



**City of Kingston  
Information Report to Council  
Report Number 19-175**

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**To:** Mayor and Members of Council  
**From:** Lanie Hurdle, Acting Chief Administrative Officer  
**Resource Staff:** Paige Agnew, Director, Planning, Building & Licensing Services  
**Date of Meeting:** June 18, 2019  
**Subject:** Drinking Water Source Protection – Overview

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**Executive Summary:**

The Ontario Drinking Water Source Protection Program (DWSP) was established in 2007 under the *Clean Water Act* (2006), as a response to the drinking water contamination tragedy in Walkerton (2000) and other water quality and quantity challenges in Ontario. The purpose of the program is to protect existing and future drinking water sources from contamination and overuse. As part of the program, 19 source protection areas and regions were developed, each with a local Source Protection Committee. Through consultation and stakeholder engagement, policies were developed to establish local source (water) protection plans. The City of Kingston is within the Cataraqui Source Protection Area and is responsible for implementing policies within the Cataraqui Source Protection Plan (2014).

In 2015, the City of Kingston initiated a five-year update to its Official Plan (OP). The Ministry of Municipal Affairs and the Ministry of Housing approved, with limited modification, the 1,500 Council-approved amendments to the OP in 2017. Through the five-year OP update, policies intended to support the objectives of the Source Protection Plan were introduced. These policies, found in Section 5.A of the Plan, are supported by mapping in Schedule 11-B which illustrates areas where land use activities could have an impact on susceptible source water resources. Planning staff work with the CRCA through the development approvals process to ensure the policies of the OP, and those of the Source Protection Plan, are upheld.

City staff represent the municipal sector on the 12 member Cataraqui Source Protection Committee. As of 2018, the City has implemented 92% of the policies within the Source Protection Plan for which the municipality is responsible.

June 18, 2019

Page 2 of 9

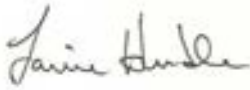
**Recommendation:**

This report is for information purposes only.

June 18, 2019

Page 3 of 9

**Authorizing Signatures:**



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**Lanie Hurdle, Acting Chief  
Administrative Officer**

**Consultation with the following Members of the Corporate Management Team:**

|   |   |
|---|---|
| Gary Dyke, Commissioner, Corporate Enterprise Services    | Not required  |
| Peter Huigenbos, Acting Commissioner, Community Services  |  |
| Jim Keech, President & CEO, Utilities Kingston            |  |
| Desirée Kennedy, Chief Financial Officer & City Treasurer | Not required  |
| Sheila Kidd, Commissioner, Transportation & Public Works  | Not required  |

June 18, 2019

Page 4 of 9

**Options/Discussion:****Drinking Water Source Protection in Ontario**

Source water is the untreated water from lakes, rivers and aquifers (groundwater) that is used to supply residents with drinking water. Source water protection is one component of a multi-barrier approach used to protect municipal drinking water from contamination or overuse. Other components applied to ensure water remains potable include: effective treatment, secure distribution, monitoring and management. The Walkerton tragedy demonstrated to provincial and municipal authorities that multiple factors can lead to a failure in the delivery of clean drinking water and, accordingly, a multifaceted approach to protecting water quality is required.

In 2006, the *Clean Water Act* (CWA) was established to strengthen existing legislation and focus efforts on protecting drinking water systems. The DWSP Program was established under the Act to protect existing and future drinking water sources and includes 19 source protection areas and regions across the Province of Ontario. The City of Kingston is part of the Cataraqui Source Protection Area, which includes all or part of 12 municipalities and is governed by the Cataraqui Source Protection Authority (Exhibit A). Each source protection area or region has a source protection plan outlining required actions to ensure proper protection of drinking water systems. The [Cataraqui Source Protection Plan](#), which applies to the Cataraqui Source Protection Area, was approved in 2014 and is administered by the Cataraqui Source Protection Authority through the Source Protection Committee. The Cataraqui Source Protection Authority is overseen by the Cataraqui Region Conservation Authority (CRCA).

**Role of the Source Protection Committee**

The Cataraqui Source Protection Committee has 12 members with four representatives from the municipal, economic and community sectors. The Chair is appointed by the Province. The primary role of the Committee is to develop a source protection plan and a technical assessment report which helps monitor the progress of source water protection policy implementation efforts within the area. Member duties also include reviewing amendments to source protection documents, providing comments on local efforts, and liaising with professionals with expertise in the practice of source water protection throughout Ontario and elsewhere.

