DRINKING WATER SOURCE PROTECTION
Our Actions Matter

LAKE ERIE SOURCE PROTECTION REGION

Grand River Source Protection Area

SOURCE PROTECTION PLAN

EXPLANATORY DOCUMENT

Prepared on behalf of:
Lake Erie Region Source Protection Committee

Under the *Clean Water Act, 2006*
(Ontario Regulation 287/07)

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1.0 INTRODUCTION

The Explanatory Document provides the intent and rationale behind the policy decisions made in the Source Protection Plan Policies (Volume II). Information on the context of the Source Protection Plan and the planning process is presented in Volume I of the Source Protection Plan.

Volume I of the Grand River Source Protection Plan provides the context for the overall Plan, including a brief history of source protection planning and the *Clean Water Act, 2006*, Source Protection Plan objectives, and a description of the watershed/source protection area. This volume also includes a description of plan components, key steps in the planning process, public consultation, interaction with other Source Protection Regions, source water threats, guidance on how to read the plan, and details on plan implementation and enforcement.

The **Assessment Report** is another key component of the Source Protection Plan. Since 2005, numerous technical studies have been completed and are summarized in the Grand River Source Protection Area Assessment Report.

Volume II of the Grand River Source Protection Plan contains the Source Protection Plan policies. These policies address both existing (where applicable) and future drinking water threats. Volume II includes policies for significant drinking water threats, local threats, and optional content. Future updates to the Source Protection Plan may include policies for moderate and low threats. The appendices associated with this volume include information as required by section 34 of O. Reg. 287/07:

The **Explanatory Document**, as stated in section 40 of Ontario Regulation 287/07 of the *Clean Water Act, 2006*, contains the following information:

- An explanation of the reasons for each policy set out in the source protection plan.
- An explanation of the reasons for designating an activity under paragraph 1 of subsection 22 (3) of the Act, including the reasons relied on by the committee to form the opinion that the activity must be prohibited in order to ensure that it ceases to be a significant drinking water threat.
- A summary of the comments received under sections 35 to 39 and an explanation of how the comments affected the development of the policies set out in the Source Protection Plan.
- An explanation of how the summary referred to in paragraph 7 of subsection 13 (1) affected the development of the policies set out in the Source Protection Plan.
- A summary of how the consideration of the potential financial implications for persons and bodies that would be implementing or affected by the Source Protection Plan influenced the development of the policies set out in the plan.
- If a policy described in subsection 22 (7) of the Act or paragraph 1 of section 26 of O. Reg. 287/07 is the only policy set out in a Source Protection Plan to deal with an

activity that has been identified as a significant drinking water threat, a statement that the Source Protection Committee is of the opinion that,

i. the policy, if implemented, will promote the achievement of the objectives of the plan in accordance with paragraph 2 of subsection 22 (2) of the Act, and

ii. a policy to regulate or prohibit the activity is not necessary to achieve those objectives.

- If, pursuant to subsection 31 (2), a significant threat policy in respect of an activity that would be a significant drinking water threat for an area identified in an assessment report is not included in the source protection plan to which the assessment report relates because there is no reasonable prospect that the activity will ever be engaged in in that area,

  i. an explanation of the source protection committee's reasons for concluding that there is no reasonable prospect the activity will ever be engaged in in that area, and

  ii. a description of the process used by the source protection committee to reach the conclusion referred to in subparagraph i, including a summary of the information, such as land use planning documents, that was relied on to reach the conclusion.

This document is submitted to the Ministry of the Environment, Conservation and Parks with the Source Protection Plan under section 22(16) of the *Clean Water Act, 2006* and under section 43(1) of O. Reg. 287/07.

In preparation for submission, this document has been updated to reflect any changes made to the Source Protection Plan and includes a brief explanation of the effect, if any, of comments received during consultation on the Plan under section 41 of O. Reg. 287/07.

2.0 OVERVIEW OF POLICY DEVELOPMENT WITHIN THE LAKE ERIE SOURCE PROTECTION REGION

The following sections present an overview of the policy development within the Lake Erie Source Protection Region, specifically for the Grand River Source Protection Area, and the necessary information that guided the policy development process. The policies were developed to meet the objectives of the *Clean Water Act, 2006* as described in the *Clean Water Act, 2006* and Volume I of this Source Protection Plan. All documents referenced are available online at the Lake Erie Source Protection website.

2.1 Policy Development within the Lake Erie Source Protection Region

2.1.1 Municipal Process

The municipal role, as defined by the approved Terms of Reference for the Source Protection Plan development is critical to the success of the program. Municipalities within the Grand River Source Protection Area together with the Grand River Conservation Authority have been actively involved in the development of the Source Protection Plan policies.

In addition, municipal councils have been actively informed about the Source Protection Plan policies throughout the policy development process. This collaborative process ensured that local conditions and needs were considered and accounted for. Further information on the process completed is presented in each of the municipal sections.

2.1.2 Financial Consideration

As of the date of this Source Protection Plan, there has been no long-term financial commitment from the Ministry of the Environment, Conservation and Parks for implementation of Source Protection Plans. Starting in 2013 through to the end of 2017, the Ministry provided funding for small and rural municipalities through the Source Protection Municipal Implementation Fund (SPMIF). The fund was designed to support municipal activities in the early stages of implementation. Moving forward, the Ministry has communicated its expectation that municipalities will fund implementation efforts without provincial support.

The Province of Ontario continues to support source protection planning, including capacity building at each Conservation Authority, completion of the technical documents, and the process to update Assessment Reports and Source Protection Plans. The Grand River Conservation Authority in exercising the responsibilities of the Grand River Source Protection Authority has responsibility for fiscal management with parties undertaking tasks in the Lake Erie Source Protection Region. Where a municipality has taken the lead for specific tasks, a Memorandum of Agreement between the Grand River Conservation Authority and the municipality was required, setting out the legal and financial obligations, technical deliverables and schedules.

Financial assistance has been made available between 2008 and 2013 to those whose activities and properties may be affected by the implementation of the Source Protection Plan through section 97 of the *Clean Water Act, 2006,* which established the Ontario Drinking Water Stewardship Program. The program also provided for outreach and education programs to raise awareness of the importance and opportunities for individuals to take actions to protect sources of drinking water. O. Reg. 286/07 was amended in July 2008 to further clarify the details of the Ontario Drinking Water Stewardship Program.

The Ontario Drinking Water Stewardship Program, funded by the Ministry of the Environment, Conservation and Parks, has directed grants to landowners within close proximity to municipal wells or surface water intakes to undertake projects to reduce existing potential contamination sources, along with communications and outreach efforts to persons and businesses in these areas. For the first three years, from 2008-2010, the program had funding to provide grants to undertake early actions close to municipal drinking water systems, in advance of approved source protection plans. In 2010-2013, the program was re-focused to give priority to funding voluntary projects that address significant threats identified in Assessment Reports prepared under the *Clean Water Act, 2006.* The Lake Erie Region Source Protection Committee has requested that the Province fund the program beyond 2014. The Joint Advisory Committee (JAC) continues to encourage the Province to re-establish and rejuvenate the stewardship program to support local source protection plan implementation efforts.

Source water protection is a responsibility that crosses watershed and municipal boundaries; therefore, arriving at a fair and equitable manner to share the financial responsibilities of implementation of the Source Protection Plan is complicated.

Within the *Clean Water Act, 2006*, some provisions are set out for financing various aspects of source protection implementation including stewardship programs and the collection of fees for Part IV policies. As stated in the *Clean Water Act, 2006*, fees can be collected for applications received under section 58, 59 or 60, for agreeing to or establishing a Part IV Risk Management Plan under section 56 or 58, for issuing a notice under section 59, for accepting a risk assessment under section 60, or for entering property or exercising any other powers under section 62.

The Lake Erie Source Protection Committee has, from the outset of the planning process, empowered municipalities to direct the source protection plans to meet their needs. The Lake Erie Region has been unique in this approach allowing municipalities to take the lead on policy development. This has resulted in plans that have been designed with the financial means of the municipality in mind.

The financial implications, and the question about what agency would ultimately be responsible for funding source water protection implementation in the Grand River Source Protection Area was strongly considered in the development of the source protection policies. The goal of the source protection policies was to, whenever possible; protect the municipal drinking water supply with the least possible expense to the implementing body.

The *Clean Water Act, 2006* and the source protection planning process were introduced by the Province in response to a province-wide concern about the safety of municipal drinking water. The Lake Erie Region Source Protection Committee strongly believes that the Province should continue to fund the implementation of the Grand River Source Protection Plan and is committed to requesting that this be done.

2.1.3 Industry Stakeholder Meetings and Discussion Papers

Industry specific experts were invited to attend a series of workshops between February and April 2011 to aid in the development of the water quality policy tool analysis presented in the appendices of the Discussion Papers. These workshops provided an opportunity for Source Protection Committee Members, staff, municipalities, and industry experts to discuss each of the drinking water quality threats and determine policy tool options that would be best suited to meet the objectives of the *Clean Water Act, 2006*. The discussion papers did not make specific recommendations on the tools to be used but identified most promising policy options to address the specific drinking water threats.

In June 2018, the Guelph-Guelph/Eramosa (GGET) Water Quantity Policy Development Study Project Team completed a water quantity discussion paper with input from the Implementing Municipal Group (IMG) and the Community Liaison Group (CLG), comprised of stakeholders and community members. The discussion paper presents promising policy tools that could be used to protect water quantity sources.

2.1.4 Post Discussion Papers

After publishing the water quality discussion papers in 2011, additional information on the drinking water threats was provided by a variety of stakeholders and implementing bodies that allowed for the further refinement of policy approaches for each of the drinking water quality threats. This is reflected in the Source Protection Plan policies presented in Volume II of the Source Protection Plan.

Following publication of the water quantity discussion paper in 2018, the GGET Project Team began the policy development process, establishing a policy framework and water quantity policy approaches. The development of water quantity policy text is currently ongoing.

Discussion on the specific details of further refinement of the Source Protection Plan policies is presented for each of the drinking water quality threats, where applicable, in the specific municipal sections of this Explanatory Document.

2.1.5 Early Engagement Process

An “early engagement” process was initiated prior to this updated Source Protection Plan being released to implementing bodies as part of pre-consultation. This process provided the Ministry of the Environment, Conservation and Parks with the opportunity to provide feedback on draft amendments to the Source Protection Plan.

2.2 Additional Source Protection Plan Information

The following section seeks to provide clarification on issues and concerns raised throughout the source protection planning process by either the Lake Erie Source Protection Committee, other interested bodies and the general public. The Source Protection Committee felt that it was important to provide clarification as to why certain activities that the public or other agencies may expect to be included in the Source Protection Plan were not included.

2.2.1 Excavation that breaches the Aquitard

Excavation that breaches the confining layer allows surface water that may contain pathogens and chemical contaminants to directly enter the aquifer. Of particular concern are aquifers in fractured bedrock where surface water may move quickly through the fractures to the drinking water supply well, in what was previously a protected situation, with little or no natural filtration. This activity is not considered a prescribed drinking water threat as per O. Reg. 287. A request was made on March 31, 2010 to the Ministry of the Environment, Conservation and Parks to include excavation below the water table that breaches the confining layer be included as a local threat. This request was not approved.

On February 3, 2011, the Source Protection Committee made a request to the Ministry of the Environment, Conservation and Parks to approve two local threats. These activities were specific to post-extraction activities. The first request for the inclusion of activities where fill material is placed was denied on July 19, 2011. The second request for the inclusion of activities that allow the ponding of water, was denied on September 23, 2022.

2.2.2 Climate Change

Predictions on climate change have implications to both water quality and quantity. In terms of water quality, the increase in air temperature and greater occurrence of extreme precipitation events is predicted to degrade water quality, including lower dissolved oxygen rates and higher stream temperatures. In terms of water quantity, climate change is expected to shift the timing of seasonal events, including an earlier and lower spring freshet, and change levels in Lake Erie due to increased lake surface temperatures. Further information on the potential effects of climate change is presented in the Grand River Source Protection Area Assessment Report.

Despite the potential implications of climate change on both water quality and quantity, it is not well understood how these impacts will affect the management of associated drinking water threats. As a result, future climate change has not directly influenced the development of policies set out in the Source Protection Plan. However, climate considerations (e.g. historic drought conditions) were included in the Tier 3 Water Budget and Risk Assessments completed in the Grand River Source Protection Area. These assessments form the foundation upon which water quantity threats were

assessed. Policies addressing existing and future water quantity threats are included in the Source Protection Plans for impacted municipalities.

The 2021 Technical Rules, under the *Clean Water Act, 2006*, include the consideration of climate change in source water quality risk assessments. A climate change vulnerability assessment tool, developed by Conservation Ontario in 2018, can provide municipalities, source protection authorities, and the Lake Erie Region Source Protection Committee with a practical and consistent approach to consider local climate change impacts in the assessment of drinking water sources/systems. Any completed vulnerability assessments will be included in future Source Protection Plan updates.

2.2.3 Emerging Contaminates: Pharmaceuticals in Drinking Water Supplies

Certain pharmaceuticals are potentially a new class of water pollutants. Drugs such as antibiotics, anti-depressants, birth control pills, seizure medication, cancer treatments, pain killers, tranquilizers and cholesterol-lowering compounds have been detected in varied water sources.

Pharmaceutical industries, hospitals, and other medical facilities are obvious sources of these compounds, but households also contribute a significant share. People often dispose of unused medicines by flushing them down toilets, and human excreta can contain varied incompletely metabolized medicines. These drugs can pass intact through conventional sewage treatment facilities, into waterways, lakes and even aquifers. Further, discarded pharmaceuticals often end up at dumps and landfills, posing a threat to underlying groundwater.

Farm animals are also a source of pharmaceuticals entering the environment, through their ingestion of hormones, antibiotics and veterinary medicines. Manure containing traces of such pharmaceuticals is spread on land and can then wash off into surface water and even percolate into groundwater.

Future source protection planning initiatives should consider the impacts of these sources of contaminates as potential threats to drinking water sources.

2.2.4 Policies for Incentive Programs or Education and Outreach Programs for Drinking Water Systems outside of the Terms of Reference

Policies in the Source Protection Plans can generally only address threats related to drinking water systems included in the Terms of Reference. Although there is a process for municipalities to add drinking water systems to the Terms of Reference if they meet certain criteria, no municipality in the Lake Erie Region has chosen to do this to date. The *Clean Water Act, 2006* allows for policies for incentive programs or education and outreach programs to be developed for drinking water systems outside the Terms of Reference. There is, however, no data available on the number or location of non-municipal residential systems in the Lake Erie Region.

On January 13, 2011 the Source Protection Committee passed a resolution not to include incentive program or education and outreach program policies for drinking water systems not included in the Terms of Reference in the initial Source Protection Plan.

2.2.5 Dead Stock

As of the date of this Source Protection Plan, the disposal of dead stock is not included as a drinking water threat. This activity was included as a drinking water threat in the 2008 version of the Ministry of the Environment, Conservation and Parks Tables of Drinking Water Threats, but has since been removed due to the changes in the legislation. The *Dead Animal Disposal Act* (1968) was replaced by the Disposal of Dead Farm Animals regulation under the *Nutrient Management Act* and the Disposal of Dead stock regulation under the *Food Safety and Quality Act*. The new regulations came into force on Friday, March 27, 2009. This regulation provides more disposal options for livestock producers and meat plant operators, with measures that will protect the environment. To be included as a drinking water threat in a future source protection plan, an application for inclusion as a local threat must be made by the Source Protection Committee to the Director. As of the date of this Source Protection Plan, this request has not been made by the Source Protection Committee.

3.0 WATERSHED WIDE POLICY DEVELOPMENT CONSIDERATION FOR PRESCRIBED DRINKING WATER THREATS

The following sections describe the decision-making process behind the drafting of the first Source Protection Plan policies for the management or prohibition of the prescribed drinking water threats as outlined in the *Clean Water Act, 2006*. Prescribed Drinking Water Threat categories and sub-categories have been revised since the first Source Protection Plan was approved in 2015. Discussion paper summaries in the sub-sections that follow are based on the 2009 Tables of Drinking Water Threats and Circumstances. Further information on policy development, including the intent and rationale for the selection of specific policy tools is presented in the municipal sections.

A detailed description of the prescribed and non-prescribed drinking water quality threats can be found in Appendix B (Drinking Water Threats and Optional Content for Lake Erie Source Protection Region) of Volume I of the Source Protection Plan.

As required by the *Clean Water Act*, *2006* policies must be written to address existing drinking water threats that meet the objectives of the *Clean Water Act, 2006*. Where the policy developers and Source Protection Committee were confident that no existing drinking water threats were in existence, no policy addressing this existing threat was developed. The *Clean Water Act, 2006* also requires policies for addressing future drinking water threats that meet the objectives of the *Clean Water Act, 2006*. Some of the policies presented in Volume II of the Source Protection Plan were included because of this requirement even though in the opinion of the municipality and the Source Protection Committee these drinking water threats are very unlikely to occur in the future.

3.1 The Establishment, Operation and Maintenance of a Waste Disposal Site within the Meaning of Part V of the *Environmental Protection Act*

3.1.1 Discussion Paper Summary

The main consideration for policy development is to reduce or eliminate the risks from existing and future waste sites and, more specifically, to ensure that any discharge from the sites does not result in a significant risk to drinking water through appropriate measures to mitigate the threat. The following is a summary of the early discussions on potential policy options for each of the Waste Disposal Site sub-threats for the first Source Protection Plan.

<u>Application of Hauled Sewage to Land</u>

The land application of hauled sewage is governed by an Environmental Compliance Approval, a Prescribed Instrument, which often contains terms and conditions designed to protect both the local groundwater and surface water supplies from adverse impacts associated with land application of this material This may include, for example, stipulated separation distances from wells and surface water bodies, and restrictions on

winter spreading to reduce the risk of run-off. The discussion paper identified the use of Prescribed Instruments as an option to address this threat. Policies could be written to require that Environmental Compliance Approvals for activities located within significant drinking water threat areas that receive hauled sewage be reviewed and, if necessary, amended to ensure they contain terms and conditions that adequately protect drinking water and meet the objectives of the *Clean Water Act, 2006*.

The discussion paper also identified education and outreach as possible tools to promote implementation of best management and alternative practices by farmers and operators of sites that receive hauled sewage.

Storage, Treatment and Discharge of Tailings from Mines

Waste Disposal Site- Landfarming (disposal) of Petroleum Refining Waste

Waste Disposal Site- Liquid Industrial Waste Injection into a well

As of the date of the completion of the Assessment Report enumeration, there were no known existing activities identified in the Lake Erie Source Protection Region for the prescribed drinking water sub-categories listed above; therefore, only policies to prevent future significant threats were identified as being necessary. With the exception of mine tailing ponds, all of the above sub threats are required to have an Environmental Compliance Approval under Part V of the *Environmental Protection Act*, 1990 therefore, the use of the Prescribed Instrument tool was identified as the most promising policy tool.

Mine tailing ponds are required to have an Environmental Compliance Approval under the *Ontario Water Resources Act*, 1990 thus; the Prescribed Instrument tool was also identified as the most promising policy tool.

Waste Disposal Sites- Landfilling of Hazardous Waste, Municipal Waste, and solid Non-Hazardous Industrial or Commercial Waste

The Prescribed Instrument tool was identified, by the Discussion Paper, as it is available for most threats associated with landfilling activities. Therefore, policies could be written to require that Environmental Compliance Approvals are reviewed and, if necessary, amended by the Ministry of the Environment, Conservation and Parks to ensure the protection of drinking water in vulnerable areas where these threats are significant. Terms and conditions for the Environmental Compliance Approval could be based on advanced best management practices and could include requirements for training of staff, and ongoing monitoring.

Other approaches for managing landfilling and hazardous waste activities are associated with encouraging and supporting proper waste disposal by business and home owners. For example, the discussion paper identified education and outreach programs as a policy option to educate the public about the disposal of household hazardous waste, electronics, compost and recyclables.

Waste Disposal Sites- PCB Waste Storage, Storage of Hazardous Waste at disposal sites

Storage of Wastes as described in clause (p), (q), (r), (s), (t) or (u) of the definition of hazardous waste

Similar policy approaches to Waste Disposal Sites- Landfilling of Hazardous Waste, Municipal Waste, and solid Non-Hazardous Industrial or Commercial Waste have been identified in the discussion paper to address the regulated waste disposal sites. However, there are a number of activities and types of waste disposal activities that are exempt from the Environmental Compliance Approval process under the *Environmental Protection Act, 1990*. For example, hardware stores that collect and store hazardous waste are not required to have an Environmental Compliance Approval, even if the activity meets the criteria for a significant threat. Part IV Risk Management Plans have been identified as an effective way to manage this activity as the Part IV tools are provided as a policy tool option if no Prescribed Instrument tools are available.

3.1.2 Post Discussion Paper

Since the finalization of the Waste Disposal Sites discussion paper in September 2011, additional guidance has been provided by the Ministry of the Environment, Conservation and Parks on the ability of certain activities to be managed through the Environmental Compliance Approval process. This guidance has aided the policy developers in their specific decision making progress.

In most cases, policies were developed using the Prescribed Instrument tool because it was determined to be the most efficient way to manage this activity using existing regulatory requirements the Ministry of the Environment, Conservation and Parks would be required to review and, if necessary, amend Environmental Compliance Approvals for these activities. Further, policies were drafted to require the Ministry of the Environment, Conservation and Parks to include terms and conditions when issuing new Environmental Compliance Approvals that, when implemented, will ensure these waste sites do not become significant drinking water threats. For those activities not regulated within the Environmental Compliance Approval process, the use of Part IV Risk Management Plans was selected in most cases to manage these activities.

Prohibition of these activities was also selected where, based on current and future land uses, this activity was unlikely to occur and/or where further protection was required based on the vulnerability of the area to contamination from this activity.

3.2 The Establishment, Operation or Maintenance of a System that Collects, Stores, Transmits. Treats of Disposes of Sewage

3.2.1 Discussion Paper Summary

The Prescribed Instrument tool (Environmental Compliance Approval under the *Environmental Protection Act, 1990* or *Ontario Water Resources Act, 1990*) was identified as the most promising policy tool for managing and prohibiting significant

drinking water threats related to sewage. A policy may have been developed to require review of existing activities or prohibition of future sewage system activities to ensure adequate protection of drinking water sources. Part IV tools are unavailable for use for sewage system activities where there is an existing Prescribed Instrument tool available. Where there is no Prescribed Instrument, the Part IV tools were identified as an option to manage or prohibit activities.

On January 1, 2011, updates to the Ontario Building Code came into effect to recognize vulnerable areas identified within the Assessment Report and require mandatory inspection programs for sewage systems regulated under the Ontario Building Code in areas where they are identified as significant drinking water threats in an approved Assessment Report.

3.2.2 Post Discussion Paper

To address these drinking water threat activities, policy developers typically selected the most promising policy tools as identified in the Discussion Papers. Since the publication of the Discussion Papers, refinements have been made to the selected policy tools based on clarifications of where land use planning can be used to address certain threats. Specific discussion included the ability to require tertiary treatment systems within the limitations of the Ontario Building Code. It was concluded that these systems could be encouraged but not made mandatory due to the current building approval processes.

In most cases, policies were developed using the Prescribed Instrument tool because it was determined to be the most efficient way to manage this activity. Using existing regulatory requirements, the Ministry of the Environment, Conservation and Parks must review and, if necessary, amend Environmental Compliance Approvals for these activities. Further, policies were drafted to require the Ministry of the Environment, Conservation and Parks to include terms and conditions when issuing new Environmental Compliance Approvals that, when implemented, will ensure these activities do not become significant drinking water threats.

3.3 The Application and Storage of Agricultural Source Material to Land

3.3.3 Discussion Paper Summary

For agricultural properties that are regulated under the *Nutrient Management Act, 2002*, the Prescribed Instrument tool was identified as a policy option. A policy could be written to ensure that the Nutrient Management Plan and Strategy under the *Nutrient Management Act, 2002* effectively protects drinking water sources from the application and storage of Agricultural Source Material. For agricultural properties that are not regulated under the *Nutrient Management Act*, 2002 Part IV Risk Management Plans for the application and/or storage of Agricultural Source Material were identified as a favorable tool for managing threats related to Agricultural Source Material. The site specific plan could incorporate components of the requirements under the *Nutrient Management Act*, 2002 as well as additional or enhanced requirements to address the

gaps in the existing legislation, such as monitoring or more restrictive nutrient application rates.

Education, outreach and incentive programs were identified as additional policy options to compliment the Prescribed Instrument and Part IV Risk Management Plan policies.

3.3.4 Post Discussion Paper

Further guidance was presented to the policy developers and Source Protection Committee by the Ministry of the Environment, Conservation and Parks and Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) on the applicability of the *Nutrient Management Act, 2002* to protect drinking water sources. Policies contained in the Source Protection Plan reflect this guidance and comments received during the pre-consultation processes.

In their technical guidance, OMAFRA states that where the *Nutrient Management Act, 2002* can be applied (i.e., farms are phased in under the *Nutrient Management Act, 2002)* this Prescribed Instrument should utilized. However, where the *Nutrient Management Act, 2002* does not apply, OMAFRA recommended the use of a Part IV Risk Management Plan.

3.4 The Management of Agricultural Source Material

This Source Protection Plan only addresses significant drinking water threats. Policies addressing the management of agricultural source material (aquaculture) are therefore not included in this Source Protection Plan as this activity cannot be a significant drinking water threat under the current Technical Rules for the prescribed drinking water threat tables.

3.5 The Application, Handling and Storage of Non-Agricultural Source Material (NASM) To Land

3.5.5 Discussion Paper Summary

Both Environmental Compliance Approvals (issued by the Ministry of the Environment, Conservation and Parks under the *Environmental Protection Act, 1990)* and NASM Plans (issued by OMAFRA under the *Nutrient Management Act, 2002)* are Prescribed Instruments under the *Clean Water Act, 2006* and have been identified as policy tool options to address these drinking water threats. Where NASM is currently regulated under the *Nutrient Management Act*, 2002 a policy was typically written to require OMAFRA to review existing and new NASM plans in significant threat areas to ensure that they protect drinking water sources. Similarly, where NASM is currently regulated under S.39 of the *Environmental Protection Act*, 1990 policies were drafted to require the Ministry of the Environment, Conservation and Parks to review and amend, if necessary, existing Environmental Compliance Approvals in the significant threat areas to ensure that they protect drinking water sources.

The prohibition tool is also available for NASM and could be applied to vulnerable areas for future threats. The application of NASM is currently prohibited under the *Nutrient Management Act, 2002* within 100 meters of a municipal well.

3.5.6 Post Discussion Paper

The acquisition of new information has been minimal and few discussions have taken place since the finalization of the Discussion Paper.

3.6 The Application, Handling and Storage of Commercial Fertilizer to Land

3.6.1 Discussion Paper Summary

In cases where the application of commercial fertilizer to land is addressed through a Nutrient Management Plan developed under the *Nutrient Management Act, 2002*, the Discussion Paper identified a specify action policy as a potential option. Specify action policies could be written to request the Ministry of the Environment, Conservation and Parks to prioritize inspections for properties where the application of commercial fertilizer is considered a significant threat to ensure that the threat is appropriately managed. Nutrient Management Plans are created by a trained and certified individual - either a farmer or a consultant. Therefore, if source protections plan policies require that specific management practices be included in Nutrient Management Plans using the Prescribed Instrument tool, OMAFRA and the affected farmers would need to be informed during consultation periods. This was identified as a significant challenge based on additional correspondence provided by the Ministry of the Environment, Conservation and Parks.

Where commercial fertilizer is not regulated under the *Nutrient Management Act, 2002* Part IV tools were identified as a potential policy option, meaning a policy could be written to require a Part IV Risk Management Plan for activities involving the application,

handling and/or storage of commercial fertilizer in significant threat areas. The Part IV Risk Management Plan could incorporate components of Nutrient Management Plans and other existing standards for commercial fertilizer, as well as requirements for inspection and monitoring. This tool would also effectively manage activities not occurring on a farm such as a retail storage facility.

Education and outreach programs were identified as another policy option to address drinking water threats related to commercial fertilizer. These programs could be targeted towards fertilizer application technicians, or towards homeowners who may not be aware of best management practices for fertilizer and the potential threats to drinking water sources.

3.6.2 Post Discussion Paper

Further discussions were held on the ability to effectively manage this activity using the *Nutrient Management Act, 2002* as a Prescribed Instrument tool. It was determined that, due to the limited ability, to add additional requirements to the Nutrient Management Plans, it would be difficult to ensure reduced risk to drinking water sources. Thus, in many cases, Part IV Risk Management Plan was selected by policy developers to manage this activity as this tool will better achieve the objectives of the *Clean Water Act, 2006*. In specific cases, prohibition of this activity was selected based on a review of current and future land use within the applicable vulnerable areas where this activity is or would be a significant drinking water threat.

3.7 The Application, Handling and Storage of Pesticide to Land

3.7.1 Discussion Paper Summary

Part IV Risk Management Plans were identified as the most promising policy options for activities involving the application, handling and storage of pesticides in significant threat areas. Where further restrictions are required, the Prescribed Instrument tool was identified as an option, as it could require the Ministry of the Environment, Conservation and Parks to revoke, or not issue, pesticide permits where pesticide activities are considered significant threats.

Education and outreach policies were identified as supporting policy options. These programs could be developed to inform the various audiences involved in the application and storage of pesticide about best management practices, Integrated Pest Management, or alternatives to pesticides that are less harmful to the environment, specifically drinking water sources. Focus could be placed on retail storage of pesticide, which is less regulated than pesticide application.

3.7.2 Post Discussion Paper

Further review of the *Pesticide Act* revealed that there were few situations where a pesticide permit would actually be required on land uses surrounding municipal intakes. Therefore, the use of the Prescribed Instrument tool to address this drinking water

threat was determined to be very limited. In many cases, policy developers selected the prohibition and management of future and existing activities using the Part IV tools.

3.8 The Application, Handling and Storage of Road Salt

3.8.1 Discussion Paper Summary

Addressing significant drinking water threats from road salt can be achieved by requiring Part IV Risk Management Plans for activities associated with the application and storage of road salt by road authorities. This can also be achieved by requiring Smart about Salt™ accreditation for property owners. However, Part IV Risk Management Plans may not be feasible in all municipalities based on the resources required to implement them.

The Discussion Paper also identified specify action policies that could be written to require municipal road authorities, and encourage the Ministry of Transportation and private contractors, to develop or amend existing salt management plans. These developments and/or amendments would ensure that salt management plans contain policies for vulnerable areas to protect drinking water sources. Such a policy could require that the plan be submitted annually to Environment Canada.

Education and outreach programs were identified in the Discussion Paper as an option for promoting responsible salt storage and application and the use of alternative de-icers. Such programs could be targeted towards the residential, industrial, commercial and institutional sectors, as well as to the public at large and local decision makers. The goal of this approach would be to improve industry practices and raise awareness about the link between salt application and water quality.

For future threats, Part IV prohibition and land-use planning tools are available and could be used to prohibit certain activities associated with the storage of road salt. However, as road salt application is required to prevent winter related accidents, prohibiting this activity was considered an unlikely option, and if possible, limited to smaller areas.

3.8.2 Post Discussion Paper

After the publication of the Discussion Papers additional discussion on alternative options to address this drinking water threat was minimal. Further guidance was provided by the Ministry of Transportation on their ability to amend salt management plans. Most policy developers selected land use planning and Part IV tools to manage and prohibit existing and future activities. In most cases these policies were complimented with education and outreach programs.

Source Protection Plan policies were not included for the application of road salt where the 80 percent impervious surface threshold, as outlined in the provincial table of circumstances was not met. Source Protection Plan policies were included where a chloride Issue Contributing Area was noted and within the Region of Waterloo as outlined in the approved Assessment Report.

3.9 The Storage of Snow

3.9.3 Discussion Paper Summary

The Discussion Paper identified Part IV Risk Management Plans to address existing threats from the storage of snow as an effective policy option for snow storage areas located within 100 meters of municipal drinking water sources. Other available policy options would require the development of salt management plans or amend existing plans to include conditions to protect municipal drinking water sources. Establishing an education and stewardship program for private contractors was identified as another option. This program could inform contractors about the responsibilities of storing and transporting snow in vulnerable areas and provide recognition for those who follow best management practices.

For future threats, land-use planning tools were identified as available to prohibit large scale storage areas in the most vulnerable areas. Future storage facilities within vulnerable areas could also be permitted subject to the provisions outlined in a Part IV Risk Management Plan satisfactory to the municipality.

3.9.4 Post Discussion Paper

Following the publication of the Discussion Papers, further discussion on policy tool options for this drinking water threat was limited. In most cases the land use planning tool has been selected by policy developers to manage or prohibit these activities in the future as there were minimal identified existing drinking water threats within the Assessment Report enumeration within most of the municipalities in the Grand River Source Protection Area.

3.10 The Handling of Storage of Fuel

3.10.1 Discussion Paper Summary

The Discussion Paper identified Part IV Risk Management Plans as an effective policy option to address significant threat activities involving the handling and storage of liquid fuel. A Part IV Risk Management Plan could incorporate components of O. Reg. 217/01 and its code, as well as other measures to ensure the protection of drinking water sources. Education and outreach and incentive programs were also identified as an available policy option to address drinking water threats from liquid fuels. Various players involved in the handling and storage of liquid fuel could be the target of such education programs. The Discussion Paper suggested that programs targeted at liquid fuel distributors would be especially valuable.

In certain cases, instruments relating to liquid fuel storage are issued under the *Aggregate Resources Act* and the *Safe Drinking Water Act* for aggregate operations and municipal residential drinking water facilities, respectively. For these circumstances, the Prescribed Instrument policy tool was identified as an effective policy option. A Prescribed Instrument policy could require that these instruments incorporate drinking water protection and contain appropriate spill contingency measures.

3.10.2 Post Discussion Paper

The Ministry of Consumer Services and the Technical Standards and Safety Authority provided guidance to the policy developers to aid in their development of the Source Protection Plan policies. This included a description of their abilities to implement certain policies with respect to the codes they promote. This discussion has been reflected in the current Source Protection Plan policies. As a result, the majority of policy developers decided not to direct the policies towards The Ministry of Consumer Services and the Technical Standards and Safety Authority.

3.11 The Handling and Storage of Dense Non-Aqueous Phase Liquid (DNAPLS)

3.11.1 Discussion Paper Summary

Part IV Risk Management Plans were identified in the Discussion Paper as an effective tool to address drinking water threats from dense non-aqueous phase liquid (DNAPLs). These plans could address operating practices such as containment and management, employee training, spill contingency plans, periodic testing of storage systems, as well as other items. If the requirements of the Part IV Risk Management Plan are not met, then the storage site would be prohibited.

An alternative policy approach identified to address threats from DNAPLs was for municipalities to establish bylaws that prohibit storage within 100 meters of the municipal drinking water source.

‘Softer’ tools such as education and outreach and incentive programs were also identified to effectively address threats, especially for where DNAPLs are used in smaller volumes such as in residential areas. Policies could be written to promote the use of alternative non-toxic products and/or proper waste disposal.

3.11.2 Post Discussion Paper

During the development of Source Protection Plan policies further discussions included determining the scope of work required as the threat circumstances for DNAPLS do not stipulate a quantity threshold. Therefore, even a very small quantity is regarded as a significant drinking water threat. Policies typically reflect this and tend to be more restrictive closer to the municipal intake. In some cases, separate policies have been written for commercial and industrial versus residential users. As the Ministry of the Environment, Conservation and Parks did not provide any guidance on quantity thresholds in the circumstance tables, the policy developers decided not to assign a quantity threshold.

3.12 The Handling and Storage of an Organic Solvent

3.12.1 Discussion Paper Summary

The Discussion Paper identified Part IV Risk Management Plans as an effective policy tool to manage significant drinking water threats from organic solvents. These plans

could address operating practices such as containment and management, employee training, spill contingency plans, periodic testing of storage systems, as well as other items. If the requirements of the Part IV Risk Management Plan are not met, then the storage site would be prohibited.

Another policy approach identified to address significant drinking water threats from organic solvents is for municipalities to establish bylaws that prohibit storage within 100 meters of the municipal drinking water source.

Education and outreach programs were also identified as proactive tools for addressing threats from organic solvents, most likely to be used in support of other policy approaches. Programs could be directed at businesses that store organic solvents with priority on significant threat areas. Programs could address pollution prevention approaches, best management practices and safe disposal of storing organic solvents.

3.12.2 Post Discussion Paper

After the publication of the Discussion Papers there was little further discussion on this drinking water threat. In the majority of cases, policy developers selected the Part IV tools to manage or prohibit these activities. Prohibition (using Part IV or land use planning tools) was often selected when there was future potential for this activity to occur within 100 meters of the municipal drinking water source or where the vulnerability score was high enough to regard this activity as significant.

3.13 The Management of Runoff That Contains Chemicals Used in the Delcing of Aircraft

3.13.1 Discussion Paper Summary

There are no existing significant drinking water threats identified within the Grand River Source Protection Area. Further, based on land use activities surrounding existing municipal intakes, the potential for an airport to be constructed in the future that is of a size that might rank as a significant drinking water threat is minimal.

It is possible to affect decision-making on airport lands, provided that the functioning of the site is not impeded. Although the Federal Government has immunity from provincial law, the Federal Government can waive that immunity by contract/agreement or conduct. Where a municipality has the responsibility for establishing Part IV Risk Management Plans, a Source Protection Plan policy can direct a municipality to negotiate a Part IV Risk Management Plan under the *Clean Water Act, 2006* with the airport authority.

3.13.2 Post Discussion Paper

Although it is unlikely for this activity to occur in the Grand River Source Protection Area in the foreseeable future, policies must be included as per the rules under the *Clean Water Act, 2006*. Therefore, as new airports would require the completion of an Environmental Assessment, the municipalities would in their review of this

Environmental Assessment be able to provide comments to the federal authorities on the effects of this activity on their drinking water supply specifically for the de-icing of aircrafts. This was most often determined, to be the most effective method to manage these future activities.

3.14 An Activity that Takes Water from an Aquifer or a Surface Water Body without Returning the Water Taken From the Same Aquifer or Surface Water Body and an Activity that Reduces the Recharge of an Aquifer

Water quantity threats policies currently included in the Grand River Source Protection Plan are specific to the Townships of Amaranth, East Garafraxa, the County of Brant, Wellington County and the Region of Waterloo. This is based on the completed Tier 3 Water Budgets and Local Area Assessments for municipal supply wells in the Town of Orangeville (located in the CTC Source Protection Region), Brant County (Bright and Bethel Well Fields), Town of Halton Hills (communities of Acton and Georgetown, located in the CTC Source Protection Region) and the Township of Centre Wellington, respectively. Water quantity policies addressing consumptive water takings and recharge reducing activities have been developed as a result of a significant risk level assigned to the water quantity wellhead protection area (WHPA-Q) in the respective area. Water quantity policy development is ongoing in the Guelph-Guelph/Eramosa area.

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Water quantity threats identified for the Townships of Amaranth,East Garafraxa, the County of Brant, Wellington County and the Region of Waterloo are specific to groundwater only. Both the taking of water from a municipal aquifer (without returning the water to that unit) and the reduction of recharge to a municipal aquifer can result in a reduction of available supply that could impair the long-term viability of a water system. Unlike water quality threats, where the threat level is the product of vulnerability score (or the location) and hazard score (of the activity), water quantity threats are a function of exposure and tolerance.

Exposure refers to the likelihood that the drinking water system could require more water under average monthly pumping conditions than is available in the local area

under modeled scenarios of drought. Tolerance refers to the predicted ability of the water system to meet peak demands under modeled scenarios of drought.

Policy tools to address the water quantity threats in the Townships of Amaranth, East Garafraxa, the County of Brant, Wellington County and the Region of Waterloo were identified in conjunction with municipal staff and reflecting on ideas in the policies developed by neighbouring Source Protection Areas and Regions. Policy tools include the use of Prescribed Instruments, specifically Permits to Take Water administered by the Ministry of the Environment, Conservation and Parks, Land Use Planning and specify action policies directed towards the municipalities, and education and outreach programs.

3.15 The Use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or a Farm Animal Yard.

3.15.1 Discussion Paper Summary

Outdoor Confinement Areas

The *Nutrient Management Act, 2002* is a Prescribed Instrument under the *Clean Water Act*, 2006 meaning Nutrient Management Strategies can be used to implement policies. These tools and the legislative framework are already in place, making them an effective approach for addressing existing and future drinking water threats from farm animal yards and outdoor confinement areas.

The Prescribed Instrument tool was identified in the Discussion Paper and a policy could require OMAFRA to ensure existing and proposed Nutrient Management Strategies in significant threat areas effectively protect municipal drinking water supplies. The policy could require that such strategies contain contingencies in case municipal groundwater monitoring identifies concerns relating to nitrogen and pathogens.

Nutrient Management Strategies only apply to outdoor confinement areas and farm animal yards on properties regulated under the *Nutrient Management Act, 2002*. Therefore, for properties with outdoor confinement areas or farm animal yards that pose a significant threat to drinking water that are not regulated under the *Nutrient Management Act*, *2002*, policies were drafted to require Part IV Risk Management Plans that could be applied to both existing and future threats. A Part IV Risk Management Plan could effectively deal with the diversity of farm animal yards and types of outdoor confinement areas by applying best management practices such as components of the Environmental Farm Plan on a site by site basis and contain requirements for ongoing monitoring and reporting to the Risk Management Official. The Part IV Risk Management Plan could also include aspects of a Nutrient Management Strategy as it relates to Outdoor Confinement Areas to maintain consistency with current regulations.

Livestock Grazing and Pasturing Land

Livestock grazing and pasturing lands are not defined under the *Nutrient Management Act, 2002* and therefore, these threats cannot be managed through the use of the Prescribed Instruments tool. Therefore, a policy could be written to require Part IV Risk Management Plans for properties with grazing and pasturing lands that pose significant drinking water threats.

In both cases, 'softer' tools, such as education and outreach and incentive programs can be used to address livestock threats. These tools will support implementation of regulations, but they can also be used on their own. Incentive programs could also be developed to support the implementation of education programs or other policy options such as voluntary Nutrient Management Strategies in order to increase the likelihood of adopting best management practices.

3.15.2 Post Discussion Paper

Within 100 meters of the municipal intake, or within the Intake Protection Zone (IPZ) One (1) it was determined that these activities should be prohibited. This is due to close proximity to the municipal well or intake and the need to protect this area from any possible activities that may impact or damage the drinking water source. Therefore, in a majority of cases most policies require prohibition of this activity within these areas. This position was not supported by OMAFRA based on their technical guidance received. Further rational is provided in the municipal sections if prohibition within this area was selected.

3.16 The Establishment and Operation of a Liquid Hydrocarbon Pipeline

At the time water quality discussion papers were developed, the establishment and operation of a liquid hydrocarbon pipeline was not prescribed as a Drinking Water Threat activity; however, the conveyance of oil by way of underground pipelines was included as an approved local threat activity in the Lake Erie Region. In July 2018, O. Reg. 287/07 under the *Clean Water Act, 2006* was amended to include the establishment and operation of a liquid hydrocarbon pipeline in the list of Prescribed Drinking Water Threats.

Within Lake Erie Source Protection Region hydrocarbon pipelines cross the Grand River upstream of several surface water intakes (i.e. Dunnville Emergency Intake, Brantford Intake, and Ohsweken Intake). The pipeline crossings are in an area of low vulnerability. Although the likelihood of a pipeline rupture is low, the consequences of a rupture could have significant impacts on downstream drinking water intakes. Due to the likely high impacts in the event of a hydrocarbon pipeline rupture, moderate and low non-binding policies have been developed for both existing and future hydrocarbon pipelines within WHPAs and IPZs across the Lake Erie Source Protection Region.

4.0 WATERSHED WIDE POLICY DEVELOPMENT, INTENT AND RATIONALE FOR NON-PRESCRIBED DRINKING WATER THREATS

The following sections describe the decision making process for the selection of policy tools made by the policy developers for non-prescribed drinking water threats. A brief summary has been provided where the outcomes published within the Discussion Paper were available. The Discussion Paper accompanied the development of the first Grand River Source Protection Plan. Further information on policy development including the intent and rationale for the selection of specific policy tools is presented in the municipal sections.

4.1 Optional Content

4.1.1 Discussion Paper Summary

On January 13, 2011 the Source Protection Committee passed a resolution (Res. No. 05-11) which determined that policies for the following optional content shall be included within the Source Protection Plans as outlined in O. Reg. 287/07:

1. Policies on Conditions that have been identified as significant drinking water threats in the Assessment Reports;
2. Policies to update spill prevention, spill contingency or emergency response plans along highways, railways or shipping lanes in Intake Protection Zones (IPZ) or Wellhead Protection Areas (WHPA);
3. Policies that govern transport pathways;
4. Policies for the monitoring of moderate and low drinking water threats in specific situations;
5. Anything that will assist in understanding the plan; and
6. Dates for when the policies take effect.

Conditions

Conditions are contaminated sites for which there is evidence of contaminants migrating towards a well from a past activity that may have an immediate impact on drinking water quality, as outlined Part XI.5, of the Technical Rules. This is further discussed in Section 4.2.

Spill Prevention, Spill Contingency or Emergency Response Plans

Spill prevention plans outline the appropriate handling and storage (action plan) of potentially harmful substances and may include preventative maintenance standards and reporting. Spill prevention and contingency plans are outlined in the *Environmental Protection Act*, *1990* O. Reg. 224/07 and are developed by industries as described in O. Reg. 222/07, Environmental Penalties. This includes, but is not limited to industrial facilities and facilities that discharge sewage other than storm water to a watercourse.

Policies for spill prevention, spill contingency or emergency response plans can only be included in the Source Protection Plan if they relate to a highway (as defined by the *Highway Traffic Act, 1990*), railway line or a shipping lane (i.e., along a transportation corridor). This does not include properties that are along highways and also within the vulnerable area (O. Reg. 287/07 section 26(6)).

Every municipality is responsible for creating an emergency response plan governing the provision of necessary services during an emergency, and the procedures and the manner in which employees of the municipality and other persons will respond to the emergency. Outdated plans may be a threat to drinking water sources as they may not contain the most recent data and most appropriate response (i.e., personnel) to an emergency or spill.

Policies were written in all cases to encourage the appropriate party(ies) to update their response/prevention/contingency plans to include the vulnerability mapping, allowing the appropriate party to have immediate access to this information when needed. This may also require modifying the development of these plans to ensure that if a spill occurred, a heighted response would occur because of the threat to the municipal drinking water supply.

Transport Pathways

Transport pathways are defined in the *Clean Water Act, 2006* O. Reg. 287/07. Transport pathways are a land condition, resulting from human activity, which increases the vulnerability of a municipal drinking water system's raw water supply. Transport pathways, such as an abandoned well, may facilitate the movement of contaminants vertically or laterally below grade, and can result in greater impact from activities identified as a drinking water threat.

Policies for a specific transport pathway could support ongoing stewardship programs to provide funding to decommission abandoned wells thereby reducing the ability of contaminates to enter the groundwater within the vulnerable areas. This may further reduce the vulnerability of an area and the amount of enumerated threats. For transport pathways not related to drinking water wells, a policy to support best management practices, and the approval of installation of new municipal infrastructure by a qualified professional would aid in the protection of municipal drinking water sources.

A broad transport pathway policy could include requesting municipalities to determine which transport pathways exist within the identified vulnerable areas and develop policies once completed to protect municipal drinking water sources.

Monitoring of Moderate and Low Drinking Water Threats

The monitoring of moderate and low drinking water threats must be included in the Source Protection Plans where the Source Protection Committee determines that this is advisable to ensure they do not become significant drinking water threats. Currently, there are no locations within the Lake Erie Source Protection Region where the Source

Protection Committee has determined it is advisable to monitor moderate and low threats.

4.1.2 Post Discussion Paper

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

The intent of the Source Protection Plan policies is to ensure that spill prevention plans, contingency plans and emergency response plans are updated for the purpose of protecting drinking water sources.

Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore, spill prevention and contingency/response plans should be updated to include maps that clearly detail the vulnerable areas. Quick and effective response to spills could prevent an emergency from affecting a municipal drinking water source.

Additionally, updates to the current spill prevention and contingency / response plans could act as a communication tool for the municipalities and the public and ensure people are aware of the location of wellhead protection areas and are knowledgeable regarding the appropriate response in the event of a spill in these areas.

Transport Pathways: Abandoned Wells

To ensure that groundwater vulnerability is not increased due to future transport pathways with respect to abandoned wells, the policies typically support the provincial efforts to encourage the decommissioning of abandoned wells as per O. Reg. 903. Often these wells are located on private property and the cost to properly decommission or upgrade the structure may be prohibitive. A specific transport pathway policy to support ongoing stewardship programs to decommission abandoned wells could reduce the ability of contaminates to enter the groundwater within the vulnerable areas. This may further reduce the vulnerability of an area and the amount of enumerated threats.

Conditions

Conditions are contamination detected in the raw drinking water supply that exists as a result of past activities that could affect the quality of drinking water. In general, Conditions resulting from past activities are found on former industrial or commercial properties but could also include other sites such as old landfills or former agricultural storage areas. A wide variety of chemicals can be associated with Conditions. Chemicals with high mobility and high toxicity are most likely to result in issues at drinking water wells and intakes or result in off-site contamination. Technical Rules (Ministry of the Environment, Conservation and Parks, 2021, Rule 126) describe a number of conditions that are considered drinking water threats to municipal sources.

The policy tools for Conditions resulting from past activities are more limited than for existing activities. Part IV tools are not available for Conditions sites where the

contamination has been caused by a previous activity on the property. However, when the contamination is caused by a current activity, such as contamination resulting from leaking fuel tanks at an operating gas station, Part IV tools may be applicable. With limited tools, it is likely that managing the risk presented by Conditions sites may require the application of several tools in combination and may require the development of progressively refined policies in subsequent Source Protection Plans.

With limited tools under the *Clean Water Act, 2006* for Conditions sites, it is important to emphasize that the Ministry of the Environment, Conservation and Parks has the legislative authority to deal with contaminated sites using existing tools available under the *Environmental Protection Act.* Under specified circumstances, these tools may be used when the Ministry has reasonable grounds to believe that contamination is present in the environment and that the contamination in question is causing or may cause an "adverse effect" as defined under the *Environmental Protection Act*.

Prescribed Instruments have limited use. Where an Environmental Compliance Approval or Permit to Take Water has been issued for a remedial project, there may be an opportunity to modify the instrument to include restrictions such as source control, remediation, monitoring, risk assessment and/or reporting. Policies could be developed to direct the province to review its Prescribed Instruments for properties with Conditions and where appropriate, apply these source protection conditions to its instruments.

The most powerful tools to address Conditions sites are the existing Ministry of the Environment, Conservation and Parks authorities under the *Environmental Protection Act* and the *Ontario Water Resources Act*. To aid the Ministry of the Environment, Conservation and Parks in enforcing the existing legislation, the Source Protection Committee may develop policies to prioritize Conditions sites in some manner (i.e., in Issue Contributing Areas or within the WHPA-A and B or within IPZ-1 and 2) in order to have Ministry of the Environment, Conservation and Parks apply its limited resources in a way that would be most effective. The Ministry of the Environment, Conservation and Parks could also be directed to report on an annual basis to the Source Protection Committee on the status of Condition sites and the progress made to ensure the sites cease to be significant drinking water threats. The development of policies whereby Conditions sites are identified early and information is shared between the Ministry of the Environment, Conservation and Parks, local municipalities and the Source Protection Committee would aid in the management and monitoring of the Condition sites. If possible, a policy requiring "Qualified Persons" as defined by the O. Reg. 153/04, to report off site contamination in vulnerable areas where the contamination would result in a significant condition, to the Ministry of the Environment, Conservation and Parks and Source Protection Committee, would enhance identification of Condition sites and allow for early management and monitoring.

Land use planning has direct application for Conditions resulting from past activities. The Source Protection Plan could develop policies to direct municipalities to amend their Official Plans to require a Record of Site Condition (RSC) under O. Reg. 153/04 for all Condition sites whenever a building permit or planning approval is requested. A less restrictive approach would be to require an RSC only when there is a change to a more

sensitive land use. Development applications may provide opportunities for the municipality to gain more environmental information on potentially contaminated sites to determine whether an RSC is required (i.e. Require a Phase 1 and/or Phase 2 Environmental Site Assessment as part of the development application for former industrial/commercial properties or other potentially contaminated properties). The RSC process is well established and defines a best management practice for managing contaminated sites. However, the RSC process does not apply to offsite contamination. Since offsite contamination is not dealt with by O. Reg. 153/04, and it is off site contamination that defines a significant Condition site, the use of a RSC in and of itself, may not address the objective of "*The Clean Water Act, 2006*". In some cases, the RSC can be used to facilitate remediation of the subject property where contamination exceeds site-specific cleanup criteria and thereby may address the source of the offsite contamination. However this approach may need to be combined with other policy options or tools to address the offsite contamination. In other cases, Part IV Risk Management Plans may be used to prevent exposure to the contamination and remediation requirements.

Incentive programs can be used to promote the cleanup of Condition sites and to direct actions to specific areas. Programs such as Community Improvement Plans may have applications with incentives such as grants, tax benefits, tax deferrals, or waiving of development charges or municipal fees. Policies could be developed to require the local planning authority to use "Community Improvement Plans" under the *Planning Act* to provide incentives for redevelopment and cleanup of contaminated sites. The Community Improvement Plans could be incorporated into an Official Plan or by other means to designate the areas for which the Community Improvement Plans would apply. The incentives program could also require the use of the RSC process as part of the application for funding. To be effective for cleanup of Conditions, the incentive program should include as a goal the "remediation of groundwater contamination sources", alongside the goal of beneficial re-use of brownfield sites.

Education and outreach programs can be used to promote source protection policies in general and the identification and remediation of contaminated sites specifically. Policies could be developed to provide educational materials to property owners which define the intake protection zone, wellhead protection areas, the drinking water issues and Issue Contributing Areas. The education materials could contain resource materials on Brownfield re-development and incentives programs. Outreach programs could target typical Conditions site stakeholders such as developers, industrial land owners and real estate lawyers and agents. It should be recognized however that, given the high costs of contaminated site remediation, education and outreach programs are not likely to have a meaningful effect on remediation or mitigation of condition sites, and may have the negative effect of stigmatizing brownfield sites and creating more barriers to the beneficial re-use of brownfield sites.

4.2 Transitional Policies

Unlike most land use related legislation e.g. *Planning Act, 1990,* the Ontario Building Code which tends to focus primarily on regulating future development/activities, the

Clean Water Act, 2006 requires the development of policies to address existing and future occurrences of a significant threat. Therefore, the policy approach for addressing existing threats may vary markedly from the policy approach used to address potential future threats, particularly given that the *Clean Water Act, 2006* puts a much greater onus on the Source Protection Committee to justify the use of certain policy tools, such as Part IV prohibition, for addressing existing threats.

The current guidance being provided as to how the Source Protection Plan would differentiate between existing and future instances of a threat is simply a significant threat activity that existed at the date the Source Protection Plan comes into effect (or at some point prior to that date) is considered to be existing. Any other circumstance is considered to be future. Unfortunately, from a policy and practical implementation perspective, such a distinction may not necessarily be reasonable or appropriate in all situations. Therefore, some form of transitional regulation and/or policy and associated guidance were requested to deal with circumstances that do not fit cleanly within such a definition. In the absence of a provincially consistent approach, transition policies were developed to address these circumstances, such as:

- Potential uses/activities that would constitute a significant threat being proposed through applications for Building Permit or development approval under the *Planning Act* initiated before the Source Protection Plan comes into effect, or certain policies within the Source Protection Plan come into effect;

- Expansions to and replacement of existing threats, uses permitted under existing zoning without any further approvals, but not necessarily established as of the date of Source Protection Plan comes into effect; and

- Threat policies in the Source Protection Plan that establish a policy implementation date that is later than the effective date of the Source Protection Plan.

4.3 Part IV, Section 59: Restricted Land Use

The intent of these policies is to designate all land uses where activities have been designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006* as Restricted Land uses under Section 59 of the *Clean Water Act*, *2006*.

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998* and the Ontario Building Code for areas where activities could be significant drinking water threats to be reviewed by the Risk Management Official. The Risk Management Official would then advise the applicant if section 57 (prohibition) or section 58 (Part IV Risk Management Plans) of the *Clean Water Act,* 2006 apply. The policies enable the Risk Management Official to pre-screen applications for land uses and activities identified as a significant drinking water threat within vulnerable areas.

In some cases residential uses have been excluded from this policy to limit the amount of applications the Risk Management Official may be required to review. As most of the drinking water threats would not apply on a residential property, based on the

circumstances required, it was determined this was a way to reduce the burden of implementation.

4.4 Implementation and Timing

The timing policies were grouped according to Section 40, 43, 57, 58, 59; under the *Clean Water Act, 2006* and education and outreach. Each policy grouping was assigned an implementation deadline.

All policies in the first Source Protection Plan took effect July 1, 2016. The effective date for amended policies, only including but not limited to the addition of new drinking water threats and regulated areas and activities, is the date of posting of the Notice of Approval of the amended provisions on the Environmental Bill of Rights Registry. Many of the policies were implemented immediately. However, some of the policies will take additional time to fully implement due to: other legislative requirements and timelines that must be met; timeframes to develop and implement new programs; and, budgetary constraints. As such, these policies specify the time in which the policies will take effect so that they are not required to be implemented immediately.

For amended policies, only including but not limited to the addition of new drinking water threats and regulated areas and activities, is the date of posting of the Notice of Approval of the amendment provisions on the Environmental Bill of Rights Registry.

The provincial ministries request for a three (3) year implementation timeline from the date the Source Protection Plan or amendment takes effect was included in the policies. However, the Ministry of the Environment, Conservation and Parks provided further comment regarding their desired timeframe for implementation of the Prescribed Instrument tool and Director discretion to determine the timeline for implementation. The request for allowing the Director to determine the timeline for implementation was not included in the Source Protection Plan policies. The policy development team felt that it was not reasonable to allow this flexibility for the Ministry and not have this discretion available for other implementing bodies.

