

Source Protection Plans and Septic System Maintenance across Ontario:

PROGRESS, CHALLENGES AND LESSONS LEARNED

Chitra Gowda, Source Water Protection Lead, Conservation Ontario

The Clean Water Act, 2006 is part of the Ontario government's commitment to ensure the sustainability of clean, safe drinking water for all Ontarians, by protecting sources of municipal drinking water including lakes, rivers and well water. Under this legislation, the source water protection program was established with substantial funding from province. This resulted in the development of science-based Assessment Reports and local Source Protection Plans (SPPs) by 19 multi-stakeholder Source Protection Committees, with Conservation Authorities (CAs) providing support including administration, technical and communications. The Ontario government has approved 16 of 22 Source Protection Plans from 2013 to July 2015, and implementation of the approved Plan policies across the province is underway.

As required by the Clean Water Act, the local Source Protection Plans include mandatory policies to address certain activities which are or could be significant threats to sources of drinking water in specific areas. In January 2011, the Ontario Building Code was changed to require Mandatory Maintenance Inspections every five years in all areas where sewage systems (governed by the Building Code Act) are identified as a significant drinking water threats, in an approved Assessment Report (technical studies behind the Plan) or approved Source Protection Plan.

Onsite sewage system inspections are conducted by the principal authority defined by the Building Code Act (the

municipality, board of health, or conservation authority). Conservation Authorities have a history of being involved in onsite sewage systems management across Ontario, through a range of services, with a few CAs administering inspection programs as well. CAs often work with members of the Ontario Onsite Wastewater Association (OOWA) as well. Between 2007 and 2012, CAs administered the Ontario Drinking Water Stewardship Program (ODWSP) funding provided by the province to landowners, to address certain activities identified as significant threats to drinking water sources. At least 1200 septic systems were upgraded or decommissioned over that period, where they were identified as a significant threat. Several Mandatory Maintenance Inspection programs have been initiated across Ontario with the approval of local Assessment Reports under the Clean Water Act. The number of required inspections range from none in a few source protection areas, to thousands in many source protection areas.

Progress updates on some of these source water protection related inspection programs in the Province are provided below, along with insights into the challenges faced, and the lessons learned. Watershed-wide CA programs (which typically provide technical and financial assistance to property owners) and municipal septic re-inspection programs cover large geographic areas that may include specific vulnerable areas where septic systems are significant threats. These watershed-wide and community-based programs contribute to the protection of sources of drinking water as well.

NORTH BAY-MATTAWA

Robert M. Palin

Robert M. Palin is the Onsite Sewage System Program Manager at the North Bay-Mattawa Conservation Authority (NBMCA) in northern Ontario. Approximately 600 properties were identified as requiring Mandatory Maintenance Inspections of septic systems, based on the local Source Protection Plan for the North Bay Mattawa source protection area. Palin explains that they are in the last year of a five-year inspection cycle, with all inspections expected to be completed by end of the year. Very few septic systems

were found to be faulty through the inspections, and Palin says this is due to various reasons including residents obtaining permits and replacing their systems before the inspections, emptying their septic tanks before the inspections, and selling their properties prior to the inspections. These also result in the number of inspections becoming a 'moving target', as some properties were eliminated from the initial list, while new septic systems were found during site visits. Palin also administered the ODWSP, and reports that many residents took advantage of the ODWSP grant funding when it was available, in order

to repair or replace their septic systems. However, the first round of Mandatory Maintenance Inspections was met with several complaints by the public. Further, since the first round of inspections is still a recent memory for residents, some are questioning why the second round of inspections will start next year, not realizing that nearly 5 years has already passed. For further information on the NBMCA sewage system inspections including the Mandatory Maintenance Inspections of septic systems, based on the local Source Protection Plan, please visit: www.nbmca.on.ca/site/indexd.asp?id=159.