A minimum of two meetings are scheduled annually. City of Kingston staff have been active members on the Committee since 2007. Currently, a staff member from Planning, Building & Licensing Services is the City of Kingston municipal representative on the Committee.

**Cataraqui Source Protection Plan**

Source protection plans require municipalities and stakeholder groups to implement policies to protect their local drinking water sources from contamination and overuse. Policies can impact land-use planning and building applications, as proposed activities may require a risk management plan or may be prohibited if they are within identified vulnerable areas. Source protection plans help ensure that storage of fuel, chemicals or waste, as well as agricultural activities close to municipal water supplies do not cause contamination to the local drinking water source.



June 18, 2019

Page 5 of 9

The Cataraqui Source Protection Plan is a locally developed action plan to reduce risks to drinking water sources. The Plan came into effect April 1, 2015 with 37 policies applying to the City of Kingston. Policies include legally-binding, have-regard-for, and non-binding efforts ranging from land-use planning, risk management of activities in areas of high vulnerability, partaking in ongoing research and education.

Within the Plan, municipalities are the implementing body for policies including risk management, land-use planning, reporting, operations, on-site sewage systems and additional research. The timeline for implementation varies from within 6 months of the Plan's approval date to 10 years after the approval for research-related work.

A proposed work plan for the review of the Cataraqui Source Protection Plan was submitted in October 2018 to the Ministry of Environment, Conservation and Parks for consideration. The work plan was proposed by the Cataraqui Source Protection Committee and endorsed by the Cataraqui Source Protection Authority. The comprehensive review will be conducted by CRCA staff to include policy updates and development to incorporate regulation amendments, data gaps and enhance clarity for improved implementation. The review is to be initiated in the spring of 2019.

### **Official Plan Update and Source Water Protection**

In 2015, the City of Kingston initiated a five-year update to its OP. The Ministry of Municipal Affairs and the Ministry of Housing approved, with limited modification, the 1,500 Council-approved amendments to the OP in 2017. Through the five-year OP update, policies intended to support the objectives of the Source Protection Plan were introduced.

Section 5.A of the updated OP, titled "Source Water Protection", establishes a policy framework for the review of development proposals that have the potential to affect an existing or potential source of drinking water. These policies are supported by mapping (Schedule 11-B) which illustrates Intake Protection Zones (IPZs), Wellhead Protection Areas (WPAs), Highly Vulnerable Aquifers (HVAs) and Significant Groundwater Recharge Areas (SGRAs) (Exhibit B). Within mapped areas, development proposals subject to municipal review must demonstrate, to the satisfaction of the City and the Cataraqui Source Protection Authority, that any risk to a source of drinking water can be adequately mitigated and managed so as to ensure the integrity of the resource is maintained over the long-term. Planning staff work with the CRCA through the development approvals process to ensure the policies of the OP, and those of the Source Protection Plan, are upheld.

### **Vulnerable Areas and Source Protection Methods**

As noted, the OP now recognizes, through mapping and a robust policy framework, areas within which land use activities must be controlled to ensure the long-term protection of drinking water resources. The features and facilities illustrated in Schedule 11-B to the OP (Exhibit B) are those that can be associated with existing or potential drinking water sources. In Kingston, there is one WPA (the Cana WHPA), and two IPZs. The IPZs include the Point Pleasant Intake Protection Zone, and the King Street Intake Protection Zone, both of which are located along the shoreline of Lake Ontario. Overall, there are nine municipal IPZs and three WHPAs within the

June 18, 2019

Page 6 of 9

Cataraqui Source Protection Area. Maps of each vulnerable area can be found at [www.cleanwatercataraqui.ca](http://www.cleanwatercataraqui.ca).

Surrounding each WHPA and IPZ are delineated vulnerable areas and zones. The size and shape of each zone represents either a set distance around the intake or wellhead, or the length of time it would take water and contaminants to reach the intake. This also includes the response time for water treatment plant operators to address potential contamination concerns prior to distribution within the municipal system. The mapped areas are based on risk management and modelling using local scientific data. Vulnerability scores are applied to each area/zone and are used to inform limitations on land use activities which pose a low, medium or significant drinking water threat. Examples of identified threats include land used for livestock grazing or pasturing; the application, handling and storage of road salt and storage of snow; and the handling and storage of fuel.