4.5 Annual Reporting and Monitoring

Monitoring and Annual Reporting policies have been included for each policy which addresses significant drinking water threats. In some instances one monitoring policy may apply to a number of different policies as the same information is required from the monitoring body. The intent of these policies is to provide the Source Protection Authority with the appropriate information to complete the required Annual Progress Report and Supplemental Form.

To gauge the effectiveness of the policies within the Source Protection Plan it is imperative that the Source Protection Authority track the Plan's policy implementation. In most instances this is accomplished by requiring the implementing body to report details of their accomplishments to the Source Protection Authority. This information is provided to the Source Protection Authority before February 1st of each year so that an Annual Progress Report and Supplemental Form can be provided to the Ministry of the

Environment, Conservation and Parks as required by the *Clean Water Act*, 2006. These policies also require the municipalities to amend their Official Plans and Zoning By-laws to ensure conformity with the Source Protection Plan. The purpose of the monitoring policy related to this policy is to provide notice as to what was amended/included in the Official Plan and Zoning Bylaw to implement the Source Protection Plan.

4.6 Incentive Programs

The intent of including policies for incentive programs is to encourage the development and implementation of incentive programs to aid in the implementation of Source Water Protection initiatives. During the development of the first Source Protection Plan policy developers and the Source Protection Committee felt strongly that the Ministry of the Environment, Conservation and Parks should be requested to fund the Ontario Drinking Water Stewardship Program to assist landowners to manage or cease activities that are identified as significant drinking water threats on their properties. Provincial funding of the program has since ceased.

The Grand River Conservation Authority currently delivers programs such as the Rural Water Quality Program to assist farmers within the Grand River Watershed. The inclusion of this policy directed to the Grand River Conservation Authority to continue providing support to these incentive programs formalizes the existing program delivery by Grand River Conservation Authority and supports any existing Education and Outreach policy addressing these threats.

4.7 Interpretation of the Source Protection Plan

The Lake Erie Region Project Team discussed the need for an Interpretation section in order to assist the reader in understanding what was to be considered the legal part of the Source Protection Plan policy. This included adding additional text to Volume I and II to aid the reader in how to read the policies using the policy applicability mapping and sidebars. It was important to note in the Source Protection Plan policy section (Volume II), that the Source Protection Plan consists of both the written policy text and Schedules.

The interpretation policy is intended to ensure the Schedules become a legal component of the Source Protection Plan. This policy was adapted to similar policies which appear in current Official Planning documents and was included in the Source Protection plan under Section 29 of O. Reg. 287/07.

The intent of the Schedules in the Source Protection Plan is to identify the areas where the policies of the Source Protection Plan apply. The boundaries for circumstances shown on the Plan Schedules are general and more detailed interpretation of the boundaries rely on the mapping in the approved Assessment Report and the Specific Circumstances found in the Technical Rules under the *Clean Water Act*, 2006.

The second part of this policy addresses updates to Acts and regulations may occur at any time. This part allows for these updates to occur without triggering a need for an

update to the Source Protection Plan policies which reference specific sections of various legislation.

5.0 POLICY DEVELOPMENT FOR COUNTY OF GREY- TOWNSHIP OF SOUTHGATE

5.1 Municipal Support

The Township of Southgate located in the County of Grey has been present at various meetings hosted by the Lake Erie Source Protection Region in order to develop locally implementable policies. These policies have been reviewed by municipal staff and council.

5.2 Financial Considerations

In reviewing the policies with the Lake Erie Source Protection Region staff, the Township staff evaluated the potential work load for the implementation of these policies. As with other municipalities within the Grand River Source Protection Area, the Township has great concerns about the financial burden implementation might cause for not only the Township but the affected property owners.

5.3 Policy Intent and Rationale

Within the Township of Southgate, the significant drinking water threat activities can only occur in a limited area based on the vulnerability analysis completed in the Assessment Report. WHPA-A has been scored with a vulnerability score of 10 as required by the *Clean Water Act, 2006*. WHPA-B (vulnerability score of 6) to C (vulnerability score of 2) have scores that are too low to meet the criteria for a significant drinking water threat based on the vulnerability. Therefore, the policies presented below apply only to WHPA- A with the exception of policies for DNAPLs which extended to WHPA- C regardless of the vulnerability score.

Based on the percentage of impervious surface area presented in the approved Assessment report, policies were not required to address significant drinking water threat activities from the application of road salt.

5.3.1 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit activities under section 57 of the *Clean Water Act, 2006*, in vulnerable areas where the activities would be a significant drinking water threat if they were established.

Rationale:

In most cases based on a review of current and projected land use in the areas where the following activities could be a significant drinking water threat, in the opinion of the Township and Source Protection Committee these activities are unlikely to occur in the

future. Also, the area in which the policies would apply is limited to WHPA-A based on the vulnerability presented in the Assessment Report.

Waste activities that do not require an Environmental Compliance Approval

For waste activities which do not require an Environmental Compliance Approval, the use of Part IV Prohibition ensures that waste activities do not become a significant drinking water threat. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal. The risks presented by these types of facilities warrant prohibition of future occurrences with a WHPA-A as this is the area that is most vulnerable. This includes the waste sub threat- discharge of tailings from mines which is exempt under the Environmental Compliance Approval process. Given existing land uses in the Township, it is unlikely these activities will occur within these applicable areas and therefore, the impact of prohibiting these activities is negligible.

The application and storage of Agricultural Source Material (ASM)

The handling and storage of Non- Agricultural Source Material (NASM)

The application of Commercial Fertilizer

The handling and storage of Commercial Fertilizer and Pesticides

The handling and storage of Road Salt

The storage of Snow

The handling and storage of Fuel- Storage more than 2,500 litres

The handling and storage Dense Non-Aqueous Phase Liquid (DNAPLs) - WHPA-A

The use of land as livestock grazing or pasturing land, an outdoor confinement area of a farm animal yard

The handling and storage of Organic Solvents

The risks presented by the above activities only apply to WHPA-A, which is directly adjacent to the drinking water wells. This area has been designated by most municipalities as a “no go zone” where due to the proximity to the drinking water source (within 100 meters) no significant drinking water threat activities should be allowed to occur in the future. Based on the review of the land uses within this zone, the likelihood of the above activities occurring within 100 meters of the municipal well is slim. Further, there are alternative locations within the Township where these new facilities can locate.

The *Nutrient Management Act* currently prohibits the application of agricultural source material, and the storage of non-agricultural source material within 100 meters of a drinking water well where it applies. Therefore, the use of Part IV Prohibition tools is consistent with the direction of the *Nutrient Management Act*. It was also determined

that the storage of agricultural source material poses a greater risk to drinking water sources and therefore should be also be prohibited.

The management of runoff that contains chemicals used in the de-icing of aircraft

There were no existing threats associated with aircraft de-icing noted in the Assessment Report. Further, based on land use activities surrounding existing municipal intakes, the potential for an airport to be constructed in the future that is of a size that might rank significant is minimal. As such, it was decided that prohibition was the best option to manage the threat.

Section 58 Risk Management Plans

Intent:

The development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act, 2006* was required for properties where management of the activity by the Risk Management Official was preferred over the use of Part IV Prohibition policies.

Rationale:

Part IV Risk Management Plans were used as a tool to effectively manage existing and future drinking water threats through the completion of these plans with the Risk Management Official.

Waste activities that do not require an Environmental Compliance Approval- existing activities

This policy ensures that existing waste activities which do not require an Environmental Compliance Approval are adequately managed to ensure they are not a risk to drinking water sources. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal. It was decided that although the policy would result in costs to the implementing body, the use of Risk Management Plans to manage existing storage of waste was the best option to manage the threat, particularly since these activities do not have an Environmental Compliance Approval and the circumstances where this policy would apply are few.

The application of Pesticide to Land - existing and future

The handling and storage of Pesticides - existing

The application, handling and storage of pesticides can be effectively addressed through the use of Risk Management Plans. The Township decided that although the policy will result in costs to the Township, the use of Risk Management Plans to manage the instances where pesticide is applied is the best option to manage the threat because land use planning tools cannot be used to manage activities. Additionally, it was felt that since there are no existing threats in the Township for the application of

pesticide to land than it would be appropriate to require Risk Management Plans in the future.

For the existing handling and storage of pesticides, this policy ensures that these activities are adequately managed to ensure they do not become a significant drinking water threat. Additionally, it was felt that since there are existing threats in the Township that it would be appropriate to require Part IV Risk Management Plans.

The handling and storage of Fuel- Storage more than 2,500 Litres

The Township determined the use of Risk Management Plans is the preferred policy direction to address this threat. Prohibition was not selected as a policy choice because it could create a number of legal non-conforming uses for the existing activities identified as a threat within the Township. A Part IV Risk Management Plan approach is recommended to ensure compliance with the requirements of the *Technical Standards and Safety Act* and to ensure that an emergency response plan is in place.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may be designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006 (*WHPA-A, B and C*),* as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998* and the Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be significant drinking water threat to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act* apply.

The policies also enable the Risk Management Official to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official.

5.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks (MECP) is required to prohibit significant drinking water threats within the Environmental Compliance Approval process.

Rationale:
Although the Environmental Compliance Approval process is considered to be rigorous, denials of an application is preferred with respect to future waste and select sewage activities, from a policy perspective. This policy would then eliminate the option of allowing these sites to be located within vulnerable areas where significant drinking water threats would occur in the future if the activity were undertaken. The risks presented by these types of facilities warrant prohibition of future occurrences as this policy would only apply to WHPA-A based on the vulnerability scoring. Additionally, in some cases (i.e., Stormwater management facilities) it was felt that since there are no existing threats in the Township that it would be appropriate to prohibit the activity in the future. If these facilities were required, they could be located outside of the highly vulnerable areas.

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Intent:

The MECP is required to review activities within the Environmental Compliance Approval process where they would be a significant drinking water threat. Environmental Compliance Approvals should not be granted unless conditions are imposed that will ensure that the activity does not become a significant drinking water threat.

Rationale:
A policy using the Prescribed Instrument tool relies on the existing responsibility of the MECP to protect drinking water sources, which is under their current mandate. It is a priority of the Township to use existing regulatory tools when available to address existing threat(s) within the Township. Environmental Compliance Approvals have been a longstanding requirement for waste and sewage disposal and the criteria used to assess these certificates are thorough.

Requiring the Ministry to review Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional conditions are added to Environmental Compliance Approvals where necessary.

Ministry of Agriculture, Food and Rural Affairs: Prohibit Non-Agricultural Source Material Plans

Intent:

The Ministry of the Environment, Conservation and Parks is required to prohibit activities within the Environmental Compliance Approval process where they would be significant drinking water threats under Subsection 39 of the *Clean Water Act*, *2006*. The Ministry of Agriculture, Food and Rural Affairs is required to prohibit the approval on application of NASM to land within their approvals processes.

Rationale:

The risks presented by the application of non-agricultural source material in a WHPA-A, which is directly adjacent to the municipal well, warrant prohibition of future occurrences. The *Nutrient Management Act* currently prohibits the application of non-agricultural source material within 100 meters of a municipal well. This policy is consistent with the established policy approach of the *Nutrient Management Act*.

5.3.3 Land Use Planning

Intent:

The intent of these policies is to prohibit and manage activities within Official Plans and Zoning by-laws. Further, the *Clean Water Act, 2006* requires municipalities to amend Official Plans to reflect land use planning policies in areas where activities could be significant drinking water threats.

Rationale:

The establishment, operation or maintenance of a system that collects, stores, transmits treats

or disposes of sewage- Prohibition

Part IV tools cannot be used to prohibit sewage threats, so it was concluded that the best approach to manage future sewage systems of this size would be to manage them through land use planning. The policy requires the Township and County to amend their Official Plan and Zoning By-law and require prohibiting all new development dependent upon this form of servicing. The Zoning By-law would make reference to the requirement in the Official Plan, thus making it ‘applicable law’. Accordingly, this policy is consistent with existing requirements in the County’s Official Plan. There are no existing threats enumerated in the Assessment Report in Dundalk and therefore, Township Staff are confident in not recommending a policy to address existing threats.

5.3.4 Education and Outreach

Education and Outreach Programs: Municipality Delivered

Intent:

The intent of these policies are to create education and outreach programs with other implementing bodies where desirable to develop, continue or enhance stewardship and outreach and education programs directed at significant drinking water threat activities prescribed under the *Clean Water Act*, 2006 where it may be deemed necessary.

Rationale:

The Township supports Education and Outreach programs to address all drinking water threats and provide information to the residents of the Township of Southgate on the protection of drinking water sources. The Township believes it is important to work with other implementing bodies, as funding allows, to provide a quality product and consistent messages to all residents. Policy GC-S-CW-1.4 is intended to be a generic policy to introduce and promote education and outreach at the Township level. Specific education and outreach policies have been developed for certain significant drinking water threats either as the main policy approach to manage the significant drinking water threat or as a complimentary policy. Where specific policies were developed to address significant drinking water threats, it was the opinion of the Township and the Source Protection Committee that these were sufficient to address these significant drinking water threats based on a review of the current and projected future land use and activities. All education and outreach policies shall be implemented as described in the policies.

<u>The application of Pesticides to Land</u>

<u>The handling and storage of Pesticides</u>

An education and outreach program to ensure the proper application and handling and storage of pesticides on residential properties has been identified as the preferred policy tool to address these drinking water threats. This program may include, but not necessarily be limited to increasing awareness and understanding of the drinking water threats and the promotion of best management practices.

<u>The handling and storage of Fuel- equal to or less than 2,500 Litres</u>

The preferred tool is education and outreach to ensure that the heating oil systems which have been identified as threats are aware of appropriate tank maintenance requirements and response in case of a spill. It is noted that home insurance companies have inspection and maintenance requirements for homes with oil tanks. At this time the Lake Erie Region Source Protection Committee is of the opinion, that this policy, when implemented, will promote the achievement of the objectives of the source protection plan, in accordance with subsection 22(2) of the Clean Water Act, and a policy to regulate or prohibit this activity is not necessary to achieve these objectives. This program will be evaluated during the next round of Source Protection Planning to determine if a more stringent policy is required. However, to date there is no evidence that fuel in quantities less than 2,500 Litres are or will affect the municipal drinking water supply.

The handling and storage of Dense Non-aqueous Phase Liquid (DNAPLs)- WHPA-A, B, C

The Township is concerned that there were various issues relating to the use of DNAPLs for industrial, commercial institutional and agricultural purposes. Many DNAPLs are readily available and are found within commonly used products. Therefore, the Township is of the opinion that use of education and outreach program which promote the use of alternative products is considered to be appropriate to address this threat in the less sensitive wellhead areas. The Township is of the opinion that if users of these products are aware of the risks associated with these products and the need to consider alternatives, it could improve the protection of the drinking water sources. Currently, there are no future industrial facilities planned for the WHPAs where this policy would apply and large quantities of DNAPLs may be stored.

The Township will be required to consult with the Township of Melancthon and the County of Dufferin to address significant drinking water threat activities in WHPA-B and C to ensure that all education and outreach programs are appropriate and delivered by the respective townships.

5.3.5 Specify Action

Encourage Appropriate Siting, Design and Maintenance Standards for the Establishment and Operation of a Liquid Hydrocarbon Pipeline

Intent:

The location and siting of liquid hydrocarbon pipelines is not controlled by the local municipalities, therefore, managing this activity through direction and recommendations to the appropriate approval authorities is the most effective approach for this local threat.

Rationale:

The primary concern regarding this threat relates to a potential spill from a liquid hydrocarbon pipeline. Encouraging the National Energy Board and the Ontario Energy Board to advise the Source Protection Authority and the Township of any proposed pipeline will assist the Township in identifying early in the process whether a proposed pipeline will affect the Township's municipal drinking water supply. There were no threats identified within the Township in the Assessment Report.

Support On-Site Re-inspection Program under Ontario Building Code

Intent:

Rely on the existing sewage system inspection program implemented through the Ontario Building Code to ensure existing and future sewage systems do not become a risk to municipal drinking water supplies.

Rationale:

Part IV tools cannot be used to prohibit sewage threats. Therefore, it was concluded that the best approach to manage future sewage systems of this size would be to manage them through the required maintenance inspection program under the Ontario Building Code. The sewage system maintenance inspection program supports the implementation of the *Clean Water Act, 2006* by providing a consistent approach for determining if on-site sewage systems are functioning as designed. The intent is to bring all systems in compliance with the Ontario Building Code.

5.3.6 Incentive Programs

Intent:

To encourage funding of programs, which encourage the protection of existing and future drinking water sources from significant drinking water threats.

Rationale:

As a supplemental policy, the Township supports incentive programs to assist property owners with the cost of implementing beneficial practices to protect drinking water sources. Where possible, incentives will be utilized with other tools to achieve risk reduction. Previously, the province has assisted (directly/in-directly) in the funding of programs such as the Ontario Drinking Water Stewardship Program. Continued provincially funding is encouraged to ensure the protection of drinking water sources.

6.0 POLICY DEVELOPMENT FOR DUFFERIN COUNTY – TOWNSHIP OF MELANCTHON

6.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Area have been actively involved with the development of the Source Protection Plan policies.

The Township of Melancthon has been present at various meetings hosted by the Lake Erie Source Protection Region to develop policies that take into account the local situation and needs. These policies have been reviewed by municipal staff and council.

6.2 Financial Considerations

In reviewing the policies with the Lake Erie Source Protection Region staff, the Township staff evaluated the potential workload for the implementation of these policies. As with other municipalities within the Grand River Source Protection Area, the Township has great concerns about the financial burden implementation might cause for not only the Township but the affected property owners. In the opinion of the Townships, adequate provincial funding is essential to facilitate implementation of these policies.

With respect to education and outreach policies where this is a secondary policy, i.e., not the sole policy addressing a particular significant drinking water threat, the implementation will be dependent on available expertise and budget.

6.3 Policy Intent and Rational

Within the Lake Erie Source Protection Region, policy development was a locally driven process. The Township of Melancthon vulnerability analysis presented in the Grand River Assessment Report confirms that the local geological and hydrogeological conditions create a highly protective drinking water supply for the Shelburne drinking water supply well PW7 and PW8. Therefore, the area where significant drinking water threat policies apply is limited to, in most cases, the 100 meters zone (WHPA-A) surrounding the municipal wells. This area was automatically assigned a vulnerability score of 10 as outlined in the Technical Rules under the *Clean Water Act, 2006*.

Where the policies would extend beyond the 100 meters zone the number of affected properties is low based on current and projected land uses. Policies were developed with this local information in mind and tailored specific to the Township of Melancthon.

To ease implementation for local municipalities, meetings were held between the Lake Erie, South Georgian Bay Lake Simcoe, and municipal staff to refine the source protection plan policies to ensure they are similar in direction across the watershed boundaries. As a result of these meetings the Township of Melancthon polices applicable in the Grand River Source Protection Area follow similar approaches to those used in the South Georgian Bay Lake Simcoe Source Protection Region.

In development of the policies, the Township paid specific attention to using existing instruments whenever possible to develop the source protection plan policies. The intent of the policies is to use these existing instruments and ensure they are inclusive of measures to protect drinking water sources. These tools are currently able to effectively manage the risk to drinking water sources in this area. This includes various provincial approvals, land use planning tools, best management practices, and education and outreach programs.

An assessment will be made in future updates to determine if the current policies met the objectives of the *Clean Water Act, 2006.* More restrictive policies may be drafted in the future based on this review. It is felt by the Township that current practices and programs provided by the Townships and Province protect their municipal drinking water sources, therefore, additional policies more restrictive then current practices are not required at this time.

For the application of road salt to be considered a significant drinking water threat the impervious area must be equal to or greater than 80%. This circumstance does not currently exist within the Township.

6.3.1 Clean Water Act, 2006 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit future activities under section 57 of the *Clean Water Act*, *2006* in vulnerable areas where the activities would be a significant drinking water threat. Where applicable, these policies must be incorporated into the Official Plan which is a readily available and accessible policy document. Incorporating a policy regarding the prohibition of these types of activities under the *Clean Water Act, 2006* into the Official Plan supports the Part IV prohibition under the *Clean Water Act, 2006.*

Rationale:

In most cases, as described below, based on a review of current and projected land use in the areas where the following activities could be a significant drinking water threat, in the opinion of the Township and Source Protection Committee these activities are unlikely to occur in the future.

Waste Disposal Sites (that do not require an Environmental Compliance Approval)
The storage of PCB waste, wastes described in clauses p, q, r, s, t, or u of the definition of hazardous waste (O. Reg 347) and hazardous liquid industrial waste do not require an Environmental Compliance Approval under the *Environmental Protection Act.* The risks presented by the future storage of PCB waste or hazardous liquid industrial waste warrant the future prohibition of these activities. Future waste disposal sites could easily be located outside of the vulnerable area.

The storage of wastes described in clauses p, q, r, s, t, or u of the definition of hazardous waste will be addressed through a targeted education and outreach program.

The application and storage of Agricultural Source Material (ASM)

The applications, handling and storage of Non- Agricultural Source Material (NASM)

The risks presented by the existing and future application and the future storage of ASM in a WHPA-A and the existing and future application, storage and handling of NASM in all significantly vulnerable areas, warrant the prohibition of future occurrences. The *Nutrient Management Act* currently prohibits the application of ASM and NASM within 100 meters of a drinking water well. The proposed policy is consistent with this established policy direction of the *Nutrient Management Act*.

The handling and storage of Commercial Fertilizer and Pesticides
The risks presented by the future handling and storage of commercial fertilizer and pesticides within the vulnerable areas warrant the future prohibition of this activity. Based on a review of the land use, there are alternative locations within the Township where these new activities can locate outside of these vulnerable areas.

The handling and storage of Road Salt
The storage of Snow
The risks presented by the future storage of snow and the handling and storage of road salt within the vulnerable areas warrant the future prohibition of this activity. Based on a review of the land use, there are alternative locations within the Township where these new facilities can locate outside of these vulnerable areas. Further, based on land use this activity is unlikely to take place within these applicable areas.

The handling and storage of Fuel

The handling and storage of Dense Non-Aqueous Phase Liquid (DNAPLs)

The handling and storage of Organic Solvents

These activities are significant drinking water threats in WHPA- A, and pose a serious risk to drinking water sources. As future activities could be located within 100 meters of the drinking water source, it is important to prohibit these activities. Further, there are alternative locations within the Township where these activities can locate.

The use of land as livestock grazing, or pasturing land, an outdoor confinement area or farm animal yard (O.Reg. 385/08, s.3.)

For those farms not phased in under the *Nutrient Management Act*, or for the activities of livestock grazing or pasturing where the number of animals on the land at any time is sufficient to generate nutrients at an annual rate that is greater than 0.5 NU/acre, prohibition was the preferred approach. There are no existing enumerated occurrences

of these activities within WHPA-A and there are alternative locations within the Township where these activities could locate in the future.

Section 58 Risk Management Plans

Intent:

The development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act*, *2006* was required to manage certain activities by creating a Risk Management Plan.

Rationale:

Part IV Risk Management Plans under section 58 of the *Clean Water Act, 2006* was used as a tool to effectively manage existing and future drinking water threats through the completion of these plans with the designated Risk Management Official.

Waste Disposal Sites (that do not require an Environmental Compliance Approval)
This policy ensures that existing waste activities which do not require an Environmental Compliance Approval are adequately managed to ensure they are not a risk to drinking water sources. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal. It was decided that although the policy would result in costs to the implementing body, the use of Risk Management Plans to manage existing storage of waste was the best option to manage the threat, particularly since these activities do not have an Environmental Compliance Approval and the circumstances where this policy would apply are few. There are no enumerated existing occurrences of these types of waste disposal sites within the WHPA-A for Shelburne well PW7.

The storage of wastes described in clauses p, q, r, s, t, or u of the definition of hazardous waste will be addressed through a targeted education and outreach program.

The storage of Agricultural Source Material (ASM)

For existing livestock operations that do not have or do not require a Nutrient Management Plan or Strategy, a Part IV Risk Management Plan is an effective means to regulate the storage of ASM. Existing agricultural operations without a Nutrient Management Plan/Strategy include livestock operations with less than 300 Nutrient Units. It is anticipated that the number of livestock operations that meet these circumstances is nominal and this approach is deemed appropriate. A Risk Management Plan may be similar in nature to a Nutrient Management Plan/Strategy and therefore would be a tool that the agricultural community is familiar with.

The application of Commercial Fertilizer

The application of commercial fertilizer is generally covered under the *Nutrient Management Act*. However, not all agricultural operations or land uses are subject to

the *Nutrient Management Act* and traditional land use planning tools can not address the application of fertilizer. As a result, the Township has determined a Risk Management Plan is the most effective tool to manage this activity, particularly where the use/agricultural operation is not subject to the *Nutrient Management Act*.

The handling and storage of Commercial Fertilizer

The handling and storage of commercial fertilizer is generally covered under the *Nutrient Management Act*. However, not all agricultural operations or land uses are subject to the *Nutrient Management Act* and traditional land use planning tools can not address the application of fertilizer. As a result, the Township has determined a Risk Management Plan is the most effective tool to manage any existing occurrences of this activity, particularly where the use/agricultural operation is not subject to the *Nutrient Management Act*.

The application, handling and storage of Pesticides

The existing and future application and the existing handling and storage of pesticides can be effectively addressed through the establishment of Risk Management Plans. Although the policy would result in costs to the municipality, the use of Risk Management Plans to manage the instances where pesticides are applied is the best option to manage this activity. Environmental Compliance Approvals and land use planning tools cannot be used to manage these activities. Given the relatively few existing threats in the Township for this activity, this tool is considered to be the most appropriate to manage this activity. This tool is also preferred over others (i.e. Part IV prohibition) particularly given the potential negative impacts such restrictions would have on the Township's agricultural community.

The application, handling and storage of Road Salt

The storage of Snow

The existing occurrence of these drinking water threats can be effectively addressed through the use of Part IV Risk Management Plans. It was decided that although the policy would result in costs to the implementing body, the use of Part IV Risk Management Plans to manage existing handling, and storage of road salt and storage of snow was the best option to manage the threat. The goal of management of road salt activities will be to maintain public safety while meeting the objectives of the *Clean Water Act, 2006*.

The handling and storage of Fuel

The Township concluded that the use of Risk Management Plans is the preferred policy direction to address existing occurrences of this threat. Prohibition was not selected as a policy choice because it could potentially create a non-conforming use for the existing activities identified as a threat within the Township. A Risk Management Plan approach is recommended to ensure compliance with the requirements of the *Technical Standards and Safety Act*.

The handling and storage of a Dense Non-aqueous Phase Liquid (DNAPL)- existing activities

The handling and storage of Organic Solvents- existing activities

This policy ensures that these activities are adequately managed to ensure they do not become a significant drinking water threat in WHPA-A, B, or C (where applicable) for existing activities. Currently there is no threshold for DNAPLs listed in the Tables of Circumstances. This tool allows for the flexibility to manage this activity depending on the industry and the quantity stored.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may be designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006 (WHPA A, B and C),* as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998* and Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be significant drinking water threats to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

The policies also enable the Risk Management Official to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official.

6.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to review activities within their approval process to ensure the objectives of the *Clean Water Act, 2006* are met.

Rationale:
This policy relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of the Townships to use existing regulatory tools when available to address the existing and future threat(s) within the Townships identified in the Assessment Report. Environmental Compliance Approvals have been a longstanding requirement for waste disposal and sewage where the criteria used to assess these certificates are thorough. Requiring the Ministry to review and amend, if necessary, Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added to Environmental Compliance Approvals where necessary.

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to prohibit significant drinking water threats within the Environmental Compliance Approval process to ensure the objectives of the *Clean Water Act, 2006* are met.

Rationale:
Although the Environmental Compliance Approval process is considered to be rigorous, denials of an application is preferred with respect to future waste and select sewage activities, from a policy perspective. This policy would then eliminate the option of allowing these sites to be located within vulnerable areas where significant drinking water threats would occur in the future if the activity were undertaken. The risks presented by these types of facilities warrant prohibition of future occurrences as this policy would only apply to WHPA-A based on the vulnerability scoring. Additionally, in some cases (i.e., stormwater management facilities) it was felt that since there are no existing threats in the Township that it would be appropriate to prohibit the activity in the future. If these facilities were required, they could be located outside of the highly vulnerable areas.

Ministry of Agriculture, Food and Rural Affairs and Ministry of the Environment, Conservation and Parks: Management –Nutrient Management Plans, Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks and Ministry of Agriculture, Food and Rural Affairs are required to manage activities within the Environmental

Compliance Approval process where they would be significant drinking water threats under Subsection 39 of the *Clean Water Act*, *2006*.

Rationale:

This policy relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks and the Ministry of Agriculture, Food and Rural Affairs to protect drinking water sources. It is a priority of the Townships to use existing regulatory tools when available and appropriate to address drinking water threats. Requiring the Ministries to review and amend, if necessary, Environmental Compliance Approvals, and Nutrient Management Plans/Strategies in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added to Environmental Compliance Approvals, and Nutrient Management Plans/Strategies where necessary to protect drinking water sources.

Ministry of Agriculture, Food and Rural Affairs and Ministry of the Environment, Conservation and Parks: Prohibition – Non-Agricultural Source Material Plans, Nutrient Management Plans, Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks and Ministry of Agriculture, Food and Rural Affairs are required to prohibit activities within the Environmental Compliance Approval and *Nutrient Management Act* process where they would be significant drinking water threats.

Rationale:

Comments were provided in the Draft Grand River Source Protection Plan by the Ministry of Agriculture, Food and Rural Affairs asking the Townships to prohibit the application and storage of non- agricultural source material within WHPA-A to be consistent with the prohibition of this activity as outlined in the *Nutrient Management Act*. This policy was included in the Amended Proposed Grand River Source Protection Plan as requested.

These policies rely on the existing responsibilities of the Ministry of the Environment, Conservation and Parks and the Ministry of Agriculture, Food and Rural Affairs to protect drinking water sources. It is a priority of the Townships to use existing regulatory tools when available and appropriate to address drinking water threats. Requiring the Ministries to prohibit the existing and future application of agricultural source material and the future storage of agricultural source materials through the Environmental Compliance Approvals, and/or Nutrient Management Plans/Strategies process in light of the circumstances that make the activity a significant drinking water threat will serve to ensure the protection of municipal drinking water sources.

6.3.3 Land Use Planning

Intent:

Prohibit and manage activities on specific lands within Official Plans and Zoning by-laws as available under the *Clean Water Act, 2006.* Further, the *Clean Water Act, 2006* requires municipalities to amend Official Plans to reflect land use planning policies in areas where activities could be significant drinking water threats.

Rationale:
It is a priority of the Township to use existing regulatory tools when available to address the drinking water threat(s). It was confirmed with the Township that the noted significant drinking water threats could be adequately managed through new land use policy tools including amendments to Official Plans and municipal planning documents based on their local approval process of planning applications and reviews completed by staff before any development occurs. This includes an amendment of official planning documents to prohibit new facilities. In considering policy options it was determined that locating future storage sites or facilities for the prohibited activities outside of vulnerable areas would not cause undue hardship.

6.3.4 Education and Outreach Programs

Intent:

To request the Nottawasaga Conservation Authority and the Township to work with other bodies to develop, continue or enhance stewardship and outreach and education programs directed at any, or all, significant drinking water threat activities prescribed under the *Clean Water Act, 2006* where it may be deemed necessary.

Rationale:

The Township supports Education and Outreach programs to address all drinking water threats and provide information to the residents of the Township of Melancthon on the protection of drinking water sources. Policy DC-M-CW-1.4 is intended to be a generic policy in terms of introducing and promoting education and outreach at the Township level. Specific education and outreach policies have been developed for certain significant drinking water threats as a complimentary policy.

The storage of wastes described in clauses p, q, r, s, t, and u of the definition of hazardous waste (O. Reg 347) are addressed through an Education and Outreach policy which focuses on the proper handling, storage and disposal of these types of waste. This policy was introduced based on further detail regarding the nature of these threats that was provided by the Ministry of the Environment, Conservation and Parks as part of their review of the plan. At this time the full extent of these types of wastes is unknown. Once the full extent of these types of wastes are understood, the Township may reconsider this policy approach in future updates of the Source Protection Plan. It should be noted the Ministry of the Environment, Conservation and Parks appropriately regulate these waste activities.

6.3.5 Incentive Programs

Intent:

Encourage the development and implementation of incentive programs to aid in the implementation of Source Water Protection initiatives.

Rationale:

The purpose of these policies is to express the Township's support for incentive programs to address drinking water threats and their desire for the Province to provide continued funding. Source water protection is a provincial initiative and affects the entire province. Municipalities strongly feel that the Province of Ontario should continue to fund programs such as the Ontario Drinking Water Stewardship Program because this program is one of the most effective tools available to eliminate existing significant drinking water threats.

The incentive policy where the Grand River Conservation Authority is named as the Implementing body is included to specifically address existing drinking water threats and help with the implementation of best management practices to reduce the risk to drinking water.

6.3.6 Specify Action

Sewage Systems and Sewage Works- Onsite Sewage Systems

The onsite sewage system maintenance inspection program supports the implementation of the *Clean Water Act, 2006* by providing a consistent approach for determining if onsite sewage systems are functioning as designed. The intent of the mandatory re-inspection program is to bring all systems in compliance with the Ontario Building Code. Implementing the program will ensure that the existing and future onsite sewage systems within the Township will be inspected as part of this program. This program is required to be implemented by the County of Dufferin as per the changes in the Ontario Building Code.

The management of runoff that contains chemicals used in the de-icing of aircraft

Based on the location as to where this activity would be a significant drinking water threat, it is not feasible for this activity to occur in the Township based on current land use and size of the land parcels required. If such activity was to occur in the future, the Township would be aware of the Environmental Assessment review process. The *Clean Water Act*, 2006 requires policy to be written to address potential significant drinking water threats even though it is in the opinion of the Township and the Source Protection Committee that these threats are not expected to occur in the future.

Consideration of Drinking Water Source Protection in Decision-Making Framework for Liquid Hydrocarbon Pipelines

Intent:

Recommend that bodies responsible for assessment and / or regulation of liquid hydrocarbon pipelines in Ontario consider drinking water source protection in their decision-making framework.

Rationale:

As the liquid hydrocarbon pipeline industry is heavily regulated both federally and provincially, the policy focusses on the need for source protection integration into the decision-making framework. The responsibility for assessment and to make decisions that incorporate source protection lies with the regulatory bodies. Some implementing bodies may already consider source protection and the policy would act as a formal confirmation of their efforts.

Use of Source Protection Information when Developing, Operating and Maintaining Liquid Hydrocarbon Pipelines

Intent:

Recommend that pipeline owners ensure that best available source protection information is used when developing, operating and maintaining liquid hydrocarbon pipelines.

Rationale:

The policy focusses on the need for source protection integration into the decision-making framework of pipeline owners. The responsibility is on the pipeline owners to ensure that they have the latest and best information, such as vulnerable areas, in the development, operation and maintenance of liquid hydrocarbon pipelines. Some pipeline owners may already consider source protection and the policy would act as a formal confirmation of their efforts.

Notification of Proposed New Liquid Hydrocarbon Pipeline

Intent:

The location and siting of liquid hydrocarbon pipelines is not controlled by the local municipalities, therefore managing this activity through direction and recommendations to the appropriate approval authority is the most effective approach for this threat.

Rationale:

The primary concern regarding this threat relates to a potential spill from a pipeline. Encouraging the Canada Energy Regulator and the Ontario Energy Board to advise the Source Protection Authority and the Municipality of any proposed pipeline will assist the Municipality in identifying early in the process whether a proposed pipeline will affect the municipal drinking water supply. Directing the policy at the Canada Energy Regulator and the Ontario Energy Board also encourages the regulators to formally integrate source protection into their processes to ensure that the policy is implemented.

Reimbursement of Costs Incurred by Municipality

Intent:

Liquid hydrocarbon pipeline owners, where appropriate, reimburse costs incurred by the Municipality if specific work to be done or for any due diligence that is required by a regulator to protect public health and municipal drinking water sources.

Rationale:

The operation and maintenance of liquid hydrocarbon pipelines is not controlled by the local municipalities, nor are they the owners of the pipelines. In the event of a spill, for example, significant costs may be incurred by municipalities and should be reimbursed by pipeline owners as they are responsible for operations and maintenance. Pipelines regulated through the Canada Energy Regulator are required to bear all costs associated with the consequences of a spill; however, the Ontario Energy Board has no legally-enforceable requirements/guidelines for provincially regulated pipelines.

7.0 POLICY DEVELOPMENT FOR DUFFERIN COUNTY- TOWNSHIPS OF AMARANTH AND EAST GARAFRAXA

7.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Areas have been actively involved with the development of the Source Protection Plan policies.

The Townships of Amaranth and East Garafraxa (Townships) have been present at various meetings hosted by the Lake Erie Source Protection Region to develop policies that take into account the local situation and needs. These policies have been reviewed by municipal staff and council.

7.2 Financial Considerations

In reviewing the policies with the Lake Erie Source Protection Region staff, the Township staff evaluated the potential workload for the implementation of these policies. As with other municipalities within the Grand River Source Protection Area, the Township has great concerns about the financial burden implementation might cause for not only the Township but the affected property owners. In the opinion of the Townships, adequate provincial funding is essential to facilitate implementation of these policies. This has been restated in the comments provided by the Townships on the Draft Grand River Source Protection Plan.

With respect to education and outreach policies where this is a secondary policy, i.e., not the sole policy addressing a particular significant drinking water threat, the implementation will be dependent on available expertise and budget.

7.3 Policy Intent and Rationale

Within the Lake Erie Source Protection Region, policy development was a locally driven process. The Townships of Amaranth and East Garafraxa vulnerability analysis presented in the Grand River Assessment Report confirms that the local geological and hydrogeological conditions create a highly protected drinking water supply for the Marsville and Waldemar drinking water systems. Therefore, the area where significant drinking water threat policies apply is limited to, in most cases, the 100 meters zone (WHPA-A) surrounding the municipal well. This area was automatically assigned a vulnerability score of 10 as outlined in the Technical Rules under the *Clean Water Act, 2006*.

In the case of the Township of East Garafraxa, the vulnerability analysis completed at a regional scale indicates that the susceptibility to contamination at this intake is minimal. Where the policies would extend beyond the 100 meters zone the number of affected properties is low based on current and projected land uses. Policies were developed with this local information in mind and tailored specific to these two Townships.

Policies have been developed to protect the Town of Orangeville's groundwater supply. This assessment can be found in the Credit Valley Source Protection Area Assessment Report. These policies reflect the requirement for activities with respect to the Issue Contributing Area for Chloride and the WHPA-Q1 and Q2 delineation whose boundaries enter the two Townships. During the development of these cross=-boundary policies, decisions were made based on the current and projected land uses including the Township of Amaranth's designated employment lands, implementation costs, and the ability of the activities to affect the municipal source based on the distance required. To ease implementation for local municipalities, harmonization meetings were held between the Lake Erie, South Georgian Bay Lake Simcoe, and CTC Source Protection Region staff, municipal staff and Source Protection Committee members to refine the source protection plan policies to ensure they are similar in direction across the watershed boundaries.

In development of the policies, the Townships paid specific attention to using existing instruments whenever possible to develop the source protection plan policies. The intent of the policies is to use these existing instruments and ensure they are inclusive of measures to protect drinking water sources. These tools are currently able to effectively manage the risk to drinking water sources in this area. This includes various provincial approvals, land use planning tools, best management practices, and education and outreach programs.

An assessment will be made in future updates to determine if the current policies met the objectives of the *Clean Water Act, 2006.* More restrictive policies may be drafted in the future based on this review. It is felt by the Townships that current practices and programs provided by the Townships and Province protect their municipal drinking water sources, therefore, additional policies more restrictive then current practices are not required at this time.

For the application of road salt to be considered a significant drinking water threat the impervious area must be equal to or greater than 80%. This circumstance does not currently exist within the Townships; however, policies were included for the Orangeville Chloride Issue Contributing Area.

7.3.1 Clean Water Act, 2006 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit future activities under section 57 of the *Clean Water Act*, *2006* in vulnerable areas where the activities would be a significant drinking water threat. Where applicable, these policies must be incorporated into the Official Plan which is a readily available and accessible policy document. Incorporating a policy regarding the prohibition of these types of activities under the *Clean Water Act, 2006* into the Official Plan supports the Part IV prohibition under the *Clean Water Act, 2006.*

Rationale:

In most cases, as described below, based on a review of current and projected land use in the areas where the following activities could be a significant drinking water threat, in the opinion of the Townships and Source Protection Committee these activities are unlikely to occur in the future. There were no policies written which prohibit existing activities.

The storage of Snow- municipal or provincially owned properties
The risks presented by the storage of snow within the vulnerable areas warrant the future prohibition of this activity. Based on a review of the land use, there are alternative locations within the Townships where these new facilities can locate outside of these vulnerable areas. Further, based on land use this activity is unlikely to take place within these applicable areas. The main purpose of this policy is to prevent “snow dumps” within the Issue Contributing Area which has been delineated for Chloride in the Town of Orangeville.

The handling and storage of Dense Non-Aqueous Phase Liquid (DNAPLs) - Future Activities

The handling and storage of an Organic Solvent - Future Activities

These activities are significant drinking water threats and pose a serious risk to drinking water sources. There are alternative products that are readily used within the industry and other suitable locations within the Township where these new facilities could locate.

Section 58 Risk Management Plans

Intent:

The development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act*, *2006* was required to manage certain activities by creating a Risk Management Plan.

Rationale:

Part IV Risk Management Plans under section 58 of the *Clean Water Act, 2006* was used as a tool to effectively manage existing and future drinking water threats through the completion of these plans with the designated Risk Management Official.

The application, handling and storage of Road Salt

The storage of Snow- industrial or commercial properties

These drinking water threats can be effectively addressed through the use of Part IV Risk Management Plans. It was decided that although the policy would result in costs to the implementing body, the use of Part IV Risk Management Plans to manage existing and future application, handling, and storage of road salt and storage of snow on

industrial and commercial properties was the best option to manage the threat. For the application of road salt, the policy specifically includes provisions for un-assumed roads and public roads that ensure that salt reduction measures and alternative approaches are included in the Risk Management Plan. The goal of management of road salt activities will be to maintain public safety while meeting the objectives of the *Clean Water Act, 2006*.

The handling and storage of a Dense Non-aqueous Phase Liquid (DNAPL) - Existing Activities

The handling and storage of an Organic Solvent - Existing Activities

This policy ensures that these activities are adequately managed to ensure they do not become a significant drinking water threat in WHPA- A for existing activities. Although the policy would result in costs to the implementing body, the use of Part IV Risk Management Plans to manage the existing instances identified within the Township where dense non-aqueous phase liquids and organic solvents are currently being stored and handled was the best option to manage the threat.

With this measure in place, there is confidence that new land uses would be screened by a Risk Management Official and be required to meet a set of criteria within vulnerable areas where the handling and storage of DNAPLs and organic solvents would be a significant drinking water threat.

Currently there is no threshold for DNAPLs listed in the Tables of Circumstances. This tool allows for the flexibility to manage this activity depending on the industry and the quantity stored.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006 (WHPA A, B and C),* as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998* and Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be a significant drinking water threat to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

The policies also enable the Risk Management Official to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official.

7.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to review activities within their approval process to ensure the objectives of the *Clean Water Act, 2006* is met.

Rationale:
This policy relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of the Townships to use existing regulatory tools when available to address the existing and future threat(s) within the Townships identified in the Assessment Report. Environmental Compliance Approvals have been a longstanding requirement for waste disposal and sewage where the criteria used to assess these certificates are thorough. Requiring the Ministry to review and amend, if necessary, Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added to Environmental Compliance Approvals where necessary.

The Permit to Take Water (PTTW) program is a tool the Ministry of the Environment, Conservation and Parks uses to manage water takings in Ontario. As the knowledge of stressed watersheds increases, the PTTW process should be used to ensure that applications received in these designated stressed areas are evaluated based on local conditions and the findings of the completed Tier 3 Water Budget (WHPA-Q1 and Q2 in this case for policies written). This includes ensuring that municipal water supplies are protected and that other takings ensure the municipal water supply can be sustained. This can be achieved by implementing a water conservation strategy and ensuring that permitted rates are realistic based on the activities that are proposed and the long term needs of the municipalities.

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to prohibit Environmental Compliance Approvals for the application of untreated septage to land.

Rationale:
This policy relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of the Townships to use existing regulatory tools when available to address the existing and future threat(s) within the Townships. Environmental Compliance Approvals have been a longstanding requirement for waste disposal where the criteria used to assess these certificates are thorough.

Requiring the Ministry to prohibit the issuing of an Environmental Compliance Approvals for the application of untreated septage to land in a vulnerable area with a score of 10 in light of the circumstances that make the activity a significant drinking water threat will serve to ensure the protection of groundwater drinking water sources.

Ministry of Agriculture, Food and Rural Affairs: Management – Non-Agricultural Source Material Plans

Intent:

The Ministry of the Environment, Conservation and Parks and Ministry of Agriculture, Food and Rural Affairs are required to manage activities within the Environmental Compliance Approval process where they would be significant drinking water threats under Subsection 39 of the *Clean Water Act*, *2006*.

Rationale:

This policy relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks and the Ministry of Agriculture, Food and Rural Affairs to protect drinking water sources. It is a priority of the Townships to use existing regulatory tools when available and appropriate to address drinking water threats. Requiring the Ministries to review and amend, if necessary, Environmental Compliance Approvals, Nutrient Management Plans and NASM Plans in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added to Environmental Compliance Approvals, Nutrient Management Plans or NASM plans where necessary to protect drinking water sources.

Ministry of Agriculture, Food and Rural Affairs and Ministry of the Environment, Conservation and Parks: Prohibition – Non-Agricultural Source Material Plans

Intent:

The Ministry of the Environment, Conservation and Parks and Ministry of Agriculture, Food and Rural Affairs are required to prohibit activities within the Environmental Compliance Approval and *Nutrient Management Act* process where they would be significant drinking water threats.

Rationale:

Comments were provided in the Draft Grand River Source Protection Plan by the Ministry of Agriculture, Food and Rural Affairs asking the Townships to prohibit the application and storage of non- agricultural source material within WHPA- A to be consistent with the prohibition of this activity as outlined in the *Nutrient Management Act*. This policy was included in the Proposed Grand River Source Protection Plan as requested.

Ministry of Agriculture, Food and Rural Affairs; Ministry of the Environment, Conservation and Parks; and Ministry of Northern Development, Mines, Natural Resources and Forestry: Provincial Ministry Review of Prescribed Instruments

Intent:

The Ministry of the Environment, Conservation and Parks, Ministry of Agriculture, Food and Rural Affairs and the Ministry of Northern Development, Mines, Natural Resources and Forestry, for prescribed instruments for significant drinking water threats, are required to advise the Townships of applications under review and that the Townships are given an opportunity to provide comments on these applications.

Rationale:

The Townships of Amaranth and East Garafraxa would like to be informed of all applications for prescribed instruments located within vulnerable areas as they relate to significant drinking water threat activities. This would include Environmental Compliance Approvals, Nutrient Management Plans/Strategies, Non-Agricultural Source Material Plans, and applications made under the Aggregate Resources Act.

7.3.3 Land Use Planning

Intent:

Manage activities on specific lands within Official Plans and Zoning by-laws as available under the *Clean Water Act, 2006.* Further, the *Clean Water Act, 2006* requires municipalities to amend Official Plans to reflect land use planning policies in areas where activities could be significant drinking water threats.

Rationale:
It is a priority of the Townships to use existing regulatory tools when available to address the drinking water threat(s). It was confirmed with the Townships that the noted significant drinking water threats could be adequately managed through new land use policy tools including amendments to Official Plans and municipal planning documents based on their local approval process of planning applications and reviews completed by staff before any development occurs. This may include requiring additional detailed studies on the local environment (i.e., hydrogeological assessment for onsite sewage systems), review of municipal servicing constraints, impact of the development, and

incorporation of best management practices to maintain current conditions post construction.

With respect to the future application of road salt, a salt impact assessment will be required within the development applications to ensure that this activity is managed within the Orangville Chloride Issue Contributing Area.

The Ministry of Agriculture, Food and Rural Affairs requested in comments provided on the Draft Grand River Source Protection plan that the design standards outlined for the storage of agricultural source material in the *Nutrient Management Act* be included and outlined in the specific policy (DC-AEG-MC-6.2). This was added as per their request; therefore, any future facility for the storage of agricultural source material shall be designed to these standards.

7.3.4 Education and Outreach Programs

Intent:

To request the Townships and the Ministry of the Environment, Conservation and Parks to work with other bodies to develop, continue or enhance stewardship and outreach and education programs directed at any, or all, significant drinking water threat activities prescribed under the *Clean Water Act, 2006* where it may be deemed necessary.

Rationale:

This education and outreach policy is included to specifically address drinking water threat activities enumerated within the Grand River Assessment Report. To date, these activities have not been confirmed. Based on the local knowledge of the area, and further review completed by the Townships, in many cases it has been concluded that these activities are currently not taking place within the designated vulnerable areas (i.e. residential fuel storage in Waldemar). The Townships will, however, engage property owners by providing specific information on best management practices to aid in the management of these existing activities, where they exist. It was confirmed with the Townships that the noted significant drinking water threats could be adequately managed through education and outreach programs including amendments to current education and outreach programs that are provided to the residents within the Townships. Due to the limited number of affected landowners, these programs will target these landowners and may include specific mail outs and/or personal contact. Broader education and outreach programs could include specific information available on the Townships' websites.

The Townships are required to report on how these programs will meet the objectives of the *Clean Water Act, 2006.* Based on the analysis above and the technical studies presented in the Assessment Report, the Source Protection Committee and the Townships believe that education and outreach tools could effectively manage significant drinking water threats and meet the objectives of the *Clean Water Act, 2006*. The required reporting will allow for further analysis and, if required, the development of

more stringent policies to protect drinking water sources in further amendments to this Plan.

Further, the *Clean Water Act*, 2006 requires policy to be written to address potential significant drinking water threats even though it is in the opinion of the Townships that these threats are not expected to occur in the future. Therefore, it is believed that the listed significant drinking water threats could be managed using the education and outreach approach.

An education and outreach policy specifically addresses the Orangeville Chloride Issue Contributing Area, to aid in the reduction of chloride potentially entering the aquifer. This policy will encourage the use of efficient water softeners will help to reduce salt loading in the future.

The Ministry of the Environment, Conservation and Parks was specifically asked to develop education and outreach programs to address existing and future drinking water threats to ensure that there is a Province wide initiative to protect drinking water sources from the identified significant drinking water threats. This messaging will be key to ensure a consistent approach. This includes messaging around the mandatory onsite sewage system inspection program.

7.3.5 Incentive Programs

Intent:

Encourage the development and implementation of incentive programs to aid in the implementation of Source Water Protection initiatives.

Rationale:

The purpose of these policies is to express the Township's support for incentive programs to address drinking water threats and their desire for the Province to provide continued funding. Source water protection is a provincial initiative and affects the entire province. Municipalities strongly feel that the Province of Ontario should continue to fund programs such as the Ontario Drinking Water Stewardship Program because this program is one of the most effective tools available to eliminate existing significant drinking water threats.

The incentive policy where the Grand River Conservation Authority is named as the Implementing body is included to specifically address existing drinking water threats and help with the implementation of best management practices to reduce the risk to drinking water.

7.3.6 Specify Action

Sewage Systems and Sewage Works- Onsite sewage Systems

The onsite sewage system maintenance inspection program supports the implementation of the *Clean Water Act* by providing a consistent approach for determining if onsite sewage systems are functioning as designed. The intent of the mandatory re-inspection program is to bring all systems in compliance with the Ontario Building Code. Implementing the program will ensure that the existing and future sewage systems within the Townships will be inspected as part of this program. This program is required to be implemented by the County of Dufferin as per the changes made to the Ontario Building Code.

The discharge to the subsurface from onsite sewage systems greater than 10, 000 Litres per day may cause a risk to drinking water sources. The Ministry of the Environment, Conservation and Parks should develop an education and outreach program and guidelines to be delivered to these system owners, developers and municipalities to inform them of the proper maintenance and installation of these systems.

The management of Runoff that Contains Chemicals used in the De-icing of Aircraft

Based on the location as to where this activity would be a significant drinking water threat, it is not feasible for this activity to occur in the Townships based on current land use and size of the land parcels required. If such activity was to occur in the future, the Townships would be aware of the Environmental Assessment review process. The *Clean Water Act*, 2006 requires policy to be written to address potential significant drinking water threats even though it is in the opinion of the Townships and the Source Protection Committee that these threats are not expected to occur in the future.

Water Conservation Plans

The development and/or update of a Water Conservation Plans will ensure these plans remain effective tools to support sustainable water use. The Water Conservation Plan is an effective method of providing guidance, strategies, programs and action plans for all sectors to conserve water, and could include things such as:

a) water demand management such as metering and variable pricing systems;

b) rainwater harvesting where appropriate;

c) used/grey water recycling;

d) the consideration of incentives for site design to conserve water and to retrofit buildings with low flow fixtures;

e) establishing a regular inspection program to detect and repair leaks in the water distribution system in order to conserve drinking water; and

f) limits on outdoor watering.

Although many municipalities currently have a water conservation plan, this policy would encourage them to update and make those plans to become more effective. In addition, it would also encourage those municipalities who do not currently have a plan to develop one.

Joint Municipal Supply Management Advisory Group and Collaboration Meetings

The allocation of water quantities and supply operational efficiencies can be more effectively managed collaboratively by the municipalities that are responsible for the supply and distribution of potable water. Such efficiencies could include the maintenance and repair of all existing systems, and the investigation and procurement of future requirements. A joint effort by the neighbouring municipalities is a proactive and forward thinking approach and would reduce existing significant drinking water threats from activities that take water from an aquifer without returning the water taken to the same aquifer.

Where municipalities share a water source within a WHPA-Q1/Q2 identified as a significant drinking water threat, the Province is requested to support municipal efforts that focus on finding collaborative and mutually beneficial solutions to address water servicing constraints. The allocation of water quantities and supply operational efficiencies can be more effectively managed collaboratively by the municipalities that are responsible for the supply and distribution of potable water. Provincial support is believed to be necessary for successful implementation of this policy.

The Townships assume that “support” under “Province to Support Joint Water Supply Management Advisory Group” is both technical and financial. It is important that they bring technical expertise and funding to the table.

The Ministry of the Environment, Conservation and Parks is requested to collaborate with other ministries and agencies to aid in the protection of this water source. This shall include supporting the municipalities in developing mutually beneficial solutions to address the identified water quantity constraints.

Settlement Area Expansions and Population and Employment Forecasts

Currently projected population employment forecasts do not consider if the municipality is able to meet a sustainable water supply. It is believed it was counterproductive to determine population employment forecasts without considering if the municipality’s water supply cannot meet the projected growth targets.

Where an activity reducing the recharge of an aquifer would be a significant drinking water threat, the Township is requested to examine municipal water supply servicing constraints when approving settlement area expansions.

Developing within recharge areas when a municipality is already experiencing water supply servicing constraints would further impair that water supply. Therefore it was felt

that settlement area expansions should only be approved if additional water supply capacity was acquired.

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

The intent of this policy is to ensure that spill prevention plans, contingency plans and emergency response plans are updated for the purpose of protection drinking water sources.

Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore, spill prevention and contingency/response plans should be updated to include maps that clearly detail the vulnerable areas. Quick and effective response to spills could prevent an emergency from affecting a municipal drinking water source. Additionally, updates to the current spill prevention and contingency/response plans could act as a communication tool for the municipalities and the public and ensure people are aware of the location of wellhead protection areas or intake protection zones and are knowledgeable regarding the appropriate response in the event of a spill in these areas.

Transport Pathways: Abandoned Wells

To achieve the intent of the *Clean Water Act*, *2006* transport pathways may increase the vulnerability of a wellhead protection area. Therefore, to ensure that this does not occur, the Townships support provincial efforts to encourage the decommissioning of abandoned wells as per Ontario Regulation 903. Often these wells are located on private property and the cost to properly decommission or upgrade the structure may be cost prohibitive. A specific transport pathway policy to support ongoing stewardship programs to decommission abandoned wells would reduce the ability of contaminates to enter the groundwater within the vulnerable areas. It is recommended that funding to the decommissioning of these wells be continued through the programs such as the Early Response Program under the Ontario Drinking Water Stewardship Program.

Consideration of Drinking Water Source Protection in Decision-Making Framework for Liquid Hydrocarbon Pipelines

Intent:

Recommend that bodies responsible for assessment and / or regulation of liquid hydrocarbon pipelines in Ontario consider drinking water source protection in their decision-making framework.

Rationale:

As the liquid hydrocarbon pipeline industry is heavily regulated both federally and provincially, the policy focusses on the need for source protection integration into the decision-making framework. The responsibility for assessment and to make decisions

that incorporate source protection lies with the regulatory bodies. Some implementing bodies may already consider source protection and the policy would act as a formal confirmation of their efforts.

Use of Source Protection Information when Developing, Operating and Maintaining Liquid Hydrocarbon Pipelines

Intent:

Recommend that pipeline owners ensure that best available source protection information is used when developing, operating and maintaining liquid hydrocarbon pipelines.

Rationale:

The policy focusses on the need for source protection integration into the decision-making framework of pipeline owners. The responsibility is on the pipeline owners to ensure that they have the latest and best information, such as vulnerable areas, in the development, operation and maintenance of liquid hydrocarbon pipelines. Some pipeline owners may already consider source protection and the policy would act as a formal confirmation of their efforts.

Notification of Proposed New Liquid Hydrocarbon Pipeline

Intent:

The location and siting of liquid hydrocarbon pipelines is not controlled by the local municipalities, therefore managing this activity through direction and recommendations to the appropriate approval authority is the most effective approach for this threat.

Rationale:

The primary concern regarding this threat relates to a potential spill from a pipeline. Encouraging the Canada Energy Regulator and the Ontario Energy Board to advise the Source Protection Authority and the Municipality of any proposed pipeline will assist the Municipality in identifying early in the process whether a proposed pipeline will affect the municipal drinking water supply. Directing the policy at the Canada Energy Regulator and the Ontario Energy Board also encourages the regulators to formally integrate source protection into their processes to ensure that the policy is implemented.

