



Canadian  
Environmental Law  
Association  
EQUITY. JUSTICE. HEALTH.

# LEAD IN OUR DRINKING WATER

Prepared for CELA by:  
Yvonne Mazurak and Christina Persad

Osgoode Law School, York University

November 4, 2019

## Table of Contents

1. INTRODUCTION	2
2. REGULATORY RESPONSES AND CURRENT FRAMEWORK IN ONTARIO	3
Safe Drinking Water Act	4
Gaps in the Existing Regulatory Framework	6
3. EXPOSURE AND HEALTH CONCERNS	6
Vulnerable Populations	8
4. RECOMMENDATIONS	10
I. Legislating Stricter Mandatory Minimum Standards	11
II. Developing a Publicly-Accessible Lead Service Line Inventory	13
Notice Requirements	15
III. Development of plans for complete removal of LSLs through a shared commitment	16
Incentivizing homeowners to replace LSLs	17
Engaging with homeowners	18
Ensuring LSLs are replaced with safer alternatives	19
IV. Reducing Risk Through Corrosion Control	19
V. Raising Awareness through Public Education	21
5. Conclusion	21

## 1. INTRODUCTION

In 2000, the drinking water system in Walkerton, Ontario became contaminated with E. Coli bacteria, tragically leaving seven people dead and over 2,300 ill. Many of the youth and children who fell sick have suffered long term impacts. As to be expected, the outbreak raised concerns about the safety of drinking water across the province and country. The Ontario government responded by setting up the Walkerton Inquiry, a special independent Commission led by Justice Dennis R. O'Connor, to examine the contamination of the water supply and, based on those findings, make recommendations for ensuring the future and continuing integrity of municipal water supplies.

It is not possible to remove all risk from a water system and great progress was made in the aftermath of the outbreak in Walkerton to make drinking water substantially safer across Ontario. The improvements in the quality of Ontario's drinking water are commended. However, as Mr. Justice O'Connor stresses in the Commission's report, the overall goal must be to ensure that "Ontario's drinking water systems deliver water with a level of risk so negligible that a reasonable and informed person would feel safe drinking the water."<sup>1</sup> As this report will outline, CELA is not able to advise that a reasonable person informed on the health effects of lead, and the potential for exposure to lead in drinking water in Ontario, should feel safe drinking Ontario water in localities where there are still lead service lines in place and a history of issues with corrosion and water chemistry. There are many communities which still have a long way to go to provide the level of assurance on the issue of lead in drinking water at consumer tap that we think is required. In part this gap in confidence is due to the current provisions of the *Safe Drinking Water Act* in Ontario under which the drinking water system operator's duty to supply water that meets regulated standards extends only to the point where the municipal system connects to the consumer's plumbing. This is the connection "at the street" where smaller lines known as "lead service lines" are connected to the utility main water supply pipes.

In addition to recommending improvements to the management and oversight of water systems, several substances were identified in Justice O'Connor's report as warranting further regulatory attention in order to achieve the "safe drinking water" standard. Lead was one of the substances identified in Volume 2 of that report. The adverse health impacts of lead exposure from common consumer products and everyday activities, including drinking water from taps, are of such great concern that in 1996 the Organisation for Economic Co-operation and Development (OECD) Environment Ministers adopted a Declaration on Risk Reduction for lead.<sup>2</sup> Health Canada has, since then, acknowledged that exposure to lead contributes to reduced cognition, digestive issues, miscarriages, kidney dysfunction, and other serious effects in adults. Children, infants and unborn fetuses are more strongly affected by lead exposure with impacts ranging from neurodevelopmental and behavioural effects, to prenatal

---

<sup>1</sup> The Honourable Dennis R. O'Connor, Part Two – Report of the Walkerton Inquiry: A Strategy for Safe Drinking Water (Toronto: Queen's Printer for Ontario, 2002), online:

<http://www.ontla.on.ca/library/repository/mon/3000/10300881.pdf>, p 74

<sup>2</sup> OECD, Lead, online: <http://www.oecd.org/env/ehs/risk-management/lead.htm>

growth abnormalities.<sup>3</sup> The current state of drinking water delivery in Ontario means that Ontario residents, their children, pregnant women, and their unborn fetuses, may still be at risk of lead exposure and lead poisoning from the lead plumbing components in their homes, schools, daycares, and workplaces. CELA concludes that both the drinking water regulatory requirements and lead service line replacement programs need to be improved so as to provide adequate protection for the most vulnerable populations across Ontario.



In this report CELA is calling on the Ontario government to implement effective measures that will contribute to the comprehensive, “source-to-tap” drinking water supply integrity envisioned by Mr. Justice O’Connor. Dissolved lead has no taste, smell, or colour, and so, without publicly available information on testing results, the public is not adequately advised as to the safety of their drinking water in respect of potential sources of lead. Taking a comprehensive, multi-faceted, multi-pronged approach to the issue is the only way that all Ontarians—no matter their age, class or background—will be able to know they are safe from the detrimental effects of lead when turning on their taps.

This report from CELA provides an overview of the current regulatory framework for drinking water in Ontario, describes the risks posed by lead, and calls for each of the following recommendations:

- I. **Regulating Stricter Mandatory Minimum Standards**
- II. **Developing a Publicly-Accessible Lead Service Line Inventory and Notice Requirements**
- III. **Development of Plans for Complete Removal of LSLs through Long-Term Shared Commitment**
- IV. **Reducing Risk Through Corrosion Control**
- V. **Raising Awareness Through Public Education**

## 2. REGULATORY RESPONSES AND CURRENT FRAMEWORK IN ONTARIO

In Canada, municipal drinking water standards and oversight are primarily matters of constitutional provincial jurisdiction. The federal government establishes guidelines for many substances and has had guidelines for lead in drinking water established by Health Canada with the input of a federal - provincial territorial committee, since the 1970s.<sup>4</sup> Under the *Constitution Act, 1864*,<sup>5</sup> drinking water resources and water supply are Provincial and

---

<sup>3</sup> Health Canada, *Lead in Drinking Water*, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, p 3

<sup>4</sup> *Ibid.*, p 259

<sup>5</sup> *The Constitution Act, 1867*, 30 & 31 Vict, c 3, online: <https://laws-lois.justice.gc.ca/eng/const/FullText.html>

Territorial responsibilities, although there are also areas of federal responsibility including responsibilities shared with First Nations and federal facilities. In the province of Ontario, aspects of those responsibilities have been allocated to municipalities within the province.

The *Safe Drinking Water Act* (“SDWA” or the “Act”), passed in December 2002, is the legislation that authorizes Ontario to regulate the quality of drinking water by way of binding standards, and it was enacted based on Justice O’Connor’s recommendations in the Report of the Walkerton Inquiry. In Part II of the Report, it was expressly recommended that:

*The Province develop a comprehensive, source-to-tap, government-wide drinking water policy and enact a SDWA embodying the important elements of that policy. I also propose that the MOE take the lead in developing and implementing the policy*<sup>6</sup>

Since the release of the Report, the Ontario government has proceeded with various measures, programs and initiatives intended to fulfill the important changes recommended by Mr. Justice O’Connor, including the SDWA and various regulations enacted under it. Together, they serve as an important component of Ontario’s framework for protecting drinking water across the province.