EASTERN ONTARIO

Keith Taylor

In Eastern Ontario, Keith Taylor, source water Project Manager at Quinte Region Conservation Authority (QRCA), provided information on Mandatory Maintenance Inspections in Quinte region. Municipal Building Inspectors have completed inspections for 99 of 172 septic systems. Similar to Palin, Taylor also mentions that the number of inspections is a moving target number. Taylor also says that there have been no septic system failures reported yet, and accredits that to about a quarter of the system owners being able to avail of ODWSP funding to repair or replace their systems, and also because several systems were decommissioned in order to be connected to municipal sewer pipes. The QRCA frequently interacts with municipalities on the inspections, and has produced a factsheet on sewage system activities and protecting drinking water sources. Taylor believes that the Mandatory Maintenance Inspections for septic systems in the Quinte Region has been a success story. To learn more about septic system inspections in the Quinte Region, please visit: www.archive.constant-contact.com/fs131/1101501069352/archive/1120658991159.html.

CATARAQUI REGION

Holly Evans

Holly Evans, Environmental Technician at the Cataraqui Region Conservation Authority (CRCA), explains that the Public Health Units are conducting the Mandatory Maintenance Inspections for septic systems which are significant threats in vulnerable areas of the Cataraqui source protection area. Evans says that there are 24 septic systems identified as significant threat activities, and of these, owners of 14 systems have participated in the ODWSP. The number of inspections completed is yet to be reported at this time. At a source protection plan implementation workshop hosted by the CRCA in March 2015, Mark Green, Chief Building Inspector at Leeds, Grenville and Lanark District Health unit, reported that across the province since 2000, septic system maintenance programs have resulted in

22% of the systems requiring upgrades, 17% requiring corrective actions (repairs), and the remaining 61% needing no action. At the local level, the big question is still: Who pays for inspections, repairs and replacement? Green's presentation, which also includes an overview of new technologies to manage sewage onsite, can be found at: www.cleanwatercataraqui.ca/CRCAsworkshops.html.

MISSISSIPPI-RIDEAU

Allison Gibbons

Allison Gibbons, source water Co-Project Manager for Mississippi-Rideau source protection region, which spans two CAs, mentions that there are only two septic systems requiring Mandatory Maintenance Inspections. These will be addressed by the Leeds, Grenville and Lanark District Health unit later this year, with support from the municipality. Allison reports that due to the small number, there have not been any concerns thus far.

SOUTH-CENTRAL ONTARIO

J. Pedro Cruz

In south-central Ontario, J. Pedro Cruz, Building Inspector at the County of Dufferin, describes that of the 116 properties in the municipality which required Mandatory Maintenance Inspections for septic systems, all 116 passed the non-intrusive visual inspections which were completed by early fall 2014.

Cruz summarized the process undertaken by the County of Dufferin into these steps: (1) identified properties that met the requirements of the mandatory inspection program and retrieved septic information relative to the properties; (2) advertised in local newspapers that during the summer, a mandatory inspection program would be implemented in the County of Dufferin.

This was done to make the general public aware of the possibility of their property falling within the scope; (3) notified

property owners of the program, the intention of the program, how and why their property was selected, basic details of what to expect during the inspection and rough date for when to expect the inspector to show; (4) conducted the inspections, on warm, sunny days between July and September.

The property owners were given the option of being present during the inspection, but were told that their presence was not necessary. There was a visual check of the grounds, clearance distances to the tank and septic bed were checked, photographs were taken, an inspection report filled out, and a septic system maintenance hand-out was left with a copy of the inspection report at the house or with the property owner; (5) compiled summary report for each specific zone (wellhead, etc.) and summary for each Conservation Authority; and (6) filed all inspection reports for record keeping.

Cruz describes the inspection program as being very well received, with no confrontations with the public. He attributes the overall success to the fact that the County of Dufferin: (1) advertised and made people aware in advance, that there would be a possibility of their property being within the scope of the inspection program; (2) made efforts to educate the public about how to maintain their septic systems and the reasons why, which improved the general knowledge of septic systems and highlighted the importance of regular maintenance; (3) provided clarification that the inspections were mandatory per the Ontario Building Code; and (4) did not charge for any of its inspections: this was the largest contributor to the inspection program's success in the County of Dufferin.

COUNTY OF WELLINGTON

Kyle Davis

Kyle Davis is the Risk Management Official at Wellington Source Water Protection, which is a partnership between the lower tier municipalities within the County of Wellington, and the County.

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There are close to 670 properties requiring Mandatory Maintenance Inspections for septic systems, within Wellington County, and the inspections must be completed by 2017. Depending on the municipality, the inspections will be conducted by either the municipal Building Department Officials or a consultant hired to complete the inspections.