The City of Kingston and much of our neighbouring municipalities sit on a limestone plain characterized by thin soils overlying limestone bedrock and includes areas of exposed fractured bedrock. The composition of this area presents challenges to source water protection as there can be greater levels of connectivity between surface and ground water resources than that found in other regions. Taking this into account, it is perhaps not surprising that more than 90 percent of the Cataraqui Source Protection Area is identified as HVA with large portions also being part of a significant groundwater recharge area (SGRA). Planning applications affecting lands in the rural area, which may include new lot creation, new land use or expansions to existing development, must demonstrate the sufficiency of the subject land to accommodate the proposal, recognizing the importance of protecting sources of drinking water. Technical studies undertaken in accordance with local and provincial standards are commonly required as a precursor to any sort of land use approval coupled with subsequent approvals required under the Ontario Building Code (OBC).

Outside of municipal planning controls, the Source Protection Plan requires that risk management efforts be put in place to manage activities that may have an impact on local drinking water sources. Landowners in a vulnerable area having a score of eight (8) or higher are contacted by a local Risk Management Official (RMO) to determine whether or not prescribed activities (i.e. handling and storage of pesticides, storage of fuel, etc.) are occurring or are likely to occur. The City of Kingston has appointed Cambium Inc. ([Report Number 18-176](#)) as the RMO responsible for engaging land owners within the Cana WHPA and, in doing so, executing risk management plans that will ensure the protection of source water. The City's Manager of Environmental Projects, trained as an RMO as well, administers this work. In addition to requiring risk management plans, the policies of the Source Protection Plan are being implemented through the preparation of local emergency response plans, winter maintenance plans, and the advancement of outward-facing education and awareness materials such as "drinking water protection zone" road signs and the distribution of information using social media platforms.

### **Kingston's Progress on Source Water Protection**

The DWSP program has now transitioned from the planning phase, which saw the introduction of land use planning policy and related efforts to support source water protection, into the

June 18, 2019

Page 7 of 9

implementation phase, requiring action to satisfy policy objectives and the requirements of the Source Protection Plan. As outlined in Table 1.0 below, the policies of the Plan have been coded into three categories based on their legal effect.

| Code | Description   |
|------|---|
| CW   | <ul style="list-style-type: none"> <li>• The <i>Clean Water Act</i> requires municipalities, local boards or source protection authorities to “comply with” any obligations imposed on it to address a significant drinking water threat (i.e. storage and handling of fuels), regardless of the particular tool or approach used in the policy.</li> <li>• The Act requires decisions under the <i>Planning Act</i>, 1990 and <i>Condominium Act</i>, 1998 to conform with policies on significant threats.</li> <li>• The Act requires decisions related to prescribed instruments (i.e. the storage and handling of over 250 litres of fuel in an intake zone having a vulnerability score of 9 or higher) to “conform with” policies on significant threats.</li> <li>• Persons carrying out significant threat activities must conform with policies that use Part IV powers under the <i>Clean Water Act</i>.</li> <li>• Public bodies designated in the source protection plan to carry out monitoring required by the <i>Clean Water Act</i> must conform with the obligations set out in the monitoring policies.</li> </ul> |
| HR   | <ul style="list-style-type: none"> <li>• The Act requires decisions under the <i>Planning Act</i>, 1990 and <i>Condominium Act</i>, 1998 to “have regard to” policies on moderate and low threats.</li> <li>• The Act requires decisions related to prescribed instruments to “have regard to” policies on moderate and low threats.</li> </ul>   |
| NB   | <p>Other types of policies are “not legally binding” under the Act, but are recommended by the Committee having determined that they are important to achieving the Plan’s objectives. These include:</p> <ul style="list-style-type: none"> <li>• Policies on significant, moderate and low threats to be implemented by bodies other than municipalities, local boards or source protection authorities and which do not rely on Part IV, prescribed instrument or <i>Planning Act</i> tools.</li> <li>• Other permitted policies governing: <ul style="list-style-type: none"> <li>○ incentive programs and education &amp; outreach programs that are not specific for a wellhead protection area or intake protection zone (i.e. private wells);</li> </ul> </li> </ul>  |

June 18, 2019

Page 8 of 9

| Code | Description  |
|------|--|
|      | <ul style="list-style-type: none"> <li>○ the update of spills prevention, contingency and response plans for highways, railways or shipping lanes in wellhead protection areas and intake protection zones; and</li> <li>○ transport pathways in wellhead protection areas and intake protection zones.</li> </ul> |

In 2017, the Source Protection Committee carried out a review of the status of municipal implementation of Plan policies. This review culminated in the preparation of the first implementation status report, dated May 1, 2018. The report was provided to the Cataraqui Source Protection Authority and submitted to the Ministry of Conservation and Parks. A secondary report was prepared and included 2018 progress and was submitted on May 1, 2019. Collectively, municipalities subject to the Source Protection Plan have successfully implemented over 85% percent of the policies outlined within the Plan.