### Safe Drinking Water Act

The purposes of the Act are identified as:<sup>7</sup>

1. To recognize that the people of Ontario are entitled to expect their drinking water to be safe
2. To provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of drinking water systems and drinking water testing

The Act consolidates legislative and regulatory requirements regarding the treatment and distribution of drinking water in Ontario. Its main features include:

- legally binding standards for certain contaminants in drinking water and for water testing,
- approvals process for private water supply systems,
- duties on owners, operating authorities and laboratories to immediately report adverse water tests,
- enforcement mechanisms, and
- an annual drinking-water report published by the Minister.

---

<sup>6</sup> The Honourable Dennis R. O’Connor, Part Two – Report of the Walkerton Inquiry: A Strategy for Safe Drinking Water (Toronto: Queen’s Printer for Ontario, 2002), online:

<http://www.ontla.on.ca/library/repository/mon/3000/10300881.pdf>, p 13

<sup>7</sup> *Safe Drinking Water Act*, SO 2002, c 32, online: <https://www.ontario.ca/laws/statute/02s32>, s 1

The Act also establishes the Advisory Council on Drinking-Water Quality and Testing Standards, to consider issues and provide recommendations relating to standards for drinking-water quality and testing.<sup>8</sup>

The Act further established that the duty owed by the owner of the municipal drinking water system is to ensure that the water provided by the system, to the point where the system is connected to the user's service line, meets quality standards.<sup>9</sup> The system must also be in a fit state of repair and satisfy the standards prescribed for the system.<sup>10</sup> Given the duty ends at the user's service line, municipalities are not mandated to have Lead Service Line Replacement Programs and thus, if any do exist, they are not regulated by the Province.

Regulations have been enacted under the Act to protect the broader public who obtain their drinking water from municipal systems, including the Drinking Water Systems Regulation (O. Reg. 170/03), which establishes testing requirements for contaminants (including lead) by municipalities.<sup>11</sup>

#### **Regulatory Amendments: Lessons from London, ON**

In April 2007, high levels of lead were detected in London, ON. The province responded quickly and soon after a multi-faceted plan was put in place to expand safety protections for drinking water and specifically reduce potential levels of lead intake, especially for pregnant women and children six and under.

As part of this plan, the *Schools, Private Schools and Child Care Centres Regulation (O. Reg 169/03)* was passed, requiring these facilities to flush their plumbing and sample for lead in drinking water.<sup>12</sup> The purpose of these requirements is to help reduce the likelihood of children attending these facilities from being exposed to excessive levels of lead in drinking water. To ensure that these facilities are complying with the law, Ontario has implemented a multi-faceted program including inspections and audits.

Amendments have also since been made to O. Reg 170/03 to reduce the risk of elevated lead levels in municipal residential and non-municipal year-round residential systems by testing tap water for lead at residential homes.<sup>13</sup> The frequency of sampling and testing according to drinking water system category, the size of the population served and the source.<sup>14</sup> For example, in large residential systems, if more than 10% of all samples in two out of the three test periods exceeds the standard prescribed for lead, the owner of the

<sup>8</sup> *Safe Drinking Water Act*, SO 2002, c 32, online: <https://www.ontario.ca/laws/statute/02s32>

<sup>9</sup> *Safe Drinking Water Act*, SO 2002, c 32, online: <https://www.ontario.ca/laws/statute/02s32>, s 11(1)(1)

<sup>10</sup> *Safe Drinking Water Act*, SO 2002, c 32, online: <https://www.ontario.ca/laws/statute/02s32>, s 11(1)(2)(ii)(iii)

<sup>11</sup> O Reg 170/03: Drinking Water Systems, online: <https://www.ontario.ca/laws/regulation/030170>

<sup>12</sup> O Reg 243/07: Schools, Private Schools and Child Care Centres, online:

<https://www.ontario.ca/laws/regulation/070243>

<sup>13</sup> O Reg 170/03: Drinking Water Systems, online: <https://www.ontario.ca/laws/regulation/030170>, Schedule 15.1, s 15.1-6(4)

<sup>14</sup> *Ontario Safe Drinking Water Act*, 2002 & its regulations: FAQs (Canadian Environmental Law Association, 2011), online: <https://www.cela.ca/publications/faqs-safe-drinking-water-act-2002-and-its-regulations>, p 4

system must ensure that a plan is prepared and submitted to the director within a year of the last failed test.<sup>15</sup>

### Gaps in the Existing Regulatory Framework

Though the *SDWA* includes a number of important measures to protect drinking water consumers, the fact that this safety net was in place at the time of the reported lead exceedances at homes in London demonstrated that improvements were needed to adequately protect the public when it comes to lead exposure in drinking water. The regulations and amendments enacted since then are fairly extensive and provide important improvements to public health, but fail to sufficiently protect all residents in Ontario from exposure to lead in their drinking water. In this report CELA will recommend that the *SDWA* regulations should be amended to increase the likelihood that drinking water operators will supply water in a manner that does not risk exceedance of lead drinking water standards at consumers' taps in their community. CELA also recommends in this report that the lead standards in Ontario should be strengthened and made more protective in line with the current Health Canada guidance. And thirdly, CELA recommends that the improved legislative and regulatory requirements be incorporated into an overall framework for ensuring and maintaining drinking water integrity for Ontario residents' safety. As it stands, the existing framework, in which lead service line policy is largely left to each municipality and its utility, in respect of lead exposure lacks the comprehensive, source-to-tap drinking water policy recommended by Justice O'Connor. Rather currently Ontario has a fragmented patchwork of voluntary programs that have led to inconsistency across the province with regard to utility reporting, grant offerings, entitlement to receiving grants, and public education campaigns.

## 3. EXPOSURE AND HEALTH CONCERNS

Historically, Canadians have been exposed to lead in gasoline, paints, and consumer goods, such as cosmetics and toys.<sup>16</sup> Regulations mandating the removal of lead from these common sources has resulted in reductions in lead exposure for Canadians.<sup>17</sup> However, sources of lead remain a significant concern to public health in many communities.<sup>18</sup>

Since most of the utility mains have already had any lead removed from the municipal systems in Ontario, remaining sources of lead typically finds their way into drinking water when it flows through the service lines connecting private users' plumbing systems with municipally-owned main water lines if those lines are made of lead. Lead service lines (LSLs)

---

<sup>15</sup> O Reg 170/03: Drinking Water Systems, online: <https://www.ontario.ca/laws/regulation/030170>, Schedule 15.1

<sup>16</sup> Health Canada, Lead in Drinking Water, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 5.0 (p 9); See also - \*\*\*here is where to include the Children's standard setting study by CELA Kooper et al 2000

<sup>17</sup> Mark Payne, "Lead in drinking water", CMAJ July 29, 2008 179 (3), online: <https://doi.org/10.1503/cmaj.071483>, at 253