Reimbursement of Costs Incurred by Municipality

Intent:

Liquid hydrocarbon pipeline owners, where appropriate, reimburse costs incurred by the Municipality if specific work to be done or for any due diligence that is required by a regulator to protect public health and municipal drinking water sources.

Rationale:

The operation and maintenance of liquid hydrocarbon pipelines is not controlled by the local municipalities, nor are they the owners of the pipelines. In the event of a spill, for example, significant costs may be incurred by municipalities and should be reimbursed by pipeline owners as they are responsible for operations and maintenance. Pipelines regulated through the Canada Energy Regulator are required to bear all costs associated with the consequences of a spill; however, the Ontario Energy Board has no legally-enforceable requirements/guidelines for provincially regulated pipelines.

7.3.7 Research

As the Tier 3 Water Budget process is relativity new in the Province of Ontario, there are many opportunities for research to better understand the management of activities in this area to ensure the objectives of the *Clean Water Act, 2006* are met. To date, there has been minimal research conducted in these areas, specific to the Source Water Protection Program, as the WHPA-Q1 and Q2 in this report are one of the first to be delineated in the Province. If research is conducted, further policy development may be able to reflect these findings. This could include refining best practices methods to promote recharge within this area of Ontario.

8.0 POLICY DEVELOPMENT FOR DUFFERIN COUNTY – TOWN OF GRAND VALLEY

8.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Area have been actively involved with the development of the Source Protection Plan policies. The Town of Grand Valley (Town) in Dufferin County (Formally the Township of East Luther Grand Valley) has been present at various meetings hosted by the Lake Erie Source Protection Region in order to develop locally implementable policies. These policies have been reviewed by Town staff and Town council.

8.2 Financial Considerations

In reviewing the policies with the Lake Erie Source Protection Region staff, the Town staff evaluated the potential workload for the implementation of these policies. As with other municipalities within the Grand River Source Protection Area, the Town has great concerns about the financial burden implementation might cause for not only the Town but the affected property owners.

8.3 Policy Intent and Rationale

Review of current and projected land uses indicates that there is a high level of protection of the municipal raw water from the prescribed drinking water threats. Therefore, the policies developed reflect this current assessment as presented in the approved Assessment Report available online at www.sourcewater.ca.

Based on the percentage of impervious surface area presented in the approved Assessment Report, policies were not required to address significant drinking water threat activities from the application of road salt.

8.3.1 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit activities under section 57 of the *Clean Water Act*, *2006* in vulnerable areas where the activities would be a significant drinking water threat if they were established. Where applicable, these policies must be incorporated into the Official Plan which is a readily available and accessible policy document and incorporating a policy regarding the prohibition of these types of facilities under the *Clean Water Act, 2006* into the Official Plan supports the Part IV prohibition under the *Clean Water Act, 2006.*

Rationale:

In most cases, as described below, based on a review of current and project land use in the areas where the following activities could be a significant drinking water threat, in the opinion of the Town and Source Protection Committee these activities are unlikely to occur in the future.

Waste activities that do not require an Environmental Compliance Approval

For activities which do not require an Environmental Compliance Approval, the use of Part IV Prohibition ensures that the activities do not become a significant drinking water threat. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal. The risks presented by these types of facilities warrant prohibition of future occurrences with a WHPA-A as this is the area that is most vulnerable. These types of activities would include the discharge of mine tailings or paint recycling depots. Given existing land uses in the Town, it is unlikely these activities will occur within these applicable areas and therefore, the impact of prohibiting these activities is negligible.

The application and storage of Agricultural Source Material (ASM)

The applications, handling and storage of Non- Agricultural Source Material (NASM)

The risks presented by the future application and storage of ASM in a WHPA-A and the existing and future application, storage and handling of NASM in all significantly vulnerable areas, warrant the prohibition of future occurrences. The *Nutrient Management Act* currently prohibits the application of ASM and NASM within 100 meters of a drinking water well. The proposed policy is consistent with this established policy direction of the *Nutrient Management Act*.

Prohibition of new storage of ASM and NASM is also proposed to be extended to the most vulnerable areas of WHPA-B (score of10), as the vulnerability of these areas is equivalent to that of WHPA-A. Under the *Clean Water Act*, 2006, the tables of drinking water threats identify the risk and level of threat posed by this activity as being the same within all areas with a vulnerability score of 10. Prohibition was also deemed to be a reasonable approach, given the location of existing livestock barns and other farm buildings/structures, the limited area affected and the ample opportunities to locate new facilities outside of significant threat areas.

The handling and storage of Commercial Fertilizer
The handling and storage of Pesticides
The storage of Snow

The risks presented by the future handling and storage of commercial fertilizer, pesticides and snow within the vulnerable areas warrant the future prohibition of this activity. Based on a review of the land use, there are alternative locations within the Town where these new activities can locate outside of these vulnerable areas. Further, based on a review of existing and projected land uses within the vulnerable areas, these activities are unlikely to occur.

The handling and storage of Fuel- Storage more than 2,500 Litres – Future Activities

The handling and storage of Dense Non-Aqueous Phase Liquid (DNAPLs) – Future Activities

The handling and storage of an Organic Solvent – Future Activities

The management of Runoff that Contains Chemicals used in De-icing of Aircraft – Future Activities

These activities are significant drinking water threats in WHPA-A, and pose a serious risk to drinking water sources. As future activities could be located within 100 meters of the drinking water source, it is important to prohibit these activities. Further, there are alternative locations within the Town where these activities can locate.

Section 58 Risk Management Plans

Intent:

The development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act*, *2006* was required for all designated properties.

Rationale:

Part IV Risk Management Plans under section 58 of the *Clean Water Act, 2006* was used as a tool to effectively manage existing and future drinking water threats through the completion of these plans with the Risk Management Official.

Waste activities that do not require an Environmental Compliance Approval- Existing Activities

This policy ensures that waste activities which do not require an Environmental Compliance Approval are adequately managed to ensure they do not become a significant drinking water threat. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal. It was decided that although the policy would result in costs to the implementing body, the use of Risk Management Plans to manage existing storage of waste was the best option to manage the threat, particularly since these activities do not have an Environmental Compliance Approval and the circumstances where this policy would apply are few.

The application of Agricultural Source Material – Existing Activities

The Town has concluded that this threat can be effectively addressed through the use of Risk Management Plans. It is intended that the Risk Management Plan may be scoped to the requirements of Nutrient Management Plans and Strategies (which is what agricultural operations under the *Nutrient Management Act* are required to prepare). The agricultural community is familiar with the requirements of the *Nutrient Management Act* and consistency is important for all agricultural properties.

The application, handling and storage of Pesticides

The existing and future application and existing handling and storage of pesticides can be effectively addressed through the use of Part IV Risk Management Plans. It was decided that although the policy would result in costs to the Town, the use of Risk Management Plans to manage the instances where pesticide is applied, handled or stored was the best option to manage the activities because land use planning tools cannot be used to manage these activities. This tool is also preferred over others (i.e. Part IV prohibition) particularly given the potential negative impacts such restrictions would have on the Town's agricultural community.

The application, storage and handling of Commercial Fertilizer

The application of fertilizer is generally covered under the *Nutrient Management Act.* However, not all agricultural operations or land uses are subject to the *Nutrient Management Act* and traditional land use planning tools can not address the application of fertilizer. As a result, the Town has determined a Risk Management Plan is the most effective tool to manage these activities. The use of Risk Management Plans is an appropriate tool to ensure that any of these activities not covered by land use planning policy or Prescribed Instruments will not negatively affect drinking water sources.

The use of Livestock Grazing, or Pasturing Land, an Outdoor Confinement Area or Farm Animal Yard

Prohibition was not selected as it was agreed that the threat can be effectively managed through the use of other tools. The first choice to address this threat for any agricultural operation is the development and implementation of a Nutrient Management Plan or Strategy. However, not all agricultural operations are subject to the *Nutrient Management Act (*and therefore are not required to have plans or strategies).

For these operations, a Risk Management Plan will be scoped to the requirements of Nutrient Management Plans and strategies (which is what agricultural operations under the *Nutrient Management Act* are required to prepare). The agricultural community is familiar with the requirements of the *Nutrient Management Act* and consistency is important for the agricultural industry.

Direct prohibition of future occurrences of this activity was not selected as the preferred approach given the difficulty of differentiating between existing and future occurrences of these activities, which typically do not require a building permit or other development approvals. However, given that no existing outdoor confinement areas have been identified in the Town and there are few, if any, existing livestock barns located within significant threat areas, it is anticipated that the Risk Management Plan process can be used to achieve location or relocation of such activities outside of significant threat areas in most cases.

The handling and storage of Road Salt and Snow

The Town concluded this threat can be effectively addressed through the use of Risk Management Plans. It was decided that although the policy would result in costs to the Town, the use of Risk Management Plans to manage existing storage and handling of road salt and storage of snow was the best option to manage these activities. The circumstances which make these activities a significant drinking water threat (e.g. greater than 5,000 tonnes or greater than 80% impervious surface) limits the number of potential occurrences of these threats. The number of affected properties is minimal. Financial implications on the Town are anticipated to be minimal.

The handling and storage of Fuel- storage more than 2,500 Litres

The Town determined that the use of Risk Management Plans is the preferred policy direction to address this threat for existing activities and future activities within WHPA-B where the vulnerability score is 10. Prohibition was not selected as a policy choice because it could potentially create a number of non-conforming uses for existing activities within the Town. A Risk Management Plan approach is recommended to ensure compliance with the requirements of the *Technical Standards and Safety Act* and to ensure that an emergency response plan is in place.

The handling and storage of a Dense Non-aqueous Phase Liquid (DNAPL)- Existing Activities

The handling and storage of an Organic Solvent- Existing Activities

This policy ensures that these activities are adequately managed to ensure they do not become a significant drinking water threat for existing activities. It was decided that although the policy would result in costs to the implementing body, the use of Risk Management Plans to manage the existing instances identified within the Town where dense non-aqueous phase liquid and organic solvents are currently being stored and handled is the best option to manage these activities. With this measure in place, there is confidence that new land uses would be screened by a Risk Management Official and required to meet a set of criteria within vulnerable areas where the handling and storage of DNAPLs and organic solvents would be a significant drinking water threat.

Currently there is no threshold for DNAPLs listed in the Tables of Circumstances. This tool allows for the flexibility to manage this activity depending on the industry and the quantity stored.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006 (WHPA A, B and C),* as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998* and Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be a significant drinking water threat to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

The policies also enable the Risk Management Official to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official.

8.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks (MECP) is required to prohibit significant drinking water threats within the Environmental Compliance Approval process.

Rationale:
The County's preference is to rely on existing legislation as much as possible to regulate prescribed drinking water threats. The Environmental Compliance Approval process is an established process that can effectively regulate and restrict uses and activities.

New waste disposal sites within the meaning of Part IV of the *Environmental Protection Act*, New Sewage Systems or Sewage Works - sewage treatment plants, sewage treatment plant effluent

The risks presented by these activities warrant prohibition of future occurrences. In some cases (i.e., sewage treatment plants), there are no existing threats in the Town and alternative locations outside vulnerable areas are available. As a result, prohibition of these activities through the Environmental Compliance Approval process will not have a significant impact on the municipality or property owners.

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Intent:

The MECP is required to review activities within the Environmental Compliance Approval process where they would be a significant drinking water threat under Subsection 39 of the *Clean Water Act*, *2006*. Environmental Compliance Approvals should not be granted unless conditions are imposed that, will ensure that the activity does not become a significant drinking water threat.

Rationale:
Policies using the Prescribed Instrument tool rely on the existing responsibility of the MECP to protect drinking water sources. It is a priority of the Town to use existing regulatory tools when available to address existing threat(s) within the Town. Environmental Compliance Approvals have been a longstanding requirement for waste disposal and the criteria used to assess these certificates are thorough. Requiring the Ministry to review Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional conditions are added to Environmental Compliance Approvals where necessary.

8.3.3 Education and Outreach

Education and Outreach Programs: Municipality Delivered

Intent:

To request the Town to work with other implementing bodies where desirable to develop, continue or enhance stewardship and outreach and education programs directed at significant drinking water threat activities prescribed under the *Clean Water Act, 2006* where it may be deemed necessary.

Rationale:

The Town supports Education and Outreach programs to address all drinking water threats and provide information to the residents of Grand Valley on the protection of drinking water sources. A larger initiative is based on funding so such programs could provide a quality program to the residents as well as, in working with other implementing bodies, the same messaging would be provided to all residents. Policy DC-GV-CW-1.4 is intended to be a generic policy in terms of introducing and promoting education and outreach at the Town level. Specific education and outreach policies have been developed for certain significant drinking water threats either as the main policy approach to manage the significant drinking water threat or as a complimentary policy.

<u>The handling and storage of Fuel- equal to or less than 2,500 Litres</u>

The preferred tool is education and outreach to ensure that the heating oil systems that have been identified as threats are aware of appropriate tank maintenance requirements and response in case of a spill. It is noted that home insurance companies have inspection and maintenance requirements for homes with oil tanks. Many rural

homes rely on fuel oil for heating and it is felt that other tools such as Part IV prohibition or Part IV Risk Management Plans would be too onerous on landowners/municipality particularly given the number of existing threats identified in the Town. The effectiveness of this policy will be re-evaluated during the next review of this Source Protection Plan.

The handling and storage of Dense Non-aqueous Phase Liquid (DNAPLs)- WHPA-B, C

The Town is concerned that there were various issues relating to the use of DNAPLs for industrial, commercial institutional and agricultural purposes. Many DNAPLs are readily available and are found within commonly used products. Therefore, the Town is of the opinion that use of an education and outreach program which promotes the use of alternative products is considered to be appropriate to address this threat in the less vulnerable wellhead areas. The Town is of the opinion that if users of these products are aware of the risks associated with these products and the need to consider alternatives, it could improve the protection of the drinking water sources.

8.3.4 Incentive Programs

Intent:

To encourage funding of programs which encourage the protection of existing and future drinking water sources from significant drinking water threats.

Rationale:

As a supplemental policy, the Town supports incentive programs to assist property owners with the cost of implementing beneficial practices to protect drinking water sources. Where possible, incentives will be utilized with other tools to achieve risk reduction. The province has assisted (directly/in-directly) in the funding of programs such as the Ontario Drinking Water Stewardship Program. Continued provincially funding is encouraged to ensure the protection of drinking water sources.

8.3.5 Specify Action

Conditions

This policy relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of the Town to use existing regulatory tools when available to address the existing threat(s) within the Town identified in the Assessment Report. Requiring the Ministry to review Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional conditions are added to Environmental Compliance Approvals where necessary.

Currently, the Town is aware of this property and the current environmental remediation activities.

The Establishment and Operation of a Liquid Hydrocarbon Pipeline

Intent:

The location and siting of liquid hydrocarbon pipelines is not controlled by the Town, therefore managing this activity through direction and recommendations to the appropriate approval authority is the most effective approach for this local threat.

Rationale:

The primary concern regarding this threat relates to a potential spill from a pipeline. Encouraging the National Energy Board and the Ontario Energy Board to advise the Source Protection Authority and the Town of any proposed pipeline will assist the Town in identifying early in the process whether a proposed pipeline will affect the Town's municipal drinking water supply. There are no threats identified within the Town in the Assessment Report.

9.0 POLICY DEVELOPMENT FOR THE COUNTY OF WELLINGTON

9.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Area and the County of Wellington have been given the opportunity to participate in the development of the Source Protection Plan policies. The County of Wellington has been present at various meetings hosted by the Lake Erie Source Protection Region in order to develop locally implementable policies. These policies have been reviewed by municipal staff and council. Early engagement with the municipal council began in the fall of 2011 with staff presentations and participation at various committee and council meetings.

A report from the County's Director of Planning (Report PD2011-26) providing draft policies for the County of Wellington was approved by the County Council on November 10, 2011. At their meeting on November 24, 2011, County Council passed the following resolution:

> "That the draft source protection policies attached to the report of the Director of Planning dated November 3, 2011 be supported and forwarded to the Lake Erie Source Committee for consideration; and
>
> "That staff circulate the draft policies to all required agencies and municipalities to fulfill the County's responsibility to consult."

On June 18, 2012 revised policies were presented to Wellington County Council based on the changes made from the pre-consultation process. The Source Protection Plan policies included in Volume II and the draft explanatory document was approved without any changes.

Since the initial policy development in 2011 and 2012, numerous updates have been presented to local municipal and County Councils regarding source protection implementation within Wellington County and policy development in the Grand River Source Protection Plan and other neighbouring Source Protection Plans in the County. Typically, these updates have either been part of annual reporting or through Section 34 updates to the Source Protection Plans. As required by Section 34 of the Clean Water Act, 2006, Council resolutions in support of proposed changes are requested, and to date, have been received by local and County Councils.

9.2 Financial Considerations

There will be direct financial costs to the local municipalities (who deliver water services) to fund, train and administer a Risk Management Official and Inspector(s). This position will require on-going administrative and support staff resources to ensure the on-going negotiation, enforcement and monitoring of Part IV Risk Management Plans.

The *Clean Water Act, 2006* provides the authority to Council of an upper-tier municipality or lower-tier municipality that has authority to pass by-laws respecting water production, treatment and storage under the *Municipal Act, 2001* to enforce the provisions of the Source Protection Plan. The County of Wellington does not have the authority to pass by-laws respecting water production, treatment and storage under the *Municipal Act*. The local municipalities in the County have this authority. The *Clean Water Act, 2006* does provide for local municipalities to enter into an agreement with a board of health, planning board or source protection authority to enforce the Source Protection Plan.

The lower tier municipalities within Wellington County appointed a single Risk Management Official for the entire County. Discussions were also required with neighbouring municipalities or Source Protection Regions (e.g. Halton Region, City of Guelph) where wellhead protection areas from these jurisdictions extend into the County. This raised a number of questions for the County in terms of responsibility and cost recovery for the implementation of measures to protect the municipal drinking water supplies from other jurisdictions. The *Clean Water Act, 2006* does make provision for imposing fees associated with the Risk Management Official/Inspector in order to assist in recovering costs. However, this may ultimately have a direct impact on landowners, farmers, businesses, etc.

Local municipalities incur additional labour and administrative costs to implement the Ontario Building Code requirements for the mandatory onsite sewage inspections. Inspections within the most vulnerable wellhead areas will be given priority.

Staff resources (either local or County) are required to implement education and outreach programs associated with the application of commercial fertilizer, handling/storage of DNAPLs, fuel storage and application of road salt.

There is also a direct cost to the County and local municipalities to amend Official Plans and Zoning By-laws to implement the Source Protection Plan policies. In addition, annual reporting requirements to the Source Protection Authority require staff resources and may have cost implications to the County and/or local municipalities to prepare and administer.

9.3 Policy Intent and Rationale

Review of current and projected land uses indicates that there is a high level of protection of the municipal raw water from the prescribed drinking water threats. Therefore, the policies developed reflect this current assessment as presented in the approved Assessment Report available online at www.sourcewater.ca.

Policies addressing the application of road salt using the issues-based and threat-based approach have been added to the Source Protection Plan.

9.3.1 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit activities under Section 57 of the *Clean Water Act, 2006* in vulnerable areas where the activities would be a significant drinking water threat.

Rationale:

Based on a review of current and projected land uses in the areas where the following activities could be a significant drinking water threat, staff are confident these activities are unlikely to occur in the future in the County.

The application and storage of Agricultural Source Material (ASM)

The application of Commercial Fertilizer

The risks presented by the application of ASM and commercial fertilizer in a WHPA-A, which is directly adjacent to a drinking water well, warrants prohibition of existing and future occurrences. This policy is consistent with the established policy direction of the *Nutrient Management Act, 2002.* The *Nutrient Management Act, 2002* currently prohibits the application of agricultural source material and commercial fertilizer within 100 meters of a drinking water well where Nutrient Management Plans and Strategies are in place. The storage of ASM also poses a significant risk to drinking water sources within a WHPA-A, and therefore is also prohibited. The majority of the wells in the County are located within urban areas and therefore, the potential impact of this policy on the farm community and other land uses is negligible.

The handling and storage of Non- Agricultural Source Material (NASM)

The risks presented by the handling and storage of non-agricultural source material warrants prohibition of future storage within WHPA-A. The *Nutrient Management Act, 2002* currently prohibits the storage and application of agricultural source material within 100 meters of a drinking water well. Prohibiting the storage of NASM in this area is consistent with the established policy direction of the *Nutrient Management Act, 2002*. As noted above, the majority of the wells in the County are within urban areas and the impact this policy would have on the farm community is negligible.

The handling and storage of Commercial Fertilizer
The handling and storage of Pesticides
The handling and storage of Road Salt
The storage of Snow

The risks presented by the handling and storage of commercial fertilizer, pesticides, road salt, and, the storage of snow within the most sensitive and vulnerable areas (i.e. WHPA-A and IPZ-1 including within issue contributing areas) warrants the future prohibition of these activities. Based on a review of the current and projected land uses,

there are alternative locations within the County outside of these vulnerable areas where these new facilities can locate.

The circumstances which generally make the storage of snow a significant drinking water threat (i.e. snow stored above grade on an area greater than 1 hectare) are not anticipated to occur within the vulnerable areas. Within the Chloride ICAs, the prohibition approach for snow storage was modified so small amounts of snow storage would not be prohibited. Similarly, the quantities which make the handling and storage of commercial fertilizer and pesticides a significant drinking water threat warrant the prohibition of these activities within the most vulnerable wellhead areas. The large volumes required would generally not apply to a small-scale operator or individual who is storing these materials for their own personal use/gain. Therefore, the impact of this policy on property owners is anticipated to be negligible.

The handling and storage of Fuel- storage more than 2,500 Litres- WHPA-A and IPZ-1

The handling and storage of Dense Non-aqueous Phase Liquid (DNAPLs) - WHPA-A and IPZ-1

The handling and storage of Organic Solvents- WHPA-A and IPZ-1

These activities are significant drinking water threats in WHPA-A and IPZ-1, and pose a serious risk to drinking water sources. As future activities could be located within these vulnerable areas, it is important to prohibit these activities. Further, there are alternative locations outside these most vulnerable areas within the County where these new facilities can be located and therefore, the impact of this policy on landowners/businesses is anticipated to be negligible.

An Activity that Takes Water from an Aquifer or a Surface Water Body without Returning the Water Taken From the Same Aquifer or Surface Water Body and an Activity that Reduces the Recharge of an Aquifer

Although Prohibition (Section 57) can be used for water quantity threats, direction from the Province is that it is a tool of last resort. This is in part because wide spread prohibitions can result in legal challenges. Use of prohibition in water quality policies has, therefore, been in limited areas only (i.e., 100 meters around wells), but applying prohibition in a limited area for water quantity would have a negligible effect on protecting municipal wells. The Tier 3 modelling has shown the area to be geologically complex and there is uncertainty inherent to the modelling which could provide grounds to challenge use of prohibition. Therefore, Part IV prohibition policies have not been used for water quantity threats.

Section 58 Risk Management Plans

Intent:

The development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act, 2006* was required for activities that cannot be managed effectively through land use planning or existing Prescribed Instruments.

Rationale:

Part IV Risk Management Plans, established under Section 58 of the *Clean Water Act, 2006* and are used as a tool to manage existing and future drinking water threats. This tool is used to "fill the gap" where land use policy or other existing legislation cannot regulate a significant drinking water threat. This tool is particularly effective in dealing with existing significant drinking water threat activities, where prohibition will likely impose undue hardship on property owners, businesses, etc. Part IV Risk Management Plans also provide an opportunity to work with property owners/proponents to manage a threat, particularly in areas that are less vulnerable (i.e. WHPA-B or C).

Waste activities that do not require an Environmental Compliance Approval

This policy ensures that waste activities which do not require an Environmental Compliance Approval are adequately managed to ensure they do not become a significant drinking water threat. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal in vulnerable areas. Although the policy would result in costs to the municipality, the use of Part IV Risk Management Plans to manage existing and future storage of waste is the best option, particularly since these activities do not have an Environmental Compliance Approval and there are relatively few circumstances where this policy would apply.

The application and storage of Agricultural Source Material (ASM)

For livestock operations that do not have or do not require a Nutrient Management Plan or Strategy, a Part IV Risk Management Plan is an effective means to regulate the application and storage of ASM. Existing agricultural operations without a Nutrient Management Plan/Strategy include livestock operations with less than 300 Nutrient Units. New livestock operations not requiring a Nutrient Management Plan/Strategy are those with less than five Nutrient Units. It is anticipated that the number of livestock operations that meet these circumstances is nominal and this approach is deemed appropriate. A Risk Management Plan may be similar in nature to a Nutrient Management Plan/Strategy and therefore would be a tool that the agricultural community is familiar with. Phased in language has been removed from this policy to address an implementation challenge as it is possible for parts of certain farms to be phased in and other parts are not phased in depending on the definition of the farm unit. The language has been clarified that an RMP is required, where activities are significant, unless a prescribed instrument has been issued.

The application, handling and storage of Pesticide

With the exception of the proposed Part IV prohibition of the future application of pesticides in WHPA-A, the existing and future application, handling and storage of pesticides can be effectively addressed through the establishment of Risk Management

Plans. Although the policy would result in costs to the municipality, the use of Risk Management Plans to manage the instances where pesticides are applied or handled and stored is the best option to manage this activity. Environmental Compliance Approvals and land use planning tools cannot be used to manage these activities. Given the relatively few existing threats in the County for these activities, this tool is considered to be the most appropriate to manage these activities. This tool is also preferred over others (i.e. Part IV prohibition) particularly given the potential negative impacts such restrictions would have on the County's agricultural community.

The application, handling, and storage of Commercial Fertilizer

The application of commercial fertilizer is generally covered under the *Nutrient Management Act*. However, not all agricultural operations or land uses are subject to the *Nutrient Management Act* and traditional land use planning tools can not address the application of commercial fertilizer. As a result, the County has determined a Risk Management Plan is the most effective tool to manage this activity, particularly where the use/agricultural operation is not subject to the *Nutrient Management Act*. This may also apply to non-agricultural operations within a Nitrate Issue Contributing Area.

The application of Road Salt

With the delineation of the issue contributing areas for Chloride, an RMP policy has been added. Since any amount of salt application within an ICA could be considered a significant threat, thresholds are required to help focus implementation. The focus is for properties where salt is or could be applied to an application area equal to or greater than 200 square meters or 8 parking spots and the property is used for any land use except residential consisting of four units or fewer. This is to limit the use of RMPs for salt application to properties where salt is being applied to a larger area. The use of the parking spot and unit thresholds are consistent with planning thresholds used in the County. This policy would also apply to areas where the threat is significant based on risk based criteria such as impervious surface cover.

The handling and storage of Road Salt

This threat can be effectively addressed through the use of Risk Management Plans. Although the policy will result in costs to the municipality, the use of Risk Management Plans to manage existing storage and handling of road salt is the best option to manage the threat. Prohibiting this activity is not appropriate due to the need for road salt to ensure public safety. The circumstances which make this activity a significant drinking water threat (e.g. greater than 5,000 tonnes) limit the number of potential occurrences of this threat. The Assessment Report does not identify any existing threats in the County, and therefore, the implementation of this approach is anticipated to be negligible.

With the delineation of the issue contributing areas for Chloride, the implementation of this policy is over a much greater area. Therefore, thresholds have been introduced to help focus implementation. Uncovered and covered road salt storage is used as these

practices pose different risks. Additionally, a threshold of 100 kilograms has been used as this is equivalent to just less than one salt storage box. It is also anticipated that 100 kilograms of salt is greater than the amount stored typically in single residential homes, therefore, the focus of the RMP policies will be on industrial, commercial, institutional and multi-residential properties. All municipal properties have also been identified as requiring salt storage RMPs (if they store salt) to show leadership by the municipalities. Additionally, a salt storage RMP is required for any amount if the property also requires a salt application RMP. This is to avoid situations where small quantities of salt stored on the property are not regulated where the application of that salt to the property is regulated.

The storage of Snow

The use of Risk Management Plans ensures that snow storage is adequately managed to ensure it does not become a significant drinking water threat. Although the policy will result in costs to the municipality, the use of Risk Management Plans to manage existing storage of snow is considered the best option to manage this activity. Further, the circumstances that make this activity a significant drinking water threat (i.e. an impervious surface greater than 80%) limits the number of potential occurrences of this threat in the County, using the threats-based approach. The Assessment Report did not identify any existing threats in the County, and therefore, the implementation of this approach is anticipated to be negligible.

With the delineation of the issue contributing areas for Chloride, the implementation of this policy is over a much greater area. Therefore, thresholds have been introduced to help focus implementation. The focus is for properties where salt is or could be applied to an application area equal to or greater than 200 square meters or 8 parking spots and the property is used for any land use except residential consisting of four units or fewer. This is to limit the use of RMPs for snow storage to properties where salt is being applied to a larger area.

The handling and storage of Fuel- storage more than 2,500 Litres

The County concluded that the use of Risk Management Plans is the preferred policy direction to address this threat outside WHPA-A. Prohibition was not selected as a policy choice because it could potentially create a number of non-conforming uses for the existing activities identified as a threat within the County. A Risk Management Plan approach is recommended to ensure compliance with the requirements of the *Technical Standards and Safety Act, 2000*.

The handling and storage of a Dense Non-aqueous Phase Liquid (DNAPLs)

The handling and storage of Organic Solvents

The use of Risk Management Plans ensures that the handling and storage of a dense non-aqueous phase liquid (DNAPL) and organic solvents are adequately managed to ensure these activities do not become a significant drinking water threat. Although these policies will result in costs to the municipality, the use of Risk Management Plans to

manage the existing instances identified within the County where DNAPLs and organic solvents are currently being stored and handled is the best option to manage this threat. With this measure in place, new land uses outside of WHPA-A would also be screened by a Risk Management Official and required to prepare a Risk Management Plan. Given the broad area where these activities are deemed to be a significant drinking water threat, the use of this approach is considered appropriate.

Modifications have been made to this policy to address implementation challenges and to achieve consistency with other Source Protection Plans in the County. The majority of DNAPL products observed in the WHPAs have been poly aromatic hydrocarbon (PAH) based such as certain types of automotive fluids and paints. A 25 litre threshold has been introduced, consistent with the Maitland and Saugeen Plans, however, the 25 litre threshold has only been applied to PAH products. Any quantity of the remaining DNAPL chemicals (i.e. chlorinated solvents) will still trigger an RMP consistent with the original intent of the policy. By applying a 25 litre threshold for PAH products, this allows lesser amounts to be handled through education and outreach approaches. This approach is consistent with the difference in risk between the PAH based products commonly observed in the WHPAs versus chlorinated solvent products.

<u>The management of Runoff that Contains Chemicals used in the De-icing of Aircraft</u>

There are no existing threats associated with aircraft de-icing noted in the Assessment Report. Based on land use activities surrounding existing municipal wells and intakes, the potential for an airport to be constructed in the future that is of a size which may pose a significant drinking water threat is minimal. The most effective policy to address this threat is the use of a Risk Management Plan.

<u>The use of land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or a Farm Animal Yard</u>

Prohibition was not considered to manage these activities given the potential impacts it would have on the County's agricultural community. A Nutrient Management Plan and/or Strategy can be an effective tool to manage these threats. However, not all agricultural operations are subject to the *Nutrient Management Act* and therefore, are not required to have Nutrient Management Plans and/or Strategies. In addition, the *Nutrient Management Act* does not regulate livestock grazing or pasturing. Therefore, a Risk Management Plan is an effective means to regulate these activities. The Risk Management Plan may be scoped to the requirements of a Nutrient Management Plan/Strategy to ensure consistency within the agricultural community. This policy also will apply within Nitrate Issue Contributing areas; however, there are only a small number of properties present in the Nitrate ICA within the Grand River area.

Direct prohibition of future occurrences of this activity was not selected as the preferred approach given the difficulty of differentiating between existing and future occurrences of these activities, which typically do not require a building permit or other development approvals. However, given that no existing outdoor confinement areas have been identified in the County and there are few, if any, existing livestock barns located within

significant threat areas, it is anticipated that the Risk Management Plan process can be used to achieve location or relocation of such activities outside of significant threat areas in most cases.

An Activity that Takes Water from an Aquifer or a Surface Water Body without Returning the Water Taken From the Same Aquifer or Surface Water Body and an Activity that Reduces the Recharge of an Aquifer

The largest driver of risk for these threat activities are water takings greater than 50,000 L (mostly municipal takings but also large non-municipal takings). These takings (existing and future) are subject to Permits to Take Water and Risk Management Plans (Section 58 RMPs) would be a duplication of that process. Additionally, policies were added to strengthen relationships between MECP and municipalities regarding PTTW approvals and review. For aggregate operations, ARA approval policies were added to complement the PTTW policies. Policies have been directed to municipalities to specifically address the largest driver of risk (municipal takings). These are related to municipal system optimization and water conservation as well as PTTWs and the municipal Drinking Water Works Permit. The use of Risk Management Plans would not provide additional value.

Risk Management Plans were considered for water takings < 50,000 L or subject to the PTTW exemption (i.e., livestock); however, these takings were evaluated in the Tier 3 modelling and determined to not be a significant driver of the risk to the municipal system in Centre Wellington. For future takings, land use planning policies have been applied to provide an extra layer of protection and study. This is based, in part, on recommendations from the Tier 3 modelling in Centre Wellington that a future, non-municipal taking could pose a risk.

Recharge reduction was determined to not be a large driver of risk to the municipal system in the Centre Wellington WHPA-Q; therefore, Environmental Compliance Approval, land use planning policies, monitoring, education and municipal design standard policies were felt to be sufficient to address the risk. Although RMP policies were used for future recharge reduction activities in the Acton WHPA-Q in the adjacent CTC Source Protection Plan, the corresponding area within the Acton WHPA-Q in the Grand River Source Protection Plan is small, rural and not subject to much development pressure. Therefore, it was deemed an RMP policy for this small area was not required.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006 (WHPA-A, B and C),* as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998* and Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be significant drinking water threat to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

The policies also enable the municipality to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act, 1990* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official. Minor edits have been made to achieve consistency with the CTC Source Protection Plan.

9.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks (MECP) is required to prohibit significant drinking water threats through the Environmental Compliance Approval process.

Rationale:
The County's preference is to rely on existing legislation as much as possible to regulate prescribed drinking water threats. The Environmental Compliance Approval process is an established process that can effectively regulate and restrict uses and activities.

New waste disposal sites within the meaning of Part IV of the *Environmental Protection Act* New Sewage Systems or Sewage Works- sewage treatment plants, sewage treatment plant effluent, industrial effluent discharge

The risks presented by these activities warrant prohibition of future occurrences. In some cases (i.e., sewage treatment plants), there are no existing threats in the County and alternative locations outside vulnerable areas are available. As a result, prohibition of these activities through the Environmental Compliance Approval process will not have a significant impact on the municipality or property owners; except within the Chloride Issue Contributing Areas. Amendments have been made to the policies to address this.

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks (MECP) is required to review activities within the Environmental Compliance Approval process where they would be a significant drinking water threat under Subsection 39 of the *Clean Water Act, 2006*. Environmental Compliance Approvals should not be granted unless terms and conditions are imposed that will ensure the activity does not become a significant drinking water threat.

Rationale:
Policies using the Prescribed Instrument tool rely on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of the County to use existing regulatory tools when available to address existing threat(s) within the County. Environmental Compliance Approvals have been a longstanding requirement for waste disposal and sewage (including activities related to the recharge reduction threat), and the criteria used to assess these Certificates are thorough. Requiring the Ministry to review Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added to Environmental Compliance Approvals, where necessary.

Ministry of the Environment, Conservation and Parks: Review and Amend Permits To Take Water and Drinking Water Works Permits

Intent:

The Ministry of the Environment, Conservation and Parks (MECP) is required to review activities within the Permit to Take Water (PTTW) and Drinking Water Works Permit process where they are or would be a significant drinking water threat under Subsection 39 of the *Clean Water Act, 2006*. Permits to Take Water and Drinking Water Works Permits should not be granted unless terms and conditions are imposed that will ensure the activity ceases to be or does not become a significant drinking water threat.

Rationale:
Policies using the Prescribed Instrument tool rely on the existing responsibility of the MECP to protect drinking water sources. It is a priority of the County to use existing regulatory tools when available to address existing and future threat(s) within the County. Permits to Take Water have been a longstanding requirement for consumptive water takings greater than 50,000 litres per day and the criteria used to assess these permits are thorough. Drinking Water Works Permits are a requirement for municipal systems and given the conclusions of the Tier 3 studies that show municipal water taking is a primary driver of the risk level, policies focused on Drinking Water Works Permits are necessary. Requiring the Ministry to review Permits to Take Water and Drinking Water Works Permits in light of the circumstances that make the activity a

significant drinking water threat will serve to ensure that additional terms and conditions are added, where necessary.

Prescribed instrument policies include conditions that the MECP shall consider to achieve the objectives of the policy, including water efficiency measures, using a phased approach to assess impacts, and drought management planning for drought sensitive wells/systems.

It is the intent that the MECP consider adding conditions to support the implementation of the Low Water Response Team declarations. Specifically, that conditions be considered for PTTWs within a WHPA-Q that require permit holders to reduce water taking in accordance with Low Water Response Team declarations of Level 1, 2 or 3 drought. Consideration should be given that those reductions in water takings are based on average daily takings over the past three months of water taking rather than permitted maximum takings. It is recognized that local site-specific situations for each PTTW in addition to the location of the PTTW within a WHPA-Q will be considered.

Ministry of Agriculture, Food and Rural Affairs and /or Ministry of the Environment, Conservation and Parks: Prohibit Application or New Storage of Non-Agricultural Source Material Plans

Intent:

The Ministry of the Environment, Conservation and Parks (MECP) or the Ministry of Agriculture, Food and Rural Affairs (OMAFRA), as applicable, are required to prohibit the application or storage of non-agricultural source material through the Environmental Compliance Approval process or in accordance with the *Nutrient Management Act* where they would be significant drinking water threat under Subsection 39 of the *Clean Water Act, 2006*.

Rationale:

The risks presented by the application or new storage of non-agricultural source material in a WHPA-A or IPZ-1 warrants prohibition of these activities within these most vulnerable areas. The *Nutrient Management Act, 2002* currently prohibits the application of non-agricultural source material within 100 meters of a municipal well. Therefore, this policy is consistent with this established policy approach of the *Nutrient Management Act, 2002*. The County's preference is to use existing regulatory tools where possible. Therefore, prohibition through this Prescribed Instrument is desirable.

Ministry of Agriculture, Food and Rural Affairs and/or Ministry of the Environment, Conservation and Parks: Review and Amend Non-Agricultural Source Material Plans and Nutrient Management Plans / Strategies

Intent:

The MECP or OMAFRA, as applicable, are required to review and, if necessary, amend Non-Agricultural Source Material (NASM) Plans or Nutrient Management Plans or Strategies to ensure these threats are managed such that they do not become a significant drinking water threat.

Rationale:
A number of existing threats have been identified within the County in the Assessment Report. The County determined the use of Prescribed Instruments, specifically Non-Agricultural Source Material (NASM) Plans as the preferred approach to address these threats. The protocol for these Plans was recently and extensively reviewed and updated by the province. These revisions are an important addition in the management of drinking water threats and the County will rely on OMAFRA and/or MECP to include measures to protect drinking water sources.

Ministry of Northern Development, Mines, Natural Resources and Forestry: Review and Amend Aggregate Resources Act Approvals

Intent:

The Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) is required to review activities within the Aggregate Resources Act, 1990 (ARA) approval process where they are or would be a significant drinking water threat under Subsection 39 of the *Clean Water Act, 2006*. ARA approvals should not be granted unless terms and conditions are included that will ensure the activity ceases to be or does not become a significant drinking water threat.

Rationale:
Policies using the prescribed instrument tool rely on the existing responsibility of NDMNRF to protect drinking water sources as part of their responsibility under the ARA. It is a priority of the County to use existing regulatory tools when available to address existing and future threat(s) within the County and the criteria used to assess these approvals are thorough. Requiring the Ministry to review ARA approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added, where necessary.

Draft prescribed instrument policies were further discussed among the policy development team, the NDMNRF and included municipal legal review. Based on these discussion, existing prescribed instrument policy for existing activities (WC-MC-22.3) was removed as it pertains to Centre Wellington and Acton WHPA-Qs, as there are no existing aggregate extraction sites below the water table in these vulnerable areas. Further discussions on prescribed instrument policy WC-MC-22.3 for existing aggregate extraction operations are deferred until the s.34 “Guelph-Guelph/Eramosa” Grand River Source Protection Plan update.

During discussions with NDMNRF, the term “operational controls” was introduced into the prescribed instrument policy for future aggregate extractions operations. Operational controls is not explicitly defined in the Grand River Source Protection Plan; however, it

is intended to capture the various measures that are added as conditions to ARA approvals, including but not limited to, limits on the depth of aggregate extraction. It is intended that by developing limits on depth of extraction, NDMNRF staff would include considerations of geological and hydrogeological features critical to the protection of the municipal water supply and aquifers for domestic and / or municipal supplies. This may include the elevations of aquitards and aquifers and consideration of variability in those elevations.

9.3.3 Education and Outreach

Education and Outreach Programs: Municipality and Conservation Authority delivered

Intent:

To request the County and local municipalities to work with other implementing bodies where desirable to develop, continue or enhance stewardship and outreach and education programs directed at significant drinking water threat activities prescribed under the *Clean Water Act, 2006* where it may be deemed necessary.

Rationale:

The County supports education and outreach programs to address all drinking water threats and provide information to the residents of Wellington County on the protection of drinking water sources. Policy WC-CW-1.5 is intended to be a generic policy in terms of introducing and promoting education and outreach at the County level. Specific education and outreach policies have been developed for certain significant drinking water threats either as the main policy approach to manage the significant drinking water threat or as a complimentary policy.

<u>The application of Commercial Fertilizer</u>

Other tools have been used to manage this activity for agricultural and non-agricultural uses. An education and outreach program for the application of commercial fertilizer on individual residential lots for personal or family use is appropriate, particularly given the number of potential properties that would be affected and the relative small volume of fertilizer that would normally be used in these circumstances. This tool is also intended to compliment/supplement the other proposed tools to manage this activity.

<u>The application of Road Salt</u>

The County's objective is to use education and outreach to target existing and future activities that require the application of road salt within Chloride ICAs. This approach was felt to be the most effective way of addressing existing activities as there are no land use planning or regulatory tools that can be used to manage this threat and Part IV tools would be too onerous on the municipality and landowners. This policy approach also reflects the similar approach taken by the Region of Waterloo and therefore ensures a consistent approach across municipal boundaries. This approach has been

expanded due to the delineation of the Chloride Issue Contributing Areas, and the local Health Unit has been added as an implementing body to reflect their jurisdiction related to private wells.

The handling and storage of Fuel - equal to or less than 2,500 Litres

The preferred tool is education and outreach to ensure that heating oil systems have been identified as threats and landowners are aware of appropriate tank maintenance requirements and response in case of a spill. It is noted that home insurance companies have inspection and maintenance requirements for homes with oil tanks. Many rural homes rely on fuel oil for heating and it is felt that other tools such as Part IV prohibition or Risk Management Plans would be too onerous on landowners and the municipality, particularly given the number of existing threats identified in the County.

The handling and storage of Dense Non-aqueous Phase Liquid (DNAPLs)

The County is concerned that there are various issues relating to the use of DNAPLs in all land uses and activities. Many DNAPLs are readily available and are found within commonly used products. Therefore, the use of education and outreach programs which promote the use of alternative products is considered appropriate to compliment the other tools proposed to manage this significant drinking water threat.

An Activity that Takes Water from an Aquifer or a Surface Water Body without Returning the Water Taken From the Same Aquifer or Surface Water Body and an Activity that Reduces the Recharge of an Aquifer

The intent of these policies are, at minimum, to address all SDWTs that are not addressed through the other policies. For instance, consumptive water takings for private domestic wells or agricultural uses that are exempt from the PTTW process. The Education and Outreach program is meant to be completed in partnership within the County as part of the Wellington Source Water Protection partnership. Collaboration can also happen with neighbouring municipalities outside of the County.

9.3.4 Incentive Programs

Intent:

To encourage funding of programs, which promote the protection of existing and future drinking water sources from significant drinking water threats.

Rationale:

As a supplemental policy, the County supports incentive programs to assist property owners with the cost of implementing beneficial practices to protect drinking water sources. Where possible, incentives will be utilized with other tools to achieve risk reduction.

The province has assisted (directly/in-directly) in the funding of programs such as the Ontario Drinking Water Stewardship Program. Continued provincial funding is encouraged to ensure the protection of drinking water sources.

9.3.5 Specify Action

Support On-Site Re-inspection Program under Ontario Building Code

Intent:

Rely on the existing onsite sewage system inspection program recently implemented through the Ontario Building Code *Act* to ensure existing and future onsite sewage systems do not become a significant drinking water threat to municipal drinking water supplies.

Rationale:

The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage

Part IV tools cannot be used to prohibit sewage threats. Therefore, it was concluded the best approach to manage future sewage systems of this size would be to manage them through the required maintenance inspection program under the Ontario Building Code. The onsite sewage system maintenance inspection program supports the implementation of the *Clean Water Act, 2006* by providing a consistent approach for determining if on-site sewage systems are functioning as designed. The intent is to bring all systems in compliance with the *Ontario Building Code*. Prohibition of uses that rely on these small onsite sewage systems is not considered by the County to be a viable option as several of the local municipalities do not have municipal services available. In addition, a land use prohibition would effectively prevent future growth in some of the County's settlement areas. This policy also applies within Nitrate Issue Contributing Areas to ensure consistency with the CTC Source Protection Plan.

Encourage Appropriate Siting, Design and Maintenance Standards for the Establishment and Operation of a Liquid Hydrocarbon Pipeline

Intent:

The location and siting of liquid hydrocarbon pipelines is not controlled by the local municipalities, therefore managing this activity through direction and recommendations to the appropriate approval authority is the most effective approach for this threat.

Rationale:

The primary concern regarding this threat relates to a potential spill from a pipeline. Encouraging the National Energy Board and the Ontario Energy Board to advise the Source Protection Authority and the County of any proposed pipeline will assist the County in identifying early in the process whether a proposed pipeline will affect the

County's municipal drinking water supply. There are no threats identified within the County in the Assessment Report.

An Activity that Takes Water from an Aquifer or a Surface Water Body without Returning the Water Taken From the Same Aquifer or Surface Water Body and an Activity that Reduces the Recharge of an Aquifer

Intent:

There are a number of specify action policies used for these threats including municipal optimization, groundwater monitoring, information sharing, design standards, prioritization of Ministry of Environment, Conservation and Parks (MECP) and Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) inspections and compliance activities. The overall principle in managing the water quantity threats is an adaptive management approach and to achieve this, specify action policies were needed.

Rationale:

Adaptive management includes a feedback cycle where data is collected, management tools are proposed and tried, more data is collected, the management tools are evaluated and adapted / modified based on the results. The cycle then starts again. Adaptive management is the basis for a number of the consumptive water taking and recharge reduction policies including monitoring, optimization, Permit to Take Water (PTTW) policies and some components of the planning policies.

Municipal Optimization – The intent of this policy is to focus on optimization efforts at existing municipal wells.

Monitoring – This is a key policy to support the adaptive management approach. It also is a policy where connections are made between the various water management studies required for the Centre Wellington system such as the Water Supply Master Plan, the Tier 3 studies, Class Environmental Assessments and others. The Preliminary Threats Analysis identified continued monitoring as a recommendation and identified both groundwater and surface water monitoring as critical. The monitoring programs may also be linked to PTTW studies / requirements, whether for the Township or others. This policy is directed to the Township of Centre Wellington, however, is it is the intention that the Township collaborate, where appropriate, with other agencies, organizations etc.

Information sharing – The intent of this policy is to encourage the listed agencies to consider collaboration in managing the water resources, where appropriate and deemed necessary. This is a key component of an adaptive management strategy as this group should serve to assess progress and evaluate success / recommend modifications as part of the adaptive management cycle. The mandatory requirement in the policy is related to writing an Information Sharing Process document to outline and consider what form the collaboration should take. Roles and responsibilities and the operation of

the group and collaboration can be further defined in the information sharing process document, including frequency of meetings, etc. Although not explicitly referenced in the policy, Ontario Ministry of Agriculture, Food and Rural Affairs and NDMNRF are members of the Low Water Response Team and the Low Water Response Team is explicitly linked in the information sharing / coordinating policy. It is envisaged this will ensure all relevant agencies are included in the collaborative information sharing.

9.3.6 Strategic Action

Decommissioning of Abandoned Wells that serve as Transport Pathways

Intent:

The intent is to ensure transport pathways such as abandoned wells are properly managed to reduce the risks to the municipal drinking water sources. A policy has also been added to address maintenance of wells within the Chloride Issue Contributing Area, as poorly maintained wells can lead to salt infiltration to the groundwater, especially since many monitoring wells are located within roadways.

Rationale:

Abandoned wells are often located on private property and the cost to properly decommission or upgrade these wells may be cost prohibitive. A specific transport pathway policy to support ongoing stewardship programs to decommission abandoned wells will help reduce the ability of contaminates to enter the groundwater within vulnerable areas. This may further reduce the vulnerability of an area and the number of identified threats.

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

Intent:

To ensure that emergency plans, contingency plans and spill containment plans are updated with respect to spills that occur within wellhead protection areas or intake protection zones.

Rationale:

Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore, spill prevention and contingency/response plans should be updated to include maps that clearly detail the vulnerable areas. Quick and effective response to spills may prevent an emergency from affecting a municipal drinking water source. Additionally, updates to the current spill prevention and contingency/response plans can act as a communication tool for the municipalities and the public and ensure residents are aware of the location of wellhead protection areas or intake protection zones and are knowledgeable regarding the appropriate response in the event of a spill in these areas.

9.3.7 Land Use Planning

Intent:

Land use planning policies have been used to help manage road salt application, road salt storage, snow storage, consumptive water taking and recharge reduction threats. The intent of these policies is to ensure during the land use planning process that proper study and, where appropriate, design measures are completed to help manage the threats.

Rationale:

Proper study and, where appropriate, design measures can be required under Planning Act approvals. The County of Wellington already has many groundwater and water protection measures in the County Official Plan and these policies build on that.

10.0 POLICY DEVELOPMENT FOR THE CITY OF GUELPH

10.1 Municipal Support

The City of Guelph developed source water protection policies that "protects, improves or restores the quality and quantity of water" (PPS, Section 2.2) in accordance with the *Clean Water Act, 2006*. The policies are designed to protect existing and future sources of Guelph's potable groundwater from unwanted impacts and harmful contaminants. The Draft Guelph Specific Policy Discussion Paper was completed in September 2011 which outlined a description of each prescribed significant drinking water threat, the relevance to the City of Guelph, the existing legislation, Lake Erie Source Protection Region's policy options, policy options for the City of Guelph, and final draft policy directives for the City for each drinking water threat. The Guelph specific policies relate to activities/significant threats identified in the vulnerability zones as almost the entire City is within a Wellhead Protection Area (WHPA).

An "early engagement" process was initiated specifically for the municipalities most affected by the policies prior to the Source Protection Plan being released for official public consultation. This process provided the municipalities with the opportunity to shape the source protection policies with regard to implementation and the available resources. The following is a list of key milestones of that "early engagement" process:

- City of Guelph Senior Staff Meeting – September 28, 2011
- Meeting with the County of Wellington – October 26, 2011
- Meeting with the Region of Halton and Town of Milton – November 2011
- Planning & Building, Engineering and Environment (PBEE) Committee Meeting – October 17, 2011
- Council Meeting – October 24, 2011
- Public Notices for Open House mailed to identified significant threat properties/posted on the City's website - October 13, 2011
- Pre- consultation Summary Notices and Sheets distributed – November 14, 2011
- Held a Pre-consultation Open House at City Hall – November 16, 2011
- Council Meeting to present finalized policies for submission to the Source Protection Committee– June 18, 2012

One of the specific requirements for an explanatory document is to advise how consideration of the potential financial implications for persons and bodies that would be implementing or affected by the source protection plan influenced the development of policies.

As part of the decision making process on policy options consideration was given to financial implications, ease of implementation, consistency across boundaries, constraint on economic development, fairness to landowners, impact to citizens as well as other factors. The final policies put forward for the City of Guelph are based on the overarching principle of providing a focused direction that ensures delivery of the outcome in a cost effective manner while ensuring ongoing economic development opportunities with the overarching objective of protecting drinking water sources.

One of the unique challenges in making decisions regarding policy directives for the City of Guelph is that almost the entire city is within a vulnerable area where activities are or would be significant drinking water threats. For this reason, options such as prohibition of activities within vulnerable areas have been carefully considered, as there are no alternative locations for these activities to occur and still be located within the municipal boundary.

Often, within the policy options set out within the Lake Erie Source Protection Region's Discussion Papers, the preferred directions referenced prohibition of the activity. Pursing this alternative most likely would have a direct negative impact on economic development in the City of Guelph as well as a high potential financial impact on landowners. For this reason, this option was pursued in very limited instances.

For a number of the significant drinking water threats, there are no Prescribed Instruments or other regulatory tools that can be easily and economically applied.

For this reason, the use of regulated activities and restricted land uses under Part IV of the *Clean Water Act*, *2006* and specifically Part IV Risk Management Plan, is often the tool of choice.

Throughout the process of developing and accessing the opportunities regarding plan policy directives by the City of Guelph, there was extensive discussion regarding the costs associated with the role of the Risk Management Official and the requirement for Part IV Risk Management Plans. It is acknowledged that the imposition of this policy direction and the associated requirements is a cost to the municipality and the business community; however, the impact of using prohibition as a policy choice was considered to have a far greater potential negative impact on the City and the impacted existing businesses and future business opportunities within this community.

The policy options chosen gave a preference to utilization and enhancement of existing programs where appropriate, minimization of new programs to be implemented by the municipalities, and building upon the experience and knowledge as well as existing tools within the City of Guelph. It was determined that this was the most cost effective and efficient approach.

Consideration of cost impact to policies that impact provincial initiatives or programs was not given significant consideration in the development of the City of Guelph policies, as the Source Protection Plan is a Provincial requirement. It was determined that the Province is capable of absorbing the costs of implementing their policies within the Source Protection Plan.

10.2 General Policies

Section 8.2 of the Grand River Source Protection Plan contains general policies that enable specific provisions under the *Clean Water Act, 2006* regarding regulated activities and restricted land uses. The provisions of the *Clean Water Act, 2006* require this language be contained within the Source Protection Plan. These provisions set out the timing for these sections to come into effect as well as the scope of these provisions. In addition, this section sets out the transition provisions and how *Planning Act* and Building Permit applications should be handled when the Source Protection Plan comes into effect and annual reporting requirements.

Regarding the definitions of existing and future use, a more restrictive approach has been used in developing the definition of existing than is found in other sections of the Grand River Source Protection Plan. The definition permits activities that have legally occurred within the last 5 years as well as ongoing activities on the date of effect of the Source Protection Plan.

There is no intent or desire to provide greater grandfathering of activities that legally existed in the past that has ceased. Once these activities have ceased, they would be required to conform to the future threat policies.

This approach was due to the fact that a number of the wellheads within the City of Guelph are located within industrial or employment areas. These areas have a long history of a variety of land uses. Providing additional timelines beyond the 5-year period included within the definition of existing would increase the potential risk of activities that have ceased being permitted to reoccur next to the wellheads.

This same philosophy was the basis of the development of the transition policies set out in Section CG-CW-2.1. If there is an active application that was proceeding to development such as a complete site plan or building permit application, the policies permit these applications to proceed. If the property only has zoning approval and no active development application, the activities on that property must conform to the future use policies within the Plan. It is also recognized that Environmental Compliance Approvals may be required for the development to proceed and that those can be approved as an existing activity if applied for prior to the approval of the Source Protection Plan. Again this more restrictive approach is proposed due to the location of the wellheads that are located within industrial or employment areas.

Policy CG-MC-1.3 has been included within the Source Protection Plan to provide direction to the City of Guelph regarding enacting a by-law under the *Municipal Act* to require the provision of specific items of information regarding persons and locations engaged in significant threat activities. This by-law would be in addition to the tools provided to the Risk Management Official under the *Clean Water Act, 2006*. These policies are an integral component of the Plan and must be consulted to understand the full effect of the policies regarding significant drinking water activities.

Policy CG-CW-1.4 exempts residential land uses from portions of this policy as the potential of a threat occurring in conjunction with a residential use is very low to non-existent. There is limited risk in not reviewing or prescreening these applications under Part IV of the *Clean Water Act, 2006*. Within the City of Guelph, the wellhead protection

areas cover the entire city and this wording was introduced to assist in managing workload considerations balanced against benefit of review and implementation of a Risk Management Plan for these activities.

Throughout the preparation of the Source Protection Plan ongoing dialogue has occurred with the Ministry of the Environment, Conservation and Parks and other Provincial Ministries regarding the strong desire of the City of Guelph to have a more interactive consultation process with the Ministries when they are reviewing a Prescribed Instrument. It is also important to the City that due consideration be given to comments provided by the City by the Ministries in that process. CG-MC-1.24 is included within the Plan to address these requirements of the City.

10.3 Policy Intent and Rationale

10.3.1 Part IV Policies

Waste Disposal Site and Storage Facilities

The City of Guelph determined that the use of Prescribed Instruments to prevent the establishment of a waste disposal site and manage waste storage facilities was the preferred primary option to address this threat, supported by land use planning. For those facilities not regulated by Prescribed Instruments or storage facilities permitted by the policies, the use of Part IV tools was the preferred policy direction. A Part IV Risk Management Plan approach is recommended for these activities to ensure the risks associated with these activities are appropriately managed.

The application and storage of Agricultural Source Material

The City of Guelph determined the use of Prescribed Instruments, specifically Nutrient Management Plans and Strategies where in place, as the preferred primary approach to address these threats. These Prescribed Instruments are effective and familiar to the farming community. For those farms not subject to the *Nutrient Management Act*, Part IV tools were the preferred approach; however, the plans must be scoped to the requirements of Nutrient Management Plans and Strategies for the specific threats.