Based on annual reporting for 2018, the City of Kingston has implemented 92 percent of the policies for which it is responsible. It is important to acknowledge that all of the 19 legally-binding policies have been fully implemented. There are three non-binding policies that need further consideration so as to fully support the objectives of the Source Protection Plan. Efforts to satisfy these non-binding policies are on-going and the objective of each should be reasonably achieved in 2019. Highlights of the work completed to date, as well as some of the work that is ongoing, include:

- Land use planning policies have all been established, risk management measures have been put into place and the OP has been updated with vulnerable area mapping and source protection program information. The first draft of the new zoning by-law includes mapping overlays and related zone provisions which limit land uses that have the potential to impact an existing or future source of drinking water.
- The City has established its own Risk Management Office and retained services through a consultant to fulfill its responsibilities under Part IV of the *Clean Water Act*. To date, all five required risk management plans have been completed for the Cana WHPA.
- Drinking water protection road signs were installed by the City of Kingston along Highway 15 to identify the location of the Cana WHPA for enhanced consideration during spills response and for public awareness and education.
- The City of Kingston, in partnership with Utilities Kingston, continues to improve infrastructure to reduce sewage overflows during heavy precipitation events through separating the combined sewer system (i.e. sanitary and storm sewers). Utilities Kingston has made available [real-time notifications](#) of sewage overflows on its website.

Annual reporting to the Cataraqui Source Protection Authority on drinking water source protection work is required each February to report on the previous year and provides an update on policy implementation and ongoing efforts in the City. A member of Planning, Building & Licensing Services is the City representative on the Source Protection Committee and is

June 18, 2019

Page 9 of 9

responsible for working with City of Kingston and Utilities Kingston staff to report on progress as it relates to implementation of the Source Protection Plan.

**Next Steps**

Municipalities and stakeholder groups will continue to be supported in implementing their responsible policies and ensuring vulnerable areas are considered during land use planning and municipal operations activities. Over the next few years, funding dependent, the Cataraqui Source Protection Authority will work to review and update the Cataraqui Source Protection Plan and associated documents to include new information, remove gaps and improve the implementation of risk management efforts within the Cataraqui Source Protection Area.

**Existing Policy/By-Law:**

Cataraqui Source Protection Plan  
City of Kingston Official Plan

**Notice Provisions:**

Not applicable

**Accessibility Considerations:**

Not applicable

**Financial Considerations:**

Not applicable

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**Other City of Kingston Staff Consulted:**

Jim Miller, Director, Utilities Engineering, Treatment and Human Resources, Utilities Kingston

Brodie Richmond, Manager, Environmental Projects, Real Estate & Environmental Initiatives