<sup>18</sup> Mark Payne, "Lead in drinking water", CMAJ July 29, 2008 179 (3), online: <https://doi.org/10.1503/cmaj.071483>, at 253

are the primary source of lead leaching into water in Ontario.<sup>19</sup> Lead present in pipe fittings, soldering, and fixtures also contribute to household drinking water lead levels. Water lead levels (WLLs) are further dependent on the stagnation time of water in the pipes, the level of corrosiveness of the source water, the age of the plumbing system, water flow, and surface area of the pipes and fittings.<sup>20</sup> Even when lead levels in drinking water municipal sources are low or undetectable,<sup>21</sup> lead levels at the “tap” or the household point of use (POU) can be elevated due to lead leaching along the water service delivery route. Further, within individual households, WLLs at the POU can be varied due to the aforementioned factors. Individual blood lead levels (BLL) can also vary based on the individual’s water consumption, age, and other consumer behaviour.<sup>22</sup>



There is no threshold for lead exposure below which no adverse health effects occur.<sup>23</sup> In other words, even at the lowest detectable level of lead exposure, negative health effects occur across all populations. Neurological,<sup>24</sup> cardiovascular,<sup>25</sup> renal,<sup>26</sup> carcinogenic,<sup>27</sup> and developmental and reproductive effects<sup>28</sup> are believed to occur at blood lead levels as low as 1-2 µg/dL. “Low” levels of lead exposure, such as 3-5 µg/dL, can cause neurologic damage, decreased IQ, behavioral problems, depression, and anxiety.<sup>29</sup>

---

<sup>19</sup> Levallois et al, “Public Health Consequences”, *Current Environmental Health Reports* (2018) 5:255-252, online: <https://www.springer.com/journal/40572>.

<sup>20</sup> Health Canada, *Lead in Drinking Water*, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 4.2 (p 8)

<sup>21</sup> Levallois et al, “Public Health Consequences”, *Current Environmental Health Reports* (2018) 5:255-252, online: <https://www.springer.com/journal/40572>.

<sup>22</sup> Health Canada, *Lead in Drinking Water*, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 5.1.2 (p 12)

<sup>23</sup> Health Canada, *Lead in Drinking Water*, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 2.1 (p 2)

<sup>24</sup> Health Canada, *Lead in Drinking Water*, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 9.1.2.1 (p 37)

<sup>25</sup> Health Canada, *Lead in Drinking Water*, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 9.1.2.2 (p 39)

<sup>26</sup> Health Canada, *Lead in Drinking Water*, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 9.1.2.3 (p 41)

<sup>27</sup> Health Canada, *Lead in Drinking Water*, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 9.1.2.4 (p 42)

<sup>28</sup> Health Canada, *Lead in Drinking Water*, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 9.1.3 (p 43)

<sup>29</sup> PEW Charitable Trusts, *10 Policies to Prevent and Respond to Childhood Lead Exposure*, Report of The Health Impact Project (2017), online: <https://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure>, p 8



## Vulnerable Populations

Populations such as infants, children, pregnant and menopausal women, and low-income or minority communities are especially vulnerable to lead exposure. They are both more likely to be exposed to higher levels of lead, and are more susceptible to the health effects of lead in drinking water.

Lead is known to compete with other metals in the brain (such as zinc, iron, and calcium), reducing the absorption of these critical elements, particularly required in large quantities by children at their developmental stage to build brain cells and develop the nervous system.<sup>30</sup> The interference of lead exposure and absorption into the brain can therefore affect children more acutely, leading to increased incidence of neurological damage.<sup>31</sup> Further, fetuses and young children are more efficient than adults at absorbing lead through ingestion, and are less efficient at the excretion of lead.<sup>32</sup> As they are in the process of growing and developing, children can suffer additional neurological effects, such as impaired learning, shorter attention spans, hyperactivity, inattentiveness, and poor school performance.<sup>33</sup>

Both women who are pregnant and women who are menopausal may have higher blood lead levels after being exposed to the same water lead levels as other individuals. Lead is stored primarily in the bones, replacing calcium, and for pregnant and menopausal women, who have higher demands for calcium, lead stored in the bones can be released into the blood, elevating BLLs, and causing adverse health effects.<sup>34</sup> Spontaneous abortion, gestational hypertension, preeclampsia, preterm birth, and low birth weight have all been found to occur with high BLLs in pregnant women.<sup>35</sup> Since lead readily crosses the placenta and also passes into breastmilk, pregnant women with elevated BLLs are at a higher risk of exposing their fetus to lead via transplacental exposure and, to a lesser extent, breast-feeding.<sup>36</sup>

---

<sup>30</sup> PEW Charitable Trusts, 10 Policies to Prevent and Respond to Childhood Lead Exposure, Report of The Health Impact Project (2017), online: <https://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure>, p 9

<sup>31</sup> PEW Charitable Trusts, 10 Policies to Prevent and Respond to Childhood Lead Exposure, Report of The Health Impact Project (2017), online: <https://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure>, p 8

<sup>32</sup> Levallois et al, “Public Health Consequences”, *Current Environmental Health Reports* (2018) 5:255-252, online: <https://www.springer.com/journal/40572>.

<sup>33</sup> Levallois et al, “Public Health Consequences”, *Current Environmental Health Reports* (2018) 5:255-252, online: <https://www.springer.com/journal/40572>.

<sup>34</sup> Health Canada, Lead in Drinking Water, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 8.2 “Distribution” (p 32)

<sup>35</sup> Levallois et al, “Public Health Consequences”, *Current Environmental Health Reports* (2018) 5:255-252, online: <https://www.springer.com/journal/40572>.

<sup>36</sup> Agency for Toxic Substances and Disease Registry (ATSDR), *The Nature and Extent of Lead Poisoning in Children in the United States: a report to Congress* (1988), online: <https://stacks.cdc.gov/view/cdc/13238>, pp 15, I-46, III-4 - III-13, and multiple references therein

Finally, increased adverse cardiovascular and reproductive effects of lead exposure have been observed in African-American and Mexican-American populations, compared with Caucasian populations, controlling for other factors.<sup>37</sup> Other studies have also concluded that higher BLLs are associated with lower socio-economic status.<sup>38</sup> Remediation of elevated water lead levels and the health effects of elevated blood lead levels is also typically lacking in economically disadvantaged communities. People living in these communities are less likely to be able to access healthcare, nutritional, and educational support, and are more likely to have lower property values,<sup>39</sup> exacerbating the already detrimental effects of elevated WLLs.

Ontario's drinking water quality standards regulation prescribes a standard for lead at .010 milligrams per litre (referred to herein as 10 micrograms per litre).<sup>40</sup> The method detection limit (MDL) for Ontario is 0.005 milligrams per litre (referred to herein as 5 micrograms per litre).<sup>41</sup> Under the *SDWA*, municipalities must ensure that the water provided to a user's plumbing system is below the prescribed standard of 10 µg/L.<sup>42</sup> However, as use of lead in municipal systems has been eliminated, the majority of water contact with lead occurs at the "user-owned" portion of the plumbing. In addition to addressing lead service lines (LSLs), corrosion control measures that the province has required of municipalities to reduce the corrosivity of water from the municipal water source is necessary to prevent further leaching of heavy metals into water at the point of use.