The City of Guelph determined that in addition to the regulations and the prohibition under the *Nutrient Management Act*, a prohibition under Part IV regarding application and storage of agricultural source materials within WHPA-A is appropriate and consistent with the *Nutrient Management Act, 2002*.

The application, handling and storage of Non-Agricultural Source Material

The City of Guelph determined that in addition to the regulations and the prohibition under the *Nutrient Management Act, 2002*, a prohibition under Part IV regarding application and storage of non-agricultural source materials within WHPA-A is appropriate and is consistent with the requirements of the *Nutrient Management Act, 2002.*

The application, handling and storage of Commercial Fertilizer

The City of Guelph determined Part IV tools would be most effective to manage these threats, if not covered by the requirements of the *Nutrient Management Act, 2002,* and should be scoped to the requirements in the *Nutrient Management Act, 2002* for Nutrient Management Plans and Strategies for agricultural operations. The farm community is familiar with the requirements of the Act and consistency is important for all agricultural properties where commercial fertilizer may be applied to land or stored. The City has recommended the use of Part IV Risk Management Plans as the appropriate tool to ensure that any of these activities not covered by land use planning policy or Prescribed Instruments such as the application of commercial fertilizer on properties not phased in under the *Nutrient Management Act, 2002,* and the storage of commercial fertilizer on farms, at retail warehousing establishments and on other properties storing over 2,500 kg of fertilizer outside of a WHPA-A, will not negatively affect drinking water sources.

The application, handling and storage of Pesticides

The City of Guelph determined Part IV tools would be most effective to manage these threats if not covered by the requirements of the *Pesticides Act, 1990*. The City has recommended Part IV Risk Management Plans as the appropriate tools to ensure that application of pesticide and the handling and storage of pesticides outside of a WHPA-A not addressed through Prescribed Instruments will be managed appropriately.

The handling and storage of Fuel

The City of Guelph determined that the use of Part IV tools was the preferred policy direction to address this threat for existing facilities and new facilities for future handling and storage of fuel in conjunction with a new or expanded retail gas station or new or expanded bulk fuel storage facility outside of the WHPA-A. Within the WHPA-A, which is directly adjacent to the well, new retail gas stations or new bulk fuel storage facilities excluding bulk fuel storage associated with a municipal emergency generator facility will not be permitted under Part IV of the *Clean Water Act, 2006*. There are alternative locations within the City where these new facilities can locate. A Part IV Risk Management Plan approach is recommended for these activities outside the WHPA-A to ensure compliance with the requirements of the Technical Standards and Safety Act and to ensure that an emergency response plan is in place.

The handling and storage of Dense Non- Aqueous Phase Liquids (DNAPLs)

The City of Guelph determined that the use of Part IV tools was the preferred policy direction to address this threat for existing facilities and new facilities.

Within the WHPA-A, which is directly adjacent to the well, no new facilities that use the specific dense non-aqueous phase liquids of concern will be permitted. This restriction is under Part IV of the *Clean Water Act, 2006*. There are alternative locations within the City where new facilities can locate.

For the remainder of existing or new facilities, the preferred method for managing this risk associated with this threat is through the implementation of Part IV Risk Management Plans supported by education and outreach programs. For those significant threats that are regulated by the *Technical Standards and Safety Act, 2000*, the Part IV Risk Management Plan should be scoped.

The handling and storage of Organic Solvents

The City of Guelph determined that the use of Part IV tools was the preferred policy direction to address the threat of handling and storage of organic solvents. Within the WHPA-A, which is in directly adjacent to the well, new facilities that handle and store organic solvents, will not be permitted under Part IV of the *Clean Water Act, 2006*. There are alternative locations within the City where these new facilities can locate.

For new facilities outside of the Wellhead Protection Area-A and existing facilities, the Part IV requirements regarding regulated activities including a Part IV Risk Management Plan will be applied.

The use of land as a Livestock Grazing and Pasturing Land and Outdoor Confinement Area or Farm Animal Yard

For those farms not phased in under the *Nutrient Management Act, 2002*, or for the activities of livestock grazing or pasturing on all farms, Part IV tools were the preferred approach, however, the Part IV Risk Management Plans should be scoped to the requirements of nutrient management strategies for these specific threats and incorporate best management practices as appropriate.

10.3.2 Prescribed Instruments

Waste Storage Facilities

The City of Guelph determined that the use of Prescribed Instruments to manage the establishment of waste storage facilities and to prohibit waste disposal facilities was the preferred primary option to address this threat, supported by education and outreach about proper hazardous waste disposal and reduction. The overall policy direction regarding this activity was to develop a balance between permitting and effectively managing waste storage facilities that could be required for industrial and municipal operations. As part of their review, the Ministry of the Environment, Conservation and Parks had also suggested that the City add policies regarding management for the storage of polychlorinated biphenyls (PCB) waste threat sub-category to ensure all waste categories have been addressed within the policy. This is now addressed in CG-MC-3. The policies are intended to not unduly restrict economic development opportunities but do prohibit new disposal sites to prevent future risks to the drinking water supplies.

Sewage System or Works - Onsite sewage System and Onsite sewage System Holding Tanks

The City of Guelph determined that the use of Prescribed Instruments to manage future onsite sewage systems regulated under Section 53 of the *Ontario Water Resources Act, 1990* was the preferred primary option to address this threat.

This policy enhances the current process and relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of the City of Guelph to use existing regulatory tools when available and appropriate to address significant drinking water threats.

Sewage Treatment Plant Effluent Discharges and Storage of Sewage, Sanitary Sewers and Related Pipes

The City of Guelph determined that the use of Prescribed Instruments to manage sewage treatment plant effluent discharges and storage of sewage, sanitary sewers and related pipes, and discharge of untreated stormwater from a stormwater management facility was the preferred primary option to address this threat.

This policy enhances the current process and relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of the City of Guelph to use existing regulatory tools when available and appropriate to address drinking water threats.

The application and storage of Agricultural Source Material and Commercial Fertilizer

The City of Guelph determined the use of Prescribed Instruments, specifically Nutrient Management Plans and Strategies, as the preferred primary approach to address these threats. These Prescribed Instruments are effective and familiar to the farming community. It was identified that there was the need to make inspections within vulnerable areas a priority to ensure that the conditions set out within the Prescribed Instruments are being implemented appropriately to protect drinking water sources.

The application, handling and storage of Non-Agricultural Source Material

The City determined the use of Prescribed Instruments, specifically Non-agricultural Source Material Plans, as the preferred primary approach to address these threats. The protocol for these plans was recently and extensively reviewed and updated by the Province. These revisions are an important addition in the management of drinking water threats and the City will rely on OMAFRA to include measures to protect drinking water sources.

The application, handling and storage of Pesticides

The City of Guelph determined the use of Prescribed Instruments, is the preferred approach to address these threats where available. This policy enhances the current process and relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of the City of Guelph to use existing regulatory tools when available and appropriate to address drinking water threats.

The storage of Snow

For any new snow storage facilities, the use of Part IV tools was the preferred policy direction. A Part IV Risk Management Plan approach is recommended for this activity to ensure the risk associated with this activity is appropriately managed.

The handling and storage of Fuel

The City of Guelph determined the use of Prescribed Instruments within the *Aggregate Resources Act*, is the preferred approach to address these threats. This policy enhances the existing process and relies on the existing responsibility of the Ministry of Northern Development, Mines, Natural Resources and Forestry to protect drinking water sources. It is a priority of the City of Guelph to use existing regulatory tools when available and appropriate to address drinking water threats.

The use of land as a Livestock Grazing and Pasturing Land and Outdoor Confinement Area or Farm Animal Yard

The City of Guelph determined the use of Prescribed Instruments, specifically Nutrient Management Strategies, as the preferred approach to address the threats related to outdoor confinement area or farm animal yard. These Prescribed Instruments are effective and familiar to the farming community.

Conditions

A condition is contamination that is the result of past activities. The City of Guelph has determined that the approach to addressing conditions will require a combination of a number of policy approaches. The use of Prescribed Instruments is the preferred choice where there is an existing instrument available to be utilized or if a new instrument is to be issued that it appropriately manages the risks. Through the review process, the City of Guelph and the Ministry of the Environment, Conservation and Parks have refined the wording for this policy to ensure that updates on the actions taken by the instrument holder are reported to the City of Guelph on an annual basis and that any new or revised Prescribed Instrument is provided to the City of Guelph. These policies will assist in the City obtaining additional information on and a clear understanding of the requirements for these sites.

10.3.3 Land Use Planning

Onsite sewage System and Onsite sewage System Holding Tanks

The City of Guelph is of the opinion that the construction of new additional onsite sewage systems is not appropriate where there are municipal services available except as specifically permitted within the Official Plan and that new lots that rely on servicing by small onsite sewage systems are to be prohibited within a WHPA-A. This approach is the highest level of management possible regarding this threat.

Sewage Treatment Plant Effluent Discharges

A current requirement of the City of Guelph through the sewer use by-law is that a Waste Survey Report be completed. The City determined that it was important that this information be provided as part of any *Planning Act* application to ensure that the information is collected in a timely fashion and could be considered as part of the review of the proposal to ensure protection of drinking water sources.

A Waste Survey Report will provide information related to the operation of the use(s), wastewater characteristics, disposal practices, spill prevention plans and supporting drawings and/or plans related to wastewater treatment prior to disposal into the municipal sanitary sewer system.

The application, handling and storage of Commercial Fertilizer

The City of Guelph determined that the use of Prescribed Instruments and Part IV tools was the preferred policy direction to address this threat for existing facilities and new facilities outside of the WHPA-A. Within the WHPA-A, which is directly adjacent to the well, large-scale new manufacturing and warehousing facilities should not be allowed. There are alternative locations within the City where these new facilities can locate. The Official Plan is a readily available and accessible policy document and should be amended to reflect the prohibition set out within this policy.

The application, handling and storage of Pesticides

The City of Guelph determined that the use of Prescribed Instruments and Part IV tools was the preferred policy direction to address this threat for existing facilities and new facilities outside of the WHPA-A. Within the WHPA-A, which is directly adjacent to the well, new large-scale manufacturing and warehousing facilities are not permitted. There are alternative locations within the City where these new facilities can locate.

The application, handling and storage of Road Salt

In addition to incorporating the requirement for best management practices for municipal roads through updates to the road salt plans, the use of best management practices for private properties is a priority for the City of Guelph. If appropriate, design elements and best management practices are to be incorporated in the design of new development, to reduce salt usage over the long term.

Due to the volume of salt required to be stored to meet the threshold of a significant drinking water threat, this threat primarily relates to large municipal and provincial salt storage facilities, the City of Guelph was of the opinion that the most effective method of addressing this storage threat is to use land use planning tools. Prohibition of new facilities was appropriate in the vulnerable areas as alternative locations are available for this type of facility. There are no enumerated existing occurrences of handling or storage of road salt where it would be significant drinking water threat within the City of Guelph wellhead protection areas.

The storage of Snow

The City of Guelph will require best practices for the management of snow storage and the associated melt water as part of the approval process for site plan applications for development with parking lots, such as multiple residential or commercial developments. Historical design has been for melt water to run across parking lots to a central catch basin, which in turn requires the application of more road salt due to icing. The location for stockpiling of snow and impact of drainage on salt application requirements should be considered.

The handling and storage of Fuel

The Official Plan is a readily available and accessible policy document and incorporating a policy regarding the prohibition of new or expanded retail gas stations and bulk fuel storage facilities, excluding bulk fuel storage associated with a municipal emergency generator facility, within WHPA-A into the Official Plan supports the Part IV tools under the *Clean Water Act, 2006*.

The handling and storage of Dense Non- Aqueous Phase Liquids (DNAPLs)

The City of Guelph determined that the use of Part IV tools was the preferred policy direction to address this threat for existing facilities and new facilities. The Official Plan is a readily available and accessible policy document and incorporating a policy regarding the prohibition of facilities with the handling and storage of dense non-aqueous phase liquids within WHPA-A into the Official Plan supports the Part IV tools under the *Clean Water Act, 2006.*

The handling and storage of Organic Solvents

The City of Guelph determined that the use of Part IV tools was the preferred policy direction to address this threat for existing facilities and new facilities. The Official Plan is a readily available and accessible policy document and incorporating a policy regarding the prohibition of facilities with the handling and storage of organic solvents facilities within WHPA-A into the Official Plan supports the Part IV tools under the *Clean Water Act, 2006.*

Conditions

The City of Guelph Official Plan contains policies regarding contaminated sites and these policies are set out below. Brownfield Community Improvement Plans (CIPS) are another land-use planning tool that can be used to designate particular areas for improvements. Tax incentives through the land-use planning process are also a way to encourage remediation of contaminated sites. There are also provisions under the Ontario Building Code that apply to the clean-up of conditions sites. If a new building is to be used in connection with one of the regulated changes in use under the O. Reg. 153/04, a Record of Site Condition must be filed before a permit is issued and construction can start.

These policies should be updated to incorporate the requirement for the completion of an environmental screening process as part of a complete *Planning Act, 1990*

application. In addition a Record of Site Condition for contaminated sites would be required for any contaminated sites. It is noted that there are limitation with a Record of Site Condition, as it does not deal with offsite impacts.

10.3.4 Education and Outreach

Waste Disposal Site and Storage Facilities

Additional policy direction in CG-CW-4 has been added regarding the following waste threat sub-categories, provided an ECA is not required:

- storage of wastes described in clauses (p), (q), (r), (s), (t), or (u) of the definition of hazardous waste, or in clause (d) of the definition of liquid industrial waste; or
- storage of hazardous or liquid industrial waste,

This policy was introduced based on further detail regarding the nature of these threats that was provided by the Ministry of the Environment, Conservation and Parks as part of their review of the plan. Given that there are a considerable number of industrial, commercial and institutionally zoned properties located within the City of Guelph, it was determined that prohibition of such waste threats where an ECA is not required and may have the unintentional consequence of constraining or prohibiting many planned land uses that only generate fairly small quantities of such wastes. It should be noted the Ministry of the Environment, Conservation and Parks appropriately regulates these waste activities. On this basis these two waste categories are exempted from the requirement for a Risk Management Plan and an education and outreach program will be implemented to address these activities.

Onsite sewage System and Onsite sewage System Holding Tanks

The City of Guelph determined that in addition to the implementation of the mandatory maintenance inspection program, education and outreach and land use planning policies, where there is the option to connect to municipal services this should be pursued by the landowner.

Since the cost of connection to municipal sewage systems is the responsibility of the landowner, the policy is written with the landowner as implementing body but the municipality as the monitor of the policy effectiveness.

Sewage Treatment Plant Effluent Discharges and Storage of Sewage

A current requirement of the City of Guelph through the sewer use by-law is that a Waste Survey Report be completed. The overall completion rate for these surveys is not at the rate that should be obtained. An education and outreach program is an important first step in increasing the completion rate and should be undertaken prior to initiating enforcement.

A Waste Survey Report will provide information related to the operation of the use(s), wastewater characteristics, disposal practices, spill prevention plans and supporting drawings and/or plans related to wastewater treatment prior to disposal into the municipal sanitary sewer system.

The application and storage of Agricultural Source Material to land

The City of Guelph determined that the use of Prescribed Instruments to manage Agricultural Source Material was the preferred policy option to address this threat. The Ministry of Agricultural, Food and Rural Affairs undertakes a successful education program through the Environmental Farm Plan. The need and methodology for protecting drinking water sources should be an element of that program.

The application, handling and storage of Road Salt

The City of Guelph and the surrounding municipalities have established successful education and outreach programs regarding the impacts of road salt and the use of best management practices. Supporting these initiatives within the Source Protection Plan will ensure in their ongoing implementation. Further enhancement of these programs will broaden their effectiveness in reducing road salt usage.

The handling and storage of Fuel

For small fuel oil tanks typical of a home oil heating system, the preferred tool is education and outreach to ensure the appropriate maintenance of the tank and response in case of a spill. The Assessment Report indicated that there are no existing threats. There is the potential within the City for this threat to exist. If any residential fuel tanks were identified, an education and outreach program regarding maintenance and spill response would be an appropriate response. It is noted that home insurance companies have inspection and maintenance requirements for homes with oil tanks.

In the opinion of the Source Protection Committee this policy, if implemented, will promote the achievement of the objectives of the plan in accordance with paragraph 2 of subsection 22(2) of the Act and a policy to regulate or prohibit the activity is not necessary to achieve those objectives.

The handling and storage of Dense Non- Aqueous Phase Liquids (DNAPLs)

In addition to the use of Part IV tools, the City of Guelph determined that this approach should be supported by an education and outreach program that promotes the use of alternative products. The City was of the opinion that if users of these products were aware of the risks associated with these products and advised of alternatives, it could improve the protection of the drinking water sources.

The handling and storage of Organic Solvents

In addition to the use of Part IV tools and land use planning approaches, the City of Guelph determined that this approach should be supported by an education and

outreach program that promotes the appropriate handling and disposal of waste products including organic solvents. The municipalities have established outreach programs for proper waste disposal and supporting these policies within the Source Protection Plan will assist in their ongoing implementation and effectiveness.

Conditions

Community improvement plans provide incentives for the clean-up of contaminated sites. The City of Guelph has been operating a successful program and it is recommended as part of this Plan that this program be continued and augmented with an additional education and outreach program to promote additional participation in the program.

10.3.5 Incentive Program

Onsite sewage System and Onsite sewage System Holding Tanks

As a supplemental policy tool to address this threat, The City of Guelph recommends working with the Grand River Conservation Authority to continue delivering incentive programs to implement best management practices regarding these threats.

The use of land as a Livestock Grazing and Pasturing Land and Outdoor Confinement Area or Farm Animal Yard

As a supplemental policy tool to address this threat, the City of Guelph recommends the continuation of Provincial stewardship funding to assist farmers with implementation of mitigation measures that reduce the risks from significant threats. Stewardship programs also assist with increased awareness about source protection. A priority on inspections for agricultural operations where significant threats exist will assist in protecting drinking water systems.

10.3.6 Specify Action

Onsite sewage System and Onsite sewage System Holding Tanks

The City of Guelph determined that the implementation of the mandatory maintenance inspection program was the primary tool to address this threat. The onsite sewage system maintenance inspection program supports the implementation of the *Clean Water Act, 2006* by providing a consistent approach for determining if on-site sewage systems, in vulnerable areas where significant threats exists, are functioning as designed. The intent of the mandatory re-inspection program is to bring all systems in compliance with the Ontario Building Code to manage the existing threats. The City of Guelph is concerned about the cost to the homeowners regarding the cost of upgrades to the onsite sewage systems if required. The City of Guelph requests that the province consider continued funding of the Ontario Drinking Water Stewardship Program.

The application, handling and storage of Non-Agricultural Source Material

The City of Guelph supports making inspections within vulnerable areas a priority to ensure that the conditions set out within the Prescribed Instruments are being implemented appropriately to protect drinking water sources.

The application, handling and storage of Road Salt

Salt management plans incorporate best management practices. The City of Guelph supports the use of these plans to promote the efficient use of road salts and the use of alternatives, and recommends that these documents be updated further to incorporate the findings of source protection planning and the latest mapping of vulnerable areas.

The management of Runoff that Contains Chemicals used in the De-icing of Aircraft

The existing regulations and guidelines are quite extensive and are an appropriate regulatory framework to protect the City of Guelph drinking water sources. For this reason, the City will rely on the existing regulatory framework and the oversight of Transport Canada to manage this threat.

Issue Contributing Areas- specific policy

The Assessment Report identified a data gap regarding the specific reason for the nitrate issue for the Carter well. Table 8-17 of the Grand River Source Protection Area Assessment Report lists all of the activities that would be identified as a significant drinking water threat if they existed within the Issue Contributing Area. Additional roadside survey work was undertaken and none of the properties were identified as a significant drinking water threats. Additional work should be undertaken to determine the sources of nitrate in the Carter well, including personal visits to agricultural properties in the area as well as further research into the potential sources of contamination related to the handling and storage of dense non-aqueous phase liquids (DNAPLS) within Issue Contributing Areas.

The Establishment and Operation of a Liquid Hydrocarbon Pipelines

As there are no existing threats regarding the establishment and operation of a hydrocarbom pipeline, this policy will only address a future threat. The primary concern for the City of Guelph is that if a pipeline is constructed, there be appropriate requirements for maintenance and inspection of a pipeline within a vulnerable area as well as ensures that any new facility would be constructed in a manner or location that would protect drinking water sources. The existing regulatory framework is quite extensive. For this reason, the City will rely on this existing regulatory framework and the oversight of the National Energy Board and the Ontario Energy Board to impose the appropriate requirements for any potential new pipeline facility.

Conditions

A co-operative information exchange amongst the City of Guelph, the Source Protection Authority and the Ministry of the Environment, Conservation and Parks is an essential part of addressing contaminated sites. Policies have been included to set out the

requirement for specific information sharing process including the scope of information to be shared and meeting timelines. By incorporating specific language into the Source Protection Plan, a framework for building upon current practices has been established which was a primary objective of the City. These efforts will be augmented by the prioritization of any abatement activities by the Ministry in areas with the greatest potential risk to drinking water sources.

10.3.7 Strategic Action

Spill Prevention Plans, Spill Contingency Plans and Emergency Response Plans along highways, railway lines or shipping lanes

A source protection plan may set out policies to be taken by persons or bodies to update spill prevention and spill contingency plans or emergency response plans for the purpose of protecting existing drinking water sources with respect to spills that occur within a well head protection area along highways.

Transport Pathways

Constructed pathways may facilitate the movement of contaminants vertically and laterally below the ground and result in faster or more widespread distribution. The City of Guelph recommends a number of policies to effectively manage increased risks to drinking water sources from threats located near transport pathways.

10.3.8 Issue Contributing Areas

An Issue Contributing Area is defined as the area within a vulnerable area where the cause of an issue at a drinking water source is thought or shown to originate. A drinking water quality issue is a parameter or pathogen shown to deteriorate or trend towards a deterioration of untreated water quality.

As the following activities are significant drinking water threats within the issue contributing areas, it is recommended that the same proposed policy directions be applied within the Issue Contributing Areas as set out within the Source Protection Plan for existing and future significant drinking water threats

The Carter Well - (Nitrate):

- The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act;
- The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage;
- The storage and application of agricultural source material to land;
- The application, handling and storage of non-agricultural source material to land;

- The application, handling and storage of commercial fertilizer;
- Storage of snow, and
- The use of land as livestock grazing or pasturing land, an outdoor confinement areas, or a farm-animal yard

Membro, Smallfield, and Emma Wells -Trichloroethylene (TCE):

- Operation of a waste disposal site;
- The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage;
- Handling and storage of DNAPLs

11.0 POLICY DEVELOPMENT FOR THE REGIONAL MUNICIPALITY OF HALTON

11.1 Municipal Support

The presented Regional Municipality of Halton (Halton Region) Source Protection Plan policies were developed in consultation with the City of Guelph and Halton Region. The policies were submitted to both parties for review to ensure they are protective of the City of Guelph's water resources, as well as, implementable by the Halton Region. Further, these policies were provided to the Halton-Hamilton Source Protection Region for additional review to improve harmonization between Source Protection Regions.

Halton Region staff have had the opportunity to consider these policies and provide comment to ensure they are feasible as well as harmonized with the neighbouring Source Protection Regions including the Halton-Hamilton and CTC Source Protection Regions.

General comments provided by Halton Region staff include criteria which the Regional Council had indicated should be used in order to review source protection plan policies. This criterion is outlined in the Halton Regional Council report PW-58-11. Criteria include: validity/scale of potential risk to the municipal drinking water system; using existing legislative tools and best management practices first; policy conformity with the Regional Official Plan; consistency of policy application across Halton Region; potential financial impact to Halton Region as a policy implementer; potential socio-economic impact to Halton Region residents, farmers and businesses; and using prohibition as a tool of last resort.

Halton Region is located within the jurisdiction of three Source Protection Regions. As such, consistency in proposed policy approaches adopted by each Source Protection Committee with respect to threat management versus threat prohibition is of great concern to Halton Region. In the Regional Council endorsed policy review criteria, staff were advised to review all policies to ensure consistency in policy approach wherever possible. Halton Region is encouraged by efforts taken by the Lake Erie Region Source Protection Committee to date in attempting to address our consistency concerns.

11.2 Financial Consideration

In reviewing the policies with the Lake Erie Source Protection Region staff, Halton Region staff evaluated the potential workload for the implementation of these policies. As with other municipalities within the Grand River Source Protection Area, Halton Region has great concerns about the financial burden implementation might cause for not only the Halton Region but the affected property owners.

The City of Guelph completed an in depth evaluation of the impacts from the implementation of the Source Protection Plan policies. Details are provided in the City of Guelph municipal section.

11.3 Policy Intent and Rationale

Within the Grand River Source Protection Area in the Region of Halton there are no enumerated existing occurrences of handling and storage of road salt, storage of snow or handling and storage of organic solvents where these activities would be significant drinking water threats. As such the Region of Halton section of the Grand River Source Protection Plan does not include policies to address the existing occurrences of these activities.

11.3.1 Clean Water Act, 2006 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit activities under Section 57 of the *Clean Water Act, 2006* in vulnerable areas where the activities would be a significant drinking water threat.

Rationale:

Based on a review of current and projected land uses in the areas where the following activities could be a significant drinking water threat, it is believed that in most cases, these activities are unlikely to occur in the future in Halton Region in the designated vulnerable areas.

Waste activities that do not require an Environmental Compliance Approval

For activities which do not require an Environmental Compliance Approval, the use of Part IV Prohibition ensures that activities do not become a significant drinking water threat. The risks presented by these types of facilities warrant prohibition of future occurrences within a WHPA-A as this is the area that is most vulnerable, as well as WHPA-B where the vulnerability score is high enough to trigger a significant drinking water threat policy. This type of activity would include the discharge of mine tailings and PCB waste storage. Given the existing land uses in Halton Region, it is unlikely these activities will occur within these applicable areas and therefore, the impact of prohibiting these activities is negligible.

The application, handling and storage of Agricultural Source Material

The application, handling and storage of Non-Agricultural Source Material

For those agricultural properties not subject to the *Nutrient Management Act, 2002*, Part IV tools were the preferred policy approach. Halton Region determined that in addition to the regulations and the prohibition under the *Nutrient Management Act, 2002*, a prohibition under Part IV regarding application and storage of agricultural and non-agricultural source materials within WHPA-A is appropriate and consistent with the *Nutrient Management Act, 2002*, thus this policy approach was adopted for Halton

Region. This approach is supported by the Ministry of Agriculture, Food and Rural Affairs as it is consistent with the rules presented in the *Nutrient Management Act, 2002*.

The handling and storage of Fuel

The handling and storage of Dense Non- aqueous Phase Liquids (DNAPLs)

The handling and storage of Organic Solvents

The application, handling and storage of Pesticides

Within the WHPA-A, which is directly adjacent to the well, new retail gas stations or new bulk fuel storage facilities excluding bulk fuel storage associated with a municipal emergency generator facility will not be permitted under Part IV of the *Clean Water Act, 2006*. Further, the handling and storage of DNAPLs, application, handling and storage of pesticides, and organic solvents will also not be permitted in WHPA-A. There are alternative locations where these new facilities can locate. In the case of pesticide application, this does not need to occur within 100 meters of the municipal intake.

Section 58 Risk Management Plans

Intent:

The development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act, 2006* was required for activities that cannot be managed effectively through land use planning or existing Prescribed Instruments.

Rationale:

Part IV Risk Management Plans completed with the Risk Management Official, under Section 58 of the *Clean Water Act, 2006* and are used as a tool to manage existing and future drinking water threats. This tool is used to “fill the gap” where land use policy or other existing legislation could not regulate a significant drinking water threat. This tool is particularly effective in dealing with existing significant drinking water threat activities, where prohibition would likely impose undue hardship on property owners, businesses, etc. Part IV Risk Management Plans also provide an opportunity to work with property owners/proponents to manage a threat, particularly in areas that are less vulnerable (i.e. WHPA-B or C).

Waste activities that do not require an Environmental Compliance Approval

This policy ensures that existing activities which do not require an Environmental Compliance Approval are adequately managed to ensure they do not become a significant drinking water threat. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal. Although the policy would result in costs to the implementing body, the use of Part IV Risk Management Plans to manage existing storage of waste was also the best option to manage these existing

threats, particularly since these activities do not have an Environmental Compliance Approval and the relatively few circumstances where this policy would apply. There were no existing significant drinking water threats enumerated in the Assessment Report.

The application and storage of Agricultural Source Material (ASM)

All properties located within an area where the vulnerability score is 10 will be subject to a Part IV Risk Management Plan, based on the current requirements of the *Nutrient Management Act*. It is anticipated that the number of livestock operations falling within these circumstances would be nominal and this approach was therefore deemed appropriate. Furthermore, the Part IV Risk Management Plans would be similar in nature to a Nutrient Management Plan/Strategy and therefore would be a tool that the agricultural community is familiar with.

The application, handling and storage of Pesticide

The application, handling and storage of pesticides can be effectively addressed through the use of Part IV Risk Management Plans. Although the policy would result in costs to the implementing body, the use of Part IV Risk Management Plans to manage the instances where pesticides are applied was the best option to manage this activity where Environmental Compliance Approvals and use land use planning tools cannot be used to manage activities.

This tool is also proposed for the handling and storage of pesticides. Given the relatively few existing threats identified Halton Region and the limited opportunities for this activity to occur in the future, the Part IV Risk Management Plan approach was chosen. As noted above, prohibition of this activity would also not be desirable to the agricultural community. There were no existing significant drinking water threats enumerated in the Assessment Report.

The application, handling, and storage of Commercial Fertilizer

The application of commercial fertilizer is generally covered under the *Nutrient Management Act*. However, not all properties or land uses are subject to the *Nutrient Management Act* and traditional land use planning tools can not address the application of fertilizer. As a result, the Part IV Risk Management Plan would be the most effective tool to manage this activity where the use is not subject to the *Nutrient Management Act*.

The handling and storage of Fuel- storage more than 2,500 Litres

Halton Region has determined that the use of Part IV Risk Management Plan was the preferred policy direction to address this threat. Prohibition was not selected as a policy choice as it could create a number of non-conforming uses for the existing activities identified as a threat in Halton Region. A Part IV Risk Management Plan approach is recommended to ensure compliance with the requirements of the *Technical Standards and Safety Act, 2000*.

The use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or a Farm Animal Yard

Prohibition was not considered to manage these activities given the potential impacts it would have on Halton Region's agricultural community. The first choice to address these threats for any agricultural property is the development and implementation of a Nutrient Management Plan and/or Strategy. However, not all agricultural properties are subject to the *Nutrient Management Act, 2002* and therefore, are not required to have Nutrient Management Plans and/or Strategies. In addition, the *Nutrient Management Act, 2002* does not regulate livestock grazing or pasturing. Therefore, a Part IV Risk Management Plan is appropriate to address these activities. The Part IV Risk Management Plan could be scoped to the requirements of a Nutrient Management Plan/Strategy to ensure consistency within the agricultural community.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006 (WHPA-A, B and C),* as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998* and the Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be a significant drinking water threat to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

The policies also enable the municipality to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act, 1990* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official.

11.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to prohibit activities within the Environmental Compliance Approval process where they would be a significant drinking water threat under Subsection 39 of the *Clean Water Act, 2006*.

Rationale:

Although the Environmental Compliance Approval process is considered to be rigorous, denial of an application is preferred with respect to future waste activities, from a policy perspective. This policy would eliminate the option of allowing these sites to be located within vulnerable areas where significant drinking water threats would occur in the future if the activity were undertaken. The risks presented by these types of facilities warrant prohibition of future occurrences. Specifically this prohibition applies to future waste disposal sites not within the meaning of Part V of the *Environmental Protection Act*. The area to which this would apply is limited based on current and future projected land uses.

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to review activities within the Environmental Compliance Approval process where they would be a significant drinking water threat under Subsection 39 of the *Clean Water Act, 2006*. Environmental Compliance Approvals should not be granted unless terms and conditions are imposed that, when implemented, will ensure that the activity does not become a significant drinking water threat.

Rationale:

Policies using the Prescribed Instrument tool rely on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of Halton Region to use existing regulatory tools when available to address the existing threat(s) within the Region. Environmental Compliance Approvals have been a longstanding requirement for waste disposal and sewage, and the criteria used to assess these Certificates are thorough. Requiring the Ministry to review Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added to Environmental Compliance Approvals, where necessary. The Region of Halton had requested this tool be specifically used for existing drinking water threats to keep consistency with other Source Protection Regions.

In some cases the policies request for additional criteria to be included in these approvals. This criteria is important to ensure the protection of drinking water sources and should be considered to be included, if not already, within the approved Environmental Compliance Approval.

Ministry of Agriculture, Food and Rural Affairs and/or Ministry of the Environment, Conservation and Parks: Review and Amend Non-Agricultural Source Material Plans and Nutrient Management Plans / Strategies

Intent:

The Ministry of the Environment, Conservation and Parks or Ministry of Agriculture, Food and Rural Affairs, as applicable, are required to review and, if necessary, amend Non-Agricultural Source Material (NASM) Plans or Nutrient Management Plans or Strategies to ensure these threats are managed such that they do not become a significant drinking water threat.

Rationale:

Halton Region determined the use of Prescribed Instruments, specifically Non-Agricultural Source Material (NASM) Plans as the preferred approach to address these threats. The protocol for these Plans was recently and extensively reviewed and updated by the Province. These revisions are an important addition in the management of drinking water threats and the Region will rely on the Ministry of Agriculture, Food and Rural Affairs and/or Ministry of the Environment, Conservation and Parks to include measures to protect drinking water sources. This also applies to the approvals for the Use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or Farm Animal Yard, the application, and the handling and storage of agricultural source material.

11.3.3 Land Use Planning

Intent:

To manage or prohibit activities within Official Plans and Zoning By-laws, as applicable, to conform with the significant threat policies set out in the Source Protection Plan, in accordance the requirements of the *Clean Water Act, 2006.*

Rationale:

The handling and storage of Road Salt

The storage of Snow

Halton Region supports the use of best management practices to promote the efficient use of road salts and the use of alternatives and promotes the proper storage of snow. The primary concern relates to large parking lots which are normally associated with multiple residential unit developments and employment, institutional or commercial land uses. These types of developments are subject to site plan control. For this reason, it is recommended that the Official Plan be amended to include policies to ensure that any new development is designed and maintained based on best management practices regarding salt application and storage. If appropriate, design elements and best management practices based on Environment Canada's guidance document should be

incorporated up front for new development so that the amount of salt usage required is reduced over the long term.

11.3.4 Education and Outreach

Intent:

To request Halton Region and local municipalities to work with other bodies where desirable to develop, continue or enhance stewardship and outreach and education programs directed at any, or all, drinking water threat activities prescribed under the *Clean Water Act, 2006* where it may be deemed necessary.

Rationale:

Halton Region supports education and outreach programs to address all drinking water threats and provides information to the residents of Halton Region on the protection of drinking water sources. An analysis will be completed by Halton Region to determine if these programs were successful. If they are not successful, more stringent policy measures will be proposed in further amendments to this Plan.

<u>The handling and storage of Fuel - equal to or less than 2,500 Litres</u>

The preferred tool is education and outreach to ensure that heating oil systems have been identified as threats and landowners are aware of appropriate tank maintenance requirements and response in case of a spill. It is noted that home insurance companies have inspection and maintenance requirements for homes with oil tanks. Many rural homes rely on fuel oil for heating and it was felt other tools such as Part IV prohibition or Risk Management Plans would be too onerous on landowners and the municipality, particularly given the number of existing threats identified in the Region. Further a well maintained system is still considered a drinking water threat based on the circumstances. Additional information to the home owner would aid in early detection of any leaks which would cause environmental damage. Halton Region and the Source Protection Committee believe this is a way to manage existing and future drinking water threats while meeting the objectives of the *Clean Water Act, 2006.*

<u>The handling and storage of Dense Non-aqueous Phase Liquid (DNAPLs)</u>

Halton Region was concerned that there were various issues relating to the use of DNAPLs in all land uses and activities. The chemicals are readily available and are found within commonly used products. Therefore, the use of education and outreach programs which promote the use of alternative products would be appropriate to compliment the other tools proposed to manage this significant drinking water threat.

11.3.5 Specify Action

Encourage Appropriate Siting, Design and Maintenance Standards for the Establishment and Operation of a Liquid Hydrocarbon Pipeline

The primary concern regarding this threat relates to a potential spill from a pipeline. The intent is to ensure that the applicable federal and provincial agencies are following industry best management practices when completing applications for underground pipelines within the meaning on Ontario Regulation 210/ 01 under the *Technical Safety and Standards Act*. Reporting on what standards are in place will help to determine if these pipelines ensure the protection of drinking water sources. Comments provided by the Ministry of Consumer Services and the Technical Safety Standards Association supported that current best practices and design guidelines are routinely followed, so this was removed from the proposed version of this policy. There were no threats identified within Halton Region in the Assessment Report.

Support On-Site Re-inspection Program under Ontario Building Code

Part IV tools cannot be used to prohibit sewage threats, so it was concluded that the best approach to manage future sewage systems of this size would be to manage them through the required maintenance inspection program under the Ontario Building Code. The onsite sewage system maintenance inspection program supports the implementation of the *Clean Water Act, 2006* by providing a consistent approach for determining if onsite sewage systems are functioning as designed. The intent is to bring all systems in compliance with the *Ontario Building Code*.

Prohibition of uses that rely on these small onsite sewage systems was not considered by Halton Region to be a viable option as several of the local municipalities do not have municipal services available. In addition, a land use prohibition would effectively prevent future growth in some of Halton Region's settlement areas.

The Management of Runoff that Contains Chemical used in the De-icing of Aircraft

There were no existing threats associated with aircraft de-icing noted in the Assessment Report. Further, based on land use activities surrounding existing municipal intakes, the potential for an airport to be constructed in the future that is of a size that might rank as a significant threat is minimal. Accordingly, it was concluded that the most effective policy to address this threat was the encouragement of best management practice when reviewing environmental assessments for proposed airports in this area.

11.3.6 Strategic Action

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

The intent of this policy is to ensure that emergency plans, contingency plans and spill containment plans are updated with respect to spills that occur within wellhead protection areas along highways or railways. Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore spill prevention and contingency/response plans should be updated to

include maps that clearly detail the vulnerable areas. Quick and effective response to spills could prevent an emergency from affecting a municipal drinking water source.

Additionally, updates to the current spill prevention and contingency/response plans could act as a communication tool for the municipalities and the public to ensure residents are aware of the location of wellhead protection areas and are knowledgeable regarding the appropriate response in the event of a spill in these areas.

Transport Pathways

The intent of this policy is to ensure that constructed pathways are managed to reduce the risk to drinking water sources. Constructed pathways may facilitate the movement of contaminants vertically and laterally below the ground and result in faster or more widespread distribution.

12.0 POLICY DEVELOPMENT FOR THE REGIONAL MUNICIPALITY OF WATERLOO

12.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Area and the Grand River Conservation Authority have been actively involved with the development of the Source Protection Plan policies. In the Regional Municipality of Waterloo, this participation has extended over many years including early consultation on the *Clean Water Act, 2006* itself and on the development of the Terms of Reference and Assessment Report. Regional Municipality of Waterloo staff have prepared several reports to Regional Council and hosted public information sessions in the lead up to policy development. The Regional Municipality of Waterloo also requested and was designated to take the lead in policy development for its protection areas on behalf of the Source Protection Committee.

As set out within Section 8 of the 2015 Regional Municipality of Waterloo's Official Plan, "Waterloo Region is unique in Ontario in that it is the largest urban municipality to rely almost exclusively on groundwater supplies for its drinking water. Approximately three quarters of the Region's drinking water comes from over 100 municipal wells. The remaining quarter of the Region's drinking water is drawn from the Grand River. Protecting these valuable water resources from contamination and from land uses that could hinder groundwater recharge is essential to maintaining human health, economic prosperity and a high quality of life in the Region."

The Region has acknowledged this unique situation for almost two decades through its leadership and implementation of its Water Resource Protection Master Plan (2007). Initiated in 1994, the Master Plan has been a cornerstone of the Regional Municipality of Waterloo's approach to drinking water management. The Master Plan, which was updated in 2007, included tasks to integrate the Plan with the objectives and other requirements of the *Clean Water Act, 2006*. The knowledge and experience gained through the implementation of the Master Plan has raised awareness of the need for source protection with the public and Area Municipalities. Previous experience in program implementation including development of land-use planning policies, incentive and education programs, and direct stakeholder interaction was critical in understanding the potential impacts of policies that might be developed under the *Clean Water Act, 2006*.

Building from existing networks, an "early engagement" process was initiated specifically for the Area Municipalities that would be affected by the policies prior to the Source Protection Plan being released for official public consultation. This process provided the municipalities with the opportunity to shape the source protection policies with regard to implementation and the available resources.

In September/November 2011, a summary of general principles and approaches being considered by Regional Municipality of Waterloo staff to develop the policies was

presented to Regional Council (E-11-102). The principles that guided the development of risk reduction policies were:

- Consider previous source protection program implementation experience and align with approaches in the Water Resources Protection Master Plan.
- More protective policies closer to the well.
- More protective policies for threats associated with an issue.
- Enable voluntary compliance prior to mandatory compliance.
- Consistent approach to policies for various threats.
- Policies using existing Prescribed Instruments and local incentive/education programs should be considered as a priority to achieve objectives. Where these do not exist, policies that could facilitate implementation through new, local programs should be developed, followed by policies that require risk management plans and/or education/awareness programs.
- Compliance dates should be staggered over a 5 year period to minimize impact.
- Policies for existing activities must allow for required changes to be implemented in a reasonable time frame. Financial incentives could be considered to assist.
- Financial impact to property owners, including municipalities and the Grand River Conservation Authority is an important consideration.

As part of the policy development process, Regional Municipality of Waterloo staff consulted with local municipal staff and the school boards through the existing Source Water Protection Liaison Committee (formerly the Water Resources Protection Liaison Committee), and held three Public Information Sessions. This Committee has been an integral component of the Master Plan and has provided support and guidance to Regional Municipality of Waterloo staff as part of the Master Plan's implementation. In addition, presentations were made to the Kitchener-Waterloo Chamber of Commerce and Area Municipal councils at Cambridge, Kitchener, Waterloo, Wilmot and Woolwich. Regional Municipality of Waterloo staff also met directly with numerous department managers and directors in Cambridge, Kitchener, and Waterloo to discuss the policies.

A first draft of the policies was presented to Regional Council in January 2012 (E-12-012). Changes to these policies have occurred in response to additional guidance from the Ministry of the Environment, Conservation and Parks, feedback from Area Municipal and Regional Municipality of Waterloo staff, and as part of the regulated pre-consultation with implementing agencies. Formal pre-consultation was required for all agencies with implementation responsibilities including: the Province (Environment,

Natural Resources, Municipal Affairs and Housing, Transportation, Infrastructure), Area Municipalities, including the City of Brantford and Wellington County, and the Grand River Conservation Authority. Feedback provided through these organizations and groups were considered.

Policies have been reformatted to more closely align with other jurisdiction's policies in the Source Protection Plan and to facilitate inclusion in the Regional Municipality of Waterloo Official Plan. This reformatting has improved the readability and reduced the total number of policies. While most of the policies continue to rely on Risk Management Plans and Prescribed Instrument tools enabled by the *Clean Water Act*, *2006* several changes were made in response to consultation including: transition policies that will recognize some planning approval to enable the activity to be treated as existing rather than future; limiting the scope of policies in surface water areas contributing to wells to that of spill preparedness; adding new policies for the Mannheim Water Treatment Plant Intake in the Grand River; and adding new policies for Brantford's intake protection zones where they occur within the Region. The final draft policies for the Regional Municipality of Waterloo were presented to council in August 2012 (E12-102).

The proposed plan was further circulated by the Grand River Conservation Authority and additional comments were received from the Province. Revisions to the policies were undertaken in response to these comments, to address opportunities to improve readability and ease of understanding of the policies and to ensure that any policy gaps were removed. On March 16, 2015, the Source Protection Committee released the revised, proposed Source Protection Plan for public comment with the commenting period closing April 24, 2015. A summary of these changes was presented to Regional Council in March 2015 (TES-WAS-15-12).

The Grand River Source Protection Plan was submitted for final approval from the Province in July 2015, and was approved in November 2015 with implementation of the policies beginning July 1, 2016. Regional Municipality of Waterloo staff continued to develop a supplementary framework to guide the successful implementation of the policy tools for which the Region would be responsible, including prohibitions, risk management plans, incentives and education. These initiatives were summarized in a report to Regional Council in March 2016 (TES-WAS-16-09), which highlighted the Region's responsibility to screen development and building permit applications, negotiate risk management plans, provide incentives, and implement education and awareness programs within source protection areas.

Throughout 2015 and 2016 Regional Municipality of Waterloo staff worked with local municipal staff to inform the planning and building industry on Source Protection Plan policy implications, which included the distribution of information sheets, development of guidance materials, modification of application forms, and training of relevant staff. To assist in application and permit screening, Regional Municipality of Waterloo staff developed an innovative data management tool and mapping application. The application is essential to navigating a complicated policy framework, as it allows for the development industry to ensure their applications have received appropriate screening and review by the Risk Management Official Office prior to submitting applications to

local municipal staff. It also provides information to existing property owners on potential policy impacts.

In October 2015 Regional Council received a report (TES-WAS-15-25) outlining the proposed broad principles of the Source Protection Incentive Program. The program is built on the experience and successes of the former Business Water Quality Program, and the current Rural Water Quality Program. Funding is made available for private property owners for existing activities under the following guiding principles; share cost of projects, encourage beneficial management practices, and fund beyond compliance. The program also included a component providing grants to small onsite sewage system owners who required an inspection under the Ontario Building Code. The broad principles were incorporated into a detailed program structure, which was presented to Regional Council in May 2016 (TES-WAS-16-14), and included incentive program and project categories along with cost share and maximum grant rates. Eligible projects would be generally funded at a 75% grant rate, and were identified based on technical analysis, program experience, and multi-stakeholder input.

To provide additional context regarding the Region's responsibility in negotiating risk management plans two reports were presented to Regional Council in 2016. TES-WAS-16-23 highlighted the overall strategy in prioritizing properties and activities closest to municipal wells for the negotiation of risk management plans for existing activities, along with the ongoing negotiation requirement for new activities created through development approval and building permit applications. By-laws and fees were developed to supplement the risk management plan negotiation and presented to Regional Council in May 2016 (TES-WAS-16-15). Details regarding classes of risk management plans, application process, notices, inspections, enforcement, and fees were established in order to provide the framework of the administration of the risk management plan process.

In 2018 Regional Municipality of Waterloo staff began the process of reviewing and updating policies as part of the Source Protection Plan update under Section 34 of the *Clean Water Act, 2006*. The policy review considered water quality and quantity requirements, consistency with the 2017 Tables of Drinking Water Threats, alignment with other regulations and programs, and challenges related to the implementation of the original policies. As part of the review process staff continued to engage with stakeholders through municipal working groups and the continuation of the Source Water Protection Liaison Committee.

The Ministry of Natural Resources and Forestry approved Waterloo Region's Tier 3 Water Budget and Local Area Risk Assessment project in 2016. As the Region's drinking water supplies were determined to be at low risk of not meeting future water demands the Region was not required to include water quantity policies in the Plan update. A report summarizing the proposed updates to the Plan as they relate to the technical work and supply well requirements from the integration of the Tier 3 project and the Master Water Supply Plan (2015) was presented to Regional Council in January 2018 (TES-WAS-18-02) with a summary of the water quantity assessment,

updated well head protection areas, and information on the consultation process for the water quality policy amendments following in May 2018 (TES-WAS-18-12).

As several policy changes were identified by Regional Municipality of Waterloo staff, particularly related to the application of salt activities, the Region hosted two Public Consultation Centres in March 2019 where members of the public and other potentially impacted stakeholders could gather information and ask questions on the proposed changes. In conjunction with the Public Consultation Centres staff individually notified each property owner with a documented confirmed or unconfirmed significant threat within the approved and proposed protection areas via letter indicating the changed status of their property as a result of the draft changes.

Regional Council received a report seeking approval of the draft amended Grand River Source Protection Plan in April 2019 (TES-WAS-19-09), which coincided with the Lake Erie Region Source Protection Committee public consultation period held between April 8 and May 21, 2019.

Changes to the policies have occurred in response to comments received from the Province.

The following is a summary of the major changes to the policies.

Table 12-1 Major Changes to Proposed Source Protection Policies for Waterloo Region

Policy Number	Change Made
Definitions	• Added entry for “storm water management facility”.
1.15	• Removed policy RW-NB-1.15, as activity now considered a prescribed drinking water threat (Establishment and Operation of a Liquid Hydrocarbon Pipeline), and addressed through policy RW-NB-61.
1.19	• Removed policy RW-CW-1.19, as this grant program is not effective for groundwater remediation. The current Ontario brownfield redevelopment regulatory regime does not require groundwater clean-up in order to redevelop a brownfield site.
2 to 4 (Waste)	• Revised policies RW-MC-2, RW-CW-3, and RW-CW-4 to adjust vulnerability scores from eight to nine in WHPA-E and IPZ-3, and included IPZ-2, for activities that can be significant in these areas (land-farming of petroleum waste, or landfilling of municipal waste, solid non-hazardous waste, and/or hazardous waste, and storage of hazardous waste at landfills

Policy Number	Change Made
	or transfer stations) as per 2017 Tables of Drinking Water Threats. • Added clauses in policies RW-MC-2, RW-CW-3, and RW-CW-4 for application of hauled sewage to land in WHPA-E, IPZ-2, and IPZ-3 areas where the vulnerability is equal to or greater than eight as per 2017 Tables of Drinking Water Threats.
7 to 8.1 (Sewage – Onsite Sewage Systems)	• Removed Branchton Meadows Chloride Issue Contributing Area clauses RW-MC-7-iii, RW-MC-8-ii, and RW-CW-8.1-iii to reflect that chloride is no longer listed as a chemical circumstance for onsite sewage systems as per 2017 Tables of Drinking Water Threats.
9 and 10 (Sewage – Onsite Sewage Systems)	• Removed Chloride and/or Sodium Issues from policies RW-MC-9 and RW-MC-10 to reflect that chloride and sodium are no longer listed as chemical circumstances for onsite sewage systems as per 2017 Tables of Drinking Water Threats.
11.1 (Sewage – Industrial Effluent Discharge	• Removed prescribed instrument clauses RW-MC-11.1-a-iv-iv and RW-MC-11.1-a-v-iv for existing industrial effluent discharge and sewer treatment plant bypass discharge in Nitrate Issue Contributing Areas where vulnerability is less than six as per 2017 Tables of Drinking Water Threats. • Expanded future sewage treatment plant bypass discharge clauses RW-MC-11.1-b-v-ii, RW-MC-11.1-b-v-iii, and RW-MC-11.1-b-v-iv to match the clauses for existing sewage treatment plants.
11.1, 13, 15, 16, 18, 19, 20.1 (Sewage)	• Revised vulnerability score threshold from eight to eight or greater for IPZ-3, and included IPZ-2, in policies RW-MC-11.1, RW-MC-13, RW-MC-15, RW-MC-16, RW-MC-18, RW-MC-19, and RW-MC-20.1 for activities that can be significant in these areas (as per 2017 Tables of Drinking Water Threats.
12.1 and 19.1 (Sewage)	• Added policies RW-CW-12.1 and RW-CW-19.1 to strengthen departmental and organizational requirements around sewer pipe construction standards and storm water management facility inspection and testing standards.

Policy Number	Change Made
13 (Sewage – Combined Sewers)	• Revised vulnerability and area threshold in clauses RW-MC-13-a-iv and RW-MC-13-b-iv from all areas in Nitrate and TCE Issue Contributing Areas to WHPA-E where the vulnerability is less than six as per 2017 Tables of Drinking Water Threats.
14 (Sewage – Sanitary Sewers)	• Revised vulnerability and area threshold in policy RW-MC-14 from all areas in Nitrate Issue Contributing Areas to WHPA-E where the vulnerability is greater than six as per 2017 Tables of Drinking Water Threats.
21, 21.1, 22 (ASM)	• Removed clause RW-CW-21-a-ii-i prohibiting existing permanent storage of agricultural source material in WHPA-A to better align with the *Nutrient Management Act, 2002,* as barns are considered ASM storage facilities, and based on known storage sites within these areas it would be more effective to manage the activity through Risk Management Plan policies. • Added existing permanent storage of ASM in IPZ-1 to policy RW-MC-21.1 to be consistent with the prohibition policy RW-CW-21. • Removed clause RW-MC-22-a-ii-ii to be consistent with the prohibition policy RW-MC-21.1. • Revised policy RW-MC-21.1 to remove reference to the Ministry of Environment, Conservation and Parks and Environmental Compliance Approvals.
22, 23, 26, 29 (ASM, Fertilizer, NASM)	• Removed wording requiring additional nitrogen soil testing for nutrient application activities (application of ASM, application of commercial fertilizer, and application of NASM) within the K26 wellfield in policies RW-MC-22, RW-CW-23, RW-MC-26, and RW-CW-29 due to a lack of clarity as to how this information can be used in management decisions, as OMAFRA's NMAN software does not allow for soil nitrogen value inputs when calculating crop requirements.
24 (ASM)	• Revised policy RW-CW-24 to update the vulnerability score threshold from eight to eight or greater for IPZ-3 and WHPA-E, and included IPZ-2, as per 2017 Tables of Drinking Water Threats.

Policy Number	Change Made
27 (NASM)	• Revised policy RW-MC-27 to clarify the Ministry of Environment, Conservation and Parks' role in managing off-farm application and/or storage of NASM through Environmental Compliance Approvals.
29 and 30 (Fertilizer)	• Revised policy RW-CW-29 to include WHPA-E with vulnerability score equal to nine for application of commercial fertilizer as per 2017 Tables of Drinking Water Threats. • Revised policy RW-CW-30 to include IPZ-2 and IPZ-3 with vulnerability score equal to nine for storage of commercial fertilizer as per 2017 Tables of Drinking Water Threats.
33 (Pesticide)	• Added education and outreach clause to policy RW-CW-33 to address gap where activities may be significant, but no other policies apply
34.1 (Salt)	• Revised existing and future prohibition of road salt storage thresholds in policy RW-CW-34.1 to better reflect site operations, and to focus prohibitions on highest risk activities (ie uncovered salt storage, large quantity storage).
35 (Salt)	• Revised policy RW-CW-35 to expand Risk Management Plan requirement to include all Chloride Issue Contributing Areas to reflect staff's assessment that the current scope of Risk Management Plan requirements is not sufficient to mitigate the risk, even though Risk Management Plans cannot reduce or mitigate impact of road salt application.
35.1 (Salt)	• Revised existing and future Risk Management Plan requirements of road salt storage thresholds in policy RW-CW-35.1 to ensure consistency with changes to policy RW-CW-34.1, and to address higher risk activities (ie less than one tonne covered storage within WHPA-A) that were not previously covered under Part IV policies.
37 (Salt)	• Revised incentive and education & outreach thresholds in policy RW-CW-37 to ensure consistency with changes to policies RW-CW-34.1, RW-CW-35, and RW-CW-35.1.
38 (Salt)	• Removed policy RW-CW-38 requiring Region and Area Municipalities to acquire Smart About Salt site certification, as it provided no additional incentive to improve practices.

Policy Number	Change Made
39, 39.1, 40 (Salt)	• Revised threshold to include all Chloride Issue Contributing Areas in policies RW-CW-39, RW-NB-39.1, and RW-CW/NB-40 to recognize that current scope of requirement is insufficient, and action across the entire Chloride Issue Contributing Area is necessary, even though Risk Management Plans cannot reduce or mitigate impact of road salt application.
41 (Snow)	• Revised policy RW-CW-41 to include IPZ-2, IPZ-3, and WHPA-E with vulnerability score equal to nine for snow storage activities that can be significant in these areas as per 2017 Tables of Drinking Water Threats.
45 (Fuel)	• Revised policy RW-CW-45 to include future prohibition within IPZ-1 for fuel storage activities that can be significant as per 2017 Tables of Drinking Water Threats.
46 and 48 (Fuel)	• Revised policy RW-CW-46 to include IPZ-2, IPZ-3, and WHPA-E with vulnerability score equal to nine for fuel storage activities that can be significant in these areas as per 2017 Tables of Drinking Water Threats. • Revised incentive and education & outreach policy RW-CW-48 to ensure consistency with changes to policy RW-CW-46.
52 and 53 (DNAPL)	• Revised incentive thresholds in policy RW-CW-52, and education and outreach threshold in policy RW-CW-53, to ensure consistency with existing Risk Management Plan policy RW-CW-51.
56 (Aircraft Deicing)	• Revised policy RW-CW-56 to include IPZ-2, IPZ-3, and WHPA-E with vulnerability score equal to nine for activities that can be significant in these areas as per 2017 Tables of Drinking Water Threats.
60 (Livestock)	• Revised policy RW-CW-60 to change vulnerability scores from eight to greater than or equal to eight in IPZ-3, and included IPZ-2, for activities that can be significant in these areas as per 2017 Tables of Drinking Water Threats.
61 (Pipeline)	• Added policy RW-NB-61 to replace former local threat policy RW-NB-1.15.

Over the last couple of years, Waterloo Region staff have installed several new supply wells and are in the process of commissioning these wells. Regulations under the Clean Water Act and Safe Drinking Water Act require protection areas be delineated and included in an approved source protection plan prior to issuing a Drinking Water Works Permit to connect a new municipal water supply well. Also, new water quantity policies have been developed to address protection areas for wells in Wellington County that extend into Woolwich Township. The key updates include the following:

- New protection areas have been delineated in northeast Cambridge following completion of a Municipal Class Environmental Assessment to add two new wells to the Pinebush well field and one new well to the Clemens Mill wellfield. The protection areas extend to the northeast into Wellington County. The existing water-quality policies in the Region of Waterloo's section of the Grand River SPP will apply to these areas in Cambridge. Equivalent policies within the Wellington County section of the Grand River SPP will apply to properties in Puslinch. The policies only apply to small number of properties due to the relatively low scoring of the protection areas and the absence of drinking water quality issues for these new wells.