Davis describes the recent education and outreach 'Septic Socials' events as being organized and hosted by Wellington Source Water Protection in partnership with the Ontario Rural Wastewater Centre (ORWC). The Septic Socials were held in summer 2015 at six locations, and attended by approximately 100 people. The Septic Socials contributed to increased awareness and knowledge of septic system maintenance and inspections. Katherine Rentsch and Doug Joy of ORWC at University of Guelph, presented to the audience, providing a clear picture of what onsite systems are, how they work, how to operate and maintain them, and what the mandatory inspections would entail. In order to learn more about septic system inspections in the County of Wellington, please visit: www.wellingtonwater.ca/septic-inspections/

SAUGEEN, GREY SAUBLE, NORTHERN BRUCE PENINSULA

Michael Varty

Within the Saugeen, Grey Sauble, Northern Bruce Peninsula source protection region, the Town of South Bruce Peninsula has implemented a town-wide septic system re-inspection program, contracted with the consultancy agency WSP.

At the Wellington Septic Socials, Michael Varty, Director of Environment, WSP Consulting, provided a presentation on the program. Approximately 2200 inspections out of 5000 have been completed in the Town of South Bruce Peninsula, with the program starting in 2013 and the first cycle ending in 2016. Varty indicates that there is a

large focus on the education of property owners, concurrent with the inspection process, and this has led to a high rate of voluntary participation by landowners. Based on the inspections, the Town issues a certificate by mail if there are no visible signs of unsafe septic system, or a remedial action letter indicating the visible deficiencies observed by the inspector and the date by which remedial actions must be completed. In the Town of South Bruce Peninsula, so far about 422 remedial action letters have been issued, of which only 1-2% will require significant repairs.

LAKE SIMCOE REGION

LEAP

As described in the OOWA Onsite Newsletter of Fall/Winter 2014 (Vol. 15, Issue 2), the Lake Simcoe Region Conservation Authority provides technical and financial assistance through its Landowner Environmental Assistance Program (LEAP). The purpose of the septic system program under LEAP is to help landowners through the process of repairing, upgrading or replacing faulty or malfunctioning septic systems in order to protect ground and surface water. To find out more, please visit: www.lsrca.on.ca/leap/projects/septic.php

SOUTH-WESTERN ONTARIO

ABMV

In south-western Ontario, the Ausable Bayfield Maitland (ABMV) source protection region also includes properties subject to Mandatory Maintenance Inspections, which are being implemented by various agencies: municipal building officials in four municipalities; the Huron County Public Health Unit on behalf of four municipalities; and the Township of Huron-Kinloss through its township-wide septic inspection program.

Donna Clarkson, Source Water Protection Specialist for the ABMV region says that most of the municipalities started inspections in early summer of 2015,

and an estimated 15-20% of inspections have been completed. To date, none have reported any negative feedback from landowners.

All municipalities plan to complete the septic inspections by year end. Following consultation with the various staff delivering the inspections, ABMV staff developed a Septic System Education and Outreach package which inspectors provide to landowners as part of their inspection. The package includes several easy to understand resources such as a map showing the subject property lines and local wellhead protection areas; ABMV factsheet on Septic System Inspections in Wellhead Protection Areas; Conservation Ontario factsheet on Wellhead Protection Areas and brochure on Septic Systems; and Service Ontario septic system checklist.

Some resources are based on those developed under the Township of Huron-Kinloss program. In addition to the educational resources, the ABMV staff developed a Homeowner Questionnaire for property owners to complete and to return to the inspector at the end of the inspection. Information from the questionnaire will be used by the Source Protection Authorities to assess the effectiveness of the education program. For more information, please visit: www.sourcewaterinfo.on.ca/content/downloads.php

HURON-KINLOSS

The Township of Huron-Kinloss started a Community Septic Inspection Program in 2007, as a proactive measure to protect surface water and groundwater resources. The program requires that septic systems in the township are inspected every 8 years; however properties with septic systems identified as significant drinking water threats require an inspection every 5 years to satisfy the Source Protection Policy requirements. Inspections are done between May 1st to October 31st, weather permitting. The township advises property owners to leave the inspection report for new owners, if the property is sold. *(continued on page 26)*

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In the first round of the program which ended in 2014, approximately 3000 properties with septic systems were inspected, identifying 2.2% of the inspected systems to be at a high risk based on environmental hazard, and 2.4% to be at a high risk based on structural safety. The second round of inspections has begun in 2015. The township expects that in the near future, there will be an increasing trend of problems and failures as the systems continue to age. For more information, please visit: www.huronkinloss.com/septic-systems.cfm.