Finally, public information regarding the presence of lead in drinking water, mitigation strategies, and available support for mitigation and remediation can supplement LSL replacement and corrosion control measures lead by the province and municipality. Justice O'Connor, in the Walkerton report, identified the lack of information and lack of an information system on the part of the (then) Ministry of the Environment that conveyed information about both the state and the history of water sources was a contributing factor in the failure of the government to take appropriate action to maintain water integrity.<sup>43</sup>

---

<sup>37</sup> Health Canada, Lead in Drinking Water, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 40 and 43 (9.1.2.2 Cardiovascular effects and 9.1.3.1 Reproductive effects)

<sup>38</sup> The fact was reported in: Ontario Ministry of Environment. Scientific Criteria Document for Multimedia Environmental Standard Development - Lead. (1994), p. 131; *and*, Cooper, K et al., Environmental Standard Setting and Children's Health. Canadian Environmental Law Association and Ontario College of Family Physicians (2000). P. 243.

<sup>39</sup> Levallois et al, "Public Health Consequences", Current Environmental Health Reports (2018) 5:255-252, online: <https://www.springer.com/journal/40572>.

<sup>40</sup> O Reg 169/03: Ontario Drinking Water Quality Standards, online: <https://www.ontario.ca/laws/regulation/030169>, Schedule 2: Chemical Standards

<sup>41</sup> City of Toronto, Ontario regulated lead testing program, online: <https://www.toronto.ca/services-payments/water-environment/tap-water-in-toronto/lead-drinking-water/ontario-regulated-lead-testing-program/>

<sup>42</sup> *Safe Drinking Water Act*, SO 2002, c 32, online: <https://www.ontario.ca/laws/statute/02s32>, s 11(1)1

<sup>43</sup> The Honourable Dennis R. O'Connor, Part Two – Report of the Walkerton Inquiry: A Strategy for Safe Drinking Water (Toronto: Queen's Printer for Ontario, 2002), online: <http://www.ontla.on.ca/library/repository/mon/3000/10300881.pdf>, p 29

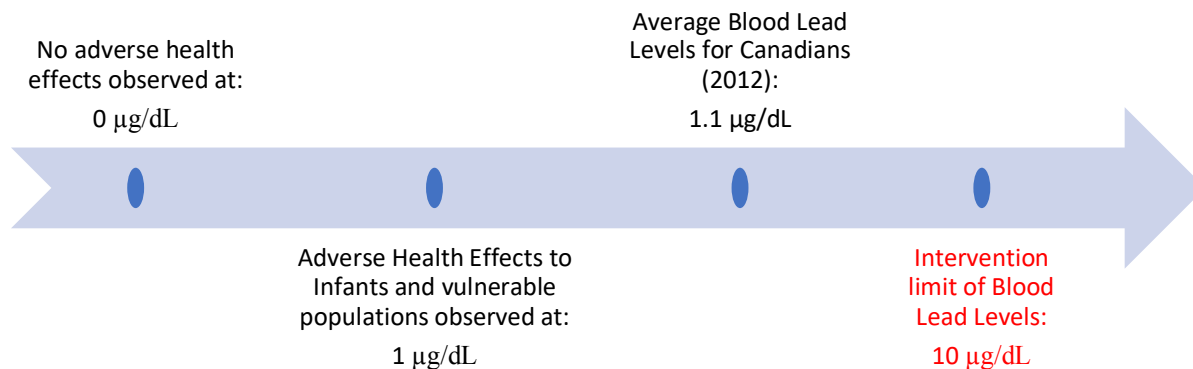


Figure 1: Important Blood Lead Levels<sup>44, 45</sup>

#### 4. RECOMMENDATIONS

To address the issue of lead levels at the point of use in Ontario, CELA is proposing the following recommendations. Each are mutually reinforcing and together form a strong framework for ensuring residents are safe. First changes to the existing *SDWA* regulations to improve accountability and reduce lead exposure are proposed. Second, as lead service lines are the primary source of lead leaching into drinking water, full inventory of LSLs is required to assess the scope of the LSL replacement project, and to provide homeowners and residents with the information needed to ensure the safety of their drinking water through interim measures. Third, mandatory and comprehensive reporting requirements are needed where LSLs are known to be present and/or where water lead levels tested at the point of use exceed the Health Canada guidance of 5 µg/L. Again, this gives residents the tools to make informed decisions about whether or not to opt into LSL replacement plans, filter subsidies, or other remediation and mitigation efforts. Fourth, CELA proposes the development of plans for the complete removal of LSLs through long-term shared commitment between the Province, the Municipal utility, and the Consumer. LSL replacement is expensive, complicated, requires technical expertise, accurate mapping, and permit approval. Fifth, corrosion controls programs that include testing, monitoring, and revision are necessary to ensure that further lead leaching does not take place. Sixth, and finally, public education and outreach strategies to educate the public on the risks and available support for mitigation of

<sup>44</sup> Average BLLs for Canadians derived from most recent Canadian Health Measures Survey in 2012 and 2013. See: <https://www150.statcan.gc.ca/n1/pub/82-625-x/2015001/article/14209-eng.htm>. Though the average for all population surveyed was 1.1 µg/dL, males were slightly higher than females at 1.2 µg/dL and 1.0 µg/dL respectively. Further, infants aged 3-5 years and adults over 20 years of age had the highest BLLs (at 0.8 µg/dL for infants, and from 0.9 – 1.8 µg/dL for adults over 20 years old)

<sup>45</sup> On March 8, 2019 final notice was posted (see <http://gazette.gc.ca/rp-pr/p1/2019/2019-03-09/html/notice-avis-eng.html>) by Health Canada, lowering the Canadian drinking water quality guideline to 5 µg/dL (from 10 µg/dL).

lead in drinking water can serve as an interim measure that can immediately allow the public to lower their lead exposure.

## I. Legislating Stricter Mandatory Minimum Standards

Currently, O. Reg. 170/03 under the *SDWA* specifies the requirements for municipal compliance with drinking water lead level standards, the actions that must be taken to reduce water lead levels, and the information that must be collected and reported. Strict and specific minimum standards for these action items can push municipalities to reduce water lead levels and give consumers the information needed to work together with municipalities.

Under section 11 of O. Reg. 170/03, municipalities are required to produce an annual report that includes the number of points where a water sample has exceeded the prescribed standard for lead during the year, where the prescribed standard is 10 µg/L or as 0.010 milligrams per litre.<sup>46</sup> However, this prescribed standard, is twice the recently amended Health Canada guidance. The Health Canada report<sup>47</sup> that led to the reduction in the guidance to 5 µg/L also indicated that there is no level of measurable lead exposure that lacks detrimental effects. Ontario's legislation should follow suit, changing the Drinking Water Quality Standards regulation to be consistent with the Health Canada guidance and should continue to work toward a zero-lead-exposure future.