- New protection areas have been delineated for two new extraction wells and conversion of an existing extraction well to an extraction/injection well for the Aquifer Storage and Recovery system at the Mannheim Water Treatments Plant in Kitchener. The existing water-quality policies in the Region of Waterloo's section of the Grand River SPP will apply to this protection area that primarily overlies the treatment plant and adjacent Water Services properties.

- New water quantity policies have been developed that will apply to the water-quantity protection area for Fergus and Elora in Wellington County that extend into Woolwich Township. The policies apply to prescribed threats in the Clean Water Act related to water taking and reductions in recharge arising from development. The policies were developed by Water Services staff based on similar policies that were developed by Wellington County. Policies for water taking are primarily directed to the Province as they have responsibility for issuing water taking permits. Policies for reductions in recharge are unlikely to affect development in this area as it is not identified as a municipal growth area in the Regional Official Plan.

Regional Council received a report seeking approval of the draft amended Grand River Source Protection Plan in December 2020 (TES-WAS-20-19), which coincided with the Lake Erie Region Source Protection Committee pre-consultation period. Similarly, Woolwich Township Council also received a report seeking approval in December 2020 because of the inclusion of the new protection area in Woolwich associated with the extension of Elora and Fergus water quantity protection area into Woolwich and related water quantity policies.

12.2 Financial Considerations

One of the specific requirements for an Explanatory Document is to advise how consideration of the potential financial implications for persons and bodies that would be implementing or affected by the source protection plan influenced the development of policies. These considerations are discussed below.

As presented in the previous section, the Regional Municipality of Waterloo has gained considerable insight on the impacts of source protection through the implementation of the Water Resources Protection Master Plan. This experience also provides the basis on which financial impacts were assessed. Specifically, financial awareness was created through a number of initiatives as follows:

- Implementing source-protection based incentive programs to farmers for 20 years and urban businesses for five years. These programs include an approval process that includes implementation costs and use the principle that the property owner may accrue a financial benefit from the improved practices and so should contribute to the cost of the new practice;

- Designing and implementing a private parking lot maintenance accreditation program that utilized the cost and potential liability associated with winter maintenance programs;

- Implementing source protection based land-use policies through development applications;

- An assessment of road salt impacts at a supply well concluded that salt concentrations in supply wells are achievable at a modest cost with improved management practices and equipment upgrades. This study led to the development of a salt management program for municipal road agencies that includes assessment and implementation of new practices. This study also provided critical insight on the Region's tiered approach to source protection as the largest improvements in water quality came from changes in practices closer to the wells; and

- A cost-benefit analysis of the potential for decreasing concentration of nitrate in a well with a nitrate drinking water issue through changes in agricultural management practices. This study again supported the Regional Municipality of Waterloo's tiered approach to source protection and identified specific practices that could be implemented to improve the cost at a reasonable cost.

This previous experience enabled staff to assess and give substantial consideration to the potential costs and impacts to the business and residents of the Regional Municipality of Waterloo as part of the decision making process in developing the Source Protection Plan policies. In essence, it was felt that the cost for implementation should be shared across all those affected by the policies. The policy framework is based on the principle of utilizing Prescribed Instruments first to place the onus on the provincial agency responsible for issuing Prescribed Instruments such as Environmental Compliance Approvals to protect municipal water supplies using

provincial legislation. Financially, this will assist in spreading implementation cost across provincial and municipal agencies. The financial impacts to municipalities for implementation and property ownership within the Regional Municipality of Waterloo are set out in detail within Staff Report E-12-075. Additional costs are projected to be incurred by the Regional Municipality of Waterloo and Area Municipalities. These impacts include costs for mitigating risk on municipal properties, new resources for undertaking the responsibilities for the Risk Management Official, and incentive and education program implementation.

A number of Regional Municipality of Waterloo and Area Municipal properties have been identified as significant drinking water threats. These threats include application of salt on road and parking lots, stormwater management facilities, snow storage sites, and onsite sewage systems. The yearly costs to implement source protection for these properties vary for each agency primarily by the threat type and the number of properties.

Throughout the consultation on the draft policies, concern was raised by Area Municipal staff on the potential inadvertent consequences of amending existing Environmental Compliance Approvals for stormwater management facility and sanitary sewers. These concerns centred on the lack of specificity in what would be required with these amendments and that the regulatory agency could include requirements within these amendments beyond what was envisioned during the development of the policies. This concern made it difficult to predict the financial impact for these policies or to assess the risk that the cost could be considerably higher than estimated. To address this, policies were added for these threats directing Area Municipalities to undertake a preliminary assessment of these structures that would assist in guiding both the Municipality and the Province on the extent to which risk reduction is necessary. The policies also include specific minimum content to guide the approval authority on the scope of measures Regional Municipality of Waterloo staff had envisioned would be required to meet the intent of the *Clean Water Act, 2006*.

Area Municipal staff also raised concerns regarding the proposal salt management policies regarding the specific language of the policies and the potential implications of implementing the policies. Many of the policies have been rewritten to improve the readability. Region staff have been working with all local municipal transportation staff including staff at the City of Cambridge to voluntarily develop RMPs for application of road salt as a means of improving understanding of the scope of management envisioned by Region staff. This will assist in managing the cost of implementing the policies.

Implementing the tasks of the Risk Management Official Office is a new responsibility for the Regional Municipality of Waterloo. Accordingly, Regional Municipality of Waterloo staff has undertaken an assessment of the financial and staffing implications needed to implement these functions. In total, 4 full-time staff will be dedicated to implement these duties, the costs of which will be borne by the Regional Municipality of Waterloo. Additional staff will be responsible for policy implementation as required, and as resources permit. In addition, contract staff may be needed in the first few years to

assist in dealing with the large number of existing threats that will need Risk Management Plans. Finally, substantial legal support is anticipated to guide negotiations of the Risk Management Plans and assist in appeals that will undoubtedly emerge with this new legislation. The fees that may be charged to persons applying for building permits or development applications may partially offset these costs.

The Risk Management Official will be required to provide notice to and sign off on Risk Management Plans before applicants can initiate the development and building permit application processes where the development includes significant threat activities in well head protection areas or intake protection zones. Municipalities have expressed concern that inclusion of this additional process within the development and building permit process will result in additional approval delays and potential additional costs to both city staff and the developer or applicant. Regional Municipality of Waterloo staff is committed to consulting further with each Area Municipality in developing and integrating this process into existing municipal approval processes.

The approved incentive program will help support the transition and/or upgrades that will be required to reduce the risk to supply wells. For wells with drinking water issues, stand-alone incentive or education policies are proposed, as part of the Regional Municipality of Waterloo's tiered approach, for the outer reaches of the Issue Contributing Areas as it was felt that the main risk reduction emphasis was needed for properties closer to the supply well.

It is anticipated that the incentive program be implemented over a ten to twenty years period to spread out the cost to the Regional Municipality of Waterloo and in recognition of the challenges in implementing incentives to several thousand properties. Education and awareness programs will be linked with the proposed incentive programs and will be developed and run parallel to these programs.

Area Municipalities will be responsible for implementing onsite sewage system inspections in source protection areas in accordance with the Ontario Building Code. The cost for this program will be borne by the municipality and may be partially offset by administration fees charged to the property owner and/or rebate programs administered through the Regional Municipality of Waterloo.

12.3 Policy Intent and Rationale

Section 10.1 of the Grand River Source Protection Plan contains definitions that apply within the Regional Municipality of Waterloo. Section 10.2 contains general policies that enable specific provisions under the *Clean Water Act, 2006* regarding regulated activities and restricted land uses. The provisions of the *Clean Water Act, 2006* require this language to be contained within the Source Protection Plan. These policies set out the timing for various sections to come into effect, the transition provisions and how *Planning Act* and Building Permit applications should be handled when the Source Protection Plan comes into effect and annual reporting requirements. These policies are an integral component of the Plan and must be consulted to understand the full effect of the policies regarding significant drinking water activities.

Regarding the definitions of existing and future use, a more restrictive approach has been used in developing the definition of existing than found in other sections of the Grand River Source Protection Plan. The definition permits activities that have legally occurred within the last five years as well as ongoing activities on the date of effect of the Source Protection Plan. There is no intent or desire to provide greater grandfathering of activities that once legally existed in the past but have now ceased operations. If these activities have ceased and a person wishes to reestablish the activity, they will be required to conform to the future threat policies. A number of the wellheads within the Regional Municipality of Waterloo are located within commercial, industrial or employments areas. These areas have a long history of a variety of land uses. Providing additional timelines beyond the five-year period as set out within the definition for existing would increase the potential risk of activities that have ceased being permitted to reoccur next to well heads.

The same principles were used in the development of the transition policies. The policies allow an active application for site plan or building permit application to continue to be processed under the existing activity policies. If the property only has zoning approval and no active development application, any new activities on that property must conform to the future use policies within the Plan. It is also recognized that Environmental Compliance Approvals may be required for the development to proceed and that those can be approved as an existing activity under this policy.

Throughout the preparation of the Source Protection Plan ongoing dialogue has occurred with the Ministry of the Environment, Conservation and Parks and other Provincial Ministries regarding requirement of the Regional Municipality of Waterloo to have a more interactive consultation process with the Ministries when they are reviewing a Prescribed Instrument.

The Regional Municipality of Waterloo expects that due consideration be given to comments provided by the Region to the Province in that process. RW-NB-1.21 and RW-MC-1.26 are included within the Plan to address these requirements of the Regional Municipality of Waterloo. Also found within this section are the condition policies. A condition is a site with contamination that is the result of past activities. The Regional Municipality of Waterloo has identified a comprehensive policy approach for addressing conditions through a combination of a number of policy tools. The use of Prescribed Instruments is the preferred tool where there is one available. This is supported by the requirement for an environmental screening process for new development applications as well as increased communication and data sharing.

During the consultation process on the draft Source Protection Plan, comments were received from the Ministry of the Environment, Conservation and Parks regarding Prescribed Instruments in general and Condition Sites specifically and the inclusion of terms and conditions for the approval of Prescribed Instruments. The purpose of the *Clean Water Act*, *2006* is “to protect existing and future sources of drinking water”. Sections 39(7) and 43(1) set out the scope of revisions to Prescribed Instruments. The *Clean Water Act, 2006* does not limit the authority of the Source Protection Committee or Source Protection Plan to require the Ministry of the Environment, Conservation and Parks to include required terms and conditions in an Environmental Compliance Approval.

Concerns were also raised by the Ministry of the Environment, Conservation and Parks regarding the monitoring policies and the documents requested. As set out in Section 87(1), the *Clean Water Act, 2006* permits the Regional Municipality of Waterloo to request copies of the amended Environmental Compliance Approvals as required in policy RW-CW-1.12. The *Clean Water Act, 2006* does not limit the authority of the Source Protection Committee or Source Protection Plan to require the Ministry of the Environment, Conservation and Parks to undertake actions. There is no requirement to provide operational flexibility to the Ministry of the Environment, Conservation and Parks. There is no requirement to avoid policies that will require the Ministry of the Environment, Conservation and Parks to make program changes and there is no requirement to provide general language in monitoring policies. The Regional Municipality of Waterloo supports the policies within the Source Protection Plan regarding these matters as presented.

Regarding transport pathways (policy RW-NB-1.23), O.Reg. 287/07 sets out in Section 1(1) the definition of a transport pathway. A transport pathway is a condition of land resulting from human activity that increases the vulnerability of a raw water supply of a drinking water system. The policy requires the assessment of the establishment of the transport pathway in conjunction with development applications. The requirement to perform certain studies or investigations prior to granting land use planning approvals or amendments is a common practice.

Within the plan, policies have been included for existing threats that have not yet been enumerated through the Assessment Report. These policies have been included within the plan to ensure that all existing activities, whether enumerated or not, are addressed within the policies.

In addition there are a limited number of the policies address existing uses that are prohibited under the policies of the plan. Through on-going field verification and discussion with property owners several activities were determined to not have been occurring, and for others it is unlikely that the activity is occurring within the area where the activity is a significant drinking water threat. In addition, for a significant number of the activities, these activities are not permitted through other legislation and regulation. The rationale for the prohibition of existing uses is set out in detail within each of the sections below.

Waterloo Region staff developed water quantity policies that are to apply to the Elora and Fergus wells systems in Wellington County that extend into Woolwich Townships. As these policies were developed to protect the Wellington County well systems, Waterloo's policies followed the policy direction taken by Wellington County staff. In addition, the scope of the policies were further reduced as the area of overlap is not identified as a growth area in Region's Official Plan which limits the extent to which new development can occur in this area.

12.3.1 Part IV Policies

Waste Disposal Site

For those facilities not regulated by Prescribed Instruments, the use of the Part IV tools to prohibit future and manage the risk from existing occurrences of this threat was preferred. The areas where prohibition and management are required are consistent with the Region's tiered approach to risk reduction and implement the same risk reduction approach as Prescribed Instruments. Prohibiting future occurrences of this threat ensures the cumulative risk to the well is not increased. Risk Management Plans provide an opportunity to effectively implement best management practices for existing significant drinking water threat activities related to waste disposal. It is not envisioned that there will be many circumstances where this policy will be applied.

Sewage System or Works – Discharge from a Stormwater Management Facility

For those facilities not regulated by Prescribed Instruments, the use of the new Part IV tools to prohibit future and manage the risk from existing occurrences of this threat was preferred. The protection areas where prohibition and management are required are consistent with the Regional Municipality of Waterloo's tiered approach to risk reduction and require the same risk reduction approach as that drafted to Prescribed Instruments. Prohibiting future occurrences of this threat ensures the cumulative risk to the well is not increased. Risk Management Plans provide an opportunity to effectively deal with significant drinking water threat activities related to stormwater discharge. Details related to the content and purpose of the Risk Management Plan assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. The minimum content reflects accepted industry standards to reduce the impact of the threat. It is not envisioned that there will be many circumstances where this policy will be applied.

The application and storage of Agricultural Source Material

In general, the Regional Municipality of Waterloo's approach to risk mitigation is based on the principle of a tiered approach to risk reduction with more restrictive measures closer to the well. Accordingly, the risks posed by this threat warrant prohibition of these activities where it is an existing threat or could be a future threat in areas closest to the wells. A number of factors were considered, and were relied upon by the Source Protection Committee in determining that this threat warranted prohibition and could not be effectively managed to reduce the risk. These included the following:

- Delineation and scoring of the 100 m area around the well recognizes that inherent uncertainty exists in the subsurface soils, which precludes delineation and scoring of multiple vulnerability zones;

- Agricultural Source Material includes pathogens whereby one pathogen could result in immediate health impacts;

- Management of this threat cannot reduce numbers of pathogens to zero thereby eliminating the threat and potential adverse effects;

- For application, the chemicals and pathogens reach the subsurface through direct and designed application;

- For storage, in the event of a spill there might not be sufficient time to respond as the storage facility is within 100 m of the well and the quantity of pathogens could overwhelm the treatment system at the well;

- Chemicals associated with this threat have already affected the drinking water quality in the well as there is a designated drinking water Issue and more restrictive risk-reduction measures are needed to reduce the risk; and

- The *Nutrient Management Act, 2002* acknowledges that the risk from this activity is high by prohibiting it within 100 m of a municipal drinking water source.

In addition, as there are alternatives available to the property owner for application of agricultural source material to ensure viable crop production via the application of commercial fertilizers, it is felt that this prohibition would be acceptable to property owners. Regional Municipality of Waterloo staff have undertaken measures to assess whether this activity is occurring and concluded that it is not widely occurring; however, there may be omissions in the Region's data.

The approach to prohibiting existing and/or future agricultural source material application, temporary field storage and/or permanent storage within WHPA-A, B and E, within Intake Protection Zone 1 as well as where there is a Nitrate Issue is part of the Region's tiered approach to risk reduction that has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive measures closest to the well and in the highest vulnerable areas with decreasing levels of restriction in other areas. A tiered approach helps reduce agency implementation costs and is a research-supported approach to reducing impacts to drinking water systems. Finally, the policies prohibit temporary field storage in Issue Contributing Areas as Regional Municipality of Waterloo does not consider this to be an acceptable management practices.

The policy approach also utilizes the Risk Management Official's responsibilities to manage both existing and future activities within WHPA-B and E and where a Nitrate Issue has been identified in all Issue Contributing Areas except WHPA-A. Use of this tool recognizes that the Nutrient Management Plans required through the *Nutrient Management Act, 2002* are not required for many existing farms in the Regional Municipality of Waterloo and are neither reviewed nor approved by the Ministry of Agricultural, Food and Rural Affairs, and that nutrient management is necessary to reduce the risk from this threat. Details related to the purpose or content of the tool assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs. Most agricultural properties have utilized a variety of activities over the past and few activities will be considered to be a future threat.

Review of the Wellhead Protection Area and or Issue Contributing Area extent and vulnerability has identified that management of the risk in areas where vulnerability is greater than 6 is necessary for wells which have drinking water issues to reduce the impact of this threat at the drinking water intake. Detailed technical studies at K26 have indicated that soil nitrate testing is needed to ensure nutrient management plans achieve the desired risk reduction goals for nitrogen. However, as there is not a consensus on how best to utilize this information in available nutrient budget software the specific requirement for additional soil nitrate testing in the K26 well field was removed from relevant policies, and risk reduction will be addressed through overall nutrient management practices.

The application, handling and storage of Non-Agricultural Source Material

In general, the Region's approach to risk mitigation is based on the principle of not increasing the risk by adding new threats and a tiered approach to risk reduction with more restrictive measures closer to the well. Accordingly, the Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose existing and future significant threats within WHPA-A and Intake Protection Zone 1. The risks posed by this threat warrant prohibition of these activities where it could be a future threat in areas closer to the wells and where it is an existing threat within a WHPA-A. A number of factors were considered and were relied upon by the Source Protection Committee in determining that this threat warranted prohibition and could not be effectively managed to reduce the risk. These included the following:

- Delineation and scoring of the 100 m area around the well recognizes that inherent uncertainty exists in the subsurface soils, which precludes delineation and scoring of multiple vulnerability zones;
- Non-agricultural source material includes pathogens whereby one pathogen could result in immediate health impacts;
- Management of this threat cannot reduce numbers of pathogens to zero thereby eliminating the threat and potential adverse effects;
- For application, the chemicals and pathogens reach the subsurface through direct and designed application;
- For storage, in the event of a spill there might not be sufficient time to respond as the storage facility is within 100 m of the well and the quantity of pathogens could overwhelm the treatment system at the well; and
- The *Nutrient Management Act, 2002* acknowledges that the risk from this activity is high by prohibiting it within 100 m of a municipal drinking water source.

In addition, as there are alternatives available to the property owner to ensure viable crop production via the application of commercial fertilizers, it is felt that this prohibition would be acceptable to property owners. Regional Municipality of Waterloo staff has

undertaken measures to assess whether this activity is occurring and are not aware of its occurrence; however, there may be omissions in the Region's data. There are no enumerated existing significant threats in Intake Protection Zone 1. It is not possible for future threats to occur due to existing land uses and zoning constraints.

The approach to prohibiting new non-agricultural source material application in WHPA-A is consistent with the Region's informal process when providing comments to the regulator on individual sites being considered for Non-agricultural source material application. It is also part of the Region's tiered approach to risk reduction that has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue.

This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas. A tiered approach helps reduce agency implementation costs and is a research-supported approach to reducing impacts to drinking water systems.

<u>The application, handling and storage of Commercial Fertilizer</u>

In general, the Region's approach to risk mitigation is based on the principle of not increasing the risk by adding new threats and a tiered approach to risk reduction with more restrictive measures closer to the well. Accordingly, the risks posed by this threat warrant prohibition of this activity where it could be a future threat in areas closest to the wells within a WHPA- A. A number of factors were considered, and were relied upon by the Source Protection Committee in determining that this threat warranted prohibition and could not be effectively managed to reduce the risk. These included the following:

- Delineation and scoring of the 100 m area around the well recognizes that inherent uncertainty exists in the subsurface soils, which precludes delineation of multiple vulnerability zones;

- In the event of a spill, there might not be sufficient time to respond as the storage facility is within 100 m of the well; and

- Chemicals associated with this threat have already affected the drinking water quality in the well and more restrictive risk-reduction measures are needed to reduce the risk.

Regional Municipality of Waterloo staff is not aware of the storage of fertilizer occurring in the WHPA-A. It is not possible for future threats to occur due to existing land uses and zoning constraints.

The approach to prohibiting future threats is part of the Region's tiered approach to risk reduction that has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas with decreasing levels of restriction in other areas. A tiered approach helps reduce agency

implementation costs and is a research-supported approach to reducing impacts to drinking water systems.

The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within all Wellhead Protection Areas where there is a drinking water issue. Chemical fertilizers do not contain pathogens so their use is less risky than agricultural source materials. The over application of fertilizers is less likely to occur than for agricultural source materials as there is a cost to the property owner for chemical purchase. In recognition of this, less restrictive policies are applied to activities in WHPA-A and B and Intake Protection Zone 1 for existing and future activities. Risk management plans are an effective means to reduce the risk from existing and future activities involving the application, handling and storage of commercial fertilizer. Details related to the content of the Risk Management Plan assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. The minimum content reflects accepted industry standards to reduce the impact of the threat. Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs. Most agricultural properties have utilized a variety of activities over the past and few activities will be considered to be a future threat.

Review of the Wellhead Protection Area extent and vulnerability has identified that management of the risk in areas where vulnerability is greater than or is equal to 6 is necessary for wells which have drinking water issues to reduce the impact of this threat at the drinking water intake. Detailed technical studies at K26 have indicated that soil nitrate testing is needed to ensure nutrient management plans achieve the desired risk reduction goals for nitrogen. However, as there is not a consensus on how best to utilize this information in available nutrient budget software the specific requirement for additional soil nitrate testing in the K26 well field was removed from relevant policies, and risk reduction will be addressed through overall nutrient management practices.

<u>The application, handling and storage of Pesticides</u>

The risks posed by this threat warrant prohibition of this activity where it is a future threat within WHPA-A and Intake Protection Zone 1 so as not to increase the overall risk to the well. There are no enumerated existing significant threats in Intake Protection Zone 1. It is not possible for future threats to occur due to existing land uses and zoning constraints.

Outside of these areas, this policy approach utilizes the Risk Management Official’s responsibilities within WHPA-A, B and E for existing activities and WHPA-B and E for future handling and storage and application and in Intake Protection Zone 1 for existing application, handling and storage and future application. Risk management plans are an effective means to reduce the risk from existing and future activities. Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs. The Region's approach to new threats is based on the principle of not increasing the risk and a tiered approach to risk reduction that includes prohibition of new threats in high vulnerability areas.

The application, handling and storage of Road Salt

The Region's approach to risk reduction related to application of road salt recognizes that winter de-icing activities are required to keep roads, parking lots and sidewalks safe for public use. It also recognizes that there are increased risks closer to the well and with larger scale operations and that approaches to application will need to vary between public roads and parking lots as well as the size of the parking lot.

Based on program implementation experience in the Regional Municipality of Waterloo, application of salt to low density, single family residential properties is not considered a significant source of salt to municipal water supplies as these homeowners are not likely to hire contractors and their primary method for dealing with snow is to shovel their driveways. For those property owners that do, the primary emphasis would be on snow management and not salt application. In review of aerial photographs of the Wellhead Protection Areas for wells with issues, it was determined that larger single family residences could have parking available for up to 6 cars. To provide an additional buffer, an area of less than 200 m^2 (or less than approximately 8 parking spots) was defined for small parking areas.

Medium parking lots are expected at properties used for multiple-residential and moderate-sized retail, commercial, and business facilities. Multiple-residential housing sites (condominium, town houses, apartments, etc.) are likely to contain parking areas for many users and thus require substantially greater parking areas. These facilities would be more likely to use contactors for winter operations and facilities would have boards/owners concerned about liability from inadequate salting related to multiple users. Medium sized parking lots are likely to be located adjacent to smaller sized business, smaller retail and commercial facilities that would likely not see the same volume of traffic as larger facilities. Based on a review of aerial photographs, and for ease of implementation, an area greater than 200 m^2 and less than 2000 m^2 (8 to 80 parking spots) was defined for medium parking areas.

Large parking lots are ones associated with substantive commercial, institutional and industrial facilities. These lots have heavy traffic use and are maintained by contractors that would need numerous trucks/equipment to provide winter salting services. Substantive deicing material would be needed to address the amount of vehicular and pedestrian traffic associated with these facilities. Large parking lots are defined as greater than 2000 m^2 (more than 80 parking spots).

The risks posed by this threat warrant prohibition of application on new roadways due to approval of development applications and new large parking lots within a WHPA- A and medium and large parking lots within Intake Protection Zone 1 as well as handling and storage within the same areas and where a Chloride and/or Sodium issue has been identified so as not to increase the overall risk to the well. A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas.

Outside of these areas, the policy approach utilizes the Risk Management Official's responsibilities to manage the risk from this threat within other areas. The Regional Municipality of Waterloo has identified that it wishes to have greater control of the application of salt on roadways and parking lots. Existing and future application of salt on roadways and on parking lots as well as the handling and storage of salt, pose a significant threat within a variety of Wellhead Protection Areas and where there is a drinking water issue related to Chloride and/or Sodium. Technical studies at several supply wells indicate that improved management practices over these areas are needed to reduce or stabilize salt levels in municipal wells over time. Specifically, where there is a drinking water issue, management of the risk in all areas is necessary to reduce the impact of this threat at the drinking water source.

Risk management plans are an effective means to reduce the risk from existing and future activities involving the handling and storage of the threat, while the effectiveness of risk management plans to reduce the risk from existing and future salt application is less certain as reduction in application rates is seen by many as compromising safety. Details related to the content of the Risk Management Plan assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. The minimum content reflects accepted industry standards to reduce the impact of the threat. Implementing this for future threats is a cost-effective approach to reducing risk. Specifically, as roads are a linear feature that could transect the Wellhead Protection Area, the identification of vulnerable areas, tracking and reporting of application rates, and utilizing techniques to reduce the impact of salt application within the Wellhead Protection Area is necessary to managing the impact of this threat on drinking water supplies.

Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs. Costs to municipalities to implement risk reduction measures for existing activities will be incorporated into existing capital and operation budgets. Spill prevention and response is part of a property owner's due diligence under the *Environmental Protection Act*. The Region's approach to salt application includes approaching large and medium sized properties in a tiered approach to reduce the risk with more regulatory approaches used closest to the wells and for the larger parking lots as they pose greater risk.

The Region's approach to salt storage near wells with drinking water issues includes regulating properties that could store large and medium sized quantities in a tiered approach to reduce the risk with more restrictive approaches used closer to the wells and for the larger storage facilities as they pose greater risk.

Over 3000 properties were identified as having parking lots that were significant threats excluding those used only for residential purposes. For wells with chloride and sodium drinking water issues, these parking lots are distributed throughout the entire 25 year time of travel zone. As different risk management measures and a tiered approach to source protection were used to guide policy development, the number of parking lots that might require Risk Management Plans needed to be balanced with the significance of the threat and the scope of any implementation program. Thus parking lots were

divided into small, medium and large sizes and different situations with different degrees of prohibition and management as identified above for the purpose of implementation.

The storage of Snow

The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A and B and Intake Protection Zone 1. Accordingly, the risks posed by this threat warrant prohibition of snow storage where it is an existing or future threat within a WHPA-A and B and within WHPAs with vulnerability greater than 6 for wells with a Nitrate, Sodium and/or Chloride Issue and in Intake Protection Zone 1. A number of factors were considered and were relied upon by the Source Protection Committee in determining that this threat warranted prohibition of existing facilities and could not be effectively managed to reduce the risk. These included the following:

- Research shows that snow removed from roadways and parking lots can have very high concentrations of sodium and chloride and can have elevated nitrogen concentrations;

- Snow storage is seasonal and temporal and therefore the method of reducing the quantity (i.e., disposal) is through melting which will result in infiltration of salt or nitrogen-laden water; and

- Due to the seasonal and temporal nature of snow storage, most property owners would not consider proper design and construction to limit impacts from infiltration into the subsurface or runoff.

Further, there are additional alternate storage approaches as the policies only prohibit the largest snow storage areas and do not limit the continuing operation of smaller sized storage areas or facilities. Regional Municipality of Waterloo staff are not aware of any existing large snow storage sites in the areas where prohibition of existing facilities applies. Existing land uses and zoning constraints regulate the establishment of a future activity.

Outside of these areas, this policy approach utilizes the Risk Management Official's responsibilities to manage the risk from this threat. Review of the Wellhead Protection Area and vulnerability has identified that management of the risk in areas where a Chloride, Sodium and/or Nitrate Issue has been identified in all contributing areas where the vulnerability is greater than or is equal to 6 is necessary to reduce the impact of this threat at the drinking water intake. Risk management plans are an effective means to reduce the risk from existing and future activities involving the storage of snow. Details related to the content of the Risk Management Plan assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. Implementing this for future threats is a cost-effective approach to reducing risk. The minimum content reflects accepted industry standards to reduce the impact of the threat. Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs.

External technical studies have identified that snow from other locations stored on a site can have elevated sodium and chloride concentrations substantially elevated compared to concentrations from de-icing activities at that property. The Region's approach to snow storage for wells with drinking water issues includes regulating properties that could store large and medium sized quantities in a tiered approach to reduce the risk with more restrictive approaches used closer to the wells and for the larger storage facilities as they pose greater risk.

The Region does not consider snow piled at the side of a road to meet the intent of the Table of Circumstances for snow storage. Further, Region staff do not intend to use snow storage policies for snow piles directly related to the adjacent parking lot. Rather snow storage in these circumstances will be addressed through salt application policies and Risk Management Plans.

The handling and storage of Fuel

The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A and B. Accordingly, the risks posed by the handling and storage of liquid fuel warrants prohibition in a number of circumstances. A number of factors were considered, and were relied upon by the Source Protection Committee in determining that existing circumstances of this threat warranted prohibition and could not be effectively managed to reduce the risk. These included the following:

- Delineation and scoring of the 100 m area around the well recognizes that inherent uncertainty exists in the subsurface soils, which precludes delineation of multiple vulnerability zones;

- In the event of a spill, the product is already below grade and as this would occur within 100 m of the well, it might not provide sufficient response time to prevent it from reaching the well;

- It is more difficult to monitor and detect leaks from below grade tanks compared to above grade tanks; the Ontario Drinking Water Standard for some of the chemicals in fuel are very low indicating that small quantities can have significant effects on drinking water systems; and

- Above grade storage alternatives are available.

Regional Municipality of Waterloo staff has undertaken measures to assess whether this activity is occurring and are not aware of any existing storage of liquid fuel within WHPA-A; however, there may be omissions in the Regional Municipality of Waterloo’s data. A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas. A tiered approach helps reduce agency implementation costs and is a research-supported approach to reducing impacts to drinking water systems.

Outside of these areas, this policy approach utilizes the Risk Management Official's responsibilities to manage the risk from this threat outside of these prohibited areas. Risk management plans are an effective means to reduce the risk from existing and future activities including handling and storage. Details related to the content of the Risk Management Plan assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. The minimum content reflects accepted industry standards to reduce the impact of the threat. Implementing this for future threats is a cost-effective approach to reducing risk. Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs. Spill prevention and response is part of a property owner's due diligence under the *Environmental Protection Act, 1990*. This threat is also heavily regulated by Technical Standards and Safety Authority. In recognition of the above and that below grade tanks will be prohibited in the same area, less restrictive policies are applied in WHPA-A and B.

<u>The handling and storage of Dense Non-Aqueous Phase Liquids (DNAPLs)</u>

The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A, B and C. The risks posed by this threat warrant prohibition of this threat where it is an existing threat in WHPA-A or future threat in WHPA-A and B and where there is a Trichloroethylene Issue so as not to increase the overall risk to the well. A number of factors were considered, and were relied upon by the Source Protection Committee in determining that this threat warranted prohibition and could not be effectively managed to reduce the risk. These included the following:

- Delineation and scoring of the 100 m area around the well recognizes that inherent uncertainty exists in the subsurface soils, which precludes delineation of multiple vulnerability zones;

- In the event of a spill, the chemicals can rapidly enter the subsurface and as this would occurred within 100 m of the well would not provide sufficient response time to mitigate the impact of the spill;

- Once in the ground, Dense Non-Aqueous Phase Liquids are very difficult if not impossible to mitigate; and

- The Ontario Drinking Water Standard for these chemicals is very low indicating that small quantities can have significant effects on drinking water systems.

Regional Municipality of Waterloo staff is not aware of the existing occurrence of this activity where it is to be prohibited.

A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas, including prohibition of most future threats. A tiered approach helps reduce

agency implementation costs and is a research-supported approach to reducing impacts to drinking water systems.

Outside of these areas, this policy approach utilizes the Risk Management Official's responsibilities to manage the risk from this threat outside of the prohibited areas. The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-B, C and D for this threat and where there is a Trichloroethylene Issue. Risk Management Plans are an effective means to reduce the risk. Details related to the content of the Risk Management Plan assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. The minimum content reflects accepted industry standards to reduce the impact of the threat. Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs. Spill prevention and response is part of a property owner's due diligence under the *Environmental Protection Act, 1990*. The physical properties of this threat make it difficult to clean up once in the subsurface that warrants the use of this tool in vulnerable areas further away from the intake.

<u>The handling and storage of Organic Solvents</u>

The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A and B. The risks posed by this threat warrant prohibition of this threat in WHPA-A where it is an existing and future threat, and in WHPA-B where it is a future threat and where the storage and handling is below grade. A number of factors were considered, and were relied upon by the Source Protection Committee in determining that the existing activity warranted prohibition and could not be effectively managed to reduce the risk. These included the following:

- Delineation and scoring of the 100 m area around the well recognizes that inherent uncertainty exists in the subsurface soils, which precludes delineation of multiple vulnerability zones;
- In the event of a spill, the product is already below grade and as this would occur within 100 m of the well, it might not provide sufficient response time to prevent it from reaching the well;
- It is more difficult to monitor and detect leaks from below grade tanks compared to above ground tanks;
- The Ontario Drinking Water Standard for many organic solvents are very low indicating that small quantities can have significant effects on drinking water systems; and
- Above grade storage alternatives are available.

Regional Municipality of Waterloo staff is not aware of the existing occurrence of this activity where it is to be prohibited.

A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas. A tiered approach helps reduce agency implementation costs and is a research-supported approach to reducing impacts to drinking water systems.

Outside of these areas, this policy approach utilizes the Risk Management Official's responsibilities to manage the risk from this threat. The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A and B where the activity is not prohibited. Risk Management Plans are an effective means to reduce the risk in these locations. Details related to the content of the Risk Management Plan assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. The minimum content reflects accepted industry standards to reduce the impact of the threat. Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs. Spill prevention and response is part of a property owner's due diligence under the *Environmental Protection Act, 1990*.

<u>The management of runoff that contains chemicals used in the de-icing of Aircraft</u>

The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A and B and in Intake Protection Zone 1. The risks posed by this threat warrant prohibition of this threat where it is a future threat so as not to increase the overall risk to the well. There are no known existing significant threats in Intake Protection Zone 1 or WHPA-A.

Outside of these areas, this policy approach utilizes the Risk Management Official's responsibilities to manage the risk from this threat. The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A and B where there is not a drinking water issue. For this threat, this approach acknowledges that the existing airport is anticipated to grow, that de-icing activities are likely to remain outside of areas where it can be significant, is governed by federal legislation and that the risks of de-icing can be managed through Risk Management Plans.

<u>The use of land as a livestock grazing and pasturing land and outdoor confinement area or farm animal yard</u>

The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A, and within Intake Protection Zone 1. The risks posed by this threat warrant prohibition of exiting outdoor confinement areas and farm animal yards in WHPA-A and future outdoor confinement areas or farm animal yards in WHPA-A, and future occurrences of this threat in WHPA-

A and B where there is a Nitrate Issue and in Intake Protection Zone 1. A number of factors were considered, and were relied upon by the Source Protection Committee in determining that the existing occurrence of outdoor confinement areas and farm animal yards warranted prohibition and could not be effectively managed to reduce the risk. These included the following:

- Delineation and scoring of the 100 m area around the well recognizes that inherent uncertainty exists in the subsurface soils, which precludes delineation of multiple vulnerability zones;
- Agricultural Source Material includes pathogens whereby one pathogen could result in immediate health impacts;
- Management of this threat cannot reduce numbers of pathogens to zero thereby eliminating the threat and potential adverse effects;
- Animal confinement and yards pose a high risk due to the concentration of animals in a small area that can result in large quantity of agricultural source material deposited in an uncontrolled manner;
- Animal movement in this confined area can remove and or disturb subsurface soil leading to increased vulnerability; and
- Chemicals associated with this threat have already affected the drinking water quality in the well and more restrictive risk-reduction measures are needed to reduce the risk.

Regional Municipality of Waterloo staff has undertaken measures to assess whether this activity is occurring and are not aware of any existing animal confinement or farm animal yards where its occurrence is to be prohibited. Further, there are no existing significant threats in Intake Protection Zone 1 and it is not possible for future threats to occur due to existing land uses and zoning constraints.

A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas, including prohibition of most future threats. A tiered approach helps reduce agency implementation costs and is a research-supported approach to reducing impacts to drinking water systems.

Outside of these areas, this policy approach utilizes the Risk Management Official's responsibilities to manage the risk from these threats within WHPA-A and B and WHPA-B, C and E where there is a Nitrate Issue. Review of the Wellhead Protection Area extent and vulnerability has identified that management of the risk in areas where vulnerability is greater than 6 is necessary to reduce the impact of this threat at the drinking water intake. Use of this tool recognizes that the *Nutrient Management Act, 2002* does not fully address these threats. Details related to the purpose or content of

the tool assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs. Most agricultural properties have utilized a variety of activities over the past and few activities will be considered to be a future threat.

12.3.2 Prescribed Instruments

Waste Disposal Site and Storage Facilities

This policy approach relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to regulate waste handling and storage. The use of established provincial approval systems is supported by the Region's overall policy development principles and is a cost effective risk management tool. In addition, the Region’s approach to risk mitigation is based on the principle of not increasing the risk by adding future threats.

Accordingly, for these threats, existing activities with current Environmental Compliance Approvals (ECA) will continue to be managed, but a review of the ECA will be required to ensure that they are adequately protective of groundwater sources. The details related to the content of the ECA assist the approval authority with understanding the minimum risk reduction measures needed to manage the risk. The minimum content reflects accepted industry standards to reduce the impact of the threat, particularly in Issue Contributing Areas. Future activities requiring an ECA will not be approved through this process due to the nature and variability of this threat.

As part of their review, the Ministry of the Environment, Conservation and Parks recommended that the Region add policies regarding management for the storage of polychlorinated biphenyls (PCB) waste threat sub-category to ensure all waste categories have been addressed within the policy.

Sewage System and Works - Onsite sewage System and Onsite sewage System Holding Tanks

Sewage System and Works - Sewage Treatment Plant Effluent Discharges

Sewage System and Works - Industrial Effluent Discharge

This policy approach relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to regulate large onsite sewage systems, sewage treatment plant effluent discharges, including lagoons and industrial effluent discharges. The use of established provincial approval systems is supported by the Region's overall policy development principles and is a cost effective risk management tool.

A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas, including prohibition of most future threats. A tiered approach helps reduce

agency implementation costs and is a research-supported approach to reducing impacts to drinking water systems.

Accordingly for these threats, existing activities with current Environmental Compliance Approvals (ECA) will continue to be managed, but a review of the ECA will be required to ensure that they are adequately protective of groundwater sources. In accordance with the Region's tiered approach, new activities within close proximity to the well and in an Issue Contributing Areas (ICA) with high vulnerability will not be approved through this process and new activities requiring an ECA in an ICA with low vulnerability will be managed. All future industrial effluent discharge will be managed through the ECA process.

The minimum content for the Environmental Compliance Approval reflects accepted industry standards to reduce the impact of the threat.

Sewage System and Works – Sewage Storage – Treatment or Holding Tanks

This policy approach relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to regulate storage of sewage, sewage treatment plant effluent discharges and industrial effluent discharges. The use of established provincial approval systems is supported by the Region's overall policy development principles and is a cost effective risk management tool. A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures for future threats. A tiered approach helps reduce agency implementation costs and is a research-supported approach to reducing impacts to drinking water systems.

Accordingly for the storage of sewage, existing activities with current Environmental Compliance Approvals (ECA) will continue to be managed, but a review of the ECA will be required to ensure that they are adequately protective of groundwater sources. The tiered approach is utilized for future storage of sewage. In areas where there is no Issue, future below grade storage will not be permitted; whereas in an Issue Contributing Area (ICA) with a high vulnerability no new below or above ground storage will be permitted. However, future storage will be managed in an ICA with low vulnerability. The minimum content for the Environmental Compliance Approval reflects accepted industry standards to reduce the impact of the threat.

Sewage System and Works – Sanitary Sewers and Related Pipes

This policy approach relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to regulate sanitary sewers and related pipes. The use of established provincial approval systems is supported by the Region's overall policy development principles and is a cost effective risk management tool.

Existing and future sanitary sewers and related pipes, excluding new combined sewers, with current Environmental Compliance Approvals (ECA) will continue to be managed, but a review of the ECA will be required to ensure spill management practices are

adequately protective of groundwater sources. New combined sewers will not be permitted through this process that is consistent with current industry practices.

Sewage System and Works – Discharge from a Stormwater Management Facility

This policy approach relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to regulate discharge of stormwater from a stormwater management facility. The use of established provincial approval systems is supported by the Region's overall policy development principles and is a cost effective risk management tool. A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo that utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas, including prohibition of most future threats.

Accordingly, existing stormwater management facilities with current Environmental Compliance Approvals (ECA) will continue to be managed, but a review of the ECA in consultation with the municipality and subject to the findings of municipality's assessment will be required to ensure that they are adequately protective of groundwater sources. Development of a new stormwater management facility close to the supply well increases the overall risk, which the Regional Municipality of Waterloo wishes to avoid; therefore new stormwater management facilities will not be permitted through this process within WHPA-A. Stormwater management facilities are necessary for new development and therefore will be permitted with an approved ECA farther from the well.

The application and storage of Agricultural Source Material

This policy approach relies on the existing responsibility of the Ministry of Agriculture, Food and Rural Affairs to manage storage and application of nutrients on farm properties in accordance with the *Nutrient Management Act, 2002*. This approach is supported by the Region's overall principles used to develop source protection policies. A cost effective risk management tool is to use established provincial approval systems when future activities will require issuing a Prescribed Instrument and to review and amend existing Prescribed Instruments. Details related to the conditions of approval assist the ministry with understanding the minimum risk reduction measures needed to manage the risk. The minimum content reflects accepted industry standards to reduce the impact of the threat. Costs to property owners to implement risk reduction measures for existing activities will be partly offset through incentive programs. Most agricultural properties have utilized a variety of activities over the past and few activities will be considered to be a future threat.

The application and storage of Non- Agricultural Source Material

This policy approach relies on the existing responsibility of the Ministry of Agriculture, Food and Rural Affairs to manage application and storage of nutrients on farm properties and the Ministry of the Environment, Conservation and Parks regarding other lands. This approach is supported by the Region's overall principles used to develop

source protection policies. A cost effective risk management tool is to use established provincial approval systems when activities will require issuing a Prescribed Instrument and to review and amend existing Prescribed Instruments. The policy approaches address Environmental Compliance Approvals that were issued by the Ministry of the Environment, Conservation and Parks prior to January 2011 and that would not otherwise be administered by the Ministry of Agriculture, Food and Rural Affairs until after 2016. It also directs the Ministry of the Environment, Conservation and Parks to revise Environmental Compliance Approvals where application is on non-farm land. There are no existing significant threats in Intake Protection Zone 1 and it is not possible for future threats to occur due to existing land uses and zoning constraints.

The handling and storage of Fuel

The policy approach relies on the existing responsibility of the Ministry of Northern Development, Mines, Natural Resources and Forestry and the use of Prescribed Instruments within the *Aggregated Resources Act, 1990* to address this threat within an aggregate operation. A cost effective risk management tool is to use established provincial approval systems when activities will require issuing a Prescribed Instrument and to review and amend existing and future Prescribed Instruments.

The taking of water from an aquifer without returning the water to the same aquifer

The policy approach relies on the existing responsibilities of the Ministry of Environment Conservation and Parks and the Ministry of Northern Development, Mines, Natural Resources and Forestry and the use of Prescribed Instruments within the *Ontario Water Resources Act* in general to address this threat and within the *Aggregate Resources Act, 1990* where below the water table extraction occurs. A cost effective risk management tool is to use established provincial approval systems when activities will require issuing a Prescribed Instrument and to review and amend existing and/or future Prescribed Instruments.

Conditions

This policy approach relies on the existing responsibility of the Ministry of the Environment, Conservation and Parks to regulate waste handling and storage. The use of established provincial approval systems is supported by the Region's overall policy development principles and is a cost effective risk management tool. The risks posed by this threat warrant a review of all existing and new relevant Prescribed Instruments that govern the Condition site to ensure that they are being managed and remediated in a way that reduces their impact on drinking water sources. This review recognizes that some Prescribed Instruments focus only on the treatment discharges or mobile treatment systems and reducing the risk through these instruments may not be feasible. Through the review process, the Region and the Ministry of the Environment, Conservation and Parks have refined the wording for this policy to ensure that updates on the actions taken by the instrument holder are reported to the Region on an annual basis and that any new or revised Prescribed Instrument is provided to the Region. These policies will assist in the Region in obtaining additional information on these sites.

12.3.3 Land Use Planning

Sewage System or Works - Onsite sewage Systems

This policy utilizes existing *Planning Act, 1990* authorities to prohibit or manage the future risk from this threat as part of the development approval process. The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats. A tiered approach is used which prohibits the activity close to the well and more permissive policies for high vulnerability areas at greater distances. The risks posed by this threat warrant prohibition of future occurrences of this threat in WHPA-A and in WHPA-B where the wells are either groundwater under the influence of surface water (GUDI) or where there is a drinking water issue for nitrogen so as not to increase the overall risk to the well or intake.

Technically, onsite sewage systems are designed to discharge pathogens and nutrients to the subsurface and are typically constructed in the shallow subsoil. In addition, since drinking water in Regional Municipality of Waterloo typically includes water softening, process wastewater will be discharged to onsite sewage systems. Further, GUDI wells obtain some portion of their water supply from shallow aquifers where onsite sewage systems may be constructed. Finally, in well K23, nitrogen mass loading calculations indicate that onsite sewage systems could contribute the majority of the loading to the supply well. In these situations, prohibiting the creation of new lots that rely on onsite sewage systems where there is already a drinking water Issue represents good land use planning.

In areas further from the well, management of the risk in other vulnerable areas is necessary to reduce the impact of this threat at the drinking water intake. Accordingly a study to assess the impact is required to manage the risk. The scope of this study is similar to what Regional Municipality of Waterloo already requests as part of development applications that include this threat. Implementation guidelines referred to in the policies may not currently exist. Where they do not exist, they will be developed and undergo further public consultation.

Sewage System or Works – Discharge from a Stormwater Management Facility

The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A and in Intake Protection Zone 1. The risks posed by this use warrant prohibition of this threat where it would be a future threat so as not to increase the overall risk to the well. Prohibition of this use adjacent to supply wells is good land use planning.

Within WHPA-B and E, Intake Protection Zone 3, and in all protection areas where there is a Chloride, and/or Nitrate Issue, the risks posed by this activity necessitate further study be undertaken as part of the *Planning Act* application process, so as not to increase the overall risk to the well and/or reduce the impact of this threat at the drinking water intake. Stormwater management facility can be designed to directly infiltrate surface water runoff that may contain a variety of chemicals from the related

catchments. Design of these facilities is integral with new development planning approval. Requiring an assessment of the impact to and recommendations for design measures in system construction to minimize the impact to drinking water systems, to the satisfaction of the Region, represents good land use planning. Implementation guidelines referred to in the policies may not currently exist. Where they do not exist, they will be developed and undergo public consultation consistent with the *Planning Act, 1990.*

Additional consideration on the potential impact to the drinking water source is required where wells are constructed in bedrock aquifers as the occurrence of surface water within 500 m could change the classification of the water supply system under the *Safe Drinking Water Act, 2002* and/or could affect the degree of treatment required for the intake.

Road Salt

This policy utilizes existing *Planning Act, 1990* authorities to manage the future risk from this activity as part of the development approval process. Development applications proposing new roads within less vulnerable areas are to be supported by a study assessing salt impact to the satisfaction of the Regional Municipality of Waterloo in WHPA-B and where there is a Chloride and/or Sodium issue in WHPA-B, C, D, E. Implementation guidelines referred to in the policies may not currently exist. Where they do not currently exist, they will be developed and undergo further public consultation.

Handling and Storage of Fuel

This policy utilizes existing *Planning Act, 1990* authority to manage the future risk from this activity as part of the development approval process. The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A and B. The risks posed by this activity warrant prohibition of future land uses associated with this threat so as not to increase the overall risk to the well. As this land use is explicitly linked to the activity and there is greater risk of impact to the well arising from spills due to the large quantities of materials stored, prohibition in highly vulnerable areas close to the well is good land use planning. The Regional Official Plan already prohibits these uses in Wellhead Protection Areas.

The taking of water from an aquifer without returning the water to the same aquifer

This policy utilizes existing Planning Act authority to manage the future risk from this activity as part of the development approval process. The policy requires appropriate studies to be conducted to ensure the sustainability of the well systems in Wellington County is not affected by the development and ensure complete application process require the studies to be completed.

Conditions

This policy utilizes existing *Planning Act, 1990* authorities to ensure the use of an environmental screening process as a component of a complete application to decrease the opportunity for contamination to leave the site and ultimately to remove the property from the list of significant condition sites.

12.3.4 Education and Outreach

Waste Disposal Site

Sewage System or Works - Onsite sewage System and Onsite sewage System Holding Tanks

The application, handling and storage of Agricultural Source Material

The application, handling and storage of Commercial Fertilizer

The application, handling and storage of Road Salt

The storage of Snow

The handling and storage of Dense Non-Aqueous Phase Liquids (DNAPLs)

The use of land as a livestock grazing and pasturing land and outdoor confinement area or farm animal yard

These policies utilize education and awareness to encourage the use of best management practices and to assist in raising awareness regarding the importance of source water protection. A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas. In areas further from the wells, incentives and/or education programs are utilized. Review of the Wellhead Protection Area extent and vulnerability in conjunction with the tiered approach has identified that education and awareness is a cost effective approach at greater distance from the well. They will be applied in Wellhead Protection Areas where the vulnerability is less than 6 for well fields where there is a drinking water issue, and where appropriate, in Intake Protection Zone 3 to assist in reducing the risk to the City of Brantford's surface water intake. Education and awareness programs assist in reducing the risk from existing threats and will be paired with incentive programs to achieve risk reduction. Details related to the purpose or content of the tool assist the implementing authority with understanding the minimum program content needed to manage the risk. Education assists property owners with understanding the importance of implementing beneficial practices to protect drinking water.

Based on further comments from the Ministry of the Environment, Conservation and Parks, additional policy direction in RW-CW-5 has been added regarding the following waste threat sub-categories, provided an ECA is not required:

- storage of wastes described in clauses (p), (q), (r), (s), (t), or (u) of the definition of hazardous waste, or in clause (d) of the definition of liquid industrial waste; or

- storage of hazardous or liquid industrial waste,

This policy was introduced based on further detail regarding the nature of these threats that was provided by the Ministry of the Environment, Conservation and Parks. Given that there are a considerable number of industrial, commercial and institutionally zoned properties located within the Region, it was determined that prohibition of such waste threats where an ECA is not required may have the unintentional consequence of constraining or prohibiting many planned land uses that only generate fairly small quantities of such wastes. The Ministry of the Environment, Conservation and Parks appropriately regulates these waste activities.

Waste Disposal Site – Application of Hauled Sewage to Land

These policies utilize education and awareness to encourage water quality improvements. A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas. In areas further from the wells, incentives and/or education programs are utilized. Review of the Wellhead Protection Area extent and vulnerability in conjunction with the tiered approach has identified that education and awareness are a cost effective approach at greater distances from the well. They will be applied in Wellhead Protection Areas where the vulnerability is less than 6 for well fields where there is a drinking water issue. Education and awareness programs reduce the risk from existing threats and will be paired with incentive programs to achieve risk reduction. Details related to the purpose or content of the tool assist the implementing authority with understanding the minimum program content needed to manage the risk. Education assists property owners with understanding the importance of implementing beneficial practices to protect drinking water. In the opinion of the source protection committee these policies, if implemented, will promote the achievement of the objectives of the plan in accordance with paragraph 2 of subsection 22(2) of the *Act* and a policy to regulate or prohibit the activity is not necessary to achieve those objectives.

The application, handling and storage of Road Salt

This policy utilizes education and awareness to encourage best management practices that form the core of the Smart About Salt program to reduce the impact of winter de-icing activities. Education and awareness programs reduce the risk from existing threats and will provide important social marketing support to incent behaviour change and are an effective approach at greater distances from the well. Details related to the purpose or content of the tool assist the implementing authority with understanding the minimum program content needed to manage the risk.

The approach for these policies is part of a tiered approach to risk reduction that has been developed by the Regional Municipality of Waterloo for well fields with a drinking

water issue to reduce the risk from winter de-icing activities. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas as well as focuses mitigation on activities for de-icing roads, large parking lots and medium sized parking lots which receive considerably greater salting levels compared to small parking lots. A tiered approach helps reduce agency implementation costs and is a research-supported approach to reducing impacts to drinking water systems. In most cases, education will be utilized with other tools to achieve risk reduction. Education assists property owners with understanding the importance of implementing beneficial practices to protect drinking water and providing additional education to property owners will reduce the risk to source water.

This tool has been identified as the primary risk-reduction measure for small salt storage facilities in vulnerable areas greater than and equal to 6 and for small parking lots in all vulnerable areas. The risk posed by these smaller structures and application on these smaller lots is less than for larger facilities or lots. In the opinion of the source protection committee these policies, if implemented, will promote the achievement of the objectives of the plan in accordance with paragraph 2 of subsection 22(2) of the *Act* and a policy to regulate or prohibit the activity is not necessary to achieve those objectives.

The handling and storage of Fuel

This policy utilizes education and awareness to encourage best management practices. Education and awareness programs reduce the risk from existing threats. There is considerable existing legislation covering this activity. Existing legislation requires an inspection of small fuel oil tank systems every 10 years by certified contractors and has additional provisions requiring fuel supply companies to monitor tank conditions. Providing additional education to home and property owners of their obligations will assist in ensuring these systems are adequately maintained to reduce the risk to source water.

For small fuel oil tanks typical of a home oil heating system, the preferred tool is incentive programs and education and outreach to ensure the appropriate maintenance of the tank and response in case of a spill. In the opinion of the source protection committee this policy, if implemented, will promote the achievement of the objectives of the plan in accordance with paragraph 2 of subsection 22(2) of the *Act* and a policy to regulate or prohibit the activity is not necessary to achieve those objectives.

The Use of Land as a Livestock Grazing and Pasturing of Land

These policies utilize education and awareness to encourage best management practices. A tiered approach to risk reduction has been developed by the Regional Municipality of Waterloo for well fields with a drinking water issue. This approach utilizes more restrictive risk management measures close to the well and in the higher vulnerable areas. In areas further from the wells, incentives and/or education programs are utilized. Review of the Wellhead Protection Area extent and vulnerability in conjunction with the tiered approach has identified that education and awareness are a cost effective approach at greater distance from the well.

For livestock grazing and pasturing of land within a WHPA-B with a vulnerability equal to 10, education and outreach was determined to be an adequate to address the risks associated with this activity. In the opinion of the source protection committee this policy, if implemented, will promote the achievement of the objectives of the plan in accordance with paragraph 2 of subsection 22(2) of the *Act* and a policy to regulate or prohibit the activity is not necessary to achieve those objectives.

The taking of water from an aquifer without returning the water to the same aquifer and reducing recharge of an aquifer

This policy utilize education and awareness to encourage best management practices, water conservation and demand management to reduce the impact on groundwater recharge to private water users within Waterloo Region. As the Elora and Fergus wells provide water supply to residents in Wellington County, the policies direct the Region of Waterloo to support initiatives developed for these systems in Wellington County.

12.3.5 Incentive Programs

Sewage System or Works -Onsite sewage System and Onsite sewage System Holding Tanks

The application handling and storage of Agricultural Source Material

The application, handling and storage of Commercial Fertilizer

The application, handling and storage of Road Salt

The application, handling and storage of Pesticides

The handling and storage of Fuel

The handling and storage of Dense Non-Aqueous Phase Liquids (DNAPLs)

The use of Land as a Livestock Grazing and Pasturing Land and Outdoor Confinement Area or Farm Animal Yard

This policy utilizes incentives to encourage the implementation of best management practices. Incentives assist property owners with the cost of implementing beneficial practices to protect drinking water and *Clean Water Act* policies related to existing threats. Incentives will be utilized with other tools to achieve risk reduction.

12.3.6 Specify Action

Specified Action is used where no other Prescribed Instrument, legislation, or *Clean Water Act* tool are available to municipalities to manage the threat, where the action will compliment other threat policies, and/or where the policy is a Strategic Action.

Sewage System or Works – Onsite sewage System or Holding Tank

Onsite sewage systems are designed to discharge nutrients and pathogens to the subsurface. A properly functioning onsite sewage system will reduce the likelihood that the drinking water treatment and disinfection systems will become overloaded. The Regional Municipality of Waterloo has identified the implementation of the mandatory maintenance inspection program as the primary tool to address this threat. This program supports the management of this threat by providing a consistent approach for determining if small onsite sewage systems are functioning as designed and to ensure compliance with the Ontario Building Code.

Sewage System or Works – Sanitary Sewers and Related Pipes

The Regional Municipality of Waterloo has identified the need for enhanced construction standards for sanitary sewers and related pipes including pumping stations within the WHPA A, and as such the Regional Municipality of Waterloo and Area Municipalities are requested to update their Design Guidelines and Supplemental Specifications for Municipal Services document.