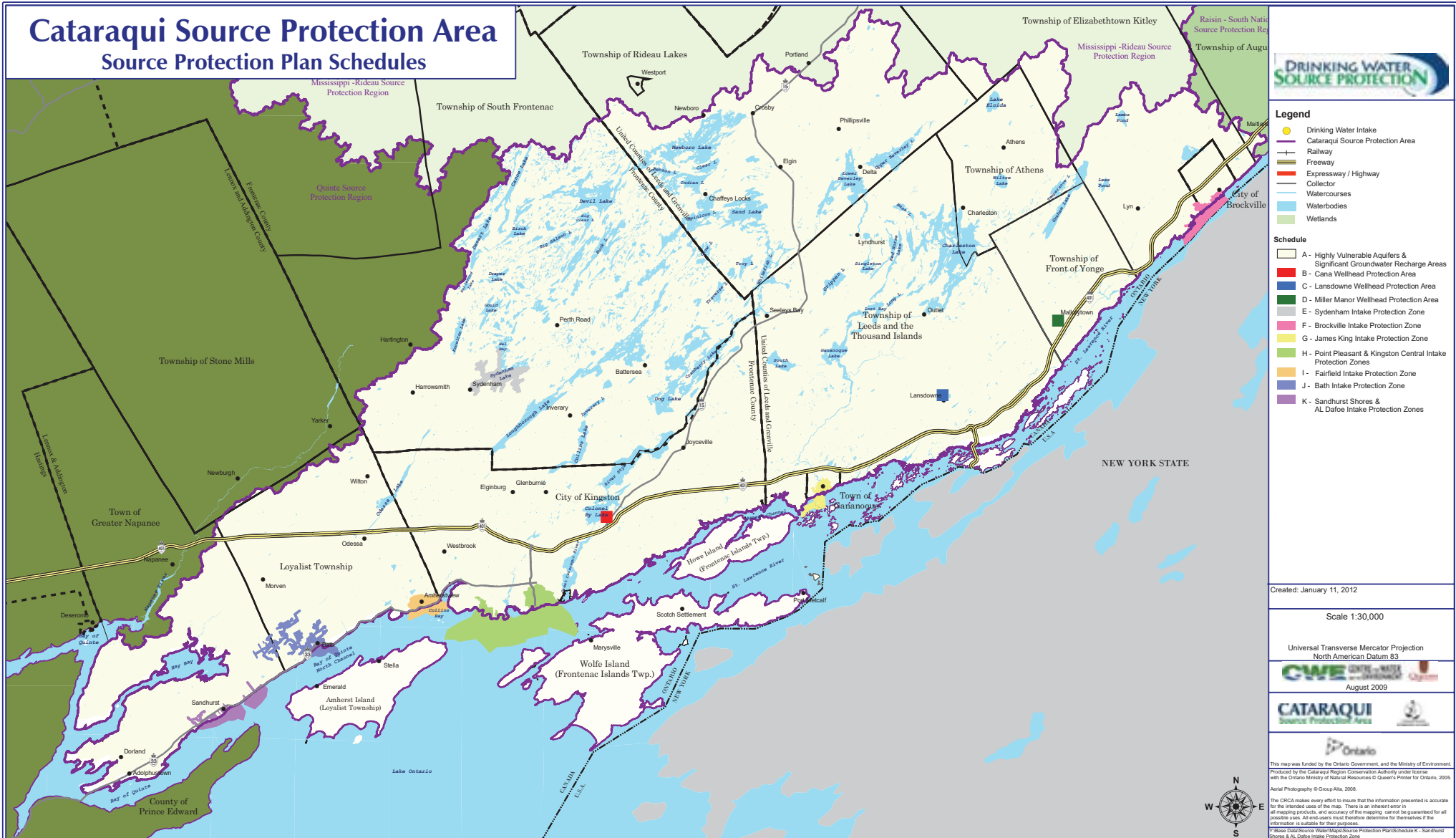
**Exhibits Attached:**

Exhibit A Cataraqui Source Protection Plan Area

Exhibit B Official Plan Schedule 11-B – Constraints Mapping – Source Water Protection

# Cataraqui Source Protection Area

## Source Protection Plan Schedules



- Legend**
- Drinking Water Intake
  - Cataraqui Source Protection Area
  - Railway
  - Freeway
  - Expressway / Highway
  - Collector
  - Watercourses
  - Waterbodies
  - Wetlands
- Schedule**
- A - Highly Vulnerable Aquifers & Significant Groundwater Recharge Areas
  - B - Carra Wellhead Protection Area
  - C - Lansdowne Wellhead Protection Area
  - D - Miller Manor Wellhead Protection Area
  - E - Sydenham Intake Protection Zone
  - F - Brockville Intake Protection Zone
  - G - James King Intake Protection Zone
  - H - Point Pleasant & Kingston Central Intake Protection Zones
  - I - Fairfield Intake Protection Zone
  - J - Bath Intake Protection Zone
  - K - Sandhurst Shores & Al. Dafeo Intake Protection Zones

Created: January 11, 2012

Scale 1:30,000

Universal Transverse Mercator Projection  
North American Datum 83



This map was funded by the Ontario Government, and the Ministry of Environment, produced by the Cataraqui Region Conservation Authority under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2005. Aerial Photography © Group A1A, 2008.

The CRCA makes every effort to insure that the information presented is accurate for the intended uses of the map. There is an inherent error in all mapping products, and accuracy of the mapping cannot be guaranteed for all possible uses. All end-users must therefore determine for themselves if the information is suitable for their purposes.

Y:\Base Data\Source Water\Map\Source Protection Plan\Schedule K - Sandhurst Shores & Al. Dafeo Intake Protection Zone





Map Document: K1008 - Official Plan Comprehensive Review/Schedule Consolidation/2016- May 15/2019 11-B Development Constraints - Source Water Protection.mxd  
 Printing Date: 2019-05-08