The annual report required under section 11 of O. Reg. 170/03 is required to be made available to the public at no charge on a website on the internet, but only for municipalities that service more than 10,000 people. **CELA recommends that the Regulation be amended to require that proactive notice be given to residents of *all* municipalities operating a municipal drinking water system. CELA also recommends a requirement that municipalities where there are known to be lead service lines give proactive notice of the issue to their residents.** Many residents may not even know about this issue or its relevance to their health or that of their children. One good mechanism is to provide information on accessing these municipal reports and as to the health issues of lead service lines via inclusion on residential water bills, as well as direct delivery leafletting the neighbourhoods with historic lead service lines. This notice and the background information should also be part of an annual public service announcement campaign immediately following the annual release of the reports.

Corrosion control reports, required under section 15.1-11 of O. Reg. 170/03 where more than 10% of testing samples exceed the prescribed lead standard, must be prepared within one year of the testing period, and must:

- (a) analyze the potential for lead leaching into water as a result of corrosion that occurs in the system's distribution system or in plumbing that is connected to the system's distribution system;
- (b) list and analyze possible measures to reduce the potential for lead leaching;

---

<sup>46</sup> O Reg 169/03: Ontario Drinking Water Quality Standards, online: <https://www.ontario.ca/laws/regulation/030169>

<sup>47</sup> Health Canada, Lead in Drinking Water, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>

- (c) identify the preferred measure or measures;
- (d) set out an implementation schedule; and
- (e) include a program for monitoring the effectiveness of the preferred measure or measures.

**CELA recommends that corrosion control reports be required whether or not lead level exceedances were observed in municipal testing.** As the effectiveness of corrosion control is variable, and highly dependent on plumbing material and water sources, corrosion control must be monitored on an ongoing basis for all municipalities. Legislation should require annual corrosion control reports for all municipalities, and information as to same included with the currently required annual report from section 11 of the Regulation, and pushed to consumers through positive marketing campaigns that encourage residents to seek out the report.

Where sampling demonstrates water lead levels in exceedance of the prescribed standard, the municipal authority is required to provide a report to the occupant of the residence within 7 days. However, where there is a multi-unit residence (as is becoming increasingly more common in large municipalities, such as Toronto), there is no requirement to provide a notice to all residents within the domicile. This report to the occupant must specify steps that the occupant ought to take based on the advice of a medical officer, but there are no specific requirements on what these steps should be. **CELA recommends that the Regulation should specify the specific components of notice that must be sent to residents and homeowners, particularly including the health effects of lead, the potential sources of exposure, the history of the property and whether or not it is known that lead plumbing serves the property, the programs that the municipality has in place to enable the homeowner to reduce their lead exposure, and the funding available to the homeowner to assist in replacing lead components of plumbing. CELA recommends that the notice should also direct the homeowner to the annual report, corrosion control report, and the lead service line inventory (where applicable, and explored in depth in the following recommendation).**

Under section 15 of O. Reg. 170/03, the definition of lead components (“lead plumbing”, “lead service pipes”, and “lead solder”) all have a threshold below which the component is considered to not contain lead. For lead plumbing and service pipes, if the lead content is below 8%, and for lead solder, below 0.2%, then the component is not covered by the Regulation.

The O. Reg. 170/03 further specifies sampling criteria that is unlikely to provide the most accurate level of resident exposure to lead in drinking water. Sampling is currently required to be taken after water has been sitting stagnant in pipes for between 30 - 35 minutes. However, as previously mentioned, the longer water sits stagnant in pipes, the more lead leaches into the water, and the higher the lead levels at the tap immediately at first flush.<sup>48</sup> Therefore residents who have a glass of water when they wake up in the mornings, or when they get home from work, after water has been sitting in the pipes for over 8 hours, are

---

<sup>48</sup> Health Canada, Lead in Drinking Water, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 4.2 (p 8)

exposed to considerably higher levels of lead than what would appear in the sampling required by the municipality. The Regulation should adopt more stringent methods of lead testing that show a more accurate representation of potential lead exposure of municipal residents through drinking water. **CELA recommends** This can serve to inform the homeowner of the benefits of flushing, as well as provide the municipality and province with more accurate results to prioritise mitigation efforts.

Finally, **CELA recommends that the SDWA and its regulations should be amended to require that a minimum of 75% of lead service lines in municipalities be replaced within 3-5 years.** Accountability for ensuring that this replacement is completed can be achieved through requiring municipalities to develop an action plan within 3 months of creating a lead service line inventory, and annual and publicly available reports on the progress of municipalities in meeting the targets under their plans. As will be discussed in the recommendations that follow, less aggressive timelines are not met in other municipalities, and there is little accountability, if any, for residents who are exposed to lead through their drinking water. The province must take a strong stance to protect Ontarians and ensure that municipalities take swift and effective action to reduce lead in drinking water.

## II. Developing a Publicly-Accessible Lead Service Line Inventory

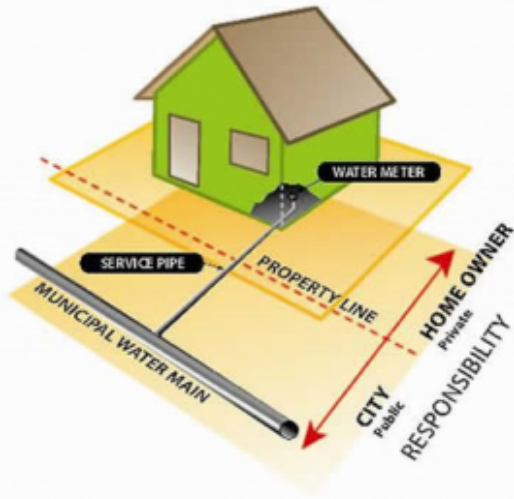
The most effective control to prevent public exposure to lead in drinking water is to remove the source of lead entirely. This option is available in most municipalities; however, it is a highly technical and expensive route for the homeowner. LSLs are commonly found in homes across Canada that were built prior to 1975.<sup>49</sup> According to the recent Health Canada report on lead in drinking water, lead service lines can account for more than half of the lead detected in homes.<sup>50</sup>

Services lines are typically thought of having two parts: the portion in the public way that is usually owned by the municipality/water system, and the portion on private property that is usually owned by the property owner. Rather than full replacement of LSLs, in many municipalities, a “partial” replacement has been done instead in some cases, where the municipality replaces the portion of the LSL that is controlled and owned by the municipality, leaving the portion of lead line that is privately owned by the homeowner untouched.