Sanitary sewers and related pipes including pumping stations can leak wastewater into the subsurface and on occasion spills occur at pump stations. As wastewater is a source of nitrogen and to be consistent with clauses in Prescribed Instrument policies, in all Issue Contributing Areas where the vulnerability is less than 6 where there is a Nitrate Issue. The Regional Municipality of Waterloo has identified the need for contingency plans to be prepared by the Area Municipalities to respond to spills in a consistent and timely manner in these areas.

Sewage System or Sewage Works- Discharge from a Stormwater Management Facility

The Regional Municipality of Waterloo has identified the need for enhanced inspection and testing standards for stormwater management facilities within the WHPA A and B, and as such the Regional Municipality of Waterloo and Area Municipalities are requested to update their Design Guidelines and Supplemental Specifications for Municipal Services document.

To assist in the review and amending of Environmental Compliance Approvals by the Ministry of the Environment, Conservation and Parks required by other policies within the Plan, the Area Municipalities are directed to prioritize and undertake an assessment of the stormwater management facilities to determine the scope and type of measure to protect drinking water sources. This policy provides the benefit of the experience of the Area Municipalities in managing these facilities to have current information on hand to assist in the Ministry of the Environment, Conservation and Parks review process.

The application, handling and storage of Road Salt

The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats. These policies take advantage of the Environmental Assessment process to include additional design considerations to reduce the impact of additional salt loading from modified roads on source water. The design alternatives include the use of impermeable shoulders to direct snow melt back

onto the road, use of living snow fences to reduce drifting and adequate ditch sizing in the design. Including these requirements in the assessment stage of building new roads is a cost effective approach to reducing the impact from new threats. These policies also request an update to the salt management plans for the Ministry of Transportation to incorporate best management practices as well as Smart about Salt accreditation for municipal facilities and large and medium sized parking lots.

The storage of Snow

This policy requests development of a provincial approval process for this threat that would follow existing provincial guidance (B-4 Guideline) to implement best management practices to minimize the impact of surface and sub-surface drainage for any new storage of snow.

The Establishment and Operation of a Liquid Hydrocarbon Pipeline

The liquid hydrocarbon pipeline industry is heavily regulated by both federal and provincial agencies. The policies rely on this existing regulatory framework and focus on integrating source protection into the existing federal and provincial decision-making framework. Some of these implementing bodies may already consider source protection in the assessment and regulation of pipelines and the Source Protection Plan policy acts as a formal confirmation of their efforts. Similarly, pipeline owners have a responsibility to ensure that they are using the latest and best available information (e.g. vulnerable areas) in the development, operation and maintenance of liquid hydrocarbon pipelines, including creating and updating their emergency planning zones (EPZs). Some pipeline owners may already consider source protection and the Source Protection Plan policy acts as a formal confirmation of their efforts.

The location and siting of liquid hydrocarbon pipelines is not controlled by local municipalities; therefore, directing a recommendation towards the appropriate approval authority is the most effective approach. The primary concern for liquid hydrocarbon pipelines is a potential spill. Encouraging the Canada Energy Regulator and the Ontario Energy Board to advise the Source Protection Authority and the municipality of any proposed pipeline will help the municipality identify potential impacts to municipal drinking water supplies early in the process. Directing the policy at the Canada Energy Regulator and the Ontario Energy Board also encourages these regulators to formally integrate source protection into their processes to ensure the policy is implemented.

Furthermore, the operation and maintenance of liquid hydrocarbon pipelines is not controlled by local municipalities and they are not the owners of the pipeline. In the event of a spill, for example, significant costs may be incurred by municipalities and should be reimbursed by the pipeline owners; as they are responsible for operations and maintenance. Owners of pipelines that are federally regulated by the Canada Energy Regulator are required to bear all costs associated with the consequences of a spill; however, the Ontario Energy Board has no such requirements for provincially regulated pipelines.

The taking of water from an aquifer without returning the water to the same aquifer

The Waterloo Region chapter of SPP include three specify action policies. One directs municipalities, conservation authorities and the Ministry of Environment Conservation and parks to work together to support local water resource management. A second one directs the municipalities and conservations authorities to ensure the sustainability of the Elora and Fergus water supply well systems is included in the terms of reference for any watershed studies that overlap with the water quantity protection area. The third directs the Ministry of Environment Conservation and Parks and the Ministry of Northern Development, Mines, Natural Resources and Forestry to add a new risk factor of Sites with Permits To Take Water and/or Aggregate Resources Act Licenses within a water quantity protection area to the Guelph District risk-based compliance process. The first two policies ensure appropriate monitoring, assessment and management of local water resources occurs while the third policy appropriate provincial agencies provide appropriate on-going oversight all to ensure the sustainability of the Elora and Fergus water supply systems.

Conditions

The existing regulatory framework for conditions provides the Ministry of the Environment, Conservation and Parks with authority to address significant Conditions. Policies have been included to set out the requirement for specific information sharing processes, including the scope of information to be shared and meeting timelines. By incorporating specific language into the source protection plan, a framework for building upon current practices has been established, a primary objective of the Region. These efforts will be augmented by the prioritization of any abatement activities by the Ministry in areas with the greatest potential risk to drinking water sources.

12.3.7 Strategic Action

Spill Prevention Plans, Spill Contingency Plans and Emergency Response Plans along highways, railway lines or shipping lanes

The Regional Municipality of Waterloo and Area Municipalities are requested to update their spill contingency plans or emergency response plans for the purpose of protecting existing drinking water sources along highways and/or railway lines are updated and that the most current information is available to the Spills Action Centre in the case of a spill.

Transport Pathways

Constructed pathways may facilitate the movement of contaminants vertically and laterally below the ground and result in faster or more widespread distribution. A number of policies are included to manage the increased risks to drinking water sources from threats located near transport pathways and to increase communication regarding the creation of new transport pathways.

These policies also utilize existing *Planning Act* authorities to manage, as part of the development approval process, the future risk resulting from the creation of transport pathways. The Regional Municipality of Waterloo has identified that it wishes to have greater control of activities that pose significant threats within WHPA-A and B with a vulnerability of ten(10) where there is not a drinking water Issue. Land-use planning documents should require an assessment of the degree to which transport pathways may be established and identify mitigation measures to protect drinking water sources.

Area Municipalities are requested to circulate site plan applications to the Regional Municipality of Waterloo within vulnerable areas that could result in the development of a transport pathway to provide an opportunity to assess the impact and comment on potential mitigation measures.

13.0 POLICY DEVELOPMENT FOR THE COUNTY OF PERTH-TOWNSHIP OF PERTH EAST

13.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Area and County of Perth have been actively involved with the development of the Grand River Source Protection Plan policies. The County of Perth has been present at various meetings hosted by the Lake Erie Source Protection Region in order to develop locally implementable policies. These policies have been reviewed by municipal staff and council.

13.2 Financial Considerations

There are direct financial costs to the County of Perth and the Township of Perth East to fund, train and administer a Risk Management Official and Inspector(s). This position requires on-going administrative and support staff resources to ensure the on-going negotiation, enforcement and monitoring of Part IV Risk Management Plans.

Further discussions are also required with neighbouring municipalities or Source Protection Regions (e.g. County of Oxford) where wellhead protection areas from the neighbouring jurisdictions extend into the County (or vice versa). This raises some questions for Perth County in terms of responsibility and cost recovery for the implementation of measures to protect the municipal drinking water supplies from other jurisdictions. The *Clean Water Act*, 2006 does make provision for imposing fees associated with the Risk Management Official/Inspector in order to assist in recovering costs. However, this may ultimately have a direct impact on landowners, farmers, businesses, etc. Staff resources are also required to implement education and outreach programs associated with the handling and storage of fuel (residential fuel oil) and DNAPLs.

There is also be a direct cost to the County and the Township of Perth East to amend Official Plans and Zoning By-laws to implement the Source Protection Plan policies. In addition, annual reporting requirements to the Source Protection Authority require staff resources and may have cost implications to the County to prepare and administer.

13.3 Policy Intent and Rationale

Review of current and projected land uses indicates that there is a high level of protection of the municipal raw water from the prescribed drinking water threats. Therefore, the policies developed reflect this current assessment as presented in the approved Assessment Report available online at www.sourcewater.ca .

Based on the percentage of impervious surface area presented in the approved Assessment report, policies were not required to address significant drinking water threat activities from the application of road salt.

In the County of Perth – Township of Perth East there are currently no existing, enumerated occurrences of management of runoff that contains chemicals used in the de-icing of aircraft. As such, policies to address the existing occurrence of this activity have not been included in the County of Perth section of the Grand River Source Protection Plan.

13.3.1 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit activities under Section 57 of the *Clean Water Act, 2006* in vulnerable areas where the activities would be a significant drinking water threat if they were established.

Rationale:

The Milverton wellhead protection area (WHPA) has few existing significant threats as enumerated in the approved Assessment Report; however, future threats are possible within the WHPA-A where the vulnerability score is 10. The surrounding lands are primarily commercial and industrial uses. Prohibited activities within WHPA-A include:

- Existing and new operation and maintenance of a waste disposal site;
- Existing and new application and storage of agriculture source material;
- Existing and new handling and storage of non-agriculture source material;
- Existing and new application, handling and storage of commercial fertilizer;
- Existing and new application of pesticide;
- New handling and storage of pesticide;
- Existing and new handling and storage of road salt;
- New storage of snow;
- New handling and storage of fuel greater than 2,500 litres;
- New handling and storage of dense non-aqueous phase liquids;
- New handling and storage of organic solvents;
- The existing and future use of land as livestock grazing or pasturing land, outdoor confinement area, or a farm animal yard.

None of the above listed activities are currently established in the WHPA-A, and, based on the current land-use, are not expected to be established at this location. Therefore, the Township of Perth East and the County of Perth believe that Part IV Prohibition is the best approach to ensure that these future threats to drinking water are never established within the WHPA-A.

The WHPA-A is contained wholly within the Milverton settlement area. The current Official Plan policies and Zoning do not allow any type of agricultural operation in the future.

The risks presented by these types of facilities and activities warrant prohibition of future occurrences within WHPA-A. It is anticipated that there will be minimal impact on future development.

Section 58 Risk Management Plans

Intent:
Require the development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act, 2006* for current or future activities. Part IV Risk Management Plans are used where the threat cannot be effectively managed through other approaches.

Rationale:

The use of Part IV Risk Management Plans to manage certain uses and activities is appropriate in instances which address existing activities and uses. Part IV Risk Management Plans are also the most effective option to manage certain threats that are more activity based and cannot be adequately managed through other means such as land use planning. An example of such activity is the storage and handling of organic solvents. The use of the Risk Management Official will result in costs to the municipality, but it was felt that this would be the most effective option to manage these threats.

The threats that require a Part IV Risk Management Plan within the WHPA-A include:

- Existing handling and storage of pesticide;
- Existing storage of snow;
- Existing handling and storage of fuel, greater than 2,500 litres;
- Existing handling and storage of dense non-aqueous phase liquids; and
- Existing handling and storage of an organic solvent;
- The future management of runoff that contains chemicals used in de-icing of aircraft.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006 (WHPA-A, B and C),* as Restricted Land Uses under Section

59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act,1990, Condominium Act, 1998* and Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be a significant drinking water threat to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

The policies also enable the Risk Management Official to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act, 1990* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official.

13.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

Require the Ministry of the Environment, Conservation and Parks (MECPMECP) to prohibit activities relating to sewage systems and waste disposal sites where they would be significant drinking water threats in the Milverton WHPA under Subsection 39 of the *Clean Water Act, 2006* using the Environment Compliance Approvals process.

Rationale:

New waste disposal sites within the meaning of Part IV of the *Environmental Protection Act, 1990*

Sewage System or Works - New Sewage Treatment Plants

Sewage System or Works - New Sewage Treatment Plant Effluent Discharges

Sewage System or Works - New Discharge from a Stormwater Management Facility

Although the Environmental Compliance Approval process is considered to be rigorous, denial of an application is preferred, from a policy perspective, to eliminate the option of allowing these activities to be located within vulnerable areas where significant drinking

water threats would occur in the future. The risks presented by these types of activities warrants prohibition of future occurrences.

Additionally it was felt that since there are no existing threats in the County that it would be appropriate to prohibit these activities in the future.

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Intent:

To reduce the risk to drinking water from existing or new sanitary sewers and pipes within a WHPA-A. Environmental Compliance Approvals should not be granted unless terms and conditions are imposed that, when implemented, will ensure that the activity does not become a significant drinking water threat.

Rationale:

This policy relies on the existing responsibility of the MECP to protect drinking water sources. It is a priority of the County and Township of Perth East to use existing regulatory tools when available and appropriate to address drinking water threats.

Requiring the MECP to review Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added to Environmental Compliance Approvals, where necessary. This policy approach is only applied to existing and future sanitary sewers and related pipes. This approach is deemed to be more reasonable than prohibition as such an approach could potentially have a negative impact on economic development opportunities and frustrate future development in this part of the community.

Ministry of Agriculture, Food and Rural Affairs: Prohibit Non-Agricultural Source Material Plans

Intent:

To prevent the application of non-agricultural source material on lands within WHPA-A.

Rationale:

The risks presented by the application and storage of NASM in WHPA-A, which is directly adjacent to the well, warrants prohibition of future occurrences. The *Nutrient Management Act, 2002* prohibits the application of non-agricultural source material within 100 meters of a well where Nutrient Management Plans and Strategies are in place. The proposed policy approach is consistent with the established policy direction of the *Nutrient Management Act, 2002*.

The WHPA-A area within the Village of Milverton is unlikely to have any locations where non-agricultural source materials would be applied, therefore, there should be no impact from this policy.

13.3.3 Land Use Planning

Land Use Planning Prohibition

Intent:

To identify the wellhead protection areas within the Official Plan and Zoning Bylaw for the County and Township of Perth East to prevent and manage the establishment of uses that would pose a threat to drinking water.

Rationale:

The purpose of the general policies in PC-MC-1.4 is to provide direction as to what needs to be amended/included in the Official Plan and Zoning Bylaw to implement the Source Protection Plan. These policies will also identify specific uses that are prohibited or managed through land use planning documents.

13.3.4 Education and Outreach

Education and Outreach Programs: Municipality and Conservation Authority delivered

Intent:

Require the County of Perth and the Township of Perth East to develop, continue or enhance education and outreach programs that target persons engaging in significant drinking water threats.

Rationale:

Education and outreach can be an effective tool to influence behaviours and practices for individuals and businesses, so the County of Perth and Township of Perth East support the use of this tool, where possible. Policy PC-CW-1.5 is intended to be a generic policy in terms of introducing and promoting education and outreach at the County level. Specific education and outreach policies have been developed for certain significant drinking water threats (e.g. DNAPLs).

The County is concerned that there are various issues relating to the use of DNAPLs in all land uses and activities. Many DNAPLs are readily available and are found within commonly used products. Therefore, the use of an education and outreach program which promotes the use of alternative products is considered appropriate to compliment the other tools proposed to manage this significant drinking water threat.

The handling and storage of DNAPLs may be a necessary part of a business process, but if the users of these products are more aware of the risks associated with these products and the need to consider alternatives, this awareness could improve the protection of the drinking water source.

There are a limited number of properties within the WHPA-B and C, therefore, the cost of implementation through direct land owner and business contact would likely be small for the Milverton area.

13.3.5 Incentive Programs

Intent:

To encourage funding of programs, which encourage the protection of existing and future drinking water sources from significant drinking water threats.

Rationale:

As a supplemental policy, the County supports incentive programs to assist property owners with the cost of implementing beneficial practices to protect drinking water sources. Where possible, incentives will be utilized with other tools to achieve risk reduction. The province has assisted (directly/in-directly) in the funding of programs such as the Ontario Drinking Water Stewardship Program. Continued provincial funding is encouraged to ensure the protection of drinking water sources.

13.3.6 Specify Action

Support On-Site Re-inspection Program under Ontario Building Code

Intent:

Rely on the existing onsite sewage system inspection program recently implemented through the Ontario Building Code to ensure existing and future onsite sewage systems do not become a significant drinking water threat to municipal drinking water supplies.

Rationale:

The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage

Part IV tools cannot be used to prohibit sewage threats. Therefore, it was concluded the best approach to manage onsite sewage systems of this size would be to manage them through the required maintenance inspection program under the Ontario Building Code. The onsite sewage system maintenance inspection program supports the implementation of the *Clean Water Act* by providing a consistent approach for determining if onsite sewage systems are functioning as designed. The intent is to bring all systems in compliance with the Ontario Building Code. Milverton is on municipal sanitary services and therefore, this policy approach is not expected to be implemented.

Encourage Appropriate Siting, Design and Maintenance Standards for the Establishment and Operation of aa Liquid Hydrocarbon Pipeline

Intent:

The location and siting of liquid hydrocarbon pipelines is not controlled by the local municipalities, therefore, managing this activity through direction and recommendations to the appropriate approval authorities is the most effective approach for this local threat.

Rationale:

The primary concern regarding this threat relates to a potential spill from a pipeline. Encouraging the National Energy Board and the Ontario Energy Board to advise the Source Protection Authority and the County of any proposed pipeline will assist the County in identifying early in the process whether a proposed pipeline will affect the County's municipal drinking water supply. There are no threats identified within the County in the Assessment Report.

13.3.7 Strategic Action

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

Intent:

To ensure that emergency plans, contingency plans and spill containment plans are updated with respect to spills that occur within wellhead protection areas along highways or railways.

Rationale:

Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore spill prevention and contingency/response plans should be updated to include maps that clearly detail the vulnerable areas. Quick and effective response to spills may prevent an emergency from affecting a municipal drinking water source. Additionally, updates to the current spill prevention and contingency/response plans can act as a communication tool for the municipalities and the public to ensure residents are aware of the location of wellhead protection areas and knowledgeable regarding the appropriate response in the event of a spill in these areas.

Decommissioning of Abandoned Wells that serve as Transport Pathways

Intent:

To encourage the establishment of a program to assist with the decommissioning of abandoned wells that may endanger municipal water supplies.

Rationale:

Often these wells are located on private property and the proper decommissioning or upgrading of the structure is cost prohibitive. A specific transport pathway policy to support ongoing stewardship programs to decommission abandoned wells will help reduce the ability of contaminates to enter the groundwater within vulnerable areas. This may further reduce the vulnerability of an area and the number of identified threats.

14.0 POLICY DEVELOPMENT FOR THE COUNTY OF OXFORD

14.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Area and the County of Oxford have been actively involved in the development of the Grand River Source Protection Plan policies.

The County of Oxford has been present at various meetings hosted by the Lake Erie Source Protection Region over the last two years to develop locally implementable policies. These policies have been reviewed by municipal staff and council.

14.2 Financial Considerations

The County's involvement in the development of Source Protection Plan policies has had financial implications for the County in terms of the considerable commitment of policy, technical and support staff to the projects. In the development of the Source Protection Plan policies and, in particular, the selection of the most appropriate policy tools, the potential financial impacts on the County and other implementing bodies, businesses and landowners were key considerations. Although the policy approaches proposed were selected, first and foremost, for being the most effective and appropriate for addressing the various significant drinking water threats, every attempt was also made to minimize the potential financial impacts of implementation on the various stakeholders.

There are direct financial costs to the County and/or local municipalities to fund, train and administer a Risk Management Official and Inspector(s). This position requires on-going administrative and support staff resources to ensure the on-going negotiation, enforcement and monitoring of Risk Management Plans.

The *Clean Water Act, 2006* does make provision for imposing fees associated with the Risk Management Officer/Inspector to assist in recovering costs. However, the imposition of such fees will need to be carefully considered, as they may have a financial impact on landowners and business operators.

Further discussions with neighbouring municipalities (e.g. Norfolk County) or Source Protection Regions where wellhead protection areas from the County extend into their jurisdictions (or vice versa) will also likely be undertaken to review various implementation options and considerations.

The County of Oxford also incurs additional labour and administrative costs to implement the Ontario Building Code requirements for the mandatory onsite sewage inspections. Inspections within the most vulnerable wellhead areas are given priority.

Municipal staff resources (primarily County, with some potential local) are required to implement education and outreach programs associated with the handling and storage of DNAPLs in household quantities and application of commercial fertilizer in association with residential uses.

There is a cost to the County and local municipalities to amend Official Plans and Zoning By-laws to implement the Source Protection Plan policies, in terms of staff resources and *Planning Act* process requirements e.g. public notice requirements. In addition, annual reporting requirements to the Source Protection Authorityl require staff resources and may have cost implications to the County and/or local municipalities to prepare and administer.

14.3 County of Oxford Policy Rationale

With a few exceptions, the general policy approach for the County of Oxford was to manage existing significant threats and prohibit the establishment of new significant threats, where possible and reasonable. Where prohibition was not possible or reasonable, the focus was to adequately manage the threat. Prescribed Instruments were generally used where they were determined to be effective for managing or prohibiting the threat. Part IV tools were used where Prescribed Instruments were not adequate or applicable. Where Section 57 (prohibition) and Section 58 (regulated activities) were used, Section 59 (restricted land use) was used to better integrate these new policy tools and related processes with existing development approval processes. Education and Outreach, Incentives and Land Use Planning policy approaches were generally limited to complementary tools for addressing significant threats, as opposed to being the primary policy approach.

14.3.1 Implementation Timing

Intent:

These policies are intended to provide implementing bodies with timing requirements for enactment of policies.

Rationale:

Except where otherwise stated in the implementation timing policies or specifically set out in the *Clean Water Act, 2006*, all policies in the Source Protection Plan come into effect on the date set by the Minister. The policies pertaining to new/future threats will be implemented immediately.

However, the majority of the existing threat policies and some of the new/future threat policies will take additional time to fully implement due to other legislative requirements and timelines that must be met, the time required to develop and implement new programs, and budgetary constraints. As such, this policy specifies implementation timing for these various policies, so that they are not required to be implemented immediately upon approval of the Source Protection Plan.

The timing policies were grouped according to Section 57(1), 58(1), 59(1), 40(2), 43(2) of the *Clean Water Act, 2006,* as well as Education and Outreach. Each policy grouping was assigned an implementation deadline. It was determined that the implementation timelines for Part IV (Section 57, 58 and 59) and Prescribed Instrument policies should generally be as short as possible, while still being achievable for the implementing

bodies, as these are the primary policy approaches being used to ensure that the vast majority of prescribed activities in the *Clean Water Act, 2006* cease to be, or do not become significant drinking water threats. One noted exception is Section 58, Risk Management Plan policies for existing threats, where no timeframe has been specified, to allow the Risk Management Official the flexibility to establish local priorities for the implementation of RMPs for existing uses, while ensuring that RMPs required for new/future uses are implemented in a reasonable timeframe.

In the case of Education and Outreach policies and Section 40 and 43 policies, longer timeframes have been permitted for implementation, as these policies will likely require the development of new programs.

Notwithstanding the permitted implementation timing, the County of Oxford intends to amend their Official Plan and Zoning By-Laws as soon as possible to address and/or communicate the applicable Source Protection Plan policies. These are the primary documents typically consulted by those making land use decisions and are; therefore, a key tool for communicating which land uses/activities may be prohibited, regulated or restricted by the policies of the Source Protection Plan using other tools, such as Part IV prohibition.

14.3.2 Transition Policies and Related Definitions

Definitions for ‘existing’ and ‘future/new’ have been included in the Oxford policies to ensure the policies for existing and future/new significant threat activities are applied as intended. The definitions of existing and future/new were determined to be critical to understanding the specific circumstances under which an existing or future/new policy would apply to a threat activity, which is particularly important in instances where the policy approaches for ‘existing’ and ’future/new’ activities differ. For example, in most cases, future/new occurrences of a particular significant threat activity are prohibited, while existing occurrences are managed. Generally, if a significant threat activity existed on the date the Source Protection Plan came into effect, or existed at some point prior to the effective date and intended to continue (e.g. an intermittent activity, such as the seasonal storage of commercial fertilizer for retail purposes), it would be considered existing. The intent is that the onus be on the proponent to demonstrate to the satisfaction of the implementing body that a particular significant threat activity was existing.

In addition to providing definitions of ‘existing’ and ‘new/future’, transitional policies have been included to identify a number of additional circumstances (e.g. stage in the development approval process) under which an activity or threat may be evaluated in accordance with the policies in the Source Protection Plan pertaining to existing threats. This distinction becomes important for significant threat activities for which ‘existing’ and ‘new/future’ occurrences are addressed differently by the Source Protection Plan policies.

It is particularly important in instances where a ‘new/future’ significant threat activity would be prohibited, while an existing occurrence of that activity would be allowed to

continue with appropriate risk management. Transitional provisions do not exempt a significant threat activity from complying with the policies of the Source Protection Plan, but rather clarify whether 'existing' or 'new/future' policies will apply. Either way, the threat activity will be addressed by Source Protection Plan policies and will need to satisfy the *Clean Water Act, 2006* test of 'ceasing to be or never becoming' a significant drinking water threat. In the limited circumstances where the transitional provision would apply, this would generally mean that this *Clean Water Act, 2006* test will simply need to be satisfied through management of the activity, rather than its prohibition.

There are two main transition policies included in the Oxford Source Protection Plan policies. The first pertains to significant threat activities associated with a development that is being proposed as part of one or more development applications (e.g. zoning, site plan and/or building permit) as of the date the Source Protection Plan takes effect. For example, an applicant has obtained all required local development approvals for a particular use and associated significant threat activity and commenced construction of the related buildings and facilities, but has not yet engaged in the activity when the Source Protection Plan comes into effect. If the significant threat activity associated with the proposed development (e.g. fuel storage as part of a gas station) was prohibited by the Source Protection Plan, that activity would not be able to be engaged in at that location notwithstanding that the proponent may have invested considerable time, money and effort in preparing the material to support the applications and possibly even preparing the site and constructing a building. Therefore, it was determined that it would be fair and reasonable to establish transitional policies to allow a significant threat activity that was clearly intended to be established as part of a formal development proposal prior to the effective date of the Source Protection Plan, to be evaluated as existing for the purposes of applying the Plan policies. It was determined that if one or more of these applications had been submitted and deemed to be complete as of the date of Source Protection Plan approval, and the applicant has formally declared that one or more significant threat activities are being proposed as part of the development, that would constitute a sufficient commitment to the establishment of the threat activity to give it transitional consideration. For similar reasons, transitional provisions for significant threat activities proposed through a complete application for a Prescribed Instrument submitted prior to the effective date of the Source Protection Plan were also included.

The second transitional policy pertains to uses and associated activities that could be established on a property in accordance with existing zoning, with no further local development approvals (e.g. *Planning Act* or building permit). A number of prescribed significant threat activities (e.g. storage and handling of commercial fertilizer, pesticides, organic solvents, DNPALs etc.) would not likely require a building permit, or any other form of local approval, to be established on a property, even after the Source Protection Plan comes into effect. This is most likely in cases where there are existing buildings and structures on a property that are suitable for the proposed use (e.g. storage of DNAPLs in an existing industrial building). For example, a proponent may have purchased or leased a property zoned for industrial purposes and containing existing industrial buildings, with the specific intent of operating a new industry that requires the handling and storage of DNAPLs as an essential part of their process. Given that there

would not likely be any local planning or building permit approvals required, it is quite likely that the proponent would not be aware that their operation involves a significant threat activity regulated by the Source Protection Plan policies. This situation is even more likely if local planning documents (OP and Zoning) have not yet been updated to identify the areas and activities that are subject to the Source Protection Plan policies.

In such circumstances, it may also be very difficult for the implementing body for a particular policy to confirm whether such activity was established after the date the Source Protection Plan was approved. For these reasons, it was determined that it would be fair and reasonable to give transitional consideration to significant threat activities in such circumstances. However, it was also felt to be important to include the proviso that, at such time as a Risk Management Inspector has visited the site and documented the threat activities existing at that time, any threat activities not documented as existing will thereafter be considered future.

The intent is that once such inspection has occurred, the owner/operator could no longer claim to be unaware of the Source Protection Plan restrictions on significant threat activities and the RMI would have conclusive documentation of the threats that were existing at that point in time. The intent is that the RMI on-site inspections and existing threat documentation will be conducted as soon as possible after the Source Protection Plans are approved.

Finally, unless otherwise noted in the threat specific policies, it is intended that replacements, modifications and expansions to existing significant threat activities be considered as part of the existing significant threat activity and, therefore, evaluated in accordance with the policies pertaining to existing threats. A specific policy dealing with replacements, modifications and expansions was included in previous versions of Oxford's policies, however, it was removed based on discussions with MECP staff. These discussions concluded that specific policies were not required to allow for replacements, modifications and expansions to existing significant threats, particularly in cases where Part IV or Prescribed Instrument policies were used. For policies where it was determined that specific provisions for replacements, modification and expansions were necessary (such as where land use planning tools were used), wording was added to those policies.

14.3.3 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit activities under Section 57 of the *Clean Water Act, 2006* in vulnerable areas where the activities are or would be a significant drinking water threat.

Rationale:

Based on a review of current and permitted land uses in the areas where the following activities could be a significant drinking water threat, it is believed that prohibition is both reasonable and most effective for addressing a number of the significant drinking water threats in the County of Oxford. Prohibited activities within WHPAs include:

- Establishment, operation, or maintenance of a waste disposal site, within the meaning of Part V of the *Environmental Protection Act*: waste disposal sites that do not require an Environmental Compliance Approval (ECA), with the exception of the following waste threat subcategories
    - storage of wastes described in clauses (p), (q), (r), (s), (t),or (u) of the definition of hazardous waste, or, in clause (d) of the definition of liquid industrial waste; and
    - the storage of hazardous or liquid industrial waste;
- New or existing application of agricultural source material (WHPA-A)
- New storage of agricultural source material
- New handling and storage of commercial fertilizer
- New handling and storage of pesticides greater than 2,500 kilograms
- New and existing handling, and storage of road salt
- New storage of snow
- New handling and storage of fuel
- New handling and storage of DNAPLs
- New handling and storage of an organic solvent

Waste disposal sites that do not require an Environmental Compliance Approval (ECA)

Waste disposal sites are generally regulated under the *Environmental Protection Act* and require an Environmental Compliance Approval (ECA); however, not all aspects of such threats (such as PCB storage) are necessarily regulated under Part V of the Environmental Protection Act. Therefore, Section 57 was generally used as a way to address any potential “gaps” in the Prescribed Instrument for future occurrences of these threats in a manner that would be consistent with prohibition through the Prescribed Instrument. It was determined to be unnecessary to prohibit existing occurrences of this activity where it would be a significant drinking water threat.

Given the limited area and number of properties in the County of Oxford where such activities could be a significant drinking water threat, it was determined that future waste

disposal sites could, and therefore should, be located in areas where they are not a significant threat to drinking water sources. No concerns were raised during pre-consultation with respect to prohibiting future occurrences of this activity in areas where it would be a significant threat to drinking water sources. The only exception to the prohibition of new waste threats is for the following waste threat sub-categories, provided an ECA is not required:

- storage of wastes described in clauses (p), (q), (r), (s), (t), or (u) of the definition of hazardous waste, or in clause (d) of the definition of liquid industrial waste; or

- storage of hazardous or liquid industrial waste,

These two exceptions were introduced based on further detail regarding the nature of these threats that was provided by the Ministry of the Environment, Conservation and Parks and Climate Change as part of their review of the plan. Upon review of this information, it was determined that these two threat categories capture both large and small quantities of hazardous and liquid industrial waste that can be generated by a broad range of industrial, commercial and/or institutional operations. Examples of such operations include nursing homes, medical clinics, retailers, print shops and laboratories that may only generate small quantities of such wastes as part of their regular operations (e.g. hardware stores that collect hazardous waste for disposal).

Given that there are a considerable number of industrial, commercial and institutionally zoned properties located within significant threat areas in the County, it was determined that prohibition of such waste threats where an ECA is not required may have the unintentional consequence of constraining or prohibiting many planned land uses that only generate fairly small quantities of such wastes. It should be noted that although such activities are not subject to an ECA, there are other tools prescribed by the *Environmental Protection Act, 1990* that the Ministry of the Environment, Conservation and Parks and Climate Change can use to regulate such activities. Further, it is understood that uses or sites that store larger quantities of such wastes, such as landfills and transfer stations, are generally subject to an ECA. Therefore, the County determined that it would be appropriate to continue to prohibit future threat activities in these two threat sub-categories where an ECA is required.

As part of their review, the Ministry of the Environment, Conservation and Parks and Climate Change had also suggested that the County consider management versus prohibition for the storage of polychlorinated biphenyls (PCB) waste threat sub-category. However, given that such threats can only be significant if they are located below grade or in an outdoor area and not in a container, it was the opinion of the County that prohibition remains a reasonable and appropriate approach for future occurrences of such threat activities, as it would simply mean that they would need to be located above grade and in an indoor area or in a container.

<u>The application and storage of Agricultural Source Material (ASM)</u>

While the *Nutrient Management Act, 2002 (NMA)* prohibits the application and storage of ASM within 100 m of a well (WHPA-A) for farms regulated under the NMA, it does not establish similar prohibitions for WHPA-B with a vulnerability score of 10. The NMA's use of prohibition within 100 m from a well pre-dated the establishment of WHPA travel time based zones and vulnerability scoring to establish well specific information on which to base local policy decisions.

Under the *Clean Water Act, 2006*, the tables of drinking water threats identify the risk and level of threat posed by this activity as being the same within all areas with a vulnerability score of 10. In fact, areas in WHPA-B with a vulnerability score of 10 have a high intrinsic vulnerability, while many of the WHPA-A in the Source Protection Region are moderate or low intrinsic vulnerability. As such, areas in WHPA-B with a vulnerability score of 10 may be considered more vulnerable than many WHPA-As, even though they have the same vulnerability score

In the case of the future storage of ASM, it was determined that the most effective and consistent policy approach would be to prohibit within both the WHPA-A (as per the NMA) and the WHPA-B with a vulnerability score of 10 (where storage of ASM is not currently prohibited on farms regulated under the NMA. This approach is keeping with the County of Oxford's overall policy approach, which is generally to prohibit new/future significant threats from becoming established where achievable and reasonable. As the NMA does not apply to all agricultural operations, Part IV prohibition was determined to be the most appropriate tool to prohibit this activity, as it would ensure that all agricultural operations undertaking this activity within significant threat areas are treated consistently. Prohibition was also deemed to be a reasonable approach in the County of Oxford, given the location of existing livestock barns and other farm buildings/structures, the limited area affected and the ample opportunities to locate new facilities outside of significant threat areas. Furthermore, the establishment of ASM storage facilities in the WHPA-A and B is already prohibited by the water quality policies in the County Official Plan, so the proposed Source Protection Plan policies will actually reduce the area where such significant threat activities are currently prohibited.

The County of Oxford also closely considered the potential impacts of prohibiting the existing and future application of ASM to land in both the WHPA-A (as per the NMA) and the WHPA-B with a vulnerability score of 10.

However, it was determined that such an approach may have a substantial impact on existing agricultural operations, as this significant threat activity was identified as existing, or likely to be existing, on all agricultural properties located within significant threat areas in the County of Oxford. For this reason, it was also determined that it would be unlikely that application of ASM to land would be considered a 'new/future' activity on affected properties in the County of Oxford context. Therefore, the County of Oxford chose to apply Part IV prohibition to existing and future application of ASM only in the WHPA-A, as this is consistent with the requirements for operations regulated under the NMA. As the NMA does not apply to all agricultural operations, Part IV prohibition was determined to be the most appropriate tool to prohibit this activity, as it

would ensure that all agricultural operations undertaking this activity within significant threat areas are treated consistently.

The handling and storage of Commercial Fertilizer

Section 57 was determined to be the most appropriate and effective approach for addressing this threat, as it provides the greatest certainty for the protection of municipal drinking water sources, by ensuring no additional significant drinking water threats related to this activity can be established. It was also determined to be a reasonable approach, given that the land area affected is relatively small and alternate locations could be found to locate new facilities.

The handling and storage of Pesticides (greater than 2500 kg or 2500 L)

While it was deemed to be unreasonable to prohibit existing storage facilities, it was also determined that new activities should be directed to areas where the risks are not significant. It was determined that Section 57 was the most appropriate and effective approach, as it provides the greatest certainty for protection of municipal drinking water sources by ensuring no additional significant drinking water threats related to this activity can be established. It was also determined to be reasonable, as the areas where this activity could be a significant threat are relatively small and there generally appear to be opportunities to locate new facilities in alternative locations.

The handling and storage of Road Salt

Prohibition of both future and existing salt handling and storage through Section 57 was determined to be the most appropriate approach because no existing road salt storage threats were identified, or likely, within the County of Oxford. Furthermore, according to the threat circumstances in the Tables of Drinking Water Threats, at or above grade, only larger quantities of salt stored in a manner where it is exposed to precipitation or runoff is considered a significant threat. Therefore, prohibition of the significant threat was determined to be the most appropriate policy approach for this activity, as the activity can still continue, or be established, provided that it is constructed in a manner which would not be a significant drinking water threat (not exposed to precipitation or runoff).

The handling and storage of Snow

The County of Oxford chose to use Risk Management Plans to address existing occurrences of this activity, as no existing occurrences of this activity were identified and, even if there were, it would not be appropriate to prohibit such activities. However, given the threat circumstances e.g. size of storage area at or above grade and existing and planned land uses in significant threat areas, it was determined to be very unlikely that new significant snow storage activities would be proposed in the County of Oxford.

Based on the threat circumstances, the limited area potentially affected and the ample opportunities to locate new facilities outside of significant threat areas, it was determined that Section 57 was the most appropriate approach for future threats, as it

provides the greatest certainty for protection of municipal drinking water sources, by ensuring no additional significant drinking water threats related to this activity are established.

The handling and storage of Fuel

The circumstances for this activity in the Tables of Drinking Water Threats indicate that for fuel storage less than 2500 Litres (L), storage above grade is not a significant threat. Therefore, new fuel storage below this size (e.g. residential heating oil storage) could still be located at, or above grade while fuel storage larger than 2500 L would be prohibited below, at, or above grade in significant threat areas. Given the number of potential existing significant threats associated with this activity, it was not deemed appropriate to prohibit existing storage of fuel. However, Section 57 was determined to be the most appropriate approach for addressing future threats, as it provides the greatest certainty for protection of municipal drinking water sources, by ensuring no additional significant drinking water threats related to this activity are established. Furthermore, it was deemed to be reasonable, given that the areas where this activity would be a significant threat to drinking water are relatively small and there are many other locations where this activity could be undertaken without being a significant threat to drinking water.

The handling and storage of dense non-aqueous phase liquids (DNAPLs)

Dense non-aqueous phase liquids (DNAPLs) are particularly persistent and toxic chemicals. The *Clean Water Act, 2006* establishes that any quantity of the specified chemicals that are considered DNAPLs is a significant threat in WHPA-A, B and C regardless of vulnerability score. Section 57 was used to prohibit new/future occurrences of this activity in the most vulnerable areas (WHPA-A and B with a vulnerability score of 10), with the exception of DNAPLs in quantities typical of household use in association with residential uses.

The approach was deemed to be more reasonable than prohibition over the entire significant threat area (WHPA-A, B and C), as such a broad prohibition could potentially have resulted in substantial impacts on economic development opportunities in some areas, given the large number of industrial and commercial properties affected. This prohibition was only applied to future activities, as it was felt that prohibition of existing could result in undue hardship for existing operations. In recognition of these potential impacts, Section 58 (Risk Management Plans) was applied within the remainder of the WHPA areas where this activity is a significant threat. While prohibition of existing activities was not relied upon to eliminate the threat, this does not limit the Risk Management Official/Inspector from discussing opportunities for using alternatives to the prescribed DNAPL, or relocating to an alternative location as part of the RMP negotiation process.

The handling and storage of Organic Solvents

The Tables of Drinking Water Threats identify the quantities (e.g. 25L) above which the handling and storage of prescribed organic solvents are a significant threat to drinking water sources. As well, only the organic solvents specifically identified in the Tables are significant drinking water threats. As with many of the other activities that the County of Oxford chose to prohibit, it was determined that prohibition of existing handling and storage was not necessary or appropriate. However, Section 57 was determined to be the most appropriate approach for addressing future threats, as it provides the greatest certainty for protection of municipal drinking water sources, by ensuring no additional significant drinking water threats related to this activity are established.

Furthermore, it was deemed to be reasonable, given that the areas where this activity would be a significant threat to drinking water are relatively small and there are ample other locations where this activity could be undertaken without being a significant threat to drinking water. As well, there may be alternative chemicals or processes available that would not be a significant drinking water threat if located in a significant threat area.

Section 58 Risk Management Plans

Intent:
The development of Risk Management Plans (RMP) under Section 58 of the *Clean Water Act, 2006* was used to allow for the management of activities that cannot be managed effectively through land use planning or existing Prescribed Instruments.

Rationale:

Risk Management Plans, in accordance with Section 58 of the *Clean Water Act, 2006* are used as a tool to manage existing and future drinking water threats. This tool is used to “fill the gap” where a land use planning policy or other existing legislation cannot adequately regulate a significant drinking water threat. This tool is particularly effective in dealing with existing significant drinking water threat activities, where prohibition would likely impose undue hardship on property owners, businesses, etc. Risk Management Plans also provide an opportunity to work with property owners/proponents to manage a threat.

The RMP process also serves as a site specific education and outreach opportunity by allowing the Risk Management Official (RMO) to comprehensively review and discuss potential alternatives (e.g. processes, substances or locations) that might eliminate the significant threat, as well as best management practices and any available local incentives with the person undertaken the activity.

The threats that require a Risk Management Plan within the WHPA-A include:

- Establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the *Environmental Protection Act*: existing waste disposal site that is not subject to an Environmental Compliance Approval or a new waste disposal site that is not subject to an Environmental Compliance Approval and falls within one of the two following waste threat sub-categories:

  - storage of wastes described in clauses (p), (q), (r), (s), (t), or (u) of the definition of hazardous waste, or in clause (d) of the definition of liquid industrial waste; or
  - storage of hazardous or liquid industrial waste;

- New or existing application of agricultural source material (outside of a WHPA-A)
- Existing storage of agricultural source material
- New or existing application of commercial fertilizer
- Existing handling and storage of commercial fertilizer (except for residential use)
- New or existing application of pesticides
- New (less than or equal to 2,500 kg) or existing (any quantity) handling and storage of pesticides
- Existing storage of snow
- Existing handling and storage of fuel and new handling and storage of fuel required for back-up generators at municipal supply wells
- New or existing handling and storage of DNAPLs (except for quantities typical of household use in association with residential uses)
- Existing handling and storage of organic solvents
- New management of runoff that contains chemicals used in the de-icing of aircraft
- New and existing use of land as livestock grazing or pasturing, outdoor confinement area or farm animal yard

<u>Waste activities that do not require an Environmental Compliance Approval</u>

This policy ensures that existing significant threat activities that are part of the waste disposal site circumstances which do not require an Environmental Compliance Approval, and new significant waste disposal site threats related to the storage of hazardous waste or storage of hazardous or liquid industrial waste that do not require an Environmental Compliance Approval are adequately managed to ensure they do not become a significant drinking water threat. Examples of such threats include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal. Although there may be financial and staffing implications for the implementing body related to the development and implementation of Risk Management Plans to manage such waste disposal sites, it was also determined to be the best option for managing these existing threats. This determination was based on the understanding that, the

waste disposal site activities that are not subject to an Environmental Compliance Approval are generally smaller scale and may be associated with the regular activities of a broad range of existing and future industrial, commercial and/or institutional operations that are currently permitted by existing zoning in a number of the County's significant threat areas. Further, although such waste disposal site threats may not be subject to an Environmental Compliance Approval, they are generally still regulated by the Ministry of the Environment, Conservation and Parks and Climate Change through other tools (e.g. directors orders, hazardous waste information network etc.). It is anticipated that these other tools may assist in informing the development of the Risk Management Plan for such activities.

The application and storage of Agricultural Source Material (ASM)

Risk Management Plans (RMP) were determined to be the most consistent, appropriate and effective means of regulating the application of ASM in significant threat areas outside of the WHPA-A and existing storage of ASM in all significant threat areas, even in instances where such activities would be subject to a Prescribed Instrument issued under the NMA. Using Section 58 policies ensures that all properties and operations associated with such activities in significant threat areas are subject to the same review process and monitoring and management requirements. As well, properties containing such significant threat activities are also likely to contain other significant threats that would require a RMP. Therefore, the use of RMPs and other Part IV tools to manage the various threats on a property allows for those threat activities to be dealt with consistently by the Risk Management Official (i.e., review processes and monitoring and management requirements). Use of these tools also ensures the Risk Management Official (RMO) is aware of all threats on a property and how they are being managed and provides an opportunity to discuss alternative locations that might eliminate the significant threat, best management practices and any local education and outreach or incentive programs that might be available to assist in managing those threats.

It is intended that the principles of the NMA, and any Prescribed Instruments issued under that Act, would serve as the general basis for the development of an RMP for such significant drinking water threats and it is anticipated that the RMO will work closely with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) staff to determine how such principles should be applied. The County is aware that the *Nutrient Management Act* (NMA, 2002) prohibits the land application of nutrients (including commercial fertilizer) within the WHPA-A for those farming applications regulated (phased in) under the NMA and that risk management officials and inspectors will be made aware of and trained on these requirements.

The application, handling and storage of Pesticide

Section 58 was determined to be the most appropriate approach for the application of pesticides and storage of smaller quantities of pesticides, as there are risk management measures which can adequately manage the risks such that the activity ceases to be a significant threat. As well, properties containing such significant threat activities are also likely to contain other significant threats that would require a RMP. Therefore, the RMP

process would allow for all threats on a property to be dealt with consistently by the Risk Management Official.

Section 58 was used for existing handling and storage of pesticides at a facility where they are manufactured, distributed or processed to allow activities to only be undertaken when the risk is managed through a RMP. While prohibition of future activities was determined to be necessary to manage the risks associated with such pesticide threats, prohibition of existing activities was not deemed to be appropriate and, therefore, management through Section 58 was selected.

Risk management measures have not been specified in these policies to provide flexibility for the RMO to determine how best to protect municipal drinking water sources. It is intended that potential opportunities to switch to alternative pesticides or to relocate storage outside of significant threat areas would also be discussed as part of the RMP process.

The application, handling, and storage of Commercial Fertilizer

Risk Management Plans were determined to be the most effective and appropriate means of regulating the application of commercial fertilizer and the handling and existing storage of commercial fertilizers in significant threat areas, even in instances where such activities may be subject to a Prescribed Instrument issued under the NMA. Using Section 58 policies would ensure that all properties and operations associated with such activities in significant threat areas are subject to the same review process and monitoring and management requirements.

As well, properties containing such significant threat activities are also likely to contain other significant threats that would require a RMP. Therefore, the RMP process would allow for all threats on a property to be dealt with through a single, consistent process and provide an opportunity for the RMO to discuss any local education and outreach or incentive programs that might be available to assist in managing those threats. It is intended that the principles of the NMA would serve as the general basis for the development of an RMP for the application of commercial fertilizer.

The storage of Snow

This activity can only be a significant drinking water threat under certain circumstances (i.e. the storage of snow below grade or, at or above grade if the area where the snow is stored is more than 1 ha) and the Assessment Report did not identify any existing threats in the County of Oxford, nor are any suspected. Although unlikely, if an existing occurrence of this threat activity were to be discovered, it was determined that a Risk Management Plan would be sufficient to adequately manage the risk such that the activity ceases to be a significant threat. However, the County of Oxford chose to use Part IV prohibition for new snow storage and disposal sites for the reasons outlined under Part IV prohibition policy approaches section.

The handling and storage of Fuel

Although prohibition was determined to be the most appropriate approach for addressing future handling and storage of fuel for the reasons outlined under the Part IV prohibition rationale, given the number of potential existing occurrences of this activity in the County of Oxford, it was determined that a Risk Management Plan was the more appropriate approach for addressing existing threats. This approach was also selected to provide the necessary flexibility to allow for new fuel storage required for back-up generators at municipal wells (which are required for emergency purposes) provided appropriate risk management measures are in place. The Risk Management Plan process can be used to ensure compliance with the requirements of the *Technical Standards and Safety Act* and any other requirements deemed necessary by the RMO to protect municipal drinking water sources.

The handling and storage of a Dense Non-Aqueous Phase Liquid (DNAPLs)

DNAPLs are a significant threat in WHPA-A, B and C regardless of vulnerability scores, therefore a large area and number of properties is potentially affected by any applicable policies. While it was determined to be important to prohibit the establishment of new DNAPL threat activities in the highest risk areas (WHPA-A and B with a vulnerability score of 10), it was not deemed to be appropriate to apply this prohibition to existing activities or to extend it to all areas where this activity would be a significant threat, due to the large area affected and the potential impact on existing and planned employment uses and associated economic development opportunities.

Although the use of DNAPLs may potentially be associated with residential uses, as the chemicals may be found within many commonly used products, the quantities are likely to be small and manageable through an education and outreach program focused on the safe storage, handling and disposal of these chemicals. However, existing DNAPL handling and storage and future DNAPL handling and storage outside of WHPA- A and B with a vulnerability score of 10 and involving quantities and concentrations of DNAPLs that, in the opinion of the RMO exceed that typical of household use, would still be designated for the purposes of Section 58 and require the establishment of a Risk Management Plan. Specific quantities, concentrations, or risk management measures were not identified in the policies to allow the RMO the flexibility to effectively manage the risks and focus on the instances of this threat that pose the greatest risk to the municipal drinking water systems.

The handling and storage of Organic Solvents

Section 58 was used for existing handling and storage of organic solvents to allow activities to only be undertaken when the risks can be adequately managed through a RMP. While prohibition of future activities was determined to be the most appropriate approach to address new occurrences of this threat for the reasons outlined under the Section 57 policies, prohibition of existing activities was not deemed to be necessary and therefore, management through the use of Section 58 was selected.

Only specific organic solvents, as listed in the Table of Drinking Water Threats under the *Clean Water Act, 2006* are significant drinking water threats. Alternatives to those

chemicals listed may be available and the Risk Management Plan process can be used to discuss the potential use of different products and/or management of how existing organic solvents are handled and stored (e.g. moving storage above grade, improved containment, spill measures put in place, etc.)

The management of Runoff that Contains Chemicals used in the De-icing of Aircraft

There were no existing threats associated with aircraft de-icing noted in the Assessment Report for the County of Oxford. Further, the potential for an airport to be constructed that is of a size and in a location that would be considered a significant drinking water threat is minimal. Therefore, the County of Oxford was confident that a policy to address existing occurrences of this threat activity was not required. However, a policy was developed to address future occurrences of this threat to encompass the unlikely development of new airports or the reclassification of an existing airport's threat level due to changes in passenger service. While airports and related activities are regulated by the Federal government, it was determined that municipalities should work collaboratively with airport authorities to ensure that activities associated with this drinking water threat never become significant. A Risk Management Plan is a formalization of the collaborative effort between the airport authority and the RMO.

The use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or a Farm Animal Yard

Although outdoor confinement areas are regulated by the *Nutrient Management Act*, not all farms contained within significant threat areas are subject to the *Nutrient Management Act, 2002* and, therefore, required to have Nutrient Management Plans and/or Strategies. In addition, the *Nutrient Management Act, 2002* does not regulate livestock grazing or pasturing activities. Therefore, it was determined that Risk Management Plans would be the most consistent, appropriate and effective means of addressing this threat.

Using Section 58 policies would ensure that all properties and operations associated with such activities in significant threat areas are subject to the same review process and monitoring and management requirements. As well, properties containing such significant threat activities are also likely to contain other significant threats that would require a RMP. Therefore, the RMP process would allow for all threats on a property to be dealt with through a single, consistent process and provide an opportunity for the RMO to discuss any local education and outreach or incentive programs that might be available to assist in managing those threats. It is intended that the principles of the NMA would serve as the general basis for the development of a RMP for such significant drinking water threats and it is anticipated that the RMO will work closely with OMAFRA staff to determine how best to apply such principles.

Direct prohibition of future occurrences of this activity was not selected as the preferred approach given the difficulty of differentiating between existing and future occurrences of these activities, which typically do not require a building permit or other development approvals. However, given that no existing outdoor confinement areas have been

identified in the County and there are few, if any, existing livestock barns located within significant threat areas, it is anticipated that the RMP process can be used to achieve location or relocation of such activities outside of significant threat areas in most cases.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may be designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006* (WHPA-A, B and C), as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

The intent of these policies is to 'flag' new *Planning Act, 1990* and building permit applications that could result in the establishment of a new significant drinking water threat subject to Part IV policies. This 'flagging' process is intended to ensure that applicants proposing development that may result in the establishment of a significant threat and the planning and building permit approval authorities are made aware of applicable Source Protection Plan policies prior to development approval. This is beneficial to both the municipality and the proponent because it would reduce the need to initiate enforcement of prohibition or risk management measures after a building or land use associated with a significant threat activity has been established. Where Section 58 policies would apply to the activity, the Section 59 policies would require the proponent to negotiate or otherwise have their RMP established prior to proceeding with the application. Being aware of the RMP requirements at the outset may also make it easier for the proponent to re-locate the significant threat activity on the site, or undertake other adjustments to the building or facility design/layout or associated processes, to address RMP requirements that may have been more difficult or costly if the activity was already established.

This process also helps to ensure significant threat activities that would be prohibited, or require the establishment of a Risk Management Plan, are not inadvertently approved, or allowed to establish as a result of a local development approval process, in contravention of the Source Protection Plan policies.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990* and Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be, a significant drinking water threats to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

Residential land uses were excluded from the restricted land use policy as they are unlikely to be associated with new significant drinking water threat activities that would

be prohibited or require Risk Management Plans. As well, given the number of residential properties located within significant threat areas, the volume of residential building permits that the RMO may have been required to review could have been considerable, with very little potential of involving threat activities that would be subject to Section 57 or 58 policies. It was also determined that the Section 59 review of applications for residential uses may have placed unnecessary pressure on limited RMO/RMI staffing resources, resulting in potential delays in development approvals and implementation of other Part IV Source Protection Plan policies (e.g. RMP's for existing activities), while providing little to no implementation benefit.

The only significant threats that would generally be associated with residential land use would be onsite sewage systems, application of commercial fertilizer and fuel storage. onsite sewage systems and commercial fertilizer application in the County of Oxford are not dealt with by Section 57 or 58 policies, so Section 59 would not apply. Furthermore, Section 59 screening was not seen to be necessary for fuel storage on residential properties, as installation of new underground fuel storage tanks, which would require a Risk Management Plan, was deemed to be unlikely.

The policies also enable the Risk Management Official to screen applications for activities identified as a significant drinking water threat within vulnerable areas. The policies also contain provisions to allow for the Risk Management Official to issue written guidance that would allow for a Planning Authority or Building Official to make a determination that the development proposed by a particular *Planning Act* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official. It is also anticipated that the RMO will establish requirements for the provision of additional documentation or detailed information (e.g. specific nature of the land use and associated activities and location on the site) to assist in the screening and review of development proposals.

14.3.4 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to prohibit activities within the Environmental Compliance Approval (ECA) process where they would be significant drinking water threats under Subsection 39 of the *Clean Water Act, 2006*.

Rationale:

New waste disposal site that requires an Environmental Compliance Approval (ECA)

Although the ECA process is considered to be rigorous, prohibition of these activities through the ECA process was determined to be the most appropriate approach for the same reasons as outlined in the rationale provided for the uses of Section 57 prohibition for future occurrences of these threats that are not subject to an ECA.

Sewage System or Works -New onsite sewage system requiring an Environmental Compliance Approval

Sewage System or Works - New sewage treatment plant

Sewage System or Works - New sewage treatment plant effluent

Sewage System or Works - New stormwater management facility discharge

Given that the area affected by these policies is relatively small, the fact that a number of these threats (sewage treatment plant effluent and stormwater management facility discharge) are only significant under specific circumstances and that there is ample area where these activities could be located without being considered a significant threat, the prohibition of these activities through the ECA process was determined not to have a significant impact on the municipality or on future development opportunities in most cases. Further, the establishment of new onsite sewage systems is already prohibited in the WHPA-A and B by the water quality policies contained in the County of Oxford Official Plan.

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Ministry of Agriculture, Food and Rural Affairs: Review and Amend Non-agricultural Source Materials (NASM) Plans

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Intent:

That the Ministry of the Environment, Conservation and Parks and the Ministry of Agriculture, Food and Rural Affairs are required to review activities that are subject to Environmental Compliance Approvals and NASM plans (in accordance with the *Nutrient Management Act*), respectively, where such activities would be significant drinking water threats under Subsection 39 of the *Clean Water Act, 2006*. Environmental Compliance Approvals and Non-agricultural Source Materials (NASM) plans are not to be approved unless terms and conditions are imposed that, when implemented, will ensure that the activity ceases to be or never becomes a significant drinking water threat or, where specified, the activity is prohibited where it is or would be a significant threat.

Rationale:

Policies using the Prescribed Instrument tool rely on the authorities of the Ministry of the Environment, Conservation and Parks and the Ministry of Agriculture, Food and Rural Affairs to protect drinking water sources through their respective approval processes. It

is generally a priority of the County to use existing regulatory tools where available and effective for addressing a particular threat activity. Environmental Compliance Approvals have been a longstanding requirement for waste disposal and sewage, and the criteria used to assess these activities are thorough. Similarly, NASM plans under the *Nutrient Management Act* have comprehensive requirements and criteria that are used to address NASM. Requiring these Ministries to review Environmental Compliance Approvals and NASM plans in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that terms and conditions are added to these approvals, where necessary.

Ministry of Agriculture, Food and Rural Affairs and/or MECP: Prohibit Application or New Storage of Non-Agricultural Source Material through NASM Plans/ECAs

Intent:

The Ministry of the Environment, Conservation and Parks or the Ministry of Agriculture, Food and Rural Affairs, as applicable, are required to prohibit the existing and future application of NASM and new storage of NASM through the Environmental Compliance Approval process or the *Nutrient Management Act, 2002*, as applicable, where such activities would be significant drinking water threat under Subsection 39 of the *Clean Water Act, 2006*.

Rationale:

As the application (both existing and future) or new storage of non-agricultural source material appears to be comprehensively regulated by the applicable Prescribed Instruments (no gaps or exceptions were identified), the County of Oxford determined that these existing regulatory tools were the most appropriate for achieving the desired prohibition of such activities where they would be a significant threat.