ESSEX REGION

ERCA + DRCC

As described in the OOWA Onsite Newsletter of Fall/Winter 2014 (Vol. 15, Issue 2), the Essex Region Conservation Authority (ERCA), in partnership with the Detroit River Canadian Cleanup (DRCC), initiated a program in 2013 aimed at educating watershed residents about proper septic system management and encouraging behavioral changes. Danielle Stuebing, ERCA's Director of Community Outreach Services, explains that a DRCC survey discovered that there were landowners who did not even know that their sewage was treated by a septic system. Of those who did know, many were not aware that septic systems require regular maintenance. In the Essex Region Source Protection Plan, which was approved in April 2015, microcystin-LR has been identified as a water quality Issue at the Lake Erie raw water intakes.

Dr. Katie Stammler, ERCA's Water Quality Scientist and Source Protection Project Manager, explains that phosphorus contributes to the growth of blue-green algae blooms in the Great Lakes including the cyanobacteria that produce the toxin microcystin-L. She adds that improperly

functioning septic systems can certainly contribute to this problem. In order to help inform landowners about the need to ensure septic systems are properly maintained, ERCA and the DRCC created a postcard with easily understood information. Stuebing said that while the issues can be complex, the desired actions are really quite simple – ensuring regular maintenance of a septic system.

Stuebing reiterated the importance of using clear and simple language in identifying the desired actions, when communicating with the public in an effort to spur action, and not get too bogged down in scientific data. It has to be relevant to the recipient in terms of why they should care. In addition to a postcard, ERCA partnered with maintenance contractors to provide a 10% discount to anyone who mentioned the program, and also provided a prompt in the form of a fridge magnet to remind homeowners to maintain their septic systems - much like an oil change reminder.

Presentations were also made to municipal councils to gain political support for and awareness of the initiative, and a forum was hosted specifically for regional building inspectors who maintain the primary responsibility for responding to complaints. *(continued on page 26)* Stuebing explains that the goal was to gain a better understanding of the barriers to addressing septic issues. This program generated significant media interest and septic contractors reported some uptake on the promotional discounts. While formal quantitative analysis was not undertaken, informal surveys conducted one year after the program indicate an enhanced understanding and awareness of septic maintenance needs. Stuebing concludes that while this has been a good start, continued education and outreach efforts are needed in order to ensure septic system maintenance.

In conclusion, septic system inspections or preparations for the same, based on the requirements of the Clean Water Act are well underway in several source protection areas and regions across the

province. Some of these inspections are part of a larger, community-based inspection program. Based on responses to the inspections thus far, it is seen that participation greatly improves due to: (1) education and outreach efforts made in advance of the inspections, providing clear messages that ensure the desired actions take place; (2) availability of grant funding such as the ODWSP to property owners to mitigate the financial impact of remedial actions; and (3) reductions in inspection fees. Commonly used educational materials about septic systems are listed below:

- Ontario Ministry of Environment and Climate Change factsheet: www.conservation-ontario.on.ca/library?view=document&id=239:swp-education-outreach-septics&catid=66:resource-catalogue-swp-education-and-outreach-policies.

Ontario Rural Wastewater Centre brochure available at the same website above.

- Conservation Ontario brochure: www.conservation-ontario.on.ca/library?view=document&id=81:septic-systems-2011&catid=59:source-water-protection

- Ontario Ministry of Agriculture, Food and Rural Affairs 'SepticSmart!' video and resources: www.omafra.gov.on.ca/english/environment/facts/sep_smart.htm

Conservation Ontario and Conservation Authorities continue to seek opportunities to collaborate and identify sources of financial support to promote and foster sound septic system management. This includes with building partnerships with local municipalities, landowners, contractors and the Ontario Onsite Wastewater Association members. For more information about possible septic services and programs being offered in your local watershed, please visit Conservation Ontario's website: www.conservation-ontario.on.ca/about-us/conservation-authorities/ca-contact-list. Conservation Ontario is the provincial organization which represents Ontario's 36 Conservation Authorities.