---

<sup>49</sup> Health Canada, Lead in Drinking Water, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 4.0 (p 6)

<sup>50</sup> Health Canada, Lead in Drinking Water, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 4.2 (p 8)



*Figure 2: Diagram of Service Pipe that draws water from the Municipal Water Main to the property. A portion of the pipe is owned by the municipality, and a portion is owned by the homeowner.<sup>51</sup>*

**CELA recommends that Municipal residents and homeowners must be provided with accurate and up-to-date information to take steps to reduce their exposure to lead in drinking water.** Residents may not know if their home is likely to be connected to a full or partial LSL. They are unlikely to know whether they should spend between \$1,500 and \$3,000 (at the most reasonable estimate)<sup>52</sup> to replace their portion of the LSL. Furthermore residents are unlikely know whether or not they should take steps to purchase filtration systems properly rated for lead reduction, or flush their water systems before each use. (Offering free lead testing for residents’ tap water is an important additional policy that municipalities should be offering through their health units, as many in Ontario do.) **CELA recommends that municipalities be required to develop a publicly accessible LSL inventory.** This will not only give residents the tools to take steps to reduce their lead exposure, but can be a demonstration of transparency and the commitment to supporting ongoing replacement of LSLs by the Province and Municipalities. Revealing the exact address where samples were drawn and LSL currently exist, however, may disincentivize homeowners from sampling their water and provide a barrier to effective monitoring. This can be addressed by providing maps that show the preponderance of lead service lines on a neighbourhood basis, with the right of residents to obtain any address-specific LSL information that the municipality holds about their residence in addition to the proactive notice requirement that CELA recommends, as discussed below.

<sup>51</sup> City of Toronto, What is a water service pipe, online: <https://www.toronto.ca/services-payments/water-environment/tap-water-in-toronto/lead-drinking-water/?accordion=what-is-a-water-service-pipe>

<sup>52</sup> “Get price quotes for lead pipe replacement, councillor advises”, Toronto Star, April 14, 2009, online: <https://www.cbc.ca/news/canada/toronto/get-price-quotes-for-lead-pipe-replacement-councillor-advises-1.784833>

### **Case Study: BOSTON - Providing the public with tools to access information**

Boston residents can access a helpful online lead service map to check whether any property in the city has an LSL. Maintained and continually updated by the Boston Water and Sewer Commission, the map is a valuable tool for renters and property purchasers.<sup>53</sup>

### **Notice Requirements**

**In the interest of transparency and furthering the shared commitment to address LSLs, CELA recommends that municipalities must also be proactive in providing owners and occupants with the information that is discovered in building the inventory.** Though this information will be made publicly accessible, individual notice must be provided to owners and occupants where LSLs have been detected or WLLs beyond the action level have been detected.

Firstly, notice can assist the goals of public education regarding lead in drinking water and steps toward mitigating exposure. It is another avenue that brings the issue of lead exposure in drinking water to the forefront of residents' minds and encourages public awareness of the possibility of lead in drinking water. Secondly, notice can promote the accessibility of the LSL inventory. Individuals are more likely to seek out and use the LSL inventory and take steps toward mitigating their risk, if they are made specifically aware of their potential exposure to lead in their homes.

### **Case Study: MICHIGAN - Mandatory development of comprehensive LSL Inventory**

#### Background

In June 2018, in response to the Flint crisis, Michigan established rules to inventory and replace LSLs, regardless of whether they were on public or private property, with the expense fully borne by the municipality, (unless the owner of the LSL objects in which case the city would only do emergency replacements). The city has a 20-year timeline to complete these replacements, and part of the requirement includes the development of an inventory of lead service lines, whether on private or public property.<sup>54</sup> The state retains the authority under the Rule to order a faster replacement rate.

#### The LSL Inventory must:

- Be made available on the municipality's publicly-accessible website
- Explicitly include what is known *and* what is not known about the composition of the LSLs on both the private and public sides
- Include the number of LSLs
- Include the number of service lines where the material is not known
- Detail the total number of service lines in the municipality

<sup>53</sup> American Water Works Association, *Flint Water Crisis: Impacts and Lessons Learned* (2016), p 11

<sup>54</sup> Michigan Register, Issue No. 11— 2018, online:

[https://www.michigan.gov/documents/opt/MR11\\_070118\\_626755\\_7.pdf](https://www.michigan.gov/documents/opt/MR11_070118_626755_7.pdf) at 49 and 70



Notice is required when:

- The municipality determines a lead pipe is present in the structure
- The municipality determines that the structure is served by a lead service line
- The municipality is unable to identify the material composition of the service line
- Private notice to the owner and occupants of the property is required of the individual tap results from lead and copper tap water monitoring carried out at that property

Timelines for Notice

- Notice required within 30 days

What is included in the Notice

- The results of the lead monitoring for the tap that was tested
- An explanation of the health effects of lead
- Steps the individual can take to reduce exposure to lead in drinking water
- Information on the maximum contaminant level goals and the action levels for lead (and the definitions of these terms)

### III. Development of plans for complete removal of LSLs through a shared commitment

While corrosion control and the replacement of the public portion of the drinking water delivery system are effective efforts for reducing the risk of exposure to lead, the potential risk of substantially elevated levels remains as long as lead service lines remain. Therefore, full replacement of the LSL with material that is completely free of lead and is compatible with corrosion control measures used by the municipality, is the only way to completely eliminate lead exposure at the point-of-use. Partial LSL replacements are not only ineffective, but have, in some cases, caused higher WLLs in the short term, due to disruptions to the system. Higher WLLs have been detected in the days and weeks following partial LSL replacement.<sup>55</sup> One study in Washington, DC, for example, found that children living in homes with lead in at least some part of their service lines were twice as likely as those living in homes without lead service lines (LSLs) to have blood lead of 5 to 9 µg/dL and three times as likely to have levels at or above 10 µg/dL. The difference between blood lead levels of children from homes with partial (ie where only one portion of a line is updated), instead of full, LSLs were not statistically significant, indicating that full replacement is crucial to prevent exposure.<sup>56</sup>

The most significant barriers to full LSL replacement so far in Ontario are that responsibility is divided and replacement is expensive, so neither individual homeowners nor water systems

---

<sup>55</sup> Levallois et al, "Public Health Consequences", *Current Environmental Health Reports* (2018) 5:255-252, online: <https://www.springer.com/journal/40572>.

<sup>56</sup> Mary Jean Brown et al., "Association Between Children's Blood Lead Levels, Lead Service Lines, and Water Disinfection, Washington, DC, 1998–2006," *Environmental Research* 111 (2011): 67–74, <https://doi.org/10.1016/j.envres.2010.10.003>

alone can entirely remove lead service lines. As a result, it will demand a long-term commitment and the development of programs responsive to local circumstances.

Full replacement will be a shared responsibility among utilities, customers, and government. As it will take a substantial, long-term effort to replace all existing LSLs, CELA urges system owners and municipalities to start as soon as possible in the development of a local strategy.

Without changes to the current status quo, LSL replacement will come at an expense to the homeowner, and therefore a plan for full replacement should include grants and/or other financial incentives for homeowners. Replacement will also require an investment on part of the municipality, given the cost of replacing lines up until the property line and increased personnel time and other administrative expenses described further below. It therefore should be part of the financial planning for municipalities within their asset management plans.