The Tables of Drinking Water Threats identify the circumstances and vulnerable areas where these activities are a significant threat to drinking water sources While the NMA prohibits the application or storage of NASM within 100 m of a well (WHPA-A), the NMA does not require a similar prohibition for WHPA-B with a vulnerability score of 10. The NMA's use of prohibition within 100 m from a well pre-dated the establishment of WHPA travel time based zones and vulnerability scoring which provided well specific information upon which to base local Source Protection policy decisions. Under the *Clean Water Act, 2006*, the Tables of Drinking Water Threats identify that the risk and level of threat posed by this activity is the same within areas with a vulnerability score of 10. In fact, areas in WHPA-B with a vulnerability score of 10 have a high intrinsic vulnerability, while many of the WHPA-As actually have moderate or low intrinsic vulnerability. As such, areas in WHPA-B with a vulnerability score of 10 may be considered more vulnerable than many WHPA-As, even though they have the same vulnerability score.

Therefore, based on the *Clean Water Act, 2006* science, it was determined that the most appropriate and consistent policy approach would be to prohibit these significant

threat activities within both the WHPA-A, (as per the NMA) and the WHPA-B, with a vulnerability score of 10 (where application of NASM is not currently prohibited under the NMA). The same policy approach has been applied to both existing and future occurrences of this threat, given that NASM application does not occur on an on-going basis on the same parcel of land and, therefore, in effect, there can be no application of NASM that would be considered 'existing' under the County of Oxford definition.

Given that existing storage of NASM was not identified, or suspected, in significant threat areas in the County of Oxford, prohibition of existing NASM storage was not deemed to be necessary. However, it was determined that managing future storage of NASM was not appropriate, when prohibition of future NASM storage was both a reasonable and more precautionary policy approach, particularly given the limited area of agricultural land that would be affected within the County of Oxford, much of which is owned by the County of Oxford. Prohibition prevents the establishment of new significant threats of this type and therefore, provides the most certainty in achieving the overall goal of protecting municipal drinking water systems.

Ministry of Agriculture, Food and Rural Affairs and/or MECP: Review and Amend Existing Non-Agricultural Source Material Plans

Intent:

The Ministry of the Environment, Conservation and Parks or Ministry of Agriculture, Food and Rural Affairs, as applicable, are required to review and, if necessary, amend Environmental Compliance Approvals or Non-Agricultural Source Material (NASM) Plans to ensure the existing storage of NASM is managed such that it ceases to be a significant drinking water threat.

Rationale:

As the storage of non-agricultural source material appears to be comprehensively regulated by the applicable Prescribed Instruments (no gaps or exceptions were identified), the County of Oxford determined that these existing regulatory tools were the most appropriate for managing such activities where they would be a significant threat. Although no existing NASM storage facilities were identified, or suspected, in significant threat areas in the County of Oxford, given the fact that such facilities may involve considerable investment/infrastructure, it was determined that it would be more reasonable to manage these existing facilities in the unlikely event one were to be identified prior to approval of the Source Protection Plan.

14.3.5 Land Use Planning

Management / Regulation through Planning Act

Intent:

The general land use planning policies are intended to ensure local planning documents are amended to include information that will serve as a resource for identifying and communicating the areas and activities that are regulated by the Source Protection Plan to those considering or making land use decisions. Further the policies require Official Plans and Zoning by-laws, as applicable, to be amended to conform with the significant threat policies set out in the Source Protection Plan, which in the case of the County of Oxford pertains to the prohibition of development on onsite sewage systems regulated by the Ontario Building Code through land use planning.

Rationale:

The purpose of these policies is to provide direction as to what needs to be amended/included in the Official Plan and Zoning Bylaw to ensure all land use planning decisions conform with the significant threat policies contained in the Source Protection Plan. The policies also identify specific uses that will be prohibited or managed through land use planning documents. The transition policies of OC-CW-1.2 also allow for transitioning of certain *Planning Act* and the Ontario Building Code applications to be processed under the “existing” policy requirements.

Official Plans and Zoning By-laws are the primary land use documents used by planning authorities (municipalities) to communicate permitted land uses and associated requirements to developers, landowners and the general public. Given that all planning decisions are required to conform with the Source Protection Plan policies on the date the Source Protection Plan takes effect, it is important that local land use planning documents are consistent with the Source Protection Plan as soon as possible. Having local land use planning documents up to date will assist in ensuring that those making local land use decisions e.g. business operators, perspective purchasers, developers, real estate agents and municipal staff and Council are aware of the Source Protection Plan policies and how they may affect land uses or activities in a particular area, before making any such decisions.

<u>Sewage System or Works - New onsite sewage systems or onsite sewage system holding tanks, with the exception of such tanks and systems which are required for a municipal water supply well</u>

Part IV tools under the *Clean Water Act, 2006* cannot be used to prohibit sewage threats, so it was determined that the best remaining policy tool to prevent the establishment of new onsite sewage systems regulated under the Ontario Building Code would be to prohibit/regulate development to be serviced by these types of onsite sewage systems through land use planning, in areas where they would be a significant drinking water threat. Amendments to the County of Oxford Official Plan and, more importantly, Area Municipal Zoning By-laws would be required to implement this policy. The area affected by this prohibition is limited and, based on review of the properties potentially affected; the impact on future development in the County of Oxford is anticipated to be minimal. Furthermore, development of new onsite sewage systems in the WHPA-A and B is already prohibited by the water quality policies contained in the

County of Oxford Official Plan, so the proposed policies will serve to reduce the area where such significant threat activities are currently prohibited.

14.3.6 Education and Outreach

Education and Outreach Programs: Municipality and Conservation Authority delivered

Intent:

The general education and outreach policies are intended to indicate that the County of Oxford, together with the Conservation Authority and other bodies, where possible, may develop Education and Outreach programs directed at any, or all, significant drinking water threat activities prescribed under the *Clean Water Act, 2006* where deemed necessary or appropriate.

The threat specific education and outreach policies require the County of Oxford to develop mandatory education and outreach programs to address certain significant threat activities. The long-term funding of education and outreach programs is critical to their success and effectiveness. The financial involvement of the Province in these programs will help to ensure their ongoing effectiveness and in maintaining a level of consistency in program messaging across the province.

Rationale:

Education and outreach can be an effective tool to influence behaviours and practices for individuals and businesses. The County of Oxford supports the use of this tool as a complementary policy approach for managing significant drinking water threats, where deemed necessary and/or appropriate. For example, the handling and storage of DNAPLs may be a necessary part of a business process, but if the users of these products are more aware of the risks associated with these products and the need to consider alternatives, this awareness could improve the protection of the drinking water source.

The County of Oxford supports the potential use of Education and Outreach programs to address significant drinking water threats, where deemed necessary and/or appropriate and subject to available funding. However, Education and Outreach programs have also been selected as the primary policy tool for addressing the following activities:

<u>The handling and storage of Dense Non-aqueous Phase Liquid (DNAPLs) - Household Concentrations/Quantities</u>

As DNAPLs are considered a significant drinking water threat in any quantity, the use of small quantities or concentrations of DNAPLs in association with residential uses may potentially be a significant threat, as the chemicals are readily available and may be found within commonly used products. However, given the large number of residential properties that would need to be reviewed to determine whether DNAPLs were present

and the likelihood of anything other than small 'household' type quantities being found, it was determined that an education and outreach program focused on the safe storage, handling and disposal of these chemicals would generally be adequate to ensure DNAPLs potentially associated with these land uses cease to be, or never become, a significant drinking water threat.

The application of Commercial Fertilizer in association with a residential use

In certain areas, the application of commercial fertilizer to residential properties is considered a significant drinking water threat. However, given the number of residential properties affected, the very small percentage of the total managed land area in the County of Oxford comprised of residential uses and the fact that any other management approach e.g. RMP would also likely be limited primarily to education, it was determined that an education and outreach program focused on the proper application of commercial fertilizer would be adequate to ensure such activity ceases to be, or never becomes, a significant drinking water threat.

14.3.7 Incentive Programs

Incentive Programs: Municipality delivered (with MECP and other bodies where possible)

Intent:

The general incentive policies are intended to indicate that the County of Oxford, together with other bodies, where possible, may develop incentive programs directed at significant drinking water threat activities prescribed under the *Clean Water Act, 2006* where deemed necessary or appropriate. These policies also request that the Ministry of the Environment, Conservation and Parks consider providing continued funding for incentive programs, such as the Ontario Drinking Water Stewardship Program.

Rationale:

Incentives can be an effective tool for influencing behaviours and practices for individuals and businesses. The County of Oxford supports the use of this tool as a complementary policy approach to assist in addressing significant drinking water threats, where deemed necessary and/or appropriate. Although, the County of Oxford supports the potential use of Incentive programs to address significant drinking water threats, where deemed necessary and/or appropriate, such programs are dependent on available funding. Continued funding for incentive programs from the Ministry of the Environment, Conservation and Parks will be a key component in assessing the potential financial impacts on the municipality associated with undertaking any such programs. Therefore, the Source Protection Plan includes a policy requesting the Province to consider the provision of continued funding for incentive programs, such as the Ontario Drinking Water Stewardship Program. As Source Protection is a provincial initiative, it was determined that continued Provincial funding for incentive programs

should be provided to ensure the effective implementation of the Source Protection Plan policies.

14.3.8 Stewardship Programs

Decommissioning of Abandoned Wells that serve as Transport Pathways

Intent:

The intent is to ensure transport pathways such as abandoned wells are properly managed to reduce the risks to municipal drinking water sources.

Rationale:

Abandoned wells are often located on private property and it may be cost prohibitive to properly decommission or upgrade these wells. A specific transport pathway policy to support ongoing stewardship programs to decommission abandoned wells would help reduce the ability of contaminants to enter the groundwater within vulnerable areas. This may further reduce the vulnerability of an area and the number of identified threats.

14.3.9 Specify Action

Encourage Appropriate Siting, Design and Maintenance Standards for the Establishment and Operation of a Liquid Hydrocarbon Pipeline

Intent:

The location and siting of liquid hydrocarbon pipelines is not controlled by the local municipalities, therefore managing this activity through direction and recommendations to the appropriate approval authority is the most effective approach for this local threat.

Rationale:

The primary concern regarding this threat relates to a potential spill from a pipeline. Encouraging the National Energy Board and the Ontario Energy Board to include appropriate design standards and maintenance practices will ensure that any new facility would be constructed in a manner or located so as to protect municipal drinking water supplies. There were no threats identified within the County of Oxford in the Assessment Report.

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

Intent:

To ensure that emergency plans, contingency plans and spill containment plans are updated with respect to spills that occur within WHPAs.

Rationale:

Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore, spill prevention and contingency/response plans should be updated to include maps that clearly detail the vulnerable areas. Quick and effective response to spills can prevent an emergency from affecting a municipal drinking water source. Additionally, updates to the current spill prevention and contingency/response plans could act as a communication tool for the municipalities and the public and ensure residents are aware of the location of WHPAs and are knowledgeable regarding the appropriate response in the event of a spill in these areas.

14.3.10 Monitoring Policies

Intent:

Monitoring Policies have been included for each policy listed above. In some instance one monitoring policy may apply to a number of different policies as the same information is required from the monitoring body.

Rationale:

The *Clean Water Act, 2006* requires the Source Protection Authority to prepare and submit to the Director and the Source Protection Committee an annual report that describes the measures taken to implement the Source Protection Plan. In order to prepare this report, the Source Protection Authority requires other implementing bodies to report annually to the Source Protection Authority by February 1st of each year. Section 65 (1) of O.Reg. 287/07 requires that annual reports from the Risk Management Official be submitted by February 1st of each year. The reporting policies use this date as the basis for establishing the reporting deadline for the other implementing bodies.

15.0 POLICY DEVELOPMENT FOR THE CITY OF HAMILTON- LYNDEN RURAL SETTLEMENT AREA

The City of Hamilton, Lynden Rural Settlement Area Source Protection Plan policies will apply to any properties located as presented in Section 13, Schedule A of Volume II. As the policy applicability area is limited to the WHPA-As for all prescribed drinking water threats with the exception of Dense Non-Aqueous Phase Liquids (WHPA-A, B and C), many of the following source protection plan policies were developed as required by the *Clean Water Act, 2006* for future activities. In most cases based on the provincial circumstances which outline the criteria required for a significant drinking water threat to occur, it is in the opinion of the City of Hamilton and Source Protection Committee that many of the following activities are unlikely to occur within the policy applicability area.

The City of Hamilton currently is in ownership of most of the land surrounding the municipal wells (WHPA-As). They have planted grass and trees around this area and have plans to maintain this land without using any fertilizers or pesticides. This is reflected in the policy decision making process below.

15.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Area have been actively involved with the development of the Grand River Source Protection Plan policies.

The City of Hamilton has been present at various meetings hosted by the Lake Erie Source Protection Region in order to develop locally implementable policies. These policies have been reviewed by municipal staff.

15.2 Financial Considerations

The City of Hamilton has reviewed all of the draft policies to ensure they are implementable within the financial constraints of the available resources. As the following policies will only apply to a limited area, limited municipal resources are required in comparison to the policies presented in the Halton-Hamilton Source Protection Plan.

15.3 Policy Intent and Rationale

Review of current and projected land uses indicates that there is a high level of protection of the municipal raw water from the prescribed drinking water threats. Therefore, the policies developed reflect this current assessment as presented in the Assessment Report available online at www.sourcewater.ca.

Based on the percentage of impervious surface area presented in the Assessment report, policies were not required to address significant drinking water threat activities from the application of road salt.

In the City of Hamilton – Lynden Rural Settlement Area there are currently no enumerated existing occurrences of waste disposal sites, discharge of stormwater from a stormwater management facility, application of non-agricultural source material (NASM), handling and storage of NASM, handling and storage of road salt or the storage of snow. As such, policies to address the existing occurrences of these activities have not been included in the City of Hamilton – Lynden Rural Settlement Area section of the Grand River Source Protection Plan.

15.3.1 Part IV Policies

Section 58 Risk Management Plans

Intent:

The development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act*, *2006* was required to manage activities located within WHPA-A.

Rationale:

Part IV Risk Management Plans under section 58 of the *Clean Water Act, 2006* was used as a tool to effectively manage existing and future drinking water threats through the completion of these plans with the Risk Management Official.

The application, handling and storage of Agricultural Source Material

The application, handling and storage of Commercial Fertilizer

The application, handling and storage of Pesticides

The best means of addressing the threats associated with agricultural source material, commercial fertilizer, and pesticides is the use of the Prescribed Instruments. For farms or properties that are not required to have a Prescribed Instrument such as a nutrient management strategy or plan, the policy approach proposed is to require a Part IV Risk Management Plan for the activities in vulnerable areas where they are or would be a significant drinking water threat. This Part IV Risk Management Plan would be based on the same principles as the nutrient management plan/strategy and scoped to address these specific threats for agricultural related activities.

As the area to which this policy would apply is limited, it was assumed that most of the applicable farms would not fall under the *Nutrient Management Act*; therefore Part IV Risk Management Plans was the tool of choice. These plans will be based off the existing requirement found within the *Nutrient Management Act* for consistency. Where a farm does require a Prescribed Instrument under the *Nutrient Management Act*, a Prescribed Instrument may be issued and if so the landowner would be able to request an exemption under s.61 of O. Reg. 287/07 from a Risk Management Plan. For pesticides, limitations were noted in the applicability of the *Pesticide Act* to manage potential activities, therefore a Part IV Risk Management Plan ensures this drinking water threat is managed.

The handling and storage of Fuel

This drinking water threat can be effectively addressed through the use of Part IV Risk Management Plans. A concern regarding prohibiting farm fuel tanks was raised. This activity could be necessary for a farm operation, and therefore, a management approach was decided as the best option.

The handling and storage of a Dense Non-aqueous Phase Liquid (DNAPL)

The handling and storage of an Organic Solvent

This policy ensures that these activities are adequately managed to ensure they do not become a significant drinking water threat. It was decided that although the policy may result in costs to the implementing body, the use of Part IV Risk Management Plans to manage the existing instances identified within the City where dense non-aqueous phase liquid may currently be stored and handled was the best option to manage the threat. With this measure in place, there is confidence that new land uses would be screened by a Risk Management Official and required to meet a set of criteria within vulnerable areas where the handling and storage of DNAPLs and organic solvents would be a significant drinking water threat.

Currently there is no threshold for DNAPLs listed in the Tables of Drinking Water Threats and Circumstances (www.swpip.ca/threats). This tool allows for the flexibility to manage this activity depending on the industry and the quantity stored.

The Use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area of Farm Animal Yard

The first choice to address this threat for any farm is the development and implementation of a nutrient management strategy. However, not all farms are included under the *Nutrient Management Act* (and therefore are not required to have strategies) and the *Nutrient Management Act* does not regulate all activities that could be significant drinking water threats. For these farms and activities, a Part IV Risk Management Plan is appropriate to this particular threat and is generally accepted as the preferred option.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006* as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998* and Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be a significant drinking water threat to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

The policies also enable the Risk Management Official to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official.

15.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to prohibit activities within the Environmental Compliance Approval process where they would be significant drinking water threats under Subsection 39 of the *Clean Water Act*, *2006*.

Rationale:

Establishment, Operation or Maintenance of a Waste Disposal Site, within the meaning of Part V of the *Environmental Protection Act*

Although the Environmental Compliance Approval process is considered to be rigorous, denial of the activity within the application is preferred with respect to future waste activities, from a policy perspective. This policy would then eliminate the option of allowing these sites to be located within vulnerable areas where significant drinking water threats would occur in the future if the activity were undertaken. The risks presented by these types of facilities warrant prohibition of future occurrences. Further, the area where these sites could be located is limited to WHPA-A, thus it is very unlikely that they will occur in the future based on current and projected land use.

Ministry of the Environment, Conservation and Parks and Ministry of Agriculture, Food and Agribusiness: Review and Amend Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks and the Ministry of Agriculture, Food and Agribusiness is required to review activities within the Environmental Compliance Approval and *Nutrient Management Act* approvals processes where they would be significant drinking water threats under Subsection 39 of the *Clean Water Act*, *2006*. Environmental Compliance Approvals and *Nutrient Management Act* approvals should not be granted unless conditions are imposed that, when implemented, will ensure that the activity does not become a significant drinking water threat.

Rationale:

Establishment, Operation or Maintenance of a System that collects, stores, transmits, treats or disposes of sewage

The application and storage of Agricultural Source Material

The use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area of Farm Animal Yard

Policies using the Prescribed Instrument tool rely on the existing responsibility of the Ministry of the Environment, Conservation and Parks and the Ministry of Agriculture, Food and Agribusiness to protect drinking water sources. It is a priority of the City of Hamilton to use existing regulatory tools when available to address the existing threat(s) within the City of Hamilton.

Environmental Compliance Approvals and *Nutrient Management Act* approvals have been a longstanding requirement and the criteria used to assess these certificates are thorough. Requiring the Ministries to review Environmental Compliance Approvals and *Nutrient Management Act* approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional conditions are added to Environmental Compliance Approvals and *Nutrient Management Act* approvals where necessary.

Ministry of Agriculture, Food and Agribusiness: Prohibit Non-Agricultural Source Material Plans

Intent:

The Ministry of the Agriculture, Food and Agribusiness is required to prohibit activities within the Non-Agricultural Source Material (NASM) Plan process where they would be significant drinking water threats under Subsection 39 of the *Clean Water Act*, *2006*.

Rationale:

The risks presented by the application, handling and storage of non-agricultural source material in a WHPA-A, which is directly adjacent to the municipal well, warrant prohibition of future occurrences. The *Nutrient Management Act* currently prohibits the application of non-agricultural source material within 100 meters of a municipal well;

therefore, this policy is consistent with this approach. The City of Hamilton has confirmed that there are no existing occurrences of the application or handling and storage of non-agricultural source material in WHPA-A, as the municipality owns all of the property within that area. As such, no existing policies were written for existing threats.

15.3.3 Land Use Planning

Intent:

The intent of these policies are to manage or prohibit activities within Official Plans and Zoning By-laws as available under the *Clean Water Act, 2006.* Further, the *Clean Water Act, 2006* requires municipalities to amend Official Plans to reflect land use planning policies in areas where activities could be significant drinking water threats.

Rationale:

The establishment, operation or maintenance of a Waste Disposal Site within the meaning of Part V of the *Environmental Protection Act, 1990*

The risks presented by these types of facilities warrant prohibition of future occurrences. The Official Plan is a readily available and accessible policy document in which prohibition can be incorporated effectively. In addition, the prohibition of waste disposal sites through land use planning will address those sites that do not require an Environmental Compliance Approval. The area to which this policy would apply is limited and based on current and projected land use. These activities are unlikely to occur in the future.

The establishment, operation or maintenance of a system that collects, stores, transmits treats or disposes of sewage

Part IV tools cannot be used to prohibit sewage threats, so it was concluded that the best approach to manage future sewage systems of this size (<10,000L) would be to manage them through land use planning. The policy requires the City of Hamilton to amend their Official Plan and Zoning By-law and require all new development, where possible, to be located outside of the vulnerable areas. Changes to the Official Plan will also be made to reflect the Ontario Building Code to ensure that future lot sizes are sufficient to accommodate the installation of future systems.

To address any potential threats posed by a new sewage system regulated under the *Ontario Water Resources Act*, the City of Hamilton will amend their Official Plan and Zoning Bylaw to require that new lot sizes be large enough to allow for the sewage system to be located outside of the vulnerable area.

The principle of a self-sustaining lot, or a minimum lot size that would accommodate all of the components required to service a lot, should be included as a tool. Lot sizes should be sufficient to meet long term servicing needs.

The Ontario Building Code does not allow existing lots of record that are substandard in size to develop unless they can meet all requirements of a Class 4 system. Holding tanks are only permitted in specific circumstances as noted above. Holding tanks and tertiary systems are not considered a sustainable treatment system by the municipalities due to long term operational and maintenance concerns. On a substandard lot, if a tertiary system fails, the lot may not have the required attenuation time to accommodate a traditional Class 4 system. Further, if possible the on-site onsite sewage systems should be location outside of the vulnerable areas. This should be considered as part of the site plan approval process.

In addition to relying on the Prescribed Instrument to address storm water management outfalls or infiltration facilities, it was determined that it would be appropriate to include a policy to locate the facility outside of the vulnerable areas where there could be a significant drinking water threat, if possible. This may not always be possible but the conditions imposed on the Environmental Compliance Approval should manage the threat.

The handling and storage of Road Salt

Based on the current and projected land use, road salt storage and handling facilities that would be significant drinking water threats are unlikely to occur and can be prohibited. The most effective method of addressing this threat in WHPA-A is to use land use planning tools to prevent the establishment of such storage facilities.

There are currently no public work yards or any plans for public works yards within the vulnerable areas and options are available to locate these facilities outside of locations where a significant threat would occur.

The storage of Snow

The risks presented by these types of facilities warrant prohibition of future occurrences and the Official Plan is a readily available and accessible policy document into which prohibition can be incorporated effectively. While best practice guidelines for the design and operation of snow storage facilities do exist, the preferred option was to prohibit the activity. It was also noted that a certificate of approval (ECA) is required for engineered facilities and this requirement could be used to manage the threat. However, from a policy perspective, it was considered more prudent to eliminate the possibility of these sites being built in vulnerable areas where a significant drinking water threat could occur in the future.

The handling and storage of Fuel

It was discussed whether prohibition or management should be used, and it was not considered appropriate to manage the risk for all scenarios. One option discussed was that a gas station could meet certain criteria, and therefore, lessen the risk within a particular area; however, it was decided that it was best not to establish the activity within the vulnerable areas in the first place. Therefore, it was determined that the preferred option for addressing the land use issues was to prohibit within the Official

Plans and Zoning By-laws the use of lands for gas stations and bulk fuel storage within the vulnerable areas where they would be significant drinking water threats.

15.3.4 Education and Outreach

Education and Outreach Programs

Intent:

To request the City of Hamilton to work with other implementing bodies where desirable to develop, continue or enhance stewardship and outreach and education programs directed at any, or all, drinking water threat activities prescribed under the *Clean Water Act, 2006* where it may be deemed necessary.

Rationale:

The establishment, operation or maintenance of a Waste Disposal Site, within the Meaning of Part V of the *Environmental Protection Act, 1990*

There was support for education and outreach approaches to address the threat of activities related to waste disposal sites; however, it was understood that this will not be enough in itself to address the threats associated with waste disposal. Education and outreach can help inform individuals about responsible waste disposal, particularly for hazardous materials, as well as how to reduce the volume of waste. The outreach and education provided through the various municipal programs at present is appropriate to build on to increase awareness about drinking water source protection.

The establishment, operation or maintenance of a System that Collects, Stores, Transmits Treats or Disposes of Sewage

Education and outreach was identified as a useful tool, but not considered adequate to solely address this threat at a significant level. It was noted that some rural residents are not familiar with onsite sewage systems and their operation. It is important that the homeowner be educated about the workings of their onsite sewage system and the limited treatment it provides.

Conventional and tertiary onsite sewage systems require long-term maintenance, and therefore, require a commitment from the homeowner to carry out that maintenance.

Maintenance of the holding tank is the key point for an education and outreach program. Holding tanks need to be inspected periodically to ensure the tank and connecting piping are not leaking, and they need to be on a regular pump-out schedule to ensure they don’t overflow. It would also be appropriate to educate users of holding tanks about the complexity of treatment of hauled sewage and the inability of conventional treatment to remove all chemicals from the effluent. This may assist in improving the quality of the sewage entering the treatment plant.

The handling or storage of Road Salt

An education and outreach program should be implemented by the municipalities to inform the private sector and the general public about source protection planning and the impacts of road salt on drinking water sources. As the only way to appropriately address this threat is to use less inorganic chloride salts or to capture road and parking lot runoff; efficient use of the salts or the use of alternatives should be the key message.

The handling and storage of Fuel

Educating both homeowners and commercial users of fuel oil is essential, particularly about the hazards associated with leaks and spills and how to prevent them. It is critical that the homeowners know that they are required to report a spill to the Spills Action Centre. The immediacy of response is most important if there is a leak or spill and quick and proper containment of a spill is the key to limiting the impacts to land and water.

Fuel oil companies and fuel distributors should be advised of the vulnerable areas where significant threats to drinking water supplies would occur and be reminded of best practices within these areas, including staff training. The education and outreach policy approach will achieve the objectives of the plan and that a policy regarding the regulation or prohibition of home fuel tanks is not necessary to achieve the Plan objectives.

The application or handling and storage of Pesticides

An education and outreach program on pesticide use and storage methods would help the land owners and industries understand the reason why this activity could potentially impact drinking water sources. This program would be targeted to users who apply on larger scale properties.

15.3.5 Incentive Programs

Incentive Programs

Intent:

Encourage the development and implementation of incentive programs to aid in the implementation of source water protection initiatives. Further, request to the Ministry of the Environment, Conservation and Parks that they continue to fund the Ontario Drinking Water Stewardship Program to assist landowners to manage or cease to conduct activities that are identified as a significant drinking water threat on their properties.

Rationale:

Source water protection is a provincial initiative and affects the entire province. Municipalities strongly feel that the Province of Ontario should continue to fund the Ontario Drinking Water Stewardship Program because this program is one of the most effective tools available to eliminate existing significant drinking water threats.

The purpose of these policies is to express the City of Hamilton's support for incentive programs to address drinking water threats and their desire for the Province to provide continued funding.

The establishment, operation or maintenance of a system that collects, stores, transmits treats or disposes of sewage

The municipality can recoup the costs of the inspection program, and it is up to the municipality as to how to administer charges. For many homeowners, the status of their system is unknown, and the fear is that, upon inspection, long-time residents may be confronted with expensive repairs or replacement costs. The issue was raised about whether the homeowners who use the onsite sewage system should pay for the inspection, as they are the users and beneficiaries. It was put forth that there be some sort of fund to assist homeowners to ensure upgrades are completed when needed without financial limitations.

15.3.6 Specify Action

On-Site Sewage System Maintenance Inspection Program

The intent is to ensure that the City of Hamilton will implement the mandatory maintenance inspection program as outlined in the Ontario Building Code. The onsite sewage system maintenance inspection program supports the implementation of the *Clean Water Act, 2006* by providing a consistent approach for determining if onsite sewage systems are functioning as designed. The intent of the mandatory re-inspection program is to bring all systems in compliance with the Ontario Building Code. Implementing the program will ensure that the existing onsite sewage systems identified within the City in the Assessment Report are operating such that they do not become a significant drinking water threat.

The management of runoff that contains chemicals used in the De-icing of Aircraft

The intent of this policy is to ensure that existing regulations are followed. The existing regulations and guidelines are quite extensive and require appropriate training of personnel, correct storage and handling of de-icing and anti-icing fluids, and the effective management of runoff from de-icing and anti-icing areas. At present, these measures are working to reduce the quantity of de-icing and anti-icing fluids into the environment. It was felt that the existing regulatory regime is appropriate for managing this threat.

Encourage Appropriate Siting, Design and Maintenance Standards for the Establishment and Operation of Liquid Hydrocarbon Pipelines

The location and siting of liquid hydrocarbon pipelines is not controlled by the local municipalities, therefore managing this activity through direction and recommendations

to the appropriate approval authorities is the most effective approach for this local threat. There were no threats identified within Lynden in the Assessment Report.

The liquid hydrocarbon pipeline industry is heavily regulated by both federal and provincial agencies. The policies rely on this existing regulatory framework and focus on integrating source protection into the existing federal and provincial decision-making framework. Some of these implementing bodies may already consider source protection in the assessment and regulation of pipelines and the Source Protection Plan policies act as a formal confirmation of their efforts. Similarly, pipeline owners have a responsibility to ensure they are using the latest and best available information (e.g. vulnerable areas) in the development, operation and maintenance of liquid hydrocarbon pipelines, including creating and updating their emergency planning zones (EPZs). The policy formalizes this responsibility.

The primary concern with liquid hydrocarbon pipelines is a potential spill. Encouraging the Canada Energy Regulator and the Ontario Energy Board to advise the Source Protection Authority and the City of any proposed pipelines will assist the City identify potential impacts to municipal drinking water supplies early in the process. Directing the policy at the Canada Energy Regulator and the Ontario Energy Board also encourages these regulators to formally integrate source protection into their processes to ensure the policy is implemented.

Furthermore, in the event of a spill, significant costs may be incurred by municipalities and should be reimbursed by the pipeline owners; as they are responsible for operations and maintenance. Owners of pipelines that are federally regulated by the Canada Energy Regulator are required to bear all costs associated with the consequences of a spill; however, the Ontario Energy Board has no such requirements for provincially regulated pipelines.

15.3.7 Strategic Action

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

Intent:

To ensure that emergency plans, contingency plans and spill containment plans are updated with respect to spills that occur within wellhead protection areas along highways or railways.

Rationale:

Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore spill prevention and contingency/response plans should be updated to include maps that clearly detail the vulnerable areas. Quick and effective response to spills may prevent an emergency from affecting a municipal drinking water source. Additionally, updates to the current

spill prevention and contingency/response plans can act as a communication tool for the municipalities and the public to ensure residents are aware of the location of wellhead protection areas and knowledgeable regarding the appropriate response in the event of a spill in these areas.

Transport Pathways

Intent:

To achieve the intent of the *Clean Water Act, 2006*, transport pathways may increase the vulnerability. Therefore, to ensure that specifically the City of Hamilton supports provincial efforts to encourage the decommissioning of abandoned wells as per Ontario Regulation 903.

Rationale:

Improperly constructed or maintained water wells can be transport pathways. The risk to drinking water sources from these wells would be lower if fewer of them existed. Therefore, it is recommended that urban residents with existing well supplies be encouraged to connect to the municipal water system, when available, decommission their wells, and local municipalities be encouraged to enact by-laws to prohibit the construction of new water wells in the urban area and settlement area where municipal water service is available.

The abandonment of wells is covered under Ontario Regulation 903, which requires that wells be appropriately decommissioned when not used for longer than two years. The wells are to be sealed in order to remove the pathway to the aquifer. This does not always happen, and consequently, the aquifer could be exposed to contamination. Also, there should be some component of enforcement. If someone abandons a home and does not decommission the well, there do not appear to be repercussions for this inaction. There was concern that the policy not be too aggressive. The focus of the policies should be to help individuals understand the potential danger of old wells and offer support through education and funding.

Further policies were developed to ensure that the creation of a potential transport pathway does not occur. This includes the use of best management practices for the installation of new municipal infrastructure, encourage the connection to municipal infrastructure for sewage and water, prohibit the construction of new wells where municipal infrastructure is available, request for the City of Hamilton and to create new procedures for the installation of earth energy systems.

16.0 POLICY DEVELOPMENT FOR THE COUNTY OF BRANT

16.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Area and the County of Brant have been actively involved with the development of the Grand River Source Protection Plan policies. The County of Brant has been present at various meetings hosted by the Lake Erie Source Protection Region in order to develop locally implementable policies. These policies have been developed and reviewed by municipal staff and council.

County of Brant Council supported the general Water Quantity policy direction and draft policies at their Council Meeting on December 17, 2019, and passed the following resolution:

> *THAT Planning Advisory Committee Report PA-19-55 – Source Water Protection Plan Update – Bethel Well be received as information; AND THAT the County of Brant endorses the proposed update to the Grand River Source Protection Plan related to the draft Water Quantity policies for the Bethel Well.*

16.2 Financial Considerations

There will be direct financial costs to the County to fund and administer an appointed Risk Management Official and Inspector(s), which have been outsourced to a consulting company. This position will require on-going administrative and staff resources at the County of Brant to ensure the on-going negotiation, enforcement and monitoring of Part IV Risk Management Plans.

Further discussions are also required with neighbouring municipalities or Source Protection Regions (e.g. City of Brantford) where wellhead protection areas or intake protection zones from the neighbouring jurisdictions extend into the County (or vice versa). This raises some questions for the County in terms of responsibility and cost recovery for the implementation of measures to protect the municipal drinking water supplies from other jurisdictions. The *Clean Water Act*, 2006 does make provision for imposing fees associated with the Risk Management Official/Inspector in order to assist in recovering costs. However, this may ultimately have a direct impact on landowners, farmers, businesses, etc.

The County will also incur additional labour and administrative costs to implement the Ontario Building Code requirements for the mandatory onsite sewage inspections. Inspections within the most vulnerable wellhead protection areas will be given priority.

Staff resources will also be required to implement education and outreach programs associated with the application of road salt and the handling and storage of DNAPLs.

There will also be a direct cost to the County to amend Official Plans and Zoning By-laws to implement the Source Protection Plan policies. In addition, annual reporting requirements to the Source Protection Authority will require staff resources and may have cost implications to the County to prepare and administer.

16.3 Policy Intent and Rationale

Review of current and projected land uses indicates that there is a high level of protection of the municipal raw water from the prescribed drinking water threats at some of the municipal wellheads within the County of Brant. The Source Protection Plan policies that were developed reflect this current assessment as presented in the approved Assessment Report, available online at www.sourcewater.ca.

Based on the percentage of impervious surface area presented in the approved Assessment report, policies were not required to address significant drinking water threat activities from the application of road salt.

The MECP approved the first draft Updated Grand River Assessment Report and Source Protection Plan on August 16, 2019. The primary revisions reflected the addition of a new well at the Airport Well Field, a proposed new well field for St. George, and sustained improvements of nitrate and chloride concentrations at the Bethel Well Field and Mt. Pleasant Well Field, respectively.

Since approval of the first updated assessment report and plan, an additional technical study was completed, entitled Whitemans Creek Tier 3 Local Area Water Budget and Risk Assessment. The study evaluated the risk of water quantity impacts to municipal drinking water supply for the Bright (Oxford County) and Bethel Wellheads located within the Whitemans Creek subwatershed. The purpose of the study was to investigate the sustainability of municipal drinking water systems in terms of being able to meet their allocated pumping rates considering future increases in municipal demand, future land use changes, drought, and impacts to other uses.

The results of the study indicated that the Whitemans Creek Subwatershed was assessed as being moderately stressed. The Tier 3 Study was required to determine the sustainability of the municipal drinking water supply under average climate and drought conditions. The study identified that the Bethel Wellfield is able to meet future water demand under average conditions, but unable to meet future demand under drought conditions. Accordingly, the Bethel Wellfield was assessed as a significant level of risk under drought conditions.

County Staff, in consultation with the Grand River Conservation Authority (GRCA) and MECP developed new water quantity policies to address the significant water quantity risk identified for the Bethel Well Field, based on the Tier 3 results. Some of the policies developed apply specifically to the County of Brant to implement, while other policies apply through provincial prescribed instruments, such as Permits to Take Water.

16.3.1 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit activities under Section 57 of the *Clean Water Act*, *2006* in vulnerable areas where the activities would be a significant drinking water threat if they were established.

Rationale:

In most cases, as described below, based on a review of current and proposed land use in the areas where the following activities could be a significant drinking water threat, it is the opinion of the County and Source Protection Committee that these activities are unlikely to occur in the future.

Waste activities that do not require an Environmental Compliance Approval

For activities that do not require an Environmental Compliance Approval, the use of Part IV Prohibition ensures that the activities do not become a significant drinking water threat. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal.

The risks presented by these types of facilities warrant prohibition of future occurrences within a WHPA-A, Nitrate Issue Contributing Areas and Intake Protection Zones, as these are the areas that are most vulnerable. This includes the waste sub threat-discharge of tailings from mines, which is exempt under the Environmental Compliance Approval process. Based on existing land use patterns and natural resource availability, it is also unlikely this activity will take place within these applicable areas.

The application and storage of Agricultural Source Material (ASM)

The risks presented by the application and storage of ASM in a WHPA-A, which is directly adjacent to a drinking water well, warrants prohibition of future occurrences. The *Nutrient Management Act* prohibits the application of agricultural source material within 100 meters of a drinking water well, where Nutrient Management Plans and Strategies are in place. This policy is consistent with the policy direction established by the *Nutrient Management Act*. As the *Nutrient Management Act* does not apply to all agricultural operations, Part IV prohibition of existing and future application of ASM was determined to be the most appropriate tool to prohibit this activity, as it would ensure that all agricultural operations undertaking this activity within significant threat areas are treated consistently.

Prohibition of new storage of ASM is also proposed to be extended to the most vulnerable areas (vulnerability score=10) of WHPA-B, as the vulnerability of these areas is equivalent to that of WHPA-A. Under the *Clean Water Act*, 2006, the Tables of Drinking Water Threats identify the risk and level of threat posed by this activity as

being the same within all areas with a vulnerability score of 10. Prohibition was also deemed to be a reasonable approach, based on the location of existing livestock barns and other farm buildings/structures, the limited area affected, and the ample opportunities to locate new facilities outside of significant threat areas.

The handling and storage of Non- Agricultural Source Material (NASM)

The risks presented by the handling and storage of NASM warrants prohibition of future storage. The *Nutrient Management Act* currently prohibits the application of NASM within 100 meters of a drinking water well. Prohibiting the storage of NASM in this area is consistent with the established policy direction of the *Nutrient Management Act*. No additional Prescribed Instrument policy was added to reduce redundancy.

Prohibition of new storage of NASM is also proposed to be extended to the most vulnerable areas (vulnerability score=10) of WHPA-B, as the vulnerability of these areas is equivalent to that of WHPA-A. Under the *Clean Water Act*, 2006, the tables of drinking water threats identify the risk and level of threat posed by this activity as being the same within all areas with a vulnerability score of 10. Prohibition was also deemed to be a reasonable approach, based on the location of existing livestock barns and other farm buildings/structures, the limited area affected, and the ample opportunities to locate new facilities outside of significant threat areas.

The handling and storage of Pesticides
The handling and storage of Road Salt
The handling and storage of Snow

The risks presented by the future handling and storage of pesticides, future road salt storage, and the future storage of snow in a quantity that is at least 0.01 hectares (10 meters by 10 meters) within the most vulnerable areas (i.e. Wellhead Protection Areas and Intake Protection Zones) warrants the prohibition of these activities. Based on a review of the land use, there are alternative locations within the County that are outside of these vulnerable areas where new facilities can be located. Further, based on land use, these activities are unlikely to take place within these applicable areas.

The handling and storage of Fuel - storage more than 2,500 Litres

The handling and storage of Dense Non-aqueous Phase Liquid (DNAPLs)

The handling and storage of Organic Solvents - WHPA-A

These activities are significant drinking water threats in a WHPA-A and WHPA-B (vulnerability score=10), and pose a serious risk to drinking water sources. Since future activities could be located within these vulnerable areas, it is important to prohibit these activities. Further, there are alternative locations outside these most sensitive areas within the County where these new facilities can be located.

Livestock Grazing or Pasturing Land, Outdoor Confinement Areas or a Farm Animal Yard

The risks presented by these activities warrant prohibition of future occurrences in a WHPA-A. These types of activities can generate the same level of risk to drinking water supplies as the application or storage of ASM. The proposed prohibition of these activities is consistent with the approach taken with respect to the application and storage of ASM and the established policy direction of the *Nutrient Management Act*. The area affected by this prohibition is relatively confined and consequently the projected impact on the agricultural community in the County is anticipated to be negligible. Properties which fall in a WHPA-A where future livestock grazing or pasturing land, outdoor confinement areas or a farm animal yard would be prohibited are quite large and it is expected that these activities could be managed in areas outside of a WHPA-A.

Section 58 Risk Management Plans

Intent:

The development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act, 2006* was required for activities that cannot be managed effectively through land use planning or existing Prescribed Instruments.

Rationale:

Risk Management Plans established under Section 58 of the *Clean Water Act, 2006* are used as a tool to manage existing and future drinking water threats. This tool is used to "fill the gap" where land use policy or other existing legislation cannot regulate a significant drinking water threat. This tool is particularly effective in dealing with existing significant drinking water threat activities, where prohibition will likely impose undue hardship on numerous property owners. Risk Management Plans also provide an opportunity to work with property owners/proponents to manage a threat, particularly in areas that are less vulnerable (i.e. WHPA-B or C).

<u>Waste activities that do not require an Environmental Compliance Approval</u>

This policy ensures that waste activities that do not require an Environmental Compliance Approval are adequately managed to ensure they do not become a significant drinking water threat. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal in less vulnerable areas (outside of a WHPA-A). It was decided that although the policy would result in costs to the implementing body, the use of Risk Management Plans to manage existing storage of waste is the best option to manage these existing threats, particularly since these activities do not have an Environmental Compliance Approval and there are relatively few circumstances where this policy would apply.

<u>The storage of Agricultural Source Material (ASM)</u>

Risk Management Plans were determined to be the most consistent, appropriate, and effective means of regulating the existing storage of ASM in all significant threat areas,

even in instances where such activities would be subject to a Prescribed Instrument issued under the *Nutrient Management Act, 2002*. Using Section 58 policies would ensure that all properties and operations associated with such activities in significant drinking water threat areas are subject to the same review process and monitoring and management requirements. As well, properties containing such significant drinking water threat activities are also likely to contain other significant drinking water threats that would require a Risk Management Plan. Therefore, the Risk Management Plan process would allow for all threats on a property to be dealt with through a single, consistent process and also provide an opportunity for the Risk Management Official to discuss any local education and outreach or incentive programs that might be available to assist in managing those threats. It is intended that the principles of the *Nutrient Management Act* would serve as the general basis for the development of a Risk Management Plan for such significant drinking water threats and it is anticipated that the Risk Management Official will work closely with OMAFRA staff to determine how such principles should be applied.

The application, handling and storage of Pesticide

The existing and future application and the existing handling and storage of pesticides can be effectively addressed through the use of Risk Management Plans. The County has decided that although the policy would result in costs to the municipality, the use of Risk Management Plans to manage the instances where pesticides are applied stored and handled (existing) was the best option to manage the threat, particularly since land use planning tools cannot be effectively used to manage such activities.

Additionally, it is felt that since there are some existing pesticide storage threats in the County, it would be appropriate to require Risk Management Plans as a prohibition may create some under hardships on property owners.

The application, handling, and storage of Commercial Fertilizer

The application of fertilizer is generally covered under the *Nutrient Management Act, 2002* or any other Prescribed Instrument. However, not all agricultural operations or land uses are subject to the *Nutrient Management Act, 2002* and traditional land use planning tools cannot address the application of fertilizer. As a result, the County has determined a Risk Management Plan is the most consistent, effective, and appropriate tool to manage these activities, particularly where the use/agricultural operation is not subject to the *Nutrient Management Act.*

The handling and storage of Road Salt

This threat can be effectively addressed through the use of Risk Management Plans. It was decided that although the policy will result in costs to the implementing body, the use of Risk Management Plans to manage existing handling and storage of road salt is the most appropriate option to manage the threat. Prohibition of this activity is not appropriate due to the need for road salt to ensure public safety. The circumstances that make this activity a significant drinking water threat (e.g. greater than 5,000 tonnes)

limit the number of potential occurrences of this significant drinking water threat. The Assessment Report does not identify any existing threats in the County, and therefore, the implementation of this approach is anticipated to be negligible.

The storage of Snow

The use of Risk Management Plans ensures that the existing snow storage in an area that is at least 0.01 hectares (10 meters by 10 meters) is adequately managed within a WHPA-A and WHPA-B (vulnerability score=10). It was decided that although the policy would result in costs to the implementing body, the use of Risk Management Plans to manage existing storage of snow was the most appropriate option to manage the threat. Additionally, the Assessment Report did not identify any existing threats, so the likeliness of this policy being applied is limited.

The handling and storage of Fuel- storage more than 2,500 Litres

The County concluded that the use of Risk Management Plans is the preferred policy direction to address this threat. Prohibition was not selected as a policy choice because it could potentially create a number of legal non-conforming uses for the existing activities identified as a threat within the County. A Risk Management Plan approach is recommended to ensure compliance with the requirements of the *Technical Standards and Safety Act, 2000* and to ensure that an emergency response plan is in place.

The handling and storage of a Dense Non-aqueous Phase Liquid (DNAPLs)

The handling and storage of Organic Solvents

The use of Risk Management Plans ensures that the handling and storage of a dense non-aqueous phase liquid (DNAPL) and organic solvents is adequately managed to ensure these activities do not become a significant drinking water threat. It was decided that although the policy will result in costs to the implementing body, the use of Risk Management Plans to manage the 42 existing instances identified within the County where DNAPL is currently being stored and handled is the best option to manage this activity. With this measure in place, there is confidence that new land uses in WHPA-A and B vulnerability score 10 would also be screened by a Risk Management Official and be required to prepare a Risk Management Plan. Given the broad area where these activities are deemed to be a significant drinking water threat, the use of this approach is considered appropriate.

The management of Runoff that Contains Chemicals Used in the De-icing of Aircraft

There are no existing threats associated with aircraft de-icing noted in the Assessment Report. Based on land use activities surrounding existing municipal wells and intakes, the potential for an airport to be constructed in the future that is of a size which may pose a significant drinking water threat is minimal. The most effective policy to address future threats from this activity is the use of a Risk Management Plan.

The Use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or a Farm Animal Yard

The County has concluded that other than future activities within WHPA-A, the threat can be appropriately addressed through the use of other tools. A Nutrient Management Plan and/or Strategy can be an effective tool to manage these threats. However, not all agricultural operations are subject to the *Nutrient Management Act, 2002* and therefore, are not required to have Nutrient Management Plans and/or Strategies. In addition, livestock grazing or pasturing lands are not covered under the *Nutrient Management Act, 2002*. As a result, a Risk Management Plan was felt to be a more consistent and appropriate tool for these activities. The Risk Management Plan may be scoped to the requirements of Nutrient Management Plans/Strategies. The agricultural community is familiar with the requirements of the *Nutrient Management Act, 2002* and it is important to ensure consistency within the agricultural community.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006* (WHPA-A, B and C), as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998,* and Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be significant drinking water threat to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (Prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

The policies also enable the Risk Management Official to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act* or Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official.

16.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks (MECP) is required to prohibit significant drinking water threats through the Environmental Compliance Approval process.

Rationale:
The County's preference is to rely on existing legislation as much as possible to regulate prescribed drinking water threats. The Environmental Compliance Approval process is an established process that can effectively regulate and restrict uses and activities.

New waste disposal sites within the meaning of Part IV of the *Environmental Protection Act*

Sewage System or Works - combined sewer discharge from a stormwater outlet

The risks presented by these activities warrant prohibition of future occurrences. In some cases there are no existing threats in the County and alternative locations outside vulnerable areas are available. As a result, prohibition of these activities through the Environmental Compliance Approval process will not have a significant impact on the municipality or property owners.

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Intent:

The MECP is required to review activities within the Environmental Compliance Approval process where they would be significant drinking water threats under Section 39 of the *Clean Water Act, 2006*. Environmental Compliance Approvals should not be granted unless terms and conditions are imposed that will ensure the activity does not become a significant drinking water threat. The MECP is required to review and amend and ensure that any new PTTW applications include source protection terms and conditions to ensure that the municipality's water supply is sustainable.

Rationale:
Policies using the Prescribed Instrument tool rely on the existing responsibility of the MECP to protect drinking water sources. It is a priority of the County to use existing regulatory tools, when available, to address existing threat(s) within the County. Environmental Compliance Approvals have been a longstanding requirement for waste disposal and sewage, and the criteria used to assess these Certificates are thorough. Requiring the MECP to review Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional conditions are added to Environmental Compliance Approvals, where necessary.

Ministry of Northern Development, Mines, Natural Resources and Forestry: Review and Amend Aggregate Resources Act License Applications

Intent:

The MECP is required to review and amend and ensure that any new Aggregate Resources Act applications for extraction below the water table in the WHPA-Q include source protection terms and conditions to ensure that the municipality's water supply is sustainable. The change from extraction above the water table to extraction below the water table would require an amendment to the *Aggregate Resources Act, 1990* site plan and license. In support of the amendment, the operator would have to provide a full hydrogeological assessment, which would be circulated to MECP to review (under an agreement between the two ministries). NDMNRF has the ability to require additional information and add terms and conditions to their approvals.

Rationale:

Policies using the Prescribed Instrument tool rely on the existing responsibility of the NDMNRF and MECP to protect drinking water sources. It is a priority of the County to use existing regulatory tools, when available, to address existing threat(s) within the County. Requiring the NDMNRF and MECP to review Aggregate Resources Act applications in light of the circumstances that make the activity a significant drinking water threat will serve to ensure applications will be reviewed and amended where appropriate.

Ministry of Agriculture, Food and Rural Affairs/Ministry of the Environment, Conservation and Parks: Review and Amend Non-Agricultural Source Material and Agricultural Source Material Plans/ Strategies

Intent:

The MECP or Ministry of Agriculture, Food and Rural Affairs (OMAFRA), as applicable, are required to review and, if necessary, amend NASM and/or ASM Plans or Nutrient Management Plans or Strategies to ensure these threats are managed such that they do not become a significant drinking water threat.

Rationale:
A number of existing threats have been identified within the County in the Assessment Report. The County determined the use of Prescribed Instruments, specifically NASM and ASM Plans/Strategies as the preferred approach to address these threats, particularly outside a WHPA-A. The protocol for these Plans has been extensively reviewed and updated by the Province. These revisions are an important addition in the management of drinking water threats and the County will rely on OMAFRA and/or MECP to include measures to protect drinking water sources. This policy is also to ensure consistency with current standards and regulations outlined in the *Nutrient Management Act* as requested by OMAFRA.

16.3.3 Land Use Planning

Intent:

To manage activities by requiring municipalities, under the *Clean Water Act, 2006,* to amend Official Plans and Zoning By-Laws to reflect land use planning policies in areas where activities could be significant drinking water threats. This also includes master planning documents to plan for growth management; including Master Servicing and water supply capacity to the planning horizon of the Growth Plan, which is to 2041.

The storage of Snow

The County supports the use of best management practices to promote the efficient use of land for the storage of snow. The primary concerns relate to large parking lots that are normally associated with multiple residential unit developments, and employment, institutional, or commercial land uses. These types of developments are subject to site plan control. For this reason, it is recommended that the Official Plan be amended to include policies to ensure that any new development is designed and maintained based on best management practices regarding snow storage and road salt application. If appropriate, design elements and best management practices should be incorporated up front for new development so that road salt and snow storage areas are managed over the long term.

An Activity That Takes Water From an Aquifer or a Surface Water Body Without Returning the Water Taken to the Same Aquifer or Surface Water Body

Land Use Planning as a management tool is considered to be an effective way to address consumptive water takings. The County of Brant during the Official Plan update, Municipal Comprehensive Review and updates to Master Servicing Plans for settlement areas is required to conform to the Growth Plan for the Greater Golden Horseshoe. The municipality shall ensure that Planning Act decisions consider the long-term sustainability of the municipal drinking water system when planning for growth and approving development that is to be serviced by an existing municipal well located within a WHPA-Q with a significant risk level.

An Activity That Reduces the Recharge of an Aquifer

County of Brant supports best management practices and will ensure that applications under the *Planning Act*, *1990* the relevant Planning Approval Authority shall ensure recharge reduction does not become a significant drinking water threat for activities related to reducing the recharge of the aquifer and groundwater supply. Much of the County's water supply is dependent on municipal wellheads, but the Tier 3 Risk Assessment identified recharge reduction activities as having a negligible effect on the drinking water supply. By requiring new development to implement best management practices such as Low Impact Development with the goal of maintaining pre-development recharge.

Conditions

The record of site condition process is important to understand the risks involved with any brownfield development site. Making this process apart of the *Planning Act* application will ensure this is completed by any new proponent.

16.3.4 Education and Outreach

Education and Outreach Programs: Municipality and Conservation Authority delivered

Intent:

To request the County to work with other implementing bodies, where desirable, to develop, continue, or enhance stewardship and outreach and education programs directed at significant drinking water threat activities prescribed under the *Clean Water Act, 2006,* where it may be deemed necessary.

Rationale:

The County supports education and outreach programs to address all drinking water threats and provide information to the residents of the County of Brant on the protection of drinking water sources. Policy BC-CW-1.5 is intended to be a generic policy in terms of introducing and promoting education and outreach at the County level. Specific education and outreach policies have been developed for certain significant drinking water threats, either as the main policy approach to manage the significant drinking water threat or as a complimentary policy.

The application and storage of Agricultural Source Material

The application and storage of Non Agricultural Source Material

ASM

The application and storage of Commercial Fertilizer

The application and storage of Pesticides

The use of Land for Livestock Grazing or Pasturing, Outdoor Confinement Area or Farm Animal Yard

An Activity That Takes Water From an Aquifer or a Surface Water Body Without Returning the Water Taken to the Same Aquifer or Surface Water Body

Education and outreach is considered by the County to be the most effective way to control these activities, particularly within the Nitrate Issue Contributing Areas and Intake Protection Zones. These areas compromise large geographic areas and other tools, such as Risk Management Plans or Prohibition, would affect numerous properties and agricultural operations, which would be onerous on the municipality and agricultural industry. An education and outreach program would also compliment the proposed

management/regulation tools (e.g. Prohibition or Risk Management) for the more vulnerable areas (i.e. WHPA-A or B). The effectiveness of this tool will be monitored to ensure that it is achieving the objectives of the *Clean Water Act* and to determine if further revisions to this approach are required at the next review of the Source Protection Plan.

The handling and storage of Fuel more than 250 Litres - equal to or less than 2,500 Litres

The preferred tool is education and outreach to ensure that heating oil systems have been identified as threats and landowners are aware of appropriate tank maintenance requirements and response in case of a spill. It is noted that home insurance companies have inspection and maintenance requirements for homes with oil tanks. Many rural homes rely on fuel oil for heating and it is felt that other tools such as Part IV Prohibition or Risk Management Plans would be too onerous on landowners/the municipality particularly given the number of existing threats identified in the County.

The handling and storage of a Dense Non-aqueous Phase Liquid (DNAPL)

The County is concerned that there are various issues relating to the use of DNAPLs in all land uses and activities. Many DNAPLs are readily available and are found within commonly used products. Therefore, the County is of the opinion that use of education and outreach programs that promote the use of alternative products and proper disposal are appropriate to address this threat in addition to the other tools proposed to manage this significant drinking water threat. The County is of the opinion that if users of these products are aware of the risks associated with these products and the need to consider alternatives, it could improve the protection of drinking water sources.

16.3.5 Specify Action

Support On-Site Re-inspection Program under Ontario Building Code

Intent:

Rely on the existing onsite sewage system inspection program, which is implemented through the Ontario Building Code, to ensure existing and future onsite sewage systems do not become a significant drinking water threat to municipal drinking water supplies.

Rationale:

The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage

Part IV tools cannot be used to prohibit sewage threats. Therefore, the County concluded that the best approach to manage future sewage systems of this size would be to manage them through the required maintenance inspection program under the Ontario Building Code.

The onsite sewage system maintenance inspection program supports the implementation of the *Clean Water Act, 2006* by providing a consistent approach for determining if on-site sewage systems are functioning as designed. The intent is to bring all systems in compliance with the Ontario Building Code. Prohibition of uses that rely on these small onsite sewage systems is not considered by the County to be a viable option as several of the local municipalities are solely serviced on private systems. A land use prohibition would effectively prevent future growth in some of the County's settlement areas.

Encourage Appropriate Siting, Design and Maintenance Standards for the Establishment and Operation of Liquid Hydrocarbon Pipelines

Intent:

The location and siting of liquid hydrocarbon pipelines is not controlled by the local municipalities, therefore managing this activity through direction and recommendations to the appropriate approval authority is the most effective approach for this local threat.

Rationale:

The primary concern of this policy is the potential spill from a pipeline. Encouraging the National Energy Board and the Ontario Energy Board to advise the Source Protection Authority and the County of any proposed pipelines will assist the County in identifying early in the process whether a proposed pipeline will affect the County's municipal drinking water supply. Liquid hydrocarbon pipeline threats have been identified within the County in the Assessment Report.

The Application of Road Salt

Intent:

To ensure the application of road salt ceases to be a significant drinking water threat in the Issue Contributing Area for the application on County and municipal roadways.

Rationale:

The prohibition of the application of road salt is not an option due to safety concerns. The updating/creation of Salt Management Plans will ensure that the County is aware that the application of road salt is current affecting groundwater drinking water sources. Modification and/or inclusion of special measures should help to manage this activity. It is hoped, that this will result in a reduction of loading on the municipal supply where this issue has been identified.