### Incentivizing homeowners to replace LSLs

One of main obstacles in encouraging homeowners to complete a full LSL replacement is the cost. Homeowners currently bear the burden of replacing LSLs on their properties, as it is perceived as being to their benefit. What this means, however, is that some property owners, especially those with low property values or with low incomes, may be unable or unwilling to participate, despite the risk posed by lead, putting them at greater risk than residents of other communities. Furthermore, residents who rent homes with LSLs will remain at risk if the property owner is not willing to invest in replacement. Providing funding and other incentives are a public policy matter.

**CELA recommends that the Province develop a grants program scaled to the size of the municipality, and require all municipalities with known lead service lines to offer homeowner grants to alleviate the cost of replacement.** Grants are one option for helping ensure users can afford to replace LSLs. Many existing grant programs allow homeowners to apply for funding that will cover a portion of the cost. As can be see in the example below, other financial support for residents include zero-interest loans or subsidies when homeowners use the same contractors as the municipality.

#### **Case Study: MILWAUKEE - Incentives for full-replacement at time of publicly-owned portion's replacement**

The City of Milwaukee has a \$3.9 million budget for its replacement program and included in this budget are funds to help pay for privately owned LSLs at the same time as the publicly owned portion.

Under the program, property owners are responsible for no more than one-third of the cost of replacement up to \$1,600 if the work is done by the city's contractor. Additionally, residents have the opportunity to pay their share over 10 years.

The program aims to reach about 600 properties a year, in order to replace 68,300 known residential LSLs over the next several decades.<sup>57</sup>

#### **Case Study: BOSTON - Zero-interest loans to remove financial barriers**

A pool of \$100 million in zero-interest loans was created to support communities in the full removal of LSLs. The Boston Water and Sewer Commission maintains open agreements with contracts to replace LSLs at an annually bid competitive price. When a replacement is done, the Commission subsidizes the first \$2,000 of the cost and bills the owner on their water bill over a repayment period of 48 months.<sup>58</sup>

Though full lead service line replacement would be the goal, even with these incentives there will be homeowners who are unwilling or unable to pursue full replacement. CELA recommends that a record, therefore, ought to be maintained explaining the reason why the line has not been replaced, so that homeowners can be reminded in the future, or so replacement can be completed when the property changes ownership.

#### **Engaging with homeowners**

Simply making funding available for homeowner will not be sufficient without effective engagement with homeowners. One factor to consider is at which opportunities the water service provide should engage homeowners in the municipality for the identification and replacement of LSLs. An example list of these opportunities was outlined in a U.S. consultation on the long-term lead and copper rules:

1. At time of title transfer.
2. As a condition of occupancy post vacancy.
3. Prior to rental.
4. As a condition of water service (initial turn on for a new customer or return to service if there is lapse in service)<sup>59</sup>.
5. In conjunction with a major remodeling of a current structure.
6. In conjunction with main replacement.
7. At time of leak or break (rather than repair).
8. During approval processes for businesses seeking an operating license (including childcare facilities).<sup>60</sup>

Municipalities may want to look at their local housing sector for the frequency that any of these opportunities to engage homeowners arise.

---

<sup>57</sup> PEW Charitable Trusts, 10 Policies to Prevent and Respond to Childhood Lead Exposure, Report of The Health Impact Project (2017), online: <https://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure>, p 29

<sup>58</sup> American Water Works Association, Flint Water Crisis: Impacts and Lessons Learned (2015), p 11

<sup>59</sup> CELA would add that this type of requirement should be subject to grants programs for low income customers

<sup>60</sup> American Water Works Association, Long-Term Lead and Copper Rule Federalism Consultation (2018), p 7

### From a Pew Research 2017 Case Study: RHODE ISLAND - Finding the right time to replace LSLs

“In 1986, Woonsocket, Rhode Island, adopted a policy requiring builders to replace the entire lead service line when a structure is sold, demolished, or replaced.† The property owner is responsible for the cost of the private side, and the city pays for its part at the same time, if it has not already been replaced.”<sup>61</sup>

It is important to note that this engagement with homeowners will come at an expense to municipalities, resulting from the personnel time, business systems and field work involved in identifying and engaging individual customers in lead service line replacement. As an example, available program data from the 2017 Flint replacement program put the administrative cost per service line removed at roughly \$760.<sup>62</sup>

#### Ensuring LSLs are replaced with safer alternatives

As LSLs are replaced, it is important that attention be paid to the material of the new pipes and fixtures installed. It is an unfortunate issue that, because of a lack of information, hazardous substances are often simply substituted with another substance known to cause adverse health effects.

Given the financial expense of full LSL replacement, as well as the time and effort involved in the process, Ontario, through its outreach programs to municipalities, health units and drinking water utilities should require that current information about drinking water materials safety be disseminated publicly so that members of the public may make choices that meet quality assurance standards and will keep them and their families safe.

#### IV. Reducing Risk Through Corrosion Control

One of the most effective methods of controlling the release of lead from lead-containing systems is to use corrosion control.<sup>63</sup> Corrosion control involves the addition of chemicals to the drinking water in order to adjust the pH of the water, creating a barrier or film between the water and the pipes.<sup>64</sup> Corrosion control has been extremely successful in Ontario municipalities in reducing lead in drinking water.<sup>65</sup> Under O. Reg 170/03, corrosion control

---

<sup>61</sup> PEW Charitable Trusts, 10 Policies to Prevent and Respond to Childhood Lead Exposure, Report of The Health Impact Project (2017), online: <https://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure>, p 29

<sup>62</sup> Mlive, Flint lead pipe replacement program to switch hands in 2018, December 1, 2017, online: [https://www.mlive.com/news/flint/index.ssf/2017/12/flint\\_lead\\_pipe\\_replacement\\_pr.html](https://www.mlive.com/news/flint/index.ssf/2017/12/flint_lead_pipe_replacement_pr.html)

<sup>63</sup> Health Canada, Lead in Drinking Water, 2017, online: <https://www.canada.ca/en/health-canada/programs/consultation-lead-drinking-water/document.html>, at 7.0 (p 22)

<sup>64</sup> PEW Charitable Trusts, 10 Policies to Prevent and Respond to Childhood Lead Exposure, Report of The Health Impact Project (2017), online: <https://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure>, p 24

<sup>65</sup> City of Toronto, “Early results indicate corrosion control is lowering lead levels in Toronto's tap water” (April 3, 2018), online:

programs (CCPs) are required when in two of the three most recent tests, more than 10% of samples exceeded the prescribed standard for lead and the number of samples in exceedance is greater than one.<sup>66</sup> However, there is no requirement for a CCP where LSLs are known to be present, but test results fall outside the specifications of the Drinking Water Systems regulation.

As previously stated, there is no safe level of exposure to lead. Where it is known that LSLs exist, or that water systems may have lead components, municipalities should be required to ensure that the drinking water being provided to residents carries no risk of corroding the system and leaching lead into water. The form of these CCPs will vary depending on the municipality's water source, pH, and other required treatments. Further, as the effectiveness of corrosion control is variable,<sup>67</sup> corrosion control cannot be used as the primary method of reducing lead exposure from drinking water, but rather as an interim measure while LSLs are replaced over time. CCPs must also have mandatory periodic review periods, as new scientific data on the effectiveness of methods becomes available, and as changes to water sources occur.

### **Case Study: TORONTO - Results of a phosphate-based CCP**

#### Background

In 2008 and 2009, more than 10% of the City of Toronto's water testing samples exceeded the prescribed lead levels, necessitating a corrosion control program under O. Reg 170/03. Between 2009 and 2017 the City of Toronto planned and implemented its CCP.<sup>68</sup>

#### The Corrosion Control Plan

In 2014, the City of Toronto began adding phosphate to the drinking water treatment process, allowing the phosphate to form a protective film between the water flowing into residences, and the pipes within the system.<sup>69</sup> The quantity of phosphate added to the drinking water systems accounts for less than 1% of the average daily consumption of phosphate for a typical person. As phosphate is naturally occurring in many foods and is required for cellular function, the City notes that there are no detrimental impacts to human health from its addition to the drinking water.<sup>70</sup>

<https://wx.toronto.ca/inter/it/newsrel.nsf/7017df2f20edbe2885256619004e428e/42b1c512c40bfd00852582640048e820?OpenDocument>

<sup>66</sup> O Reg 170/03: Drinking Water Systems, online: <https://www.ontario.ca/laws/regulation/030170>, Schedule 15.1, s 15.1-11(1)

<sup>67</sup> PEW Charitable Trusts, 10 Policies to Prevent and Respond to Childhood Lead Exposure, Report of The Health Impact Project (2017), online: <https://www.pewtrusts.org/en/research-and-analysis/reports/2017/08/10-policies-to-prevent-and-respond-to-childhood-lead-exposure>, p 32

<sup>68</sup> City of Toronto, "Backgrounder: City of Toronto's Lead Mitigation Strategy" (April 3, 2018), online: <https://www.toronto.ca/home/media-room/backgrounders-other-resources/backgrounder-city-of-torontos-lead-mitigation-strategy/>

<sup>69</sup> City of Toronto, "Corrosion Control", online: <https://www.toronto.ca/services-payments/water-environment/tap-water-in-toronto/lead-drinking-water/corrosion-control/>

<sup>70</sup> City of Toronto, "Corrosion Control", online: <https://www.toronto.ca/services-payments/water-environment/tap-water-in-toronto/lead-drinking-water/corrosion-control/>

## Results

In 2018, the City of Toronto reported that tested tap water lead levels were significantly lower in 2017 than in 2008 and 2009. 2017 tests showed 2% of samples in exceedance of the maximum allowable concentration of 10 ppb, compared with 52% exceedance in 2008.<sup>71</sup>

## V. Raising Awareness through Public Education

Much of the public's awareness around lead is focused on lead paint and lead dust, however, water can become a sudden and unnoticed source of high levels. Without clear and complete information on the potential risk of lead in drinking water and ways to minimize the risk, the public is unable to take appropriate action.

In an effort to ensure transparency, test sample results and the LSL inventory should be made available to the public. Raising awareness of these information resources should be made part of outreach efforts.

Targeted outreach to users with lead service lines can also help ensure they are aware of risks and the supports that are available for completing the service line replacement. It is important that this outreach is organized effectively so that it reaches customers at times when they are prepared to act, for example, when a new homeowner is reviewing needed improvements or at other times listed in Section III above. Some challenges are that existing delivery mechanisms, like bill stuffers, will reach users who have lead service lines and those who do not, and so messaging that recognizes this would be needed. These mechanisms, though helpful, may also fail to reach the primary point of contact for the water system (for example, when residents of the home are renters). Targeted outreach is especially important in communities with vulnerable populations,

Recognizing that in some cases users may have no current interest in completing a replacement, outreach ought to be regular and on-going. Ownership or circumstance will change over time, so a decision will eventually be made to replace the line.

## 5. Conclusion

Ontarians deserve to have access to water from their taps that will not harm them and their families; but across the province too many residents still face the risk of lead levels in their drinking water. Under the current framework, standards for replacement of LSLs and reporting are not sufficiently mandated, and as a result there is a lack of consistency across Ontario. This, combined with the fact that lead is taste-less and odor-less and the lack of access to information on the issue, most residents are unaware that they may be at risk and uninformed about the tools available to them for addressing this risk.

---

<sup>71</sup> City of Toronto, "Early results indicate corrosion control is lowering lead levels in Toronto's tap water" (April 3, 2018), online:

<https://wx.toronto.ca/inter/it/newsrel.nsf/7017df2f20edbe2885256619004e428e/42b1c512c40bfd00852582640048e820?OpenDocument>

It is for this reasons that this report strongly urges that action be taken through the following recommendations:

### **1. Legislating Stricter Mandatory Minimum Standards**

#### **CELA recommends that:**

- 1.1. The Regulation be amended to require that proactive notice be given to residents of *all* municipalities operating a municipal drinking water system.
- 1.2. A requirement that municipalities where there are known to be lead service lines give proactive notice of the issue to their residents.
- 1.3. Corrosion control reports be required whether or not lead level exceedances were observed in municipal testing.
- 1.4. The Regulation should specify the specific components of notice that must be sent to residents and homeowners, particularly including the health effects of lead, the potential sources of exposure, the history of the property and whether or not it is known that lead plumbing serves the property, the programs that the municipality has in place to enable the homeowner to reduce their lead exposure, and the funding available to the homeowner to assist in replacing lead components of plumbing.
- 1.5. The notice should also direct the homeowner to the annual report, corrosion control report, and the lead service line inventory (where applicable, and explored in depth in the following recommendation).
- 1.6. The Regulation should require sampling be taken after overnight stagnation, as well after a flush.
- 1.7. The *SDWA* and its regulations should be amended to require that a minimum of 75% of lead service lines in municipalities be replaced within 3-5 years.

### **2. Developing a Publicly-Accessible Lead Service Line Inventory and Notice Requirements**

#### **CELA recommends that:**

- 2.1. Municipal residents and homeowners must be provided with accurate and up-to-date information to take steps to reduce their exposure to lead in drinking water.
- 2.2. Municipalities be required to develop a publicly accessible LSL inventory.
- 2.3. Municipalities must also be proactive in providing owners and occupants with the information that is discovered in building the inventory, in the interest of transparency and furthering the shared commitment to address LSLs.

### **3. Development of Plans for Complete Removal of LSLs through Long-Term Shared Commitment**

#### **CELA recommends that:**

- 3.1. The province develop a grants program scaled to the size of the municipality, and require all municipalities with known lead service lines to offer homeowner grants to alleviate the cost of replacement.
- 3.2. A record ought to be maintained explaining the reason why the line has not been replaced, so that homeowners can be reminded in the future, or so replacement can be completed when the property changes ownership.



Canadian  
Environmental Law  
Association

EQUITY. JUSTICE. HEALTH.