Conditions

It is important for the County to continue to support the environmental investigation, remediation, and redevelopment of sites that are noted to be Conditions. This is

important from both an economic stand point and community improvement. Education and outreach programs could also be included in this to ensure the developers are aware of initiatives regarding source water protection.

Maintenance of the Tier 3 Water Budget Model

Intent:

To ensure that the Whitemans Creek Tier 3 Water Budget model is funded and maintained for future and ongoing use.

Rationale:

The Whitemans Creek Tier 3 Water Budget and Risk Assessment was a complex and expensive study. The models used in the study are critical to the Tier 3 process and valuable tools that can be used in other water quantity studies to make informed and regulatory decisions at the County of Brant, the GRCA and the MECP. Maintenance of the model is costly, and beyond the funding capabilities of the County of Brant.

Ensuring Future Water Quantity Supply and Demand Management

Intent:

To ensure that the County of Brant's drinking water supply system is up-to-date with the most accurate information available, and update planning documents.

Rationale:

Although the County of Brant has and will be updating Master Servicing Plans and water conservation plans for the County and settlement areas, the Tier 3 Water Budget and Risk Assessment considerations are currently not included.

Identifying Additional Drinking Water Supplies

Intent:

The County of Brant is encouraged to consider locating additional water supply sources outside of the WHPA-Q, where practical, to reduce water quantity risks.

Rationale:

The County of Brant requires updating the hydrogeologic model to include wellfields servicing the Town of Paris including the Airport Well to complete a Well Capacity Study to support the Water Supply Master Plan for the County of Brant. Implementing water conservation efforts will not necessarily reduce water use, and the preferred measure to managing water quantity risk is to source additional drinking water supplies outside the vulnerable area for future growth to the town of Paris.

16.3.6 Incentive Programs

Intent:

To encourage program funding that supports the protection of existing and future drinking water sources from significant drinking water threats.

Rationale:

As a supplemental policy, the County supports incentive programs to assist property owners with the cost of implementing beneficial practices to protect drinking water sources. Where possible, incentives will be used with other tools to achieve risk reduction. The Province has assisted (directly and in-directly) in the funding of programs such as the Ontario Drinking Water Stewardship Program. Continued provincially funding is encouraged to ensure the protection of drinking water sources.

16.3.7 Strategic Action

Decommissioning of Abandoned Wells that serve as Transport Pathways

Intent:

The intent is to ensure transport pathways, such as abandoned wells, are properly managed to reduce the risks to the municipal drinking water sources.

Rationale:

Abandoned wells are often located on private property and the cost to properly decommission or upgrade the structure may be cost prohibitive. A specific transport pathway policy to support ongoing stewardship programs to decommission abandoned wells will help reduce the ability of contaminates to enter the groundwater within vulnerable areas. This may further reduce the vulnerability of an area and the number of identified threats.

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

Intent:

To ensure that emergency plans, contingency plans and spill containment plans are updated with respect to spills that occur within Wellhead Protection Areas along highways or railways.

Rationale:

Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore, spill prevention and contingency/response plans should be updated to include maps that clearly detail the

vulnerable areas for drinking water sources. Quick and effective response to spills may prevent an emergency from affecting a municipal drinking water source. In addition, updates to the current spill prevention and contingency/response plans can act as a communication tool for the County and the public and also ensure residents are aware of the location of Wellhead Protection Areas and Intake Protection Zones and are knowledgeable regarding the appropriate response in the event of a spill in these locations.

17.0 POLICY DEVELOPMENT FOR THE CITY OF BRANTFORD

17.1 Municipal Support

Staff from the Policy Planning Department and Environmental Services Department has been actively involved in preparing and developing draft Source Protection Policies for the City's Intake Protection Zones. City of Brantford, Councilor Marguerite Ceschi-Smith, also sat on the Source Water Protection Committee from 2007-2014.

On March 5, 2012 Staff Report CD2012-016, was presented to the City's Committee of the Whole, Community Services. This report presented the draft Source Water Policies for the City of Brantford. Staff Report CD2012-016 included the following recommendations to the Committee:

> *"THAT Staff Report CD2012-016 regarding Significant Drinking Water Threat Policies for the City of Brantford BE RECEIVED;"*
>
> *"THAT the Significant Drinking Water Threats, attached as Appendix "B" to Report CD2012-016 BE SUPPORTED; and,"*
>
> *"THAT Appendix "B" to Report CD2012-016 BE FORWARDED to the Lake Erie Region Source Protection Committee for inclusion in the Grand River Source Protection Plan."*

The Committee of the Whole approved the above noted recommendations and on March 23, 2012, the recommendations were ratified by City Council. Planning staff subsequently forwarded the draft policies to the Grand River Conservation Authority, acting as the Grand River Source Protection Authority, to be included in the final version of the Grand River Source Protection Plan.

On March 19th, 2019 Council Report 2019-163, was presented to the City's Committee of the Whole, Community Services. This report presented new amendments to the Brantford's Source Protection Plan policies. Council Report 2019-163 included the following recommendations to the Committee:

> *"THAT Report No. 2019-163 titled "Update to City of Brantford's Source Protection Plan" BE RECEIVED; and"*
>
> *"THAT the proposed amendments to specific policies in the Brantford Source Protection Plan as set out in Appendix A of Report 2019-163 BE APPROVED; and"*
>
> *"THAT a copy of this resolution BE PROVIDED to the Grand River Source Protection Authority by April 3rd, 2019."*

The Committee of the Whole approved the above noted recommendations and on April 3rd, 2010, the recommendations were ratified by City Council. Compliance staff subsequently forwarded the amendments to the Grand River Conservation Authority, acting as the Grand River Source Protection Authority, to be included in the updated version of the Grand River Source Protection Plan.

17.2 Financial Considerations

The Grand River is the source of the City of Brantford's drinking water. The Grand River traverses many different regions, cities and counties. In this case, it may not be fair for the City of Brantford to bear the full cost of source protection plan implementation.

Within the *Clean Water Act*, 2006 some provisions are set out for financing various aspects of source protection including stewardship programs and application of fees for Part IV policies.

As stated in the *Clean Water Act*, 2006 fees can be applied for applications received under section 58, 59 or 60, for agreeing to or establishing a Part IV Risk Management Plan under section 56 or 58, for issuing a notice under section 59, for accepting a risk assessment under section 60, or for entering property or exercising any other powers under section 62.

The Lake Erie Source Protection Committee has, from the outset of the planning process, empowered the municipalities to direct the source protection plans to meet their needs. The Lake Erie Source Protection Region has been unique in this approach allowing municipalities to take the lead on policy development. This has resulted in plans that have been designed with the financial means of the municipality in mind.

The financial implications, and the question about what agency would ultimately be responsible for funding source water protection implementation in the City of Brantford was strongly considered in the development of the source protection policies.

The City has tried to limit the use of Part IV Risk Management Plans where ever possible in an effort to reduce costs. However, in some instances the Part IV Risk Management Plan is the best option to address significant drinking water threats. This was implemented where after a review of the existing and project future land uses, and it was noted that there was a high likelihood of the activity occurring.

Finally, the financial implications on other agencies have also been considered in the development of the policies. The majority of policies included in this Plan are requesting implementing bodies to prioritize the Intake Protection Zones (IPZs) in their approval process, deny the approvals, and provide for measures that would address concerns within the IPZs, or enhance existing programs and services to have regard to significant threat policies and source protection. In many cases, it is believed that these policies should have no financial implications for the implementing body other than those already assumed within their own internal processes.

Therefore, in the absence of any clear indication from the Province of Ontario as to the level of its financial commitment for the implementation of source water protection, the goal of the source protection policies was to, whenever possible, protect the municipal drinking water supply with an as low as possible expense to the implementing body.

17.3 Policy Intent and Rationale

The Source Protection Plan policies apply within the City of Brantford city limits, where vulnerable areas were identified in the approved Assessment Report. As such, the majority of the land is residential, commercial and industrial, therefore, the policies were written to reflect this land use. It is anticipated that this land use will change minimally in the future where the policies will apply. The mapping reflected in the Source Protection Plan should be referenced when reviewing this rational.

17.3.1 Part IV Policies

Section 57 Prohibition

Intent:

These policies are intended to prohibit activities under Section 57 of the *Clean Water Act, 2006* in vulnerable areas where the activities would be a significant drinking water threat. The Holmedale Canal, which is located in IPZ-1 conveys raw water from the Grand River to the water treatment plant's intake. The Canal is characterized by a low dilution capacity, therefore contaminant intrusion will have the most significant impact on raw water quality. Generally, policies are significantly more stringent in IPZ-1 compared to IPZ-2 or IPZ-3.

Rationale:

Based on a review of current and projected land uses in the areas where the following activities could be a significant drinking water threat, it is believed that in most cases, these activities are unlikely to occur in the future in the City.

Waste activities that do not require an Environmental Compliance Approval

For new activities which do not require an Environmental Compliance Approval, the use of Part IV Prohibition within the Intake Protection Zones ensure that where such activities would pose a significant drinking water threats, they never become significant drinking water threats. The risks presented by these types of facilities warrant prohibition of future occurrences as these are the most vulnerable areas. These types of activity would include among other, the storage or discharge of mine tailings and the land disposal of industrial wastes.

Future waste generation activities carried out in IPZ-1 which don't require a Prescribed Instrument but that would pose a significant drinking water threat will be prohibited. Only small waste generators are exempt as described in clauses (p), (q), (r), (s), (t), or (u) of the definition of hazardous waste, or in clause (d) of the definition of liquid industrial

waste as per O. Reg 347. This exemption was crucial so as to avoid infringing on the type of institutional, commercial and industrial facilities that can be located in this vulnerable area.

The storage of Agricultural Source Material (ASM)

The risks presented by the future storage of ASM warrants prohibition of future occurrences in order to minimize eutrophication of the Grand River. The *Nutrient Management Act* currently does not provide any guidance for Intake Protection Zones, however, guidance from OMAFRA has stated that WHPA-A is similar in vulnerability to IPZ-1, thus the same principals can apply. Therefore, this policy is consistent with the direction of the *Nutrient Management Act*. The municipal intake is located within urban areas and therefore, the potential impact of this policy on the agricultural community and other land uses is negligible.

The application, or handling and storage of Non-Agricultural Source Material (NASM)

The future application, or handling and storage of NASM in IPZ-1 will be prohibited in order to reduce the likelihood of contaminant intrusion in the Holmedale Canal. Furthermore, the policy pertaining to the future application of NASM will not apply until either the percent managed land and/or the livestock density increases over current values as detailed in the Assessment Report.

The application of Commercial Fertilizers

The application of commercial fertilizers have been revised to only include its handling and storage. Brantford's Source Protection Plan previously indicated that the application of fertilizers did not currently apply due to the low percentages of managed land and livestock density as detailed in Maps 15-7 and 15-10 of Brantford's Assessment Report.

The storage and handling of Commercial Fertilizers

The future handling and storage of commercial fertilizers in IPZ-1 will be prohibited in order to reduce the likelihood of contaminant intrusion in the Holmedale Canal.

The handling and storage of Dense Non-aqueous Phase Liquids (DNAPL)

The handling and storage of Organic Solvent

The handling and storage of Fuel

The handling and storage of Pesticides

For the same reasons presented above, the future handling and storage of DNAPL, organic solvent, fuel and pesticides in IPZ-1 on commercial/industrial, institutional and agricultural properties will be prohibited to limit contaminant intrusion in the Holmedale Canal.

Section 58 Risk Management Plans

Intent:

The development of Part IV Risk Management Plans under Section 58 of the *Clean Water Act*, *2006* was required for activities that cannot be managed effectively through land use planning or existing Prescribed Instruments.

Rationale:

Part IV Risk Management Plans under Section 58 of the *Clean Water Act, 2006* are used as a tool to manage existing and future drinking water threats. This tool is used to "fill the gap" where land use policy or other existing legislation could not regulate a significant drinking water threat. This tool is particularly effective in dealing with existing significant drinking water threat activities, where prohibition would likely impose undue hardship on property owners, businesses, etc. Part IV Risk Management Plans also provide an opportunity to work with property owners/proponents to manage a threat, particularly in areas that are less vulnerable (i.e. IPZ- 2, 3).

Waste activities that do not require an Environmental Compliance Approval

This policy ensures that new activities which do not require an Environmental Compliance Approval are adequately managed to ensure they do not become a significant drinking water threat. Examples include auto-salvaging facilities and hardware stores that collect hazardous waste for disposal.

IPZ-2 and IPZ-3 are protected areas located upstream of the Holmedale Canal on the Grand River. Pollutant intrusion in these locations will have a lesser impact compare to the Holmedale Canal due to a stark increase in dilution factor. As such, new small and large waste generators, which don't require a Prescribed Instrument but which pose a significant drinking water threat will be permitted as long as they are managed through an RMP and/or an Education and Outreach program.

To ensure that existing activities in IPZ-1, 2 and 3 that are significant drinking water threats, cease to be significant drinking water threats, the City has determined that a Part IV Risk Management Plan would be the most effective tool to minimize the risk.

Although these policies would result in costs to the implementing body, the use of Part IV Risk Management Plans to manage existing storage of waste was also the best option to manage these existing threats, particularly since these activities do not have an Environmental Compliance Approval and the relatively few circumstances where this policy would apply.

The application, or handling and storage of Agricultural Source Material (ASM)

For existing agricultural operations that do not have or do not require a Nutrient Management Plan under the *Nutrient Management Act*, a Part IV Risk Management Plan was felt to be an effective means to regulate the application or handling and

storage of ASM. Existing agricultural operations where this policy would apply are less than 300 Nutrient Units. New livestock operations not requiring a Nutrient Management Plan/Strategy would be less than five (5) Nutrient Units. It is anticipated that the number of livestock operations falling within these circumstances would be nominal and this approach was therefore deemed appropriate. Furthermore, the Part IV Risk Management Plan would be similar in nature to a Nutrient Management Plan/Strategy and therefore would be a tool that the agricultural community is familiar with. This policy approach is supported by OMFARA.

The handling, and storage of Commercial Fertilizer

The City has determined a Part IV Risk Management Plan would be the most effective tool to manage this existing activity in IPZ-1.

The application, handling and storage of Pesticides

The risks presented by existing application, or handling and storage of pesticides, within the most sensitive and vulnerable areas (i.e. Intake Protection Zones) warrants the management of these activities via Risk Management Plans. While the future handling and storage of pesticides in IPZ-2 will also be managed by Risk Management Plans, future activities in IPZ-1 will be prohibited to limit contaminant intrusion in the Holmedale Canal. Current legislation prohibits the use of pesticides on a residential scale thus, these policies are directed to land uses other than residential.

The handling and storage of Road Salt

Where this activity currently poses a significant drinking water threat in IPZ-1 and IPZ-2, a Risk Management Plan should ensure that the risk is well managed so as to limit the amount of road salt that may enter the waterways. Road salt is a major contributor to higher chloride and sodium levels in raw water.

The handling and storage of Snow

The City has determined a Part IV Risk Management Plan would be the most effective tool to manage any existing occurrences of these activities based on a review of the current land uses.

The handling and storage of Fuel

The City determined that the use of Part IV Risk Management Plans was the preferred policy direction to address existing storage of fuel in IPZ-1 and IPZ-2. A Part IV Risk Management Plan approach is recommended to ensure compliance with the requirements of the *Technical Standards and Safety Act*. Future uses of fuel in IPZ-2 will be managed by Part IV Risk Management Plans to effectively protect source water.

The handling and storage of a Dense Non-Aqueous Phase Liquid (DNAPLs)

The handling and storage of an Organic Solvent

The use of Part IV Risk Management Plans ensures that the existing handling and storage of a dense non-aqueous phase liquid (DNAPL) and organic solvents are adequately managed to ensure these activities cease to become a significant drinking water threat. It was decided that although the policy may result in costs to the implementing body, the use of Part IV Risk Management Plans to manage the existing instances identified within the City where dense non-aqueous phase liquid may currently be stored and handled was the best option to manage the threat. Future handling and storage of DNAPLs and organic solvents in IPZ-1 will be prohibited to avoid contaminant intrusion that may have a deleterious effect on raw water quality in the Homedale Canal.

<u>The use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area of a Farm Animal Yard</u>

Prohibition was not considered given the potential impacts it would have on the City's agricultural community. The first choice to address these drinking water threats is the development and implementation of a Nutrient Management Plan and/or Strategy.

However, not all farms are subject to *Nutrient Management Act* and therefore, are not required to have Nutrient Management Plans and/or Strategies. In addition, the *Nutrient Management Act* does not regulate livestock grazing or pasturing. Therefore, a Part IV Risk Management Plan is appropriate to address these activities. The Part IV Risk Management Plan could be scoped to the requirements of a Nutrient Management Plan/Strategy to ensure consistency.

Section 59 Restricted Land Use

Intent:

To designate all land uses, with the exception of residential land uses, in areas where significant threat activities may be designated for the purposes of Section 57 and/or 58 of the *Clean Water Act, 2006* as Restricted Land Uses under Section 59 of the *Clean Water Act, 2006* to help ensure that any applicable Part IV tools are considered early in the development process.

Rationale:

These policies were developed to require all applications under the *Planning Act, 1990, Condominium Act, 1998* and Ontario Building Code, with the exception of those associated with residential uses, within areas where activities are, or would be significant drinking water threat to be reviewed by the Risk Management Official, who would then advise the applicant/landowner if Section 57 (prohibition) or Section 58 (Risk Management Plans) of the *Clean Water Act, 2006* apply.

The policies also enable the Risk Management Official to screen applications for activities identified as a significant drinking water threat within vulnerable areas and make a determination that the development proposed by a particular *Planning Act* or

Building Permit application is not designated for the purposes of Section 59, under specified circumstances. The intent is to allow for the Restricted Land Use process to be refined over time, so that only those applications that are likely to be associated with, or affect, a significant threat activity would require review by the Risk Management Official.

17.3.2 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to prohibit activities within the Environmental Compliance Approval process where they would be significant drinking water threat under Subsection 39 of the *Clean Water Act, 2006*.

Rationale:

Although the Environmental Compliance Approval process is considered to be rigorous, denial of an application is preferred with respect to future waste activities, from a policy perspective. This policy would eliminate the option of allowing these sites to be located within vulnerable areas where significant drinking water threats would occur in the future if the activity were undertaken. The risks presented by these types of facilities warrant prohibition of future occurrences. In some cases there are no existing threats in the City and alternative locations outside sensitive wellhead areas are available. As a result, prohibition of this activity through the Environmental Compliance Approval process would not have a significant impact.

Based on the location of the IPZ and where these policies would apply, there would be minimal impact, if any to current and future land owners.

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Compliance Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to review Environmental Compliance Approvals. Environmental Compliance Approvals should not be granted unless terms and conditions are imposed that, when implemented, will ensure that the activity does not become a significant drinking water threat.

Rationale:

Policies using the Prescribed Instrument tool rely on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of the City to use existing regulatory tools when available to address the existing threat(s) within the City. Environmental Compliance Approvals have been a

longstanding requirement for waste disposal and sewage, and the criteria used to assess these Certificates are thorough. Requiring the Ministry to review Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added to Environmental Compliance Approvals, where necessary.

To ensure that the City's concerns are addressed through this process, it is requested the Ministry consult with the City during the review process. Documentation and reporting back with proof of compliance with the policy will provide assurance to the Source Protection Authority that the policy is effective.

Ministry of Agriculture, Food and Rural Affairs and /or Ministry of the Environment, Conservation and Parks: Review and Amend Nutrient Management Plans, Strategies, and NASM Plans

Intent:

The Ministry of the Environment, Conservation and Parks or the Ministry of Agriculture, Food and Rural Affairs, as applicable, are required to review activities within the Environmental Compliance Approval process or in accordance with the Nutrient Management Plan/ Strategy or NASM Plan where they would be significant drinking water threat under Subsection 39 of the *Clean Water Act, 2006*.

Rationale:

Requiring the Ministry to review documents created and managed under the *Nutrient Management Act* will serve to ensure that additional terms and conditions are added to Plans, where necessary. It is a priority for the City to rely on existing instruments where possible. Consultation with the Ministries has indicated that this approach is acceptable and implementable.

Ministry of Agriculture, Food and Rural Affairs and Ministry of the Environment, Conservation and Parks: Prohibition Non-Agricultural Source Material Plans

Intent:

The Ministry of the Environment, Conservation and Parks and Ministry of Agriculture, Food and Rural Affairs are required to prohibit activities within the Environmental Compliance Approval and *Nutrient Management Act, 2002* process where they would be significant drinking water threats.

Rationale:

Comments were provided in the Draft Grand River Source Protection Plan by the Ministry of Agriculture, Food and Rural Affairs asking the City to prohibit the application and storage of non-agricultural source material within IPZ-1 to be consistent with the prohibition of this activity as outlined in the *Nutrient Management Act* within 100 meters

of a municipal intake. Although the *Nutrient Management Act, 2002* speaks to groundwater systems, the same policy was noted could apply to surface water intakes. This policy was included in the Proposed Grand River Source Protection Plan as requested.

17.3.3 Land Use Planning

Intent:

To manage or prohibit activities within Official Plans and Zoning by-laws, as applicable, in accordance with the requirements of the *Clean Water Act, 2006.*

Rationale:

A policy was included based on comments received to ensure that the Risk Management Official approvals are included within the municipal planning process.

Sewage Systems or Works - Stormwater Management Facilities

Part IV tools of the *Clean Water Act, 2006* cannot be used to prohibit sewage threats, so it was decided that the best approach to prevent future sewage systems of this size would be to prohibit/regulate developments which rely on these types of sewage systems through land use planning in the most sensitive intake protection zones. It is recommended that all Stormwater management facilities be located outside of the vulnerable areas. Amendments to the Official Plan policies would be required to implement this policy.

The handling and storage of Road Salt

The handling and storage of Snow

It was determined that there would be no need to store road salt and snow within the area where the policy would apply. Thus, this activity has been prohibited through land use planning as applications for these storage facilities would be received by the City's planning department.

The handling and storage of Fuel - gas stations

The risks presented by these facilities warrant prohibition of future occurrences and the Official Plan and Zoning By-law are readily available and accessible policy documents. Prohibition of these types of facilities into the Official Plan and Zoning By-law will address this future significant drinking water threat.

17.3.4 Education and Outreach

Education and Outreach Programs: Municipality and Conservation Authority Delivered

Intent:

To request the City to work with other agencies where desirable to develop, continue or enhance outreach and education programs directed at any of the identified drinking water threat activities prescribed under the *Clean Water Act, 2006*.

Rationale:

The City supports Education and Outreach programs to address all drinking water threats and provide information to the residents of the City of Brantford on the protection of drinking water sources. Such programs may include, but not necessarily be limited to, increasing awareness and understanding of significant drinking water threats and promotion of best management practices.

This education and outreach policy is included to specifically address existing and future drinking water threats derived from commercial, institutional ,industrial and agricultural activities within City limits. The City will engage property owners by providing specific information on best management practices to aid in the management of these existing and future activities. A review of these activities and an update to the drinking water threat enumeration will determine if future, more stringent source protection plan policies are required. The City and the Source Protection Committee agree that this is an effective way to manage these potential activities and meet the objectives of the *Clean Water Act*. 2006.

Due to the limited amount of affected landowners, these programs may include specific mail outs and/or personal contact. Broader education and outreach programs could include specific information available on the City's websites.

<u>Sewage Systems or Works - Onsite sewage Systems and Holding Tanks</u>

The City's Official plan does not permit onsite sewage systems in new developments within the City limits. This policy would assist in ensuring new developments make use of existing municipal services and remove a potential drinking water threat.

17.3.5 Incentive Programs

Intent:

Encourage the development and implementation of incentive programs to aid in the implementation of Source Water Protection initiatives.

Rationale:

The purpose of these policies is to express the City's support for incentive programs to address drinking water threats and their desire for the Province to provide continued funding. Source water protection is a provincial initiative and affects the entire province. Municipalities strongly feel that the Province of Ontario should continue to fund programs such as the Ontario Drinking Water Stewardship Program because this

program is one of the most effective tools available to eliminate existing significant drinking water threats.

17.3.6 Specify Action

The handling or storage of Road Salt

The City supports the use of these best management practices to promote the efficient use of road salts and the use of alternatives such as a salt management plan. Amendments to this plan will allow for the protection of drinking water sources as staffs who implement these plans will be aware of these vulnerable areas.

The management of Runoff that Contains Chemicals used in the De-icing of Aircraft

The intent is to ensure that the applicable federal and provincial agencies are following industry best management practices when completing applications for the development of new airports. There were no existing threats associated with aircraft de-icing noted in the Assessment Report. Further, based on land use activities surrounding existing municipal intakes, the potential for an airport to be constructed in the future that is of a size that might rank significant is minimal. As a result, relying on the existing regulations under Transport Canada was considered to be the best option to manage this threat. The municipality would be involved in any review of environmental assessments, therefore would have an opportunity to review this requirement.

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore, spill prevention and contingency/response plans should be updated to include maps that clearly detail the vulnerable areas. Quick and effective response to spills could prevent an emergency from affecting a municipal drinking water source. Additionally, updates to the current spill prevention and contingency/response plans could act as a communication tool for the municipalities and the public and ensure residents are aware of the location of wellhead protection areas or intake protection zones and are knowledgeable regarding the appropriate response in the event of a spill in these areas.

18.0 POLICY DEVELOPMENT FOR THE COUNTY OF HALDIMAND

18.1 Municipal Support

To date, the municipalities within the Grand River Source Protection Area, including Haldimand County have been actively involved with the development of Grand River Source Protection Plan policies. Haldimand County has been present at various meetings hosted by the Lake Erie Source Protection Region in order to develop locally implementable policies. These policies have been reviewed by municipal staff and council.

18.2 Financial Considerations

In reviewing the policies with the Lake Erie Source Protection Region staff, Haldimand County staff evaluated the potential workload for the implementation of these policies. As with other municipalities within the Lake Erie Source Protection Region, Haldimand County has great concerns about the financial burden implementation might cause for not only Haldimand County but the affected property owners.

There are direct financial costs to Haldimand County to implement the Source Protection Plan policies. The intent was to use policy options other than relying upon on the *Clean Water Act, 2006* Part IV tools. As a small municipality Haldimand County has limitations from a budgetary perspective, and given the context of the drinking water threats relative to the Intake Protection Zones, Haldimand County is confident that the policies presented without the use of the Part IV tools are suitable to appropriately address any significant drinking water threats.

There is also a direct cost to Haldimand County to amend Official Plans and Zoning By-laws to implement the Source Protection Plan policies. In addition, annual reporting requirements to the Source Protection Authority require staff resources and may have cost implications to Haldimand County to prepare and administer.

18.3 Policy Intent and Rationale

Haldimand County is located in the south eastern part of the Grand River Source Protection Area. Policies apply within Haldimand County, where vulnerable areas were identified in the approved Assessment Report. A majority of the land is residential with some institutional or commercial properties, therefore the policies were written to reflect this land use. It is anticipated that this land use will change minimally in the future where the policies will apply.

The review of the current and project land uses indicates that there is currently a high level of protection of the raw water from the prescribed drinking water threats. Therefore, the policies developed reflect this current assessment as presented in the approved Assessment Report found online at www.sourcewater.ca.

In Haldimand County there are no existing combined sewer discharges located in Intake Protection Zones 1 or 2. There are also no enumerated existing occurrences of handling

and storage of fuel; application, or handling and storage of road salt; or storage of snow activities within Intake Protection Zones 1 or 2. As such there are no policies included in the Haldimand County section of the Grand River Source Protection Plan to address the existing occurrence of the above listed activities.

18.3.7 Prescribed Instruments

Ministry of the Environment, Conservation and Parks: Prohibit Environmental Certificates of Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to prohibit activities within the Environmental Compliance Approval process where they would be significant drinking water threats under Subsection 39 of the *Clean Water Act, 2006*.

Rationale:

Although the Environmental Compliance Approval process is considered to be rigorous, denial of an application is preferred with respect to future waste activities, from a policy perspective. This policy would eliminate the option of allowing these sites to be located within vulnerable areas where significant drinking water threats would occur in the future if the activity were undertaken. The risks presented by these types of facilities warrant prohibition of future occurrences. Based on a review of the current and future land uses, the likelihood of these applications occurring within the significant drinking threat area is minimal.

Ministry of the Environment, Conservation and Parks: Review and Amend Environmental Certificates of Approvals

Intent:

The Ministry of the Environment, Conservation and Parks is required to review activities within the Environmental Compliance Approval process where they would be significant drinking water threats under Subsection 39 of the *Clean Water Act, 2006*. Environmental Compliance Approvals should not be granted unless terms and conditions are imposed that, when implemented, will ensure that the activity does not become a significant drinking water threat.

Rationale:

Policies using the Prescribed Instrument tool rely on the existing responsibility of the Ministry of the Environment, Conservation and Parks to protect drinking water sources. It is a priority of Haldimand County to use existing regulatory tools when available to address the existing threat(s) within the County. Environmental Compliance Approvals have been a longstanding requirement for waste disposal and sewage, and the criteria used to assess these Certificates are thorough. Requiring the Ministry to review

Environmental Compliance Approvals in light of the circumstances that make the activity a significant drinking water threat will serve to ensure that additional terms and conditions are added to Environmental Compliance Approvals, where necessary. In some cases the policies request for additional criteria to be included in these approvals. This criteria is important to ensure the protection of drinking water sources and should be considered to be included, if not already, within the approved Environmental Compliance Approval.

Ministry of Agriculture, Food and Rural Affairs (OMFARA) and/or Ministry of the Environment, Conservation and Parks: Non-Agricultural Source Material Plans and Nutrient Management Plans/ Strategies

Intent:

The Ministry of the Environment, Conservation and Parks or Ministry of Agriculture, Food and Rural Affairs, as applicable, are required to review and amend or prohibit the approval of Non-Agricultural Source Material (NASM) Plans or Nutrient Management Plans or Strategies to ensure these threats are managed such that they do not become a significant drinking water threat.

Rationale:

Haldimand County determined the use of Prescribed Instruments, as the preferred approach to address these threats as the current and projected land use of IPZ 1 and 2 would not allow for agricultural activities to occur. As the Source Protection Committee is required to include policies for future significant drinking water threat, the protocol for Nutrient Management Plans and Strategies was recently and extensively reviewed and updated by the Province. These revisions are an important addition in the management of drinking water threats and the County will rely on OMAFRA and/or Ministry of the Environment, Conservation and Parks to include measures to protect drinking water sources. If activities were to occur that do not require a Nutrient Management Plan, education and outreach programs will be implemented to ensure that the person engaging in the activity is aware of current best practices and the location of the property with respect to the drinking water intake.

Based on current land use, this activity is very unlikely to occur in the future on lands located in Intake Protection Zone 1 and 2.

18.3.8 Land Use Planning

Intent:

To manage or prohibit activities within Official Plans and Zoning By-laws, as applicable, to conform with the significant threat policies set out in the Source Protection Plan, in accordance with the requirements of the *Clean Water Act, 2006.*

Rationale:

The handling and storage of Fuel

The handling and storage of Dense Non- Aqueous Phase Liquids (DNAPLs)

The handling and storage of Organic Solvents

The Official Plan is a readily available and accessible policy document and incorporating a policy regarding the prohibition of the above activities into the Official Plan supports the requirement to ensure these activities cease to be significant drinking water threats, where applicable. The potential for this storage to occur in the designated lands is minimal in the future. Prohibition of handling and storage of fuel and the prohibition of the handling and storage of DNAPLs for industrial, commercial or institutional purposes are intended to remove the future potential threat from the area. Appropriate restrictions can be applied through amendments to the Zoning By-law on a site specific basis to prohibit the activity.

The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage- Onsite sewage Systems, Discharge from a Stormwater Management Facility

The policy for onsite sewage systems builds on existing regulation/programs and existing legislation can be utilized to effectively ensure that this threat does not become significant. The *Clean Water Act, 2006* requires that the Source Protection Plan address all 'would be' significant drinking water threats, regardless of their feasibility within an Intake Protection Zone, therefore it is highly unlikely that these systems would be installed in the designated areas in the future. Official Plan and zoning amendments provide assurances that significant threat activities can and will be regulated.

For the discharge from a stormwater management facility, the policy builds on existing regulation/programs; existing legislation can be utilized to effectively ensure that this threat does not become significant. Official Plan and zoning amendments provide assurances that significant threat activities can and will be regulated. The policy requires new developments to include integrated treatment approaches and explore new technologies to reduce the risk to drinking water sources. If possible this discharge should occur outside of the vulnerable areas to ensure the protection of drinking water sources.

The handling and storage of Pesticides

The handling and storage of Commercial Fertilizer

Haldimand County determined within the Intake Protection Zones, new large-scale manufacturing and warehousing facilities are not permitted. Further, the above activities should not be permitted closest to the municipal drinking water source. There are alternative locations within where these new facilities can locate.

The handling and storage of Road Salt

Haldimand County supports the use of best management practices to promote the efficient use of road salts and the use of alternatives. The primary concern relates to parking lots which are normally associated with multiple residential unit developments and employment, institutional or commercial land uses. These types of developments are subject to site plan control. For this reason, it is recommended that the Official Plan be amended to include policies to ensure that any new development is designed and maintained based on best management practices and that the County update its salt management plans to address the Intake Protection Zones.

18.3.9 Education and Outreach

Intent:

To request Haldimand County to work with other implementing bodies where desirable to develop, continue or enhance stewardship and outreach and education programs directed at any, or all, significant drinking water threat activities where it may be deemed necessary.

Rationale:

Haldimand County supports education and outreach programs to address all significant drinking water threats and provide information to the residents of Haldimand County on the protection of drinking water sources. It is the intent of this policy to also be applied to any existing activities where no current drinking water threat policy exits. This is due to the certainty of Haldimand County and the Source Protection Committee that these activities will not occur before the Source Protection Plan is approved based on current and future land use approvals.

<u>Establishment, Operation or Maintenance of a Waste Disposal Site, within the Meaning of Part IV of the Environmental Protection Act</u>

Haldimand Count will prepare and implement an education and outreach program to address the existing and future establishment of a waste disposal site, within the meaning of Part V of the Environmental Protection Act that does not require an Environmental Compliance Approval. The program will focus on the proper handling, storage and disposal of wastes.

<u>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage – Storage of Sewage, Sewage Treatment Plant Effluent Discharges.</u>

Haldimand County will prepare and implement an education and outreach program to address the future storage of sewage and sewage treatment plant effluent discharges. Currently, Haldimand County participates in programs to reduce the impact of sewage treatment plant discharges on the local water supply. The policies support the continuation of these programs by enhancing the knowledge of operators, general public and elected officials on the performance and operation of these plants and the benefits of participating in existing best management practice programs.

The application of Commercial Fertilizer

The application of Pesticides

The handling and storage of Commercial Fertilizer

The handling and storage of Pesticides

For the application of commercial fertilizer and pesticides to land, Haldimand County will prepare and implement an education and outreach program to encourage best management practices on the lands within the vulnerable areas. The program will also outline requirements for proper handling and storage as well as the steps to be taken if a spill or leak is detected. As there are currently only two property owners, the intent of this program will be to specifically address current practices on both properties and look to alternatives to ensure the protection of drinking water sources.

The handling and storage of Dense Non-Aqueous Phase Liquid (DNAPL)

The handling and storage of Organic Solvents

Education and outreach programs for the handling and storage of DNAPLs and organic solvents will include information regarding the requirements for proper storage and steps that should be taken if there is a leak or spill detected.

The use of Land as Livestock Grazing or Pasturing Land

As future activities with respect to livestock grazing or pasturing are highly unlikely to occur in the future, these policies will aim to address any potential future activities located within Intake Protection Zone 1 and 2.

18.3.10 Specify Action

Support On-Site Re-inspection Program under Ontario Building Code

Intent:

Rely on the existing onsite sewage system inspection program recently implemented through the Ontario Building Code to ensure existing and future onsite sewage systems do not become a risk to municipal drinking water supplies.

Rationale:

Part IV tools cannot be used to prohibit sewage threats, so it was concluded that the best approach to manage future sewage systems of this size would be to manage them through the required maintenance inspection program under the Ontario Building Code. The onsite sewage system maintenance inspection program supports the implementation of the *Clean Water Act, 2006* by providing a consistent approach for determining if on-site sewage systems are functioning as designed. The intent is to

bring all systems in compliance with the Ontario Building Code. Prohibition of uses that rely on these small onsite sewage systems was not considered by the County to be a viable option as not all areas of the County have municipal services available.

Participation in the Grand River Watershed Wastewater Optimization Program

This program specifically looks at targets and best management practices for the storage of sewage and sewage treatment plant effluent discharges. If these activities were to occur in the future within the vulnerable areas, participation in this program would allow for the use of best management practices to reduce the risk to drinking water sources.

Prioritization of Inspections for Industrial Effluent Discharges

There is a need for the Ministry of the Environment, Conservation and Parks to use the data published in the approved Assessment Reports to determine where their limited resources are required for inspections. These inspections should be focused on facilities within the vulnerable areas to ensure the protection of drinking water supplies.

Emergency Management for Industrial Operators

In order for Haldimand County to ensure the protection of their drinking water sources, the industrial operators within the significant drinking water threat areas should provide their emergency planning documents including updates to Haldimand County for review. This would ensure that the appropriate measures are included to protect the municipal intake.

Training of Pesticide Permit Holders and Ministry of the Environment, Conservation and Parks Inspections

There is a need for the development of training materials for pesticide permit holders to include information with respect to source water protection. Inspections by the Ministry of the Environment, Conservation and Parks should be focused in these areas.

Winter Maintenance and Salt Management Plans

Haldimand County shall amend their winter maintenance and salt management plans to identity the Intake Protection Zones to ensure the protection of drinking water sources. This will also include updating these plans to ensure all best management practices are captured.

Private contractors will also be contacted to request a review of their salt management plans to ensure their current practices include measures to protect drinking water sources. The intent is to educate these contractors on the issues of the handling and storage of road salt and suggest amendments to current practices, if required, to address these potential drinking water threats.

The Management of Runoff that Contains Chemical used in the De-icing of Aircraft

There were no existing threats associated with aircraft de-icing noted in the Assessment Report. Further, based on land use activities surrounding existing municipal intakes, the potential for an airport to be constructed in the future that is of a size that might rank as a significant threat is minimal. Accordingly, it was concluded that the most effective policy to address this threat was the through the encouragement of best management practices when reviewing environmental assessments for proposed airports in this area.

Incentive Programs

The intent of including policies for incentive programs is to encourage the development and implementation of incentive programs to aid in the implementation of source water protection initiatives. Further, policy developers and the Source Protection Committee felt strongly that the Ministry of the Environment, Conservation and Parks should be requested to continue to fund the Ontario Drinking Water Stewardship Program to assist landowners to manage or cease to conduct activities that are identified as a significant drinking water threat on their properties.

The Use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or Farm Animal Yard

Haldimand County shall ensure that if an application is received through the municipal planning process for these activities that best management practices are used to ensure the protection of drinking water sources. Based on the current and projected land use as described above, the likelihood of these activities occurring is minimal. This policy supports the Prescribed Instrument and education and outreach policies prepared to address this drinking water threat. It is in the opinion of Haldimand County and the Source Protection Committee that this activity is not expected to occur in the future, nor does the potential for this activity exist based on regulated land uses.

18.3.11 Strategic Action

Spill Prevention, Spill Contingency and Emergency Response Plans along highways, railway lines or shipping lanes

Intent:

To ensure that emergency plans, contingency plans and spill containment plans are updated with respect to spills that occur within wellhead protection areas along highways or railways.

Rationale:

Municipal emergency services are often the first responders to events that may adversely impact a source of municipal drinking water. Therefore spill prevention and

contingency/response plans should be updated to include maps that clearly detail the vulnerable areas. Quick and effective response to spills could prevent an emergency from affecting a municipal drinking water source. Additionally, updates to the current spill prevention and contingency/response plans could act as a communication tool for the municipalities and the public to ensure residents are aware of the location of wellhead protection areas and are knowledgeable regarding the appropriate response in the event of a spill in these areas.

Further requests to business, industries and industrial operators will be made to ensure that their emergency contingency plans included the delineated Intake Protection Zones and measures to protect the municipal drinking water supplies.

19.0 CONSULTATION DURING DEVELOPMENT OF THE SOURCE PROTECTION PLAN

Formal consultation with stakeholders and the public was key to developing a locally derived Source Protection Plan. In accordance with the *Clean Water Act, 2006* implementing bodies were provided with a pre-consultation notice and the opportunity to provide feedback on the proposed Source Protection Plan prior to its release for formal public consultation. The Source Protection Committee reviewed and considered the feedback received during pre-consultation while finalizing the Source Protection Plan policies.

19.1 Summary of Pre-consultation Comments

Pre-consultation for development of the Grand River Source Protection Plan policies was held in 2011 to 2012. The following implementing bodies provided comments during these initial pre-consultation periods:

- Ministry of the Environment, Conservation and Parks (MECP)
- Ministry of Municipal Affairs and Housing (MMAH)
- Ministry of Infrastructure (MOI)
- Ministry of Transportation (MTO)
- Ministry of Natural Resources (MNR)
- Ministry of Agriculture, Food and Agribusiness (MAFA)
- Ministry of Public and Business Service Delivery and Procurement (MPBSDP)
- Technical Standards and Safety Authority (TSSA)
- Ontario Energy Board
- Municipalities
    - Grey County
    - Townships of Amaranth and East Garafraxa
    - Town of Grand Valley
    - Halton Region
    - County of Wellington
    - City of Waterloo
    - City of Cambridge
    - City of Kitchener
    - City of Brantford
    - Town of Ingersoll

    - Township of Norwich
    - City of Hamilton
- Conservation Authorities
    - Grand River Conservation Authority
    - Long Point Region Conservation Authority

Collectively, implementing bodies identified the following matters of concern in the draft policies for each of the municipal sections of the Grand River Source Protection Plan:

- common editorial mistakes and complex policy language
- missing legislative requirements or misalignment with existing regulatory frameworks
- policy gaps
- inappropriate policy tool selection
- problematic terminology and areas requiring more clarity or detail
- policies that would not be implementable or supported
- opportunities for policy consistency across municipalities
- funding and resource implications for implementation

The draft Source Protection Plan policies were revised accordingly to address the pre-consultation comments, ensuring that policies were implementable and correcting any errors or omissions. Additional rationale was provided in the Explanatory Document for instances where policies may not have been revised but where the position of the Source Protection Committee could be clarified.

A record of all comments received during pre-consultation was documented for submission to MECP and is available upon request.

19.2 Summary of Public Consultation Comments

Following pre-consultation, the Grand River Source Protection Plan was released for public consultation three times before approval on November 26, 2015.

The following parties provided comments during the three public consultation periods held in 2012 and 2015:

- Ministry of the Environment, Conservation and Parks (MECP)
- Ministry of Municipal Affairs and Housing (MMAH)
- Ministry of Agriculture, Food and Agribusiness (MAFA)
- Ministry of Infrastructure (MOI)

- Ministry of Public and Business Service Delivery and Procurement (MPBSDP)
- Municipalities
    - Townships of Amaranth and East Garafraxa
    - City of Cambridge
    - City of Waterloo
    - Halton Region
- Impacted businesses and/or concerned residents/landowners (37)

Comments from provincial ministries focused on ensuring that:

- policies were implementable (e.g., directing the policy to the correct implementing body and ensuring that the policies were realistic for ministries);
- all threat circumstances were addressed appropriately;
- the impacts of multiple policy outcomes applying within a municipal boundary were considered;
- implementation and monitoring requirements were adequately captured;
- policy applicability was clear;
- prohibition policies were justified; and
- rationale in the Explanatory Document was robust.

The Source Protection Committee responded by correcting errors and closing policy gaps where appropriate and by editing the Explanatory Document to provide more clarification where necessary. In cases where the Source Protection Committee felt strongly that policy revisions were not required in response to comments, the rationale was documented and provided to MECP during submission of the Source Protection Plan.

Several comments from members of the public raised concern that aggregate extraction that breaches an aquitard should be included as prescribed drinking water threat and addressed in the Source Protection Plan. No policy revisions were made in response to these comments, as the Source Protection Committee had requested this activity be designated a prescribed drinking water threat and the request was denied by MECP.

Additional public concerns included:

- source protection policies being onerous/costly for landowners, duplicating regulatory processes, or being difficult to understand;
- inconsistencies in policy approach across municipal boundaries or source protection areas; and
- other activities being excluded from the Source Protection Plan that could pose a risk to drinking water.

Policies were not revised based on these comments; however, an explanation was provided to reinforce that the Source Protection Committee is committed to considering landowner interests while protecting drinking water sources and promoting the use of existing management tools and strategies wherever possible. It was also clarified that landowner compensation would not be provided by the Province. Additional concerns regarding certain human activities being excluded from the Source Protection Plan did not impact the proposed policies, as they can only address drinking water threats as prescribed under the *Clean Water Act, 2006.*

A record of all comments received during public consultation was documented for submission to MECP and is available upon request.

20.0 CONSULTATION ON AMENDMENTS TO THE SOURCE PROTECTION PLAN

Amendments to the Source Protection Plan are identified and conducted in collaboration with key stakeholders and implementing bodies. Each time an amendment is undertaken, affected municipalities and implementing bodies are provided the opportunity for pre-consultation and are notified when public consultation begins.

The tables below summarize the pre-consultation and public consultation comments received for amendments made to the Grand River Source Protection Plan.

Comments are paraphrased and combined where appropriate to allow for a concise summary. Comments unrelated to the Source Protection Plan amendment are not included in this summary.

A detailed record of all comments received during consultation for Source Protection Plan amendments is documented for submission to MECP and is available upon request.

Table 20-1 Summary of Consultation Comments on Version 2 of the Grand River Source Protection Plan (S.34 Amendment for Grey, Hamilton and Brant effective August 16, 2019)

Commentor	Consultation	Summary of Comments	How comment was addressed
MECP	Pre-consultation	Editorial comments on the Assessment Report for technical correctness or clarity.	Text edits made as suggested.
MECP	Pre-consultation	Clarification requested regarding the accuracy of information related to livestock threat activities.	Reference to technical information was updated, as the Assessment Report referred to an outdated technical report.
MECP	Pre-consultation	Clarification requested on the methodology for impervious surface calculations for the County of Brant.	Text updated to clarify the methodology.
Member of the public	Public consultation	Inquiry regarding a potential threat activity occurring on a specific property.	The individual was directed to contact the municipality to further discuss property questions.

Table 20-2 Summary of Consultation Comments on Version 3 of the Grand River Source Protection Plan ('Bundled' S.34 Amendment effective June 5, 2020)

Commentor	Consultation	Summary of Comments	How comment was addressed
MECP	Pre-consultation	Editorial comments on the Assessment Report and Source Protection Plan for correctness and clarity. Gaps in information or areas requiring more detail were flagged. Simplified terminology was suggested to enhance readability.	Assessment Report text and/or Source Protection Plan policies were revised to address the comments. Additional detail was added to the Assessment Report as needed and plain language adopted where appropriate. Policy applicability was edited to ensure threats were adequately addressed and/or policies were implementable.

Commentor	Consultation	Summary of Comments	How comment was addressed
MECP	Pre-consultation	Missing technical reports requested for review in order to support Assessment Report amendments.	Copies of the requested technical reports were provided.
MECP	Pre-consultation	Additional information requested to explain how technical assessments were completed for the Region of Waterloo and the potential impacts of selected methodology.	Rationale was provided to explain the technical assessments and minor edits were made to the Assessment Report for clarity.
MECP	Pre-consultation	Clarification requested regarding the inclusion or omission of various Issue Contributing Areas.	Clarification on the subject Issue Contributing Areas was provided.
MECP	Pre-consultation	Information requested regarding past discussions with the Ministry District Office on significant Conditions sites in the Region of Waterloo.	Information provided as requested.
MECP	Pre-consultation	The Explanatory Document should include sufficient rationale to explain Source Protection Plan policy approaches.	Text added to the Explanatory Document where needed for clarity.
MAFA	Pre-consultation	Revisions to policy language requested to clarify the applicability and to better align with the *Nutrient Management Act*. Support provided for incentive and education and outreach policies.	Relevant *Nutrient Management Act* policies were revised for clarity. Other policies were not revised and rationale was provided.
Member of the Public	Public Consultation	Concern with threat identification in the County of Wellington and chemical concentration monitoring. Additional concern that it is difficult to determine how the Source Protection Plan policies will impact them.	Comments were noted and deferred for a future update to the County of Wellington section of the Assessment Report (2020). The landowner was directed to contact the

Commentor	Consultation	Summary of Comments	How comment was addressed
			municipality to further discuss property concerns.

Table 20-3 Summary of Consultation Comments on Version 4 of the Grand River Source Protection Plan (S.34 amendment for Wellington and Brant effective February 3, 2021)

Commentor	Consultation	Summary of Comments	How comment was addressed
MECP	Pre-consultation	Editorial comments for correctness and clarity related to Source Protection Plan policies.	Policy text revised to address comments.
MECP	Pre-consultation	Clarification requested on revisions to the significant Conditions sites identified in the Assessment Report.	Additional information provided where available and text edits made to the Assessment Report to address the comments.
MECP	Pre-consultation	Clarification requested on whether a risk assessment was done for liquid hydrocarbon pipelines for the County of Wellington as per the 2018 Technical Rules.	Edits made to the Assessment Report to properly reflect the completed risk assessment.
MECP	Pre-consultation	Examples requested for when a Risk Management Plan policy would apply to a storm water management facility. Examples should be included in the Explanatory Document.	Additional justification for the policy was provided. The policy addresses a perceived implementation gap with Environmental Compliance Approvals for storm water. Clarification requested from MECP on whether this interpretation is correct.
MECP	Pre-consultation	The Explanatory Document must include sufficient rationale to explain the proposed policy approach for road salt threats.	Text added to the Explanatory Document for clarity.

Commentor	Consultation	Summary of Comments	How comment was addressed
County of Brant	Public Consultation	Various editorial edits for correctness and clarity, especially regarding policy intent.	Text revised in the Assessment Report and Source Protection Plan policies to address the comments and provide greater clarity.
Member of the Public	Public Consultation	Concern with the limitations of the *Clean Water Act, 2006* and the list of prescribed drinking water threats. Specific concern that a particular Conditions site in the County of Wellington should be identified as threat.	Comments on the *Clean Water Act, 2006* and Technical Rules could not be addressed. Clarification was provided regarding the significant threat Conditions site.
Member of the public	Public Consultation	Concern that source protection will impose connection to municipal services for landowners on private water and sewage systems.	The County of Wellington provided a separate response to address the landowner's concerns and clarified that there is no policy requiring mandatory connection to municipal services.
Member of the public	Public Consultation	[Outstanding] concern with threat identification in the County of Wellington and chemical concentration monitoring. Additional concern that it is difficult to determine how the Source Protection Plan policies will impact them.	The landowner was directed to the relevant sections of the amended Assessment Report and clarification on data sources for threat assessment were provided. The landowner was also directed to contact the municipality to further discuss property concerns.
Member of the public	Public Consultation	Concern with how WHPAs were delineated and how livestock density was calculated for the County of Wellington.	A response was provided to the landowner with additional information and rationale.

Table 20-4 Summary of Consultation Comments on Version 5 of the Grand River Source Protection Plan (S.34 amendment for Wellington and Region of Waterloo effective February 18, 2022)

Commentor	Consultation	Summary of Comments	How comment was addressed
MECP	Pre-consultation	Editorial comments for correctness and clarity. Gaps in information or areas requiring more detail were flagged.	Assessment Report and Source Protection Plan policies were revised to address the comments. Additional detail was provided in a supplementary memo or added to the Assessment Report as needed. Where Source Protection Plan policies were not revised, additional rationale was provided.
MECP	Pre-consultation	Suggest focusing water quantity policies towards addressing issues with municipal infrastructure.	Comment was considered but no policy revisions were made. Additional policy rationale was provided.
MECP	Public Consultation	Additional comments to ensure correctness and clarity of proposed policies. Potential implementation issues or problematic language was flagged.	Policies revised as suggested to address the comments.
MNR	Pre-consultation	Suggest that Specify Action policies related to the *Aggregate Resources Act* are unnecessary given the existing legislative framework.	Comment was considered but no policy revisions were made. Additional policy rationale was provided.
MNR	Pre-consultation	Editorial edits for policy correctness and clarity on intent. Request for “shall consider” wording in the policies.	Policies revised as suggested to address the comments.
MNR & MECP	Public Consultation	Prescribed instrument policies for water quantity threats duplicate existing legislative requirements and/or processes under the Permit to Take Water framework and the *Aggregate Resources Act.*	Policies revised to add clarity and ensure policies are implementable. Further policy review deferred until a future S.34 amendment for Guelph-Guelph Eramosa Township.

Commentor	Consultation	Summary of Comments	How comment was addressed
Community Liaison Group	Public Consultation	Various questions and comments on how water quality threats will be addressed by policies, as well as consideration of climate change impacts. Additional questions on how water quantity policies will be implemented, noting concerns with timing (i.e. future growth), practical applicability, responsibilities for implementing bodies, and unclear policy language.	Clarification and additional information provided in written responses. Minor edits to policy language were incorporated to ensure correct interpretation.
Blue Triton Brands	Public Consultation	Water quantity policies should refer to uncertainties and data gaps in the Centre Wellington Tier 3 study.	No policy revisions were made. It was noted that policy language refers to the study itself, which contains information about the uncertainties and data gaps.
Blue Triton Brands	Public Consultation	Recommend that “due regard” be defined in policies and clarification requested on the intent of certain water quantity policies.	Case law provides sufficient interpretation of “due regard”. A separate definition was not added to the Source Protection Plan. Clarification on policy intent was provided in a written response and minor edits to unclear policy language were made to ensure correct interpretation.
Ontario Stone, Sand and Gravel Association and Lafarge Inc.	Public Consultation	Concern that water quantity policies duplicate existing regulatory processes under the *Aggregate Resources Act.* Additional concern regarding unclear definitions for “Consumptive Water Taking” and “Recharge Reducing Activity”. A meeting to further discuss concerns was requested.	Reference to ongoing discussion with MNR on the *Aggregate Resources Act* framework was provided in a written response. Definitions were explained as per definitions provided in the *Clean Water Act, 2006.* The Project Team met with both parties to further discuss comments and concerns.

Commentor	Consultation	Summary of Comments	How comment was addressed
Members of the Public	Public Consultation	Multiple questions and comments about the details and results of the Centre Wellington Tier 3 study, including reference to data gaps and uncertainties.	Relevant sections of the Assessment Report were revised to address errors or add clarity. Additional clarification provided in separate written responses.
Member of the Public	Public Consultation	Concern that the Source Protection Plan only addresses municipal water supplies and lack of clarity on which municipalities will be involved in information sharing related to the County of Wellington WHPA-Q.	Clarification provided in a written response regarding the scope of the *Clean Water Act, 2006* and which municipalities are impacted by proposed policies.

Table 20-5 Summary of Consultation Comments on Version 6 of the Grand River Source Protection Plan (S.34 amendment for Grand Valley effective February 15, 2022)

Commentor	Consultation	Summary of Comments	How comment was addressed
MECP	Pre-consultation	Suggest reconsidering implementation timing requirements (i.e. 3 years) for certain policies and consider a transition policy.	Comment on implementation timing was considered but no policy changes were made. A new transition policy was added.

Table 20-6 Summary of Consultation Comments on Version 7 of the Grand River Source Protection Plan (S.34 amendment for Melancthon, Amaranth, and East Garafraxa effective September 11, 2024)

Commentor	Consultation	Summary of Comments	How comment was addressed
MECP	Pre-consultation and Public Consultation	Suggest reconsidering implementation timing requirements (i.e. 3 years) for certain policies and review the existing transition policy.	Comment was considered but no policy changes were made.
MECP	Pre-consultation and Public Consultation	Edits to the Assessment Report requested to clarify which drinking water systems are subject to either the 2017 or 2021 Technical Rules.	Edits were made to the Assessment Report as requested for clarity.

Commentor	Consultation	Summary of Comments	How comment was addressed
MECP	Pre-consultation	Technical questions on the methodology used for impervious surface calculations.	Clarification on the methodology was provided in a written response.
MECP	Public Consultation	Request for additional information on consultation activities.	A summary of consultation activities was provided.
Member of the Public	Public Consultation	Concern that tile draining for agricultural land use will be restricted by Source Protection Plan policies inside of a WHPA.	A written response was provided to clarify that tile draining is not a prescribed drinking water threat under the *Clean Water Act, 2006.*

Table 20-7 Summary of Consultation Comments on Version 8 of the Grand River Source Protection Plan (S.34 amendment for Region of Waterloo effective April 1, 2025)

Commentor	Consultation	Summary of Comments	How comment was addressed
MECP	Pre-consultation	Minor editorial errors were noted.	Errors corrected as suggested.
MECP	Pre-consultation	A question was raised on the potential redundancy of certain Assessment Report maps.	Additional information on the interpretation of the maps was provided for clarity. No map revisions were made.
MECP	Pre-consultation	Comment to reconsider the Trichloroethylene Issue Contributing Area in a future amendment to the Source Protection Plan.	Comment was noted for the future comprehensive S.36 update to the Source Protection Plan.
MECP	Pre-consultation	Additional information requested regarding the assessment of a Conditions site in the William Street WHPAs.	Information provided as requested.
MECP	Pre-consultation	Suggest redirecting the liquid hydrocarbon pipeline policy towards the Source Protection	The comment broadly impacts the entire Source Protection Region. It was noted for

Commentor	Consultation	Summary of Comments	How comment was addressed
		Authority instead of pipeline regulators to enhance implementation of the policy.	consideration during the comprehensive S.36 update to the Source Protection Plan.

Table 20-8 Summary of Consultation Comments on Version 9 of the Grand River Source Protection Plan (S.34 amendment for Hamilton effective June 25, 2025)

Commentor	Consultation	Summary of Comments	How comment was addressed
Not applicable	Not applicable	No comments were received during the pre-consultation or public consultation period.	Not applicable