

March 28, 2022

DELIVERED VIA EMAIL

Mirek Tybinkowski
Great Lakes and Inland Waters Branch
40 St. Clair Avenue West, 9th Floor
Toronto, ON M4V 1M2

**Re: Municipal Wastewater and Stormwater Management in Ontario Discussion Paper
(ERO Number: 019-4967)**

Canadian Environmental Law Association (“CELA”) provides the following brief comments in response to the proposed Municipal Wastewater and Stormwater Management in Ontario Discussion Paper (the “Discussion Paper”), ERO Number 019-4967.

CELA believes that wastewater and stormwater management play a significant role in building climate resilient communities, protecting water quality and quantity, and mitigating risks to drinking water sources. However, the absence of a supporting legislative framework undermines this potential. CELA has reviewed the Discussion Paper from a public interest perspective and makes the following comments and recommendations to the Ministry.

A. Background on Canadian Environmental Law Association

CELA is a public interest law group founded in 1970 for the purposes of using and enhancing environmental laws to protect the environment and safeguard human health. As a specialty legal aid clinic funded by Legal Aid Ontario, our primary focus is on assisting and empowering low-income people and disadvantaged communities.

CELA has a long history of advocating for stringent and effective laws, regulations, and policies to protect water in Ontario. CELA’s Executive Director, Theresa McClenaghan, has been a member of the National Expert Panel on Watershed Contaminants which conducted an in-depth analysis of various issues associated with wastewater and stormwater and published a report titled

“Canada’s Challenges and Opportunities to Address Contaminants in Wastewater.”¹ This submission builds on that report.

B. Analysis of Municipal Wastewater and Stormwater Management in Ontario Discussion Paper

(i) General comments

CELA is supportive of efforts to create stronger wastewater and stormwater management systems in Ontario. The Discussion Paper, aptly, highlights the shortcomings in the present system and the additional risks to water systems from climate change impacts.

Wastewater and stormwater management are heavily dependent on social and environmental circumstances. Proper management of wastewater and stormwater has various advantages, including fulfilling public needs, social equity and enhancing food security. Further, a lack of proper management results in financial, environmental and societal costs in terms of human health, mortality and morbidity.² In order to ensure the efficient and effective management of municipal wastewater and stormwater, CELA **submits** a regulation needs to be created based on the principles of sustainable development and incorporate the following principles:

- water reuse and recycling;
- access to information to ensure public engagement and awareness;
- the precautionary principle, to ensure that the regulation is forward looking and preventive in nature; and
- equity and access to justice, to ensure all people are accounted for.

In addition, and as further explained below, adequate funding is needed to support integrated water resource management.

(ii) Adequate financing to support wastewater and stormwater management

Section 2 of O. Reg. 453/07 under the Safe Drinking Water Act³ requires mandatory financial plans for water systems. The intent of this O. Reg. is to ensure that municipalities plan for long term financial sustainability of their drinking water systems and to ensure safety of their drinking water systems into the future. For this, the mandatory requirement for financial plans is at least 6 years. CELA submits that these time frames should be expanded for ideally 15 years, to take into

¹ <https://cwn-rce.ca/wp-content/uploads/2018/08/CWN-2018-Expert-Panel-Report-on-Contaminants-in-Wastewater.pdf>

² <https://gridarendal-website->

live.s3.amazonaws.com/production/documents/s_document/208/original/SickWater_screen.pdf?1486721310

³ <https://www.ontario.ca/laws/regulation/070453>

account various factors contained in this submission, with mandatory planning for at least 10 years. CELA further submits more targeted funding, aiming at a longer time-frame, would better address ongoing wastewater and stormwater management upgrades. For some municipalities and utilities, there is a need to make major investments to achieve minimum standards. These communities include many coastal communities, smaller systems, Northern communities, and most Indigenous communities.

Examples of areas where funding could be targeted include:

1. Understanding the evolution of composition of wastewater and stormwater components to create a risk-based framework: Removal of organic matter and pathogens remains a critical objective of wastewater treatment and vigilance is needed to ensure we address this in all locations and not just in large urban centers. The science is sufficient to indicate that some contaminants of emerging concern (“CECs”), such as estrogens (endocrine disruptors), represent a meaningful risk to the environment and that well-operated, conventional treatment can help reduce environmental exposures. However, there are various unknown elements in the which are result of increased use of chemicals in households. A study by CELA and Clean Production Action (“CPA”) details on two antibacterial chemicals which are commonly used in liquid soaps and toothpastes; and, which make way into out wastewater. These two antibacterial chemicals, Triclosan is a Benchmark 1 (i.e. a chemical to be avoided) and Triclocarbon is a Benchmark 2 (i.e. has a very high aquatic toxicity).⁴ Funds need to be further invested in researching the components so that a functioning risk-based framework can be created.
2. Source control pollution prevention: This stage is built on one of the oldest principles in environmental law- the precautionary principle. Reduction of or elimination of contaminants through source control means that those contaminants will be kept out of the wastewater system. Considering the ever-changing composition of wastewater, there can be myriad of contaminated elements- treatable, untreatable and semi-treatable present in our wastewater. Source control would require that these contaminants be identified and their quantity be removed or reduced from those consumer products. This will also help reduce the costs of expensive treatments. In addition, efforts need to be undertaken to create awareness and knowledge about those components with the public and the harm it causes upon entering our water system. Similarly, for industries focus can be on creation of by-laws that would restrict them from discharging waste with certain components or treating the waste before discharging.

⁴ <https://cela.ca/july-2014-bulletin/>

3. Investing in adequate infrastructure: Our growing cities and the impacts on climate change on water cycles has made it more important than ever to upgrade our infrastructure. It is important to distinguish between wastewater and stormwater generated in urban, industrial and rural areas and treat them according to their composition. Our older systems consist of combined sewers that receive both raw wastewater (sewage) inputs as well as stormwater. These combined sewers release stormwater and raw wastewater when the collection system capacity is exceeded during heavy rain. As a result, contaminants in wastewater mix with stormwater and impact human and aquatic ecosystem health.
4. Encouraging new treatment methods and co-benefits: It is important to provide a platform for the development of new and innovative technologies based on practices seen around the world. Increased treatment incurs not only greater financial costs, but can also involve other trade-offs through increased energy footprint, or the transfer of risk through residuals management. This heightens the importance of capturing a broader set of societal and environmental considerations. Such considerations include adaptability, applications of the precautionary principle, resilience, socio-economics, cultural needs and emerging risks, as well as opportunities to achieve important co-benefits (e.g., resource recovery). The environmental benefits of reductions in energy use and GHG emissions through optimizing existing processes, using innovative technologies or solutions, should be prioritized and incentivized. Inevitably, the “future-ready” approach that should be encouraged is the one that will make the most sense for each unique geographic, cultural and environmental setting and is cost-effective and sustainable.
5. Using wastewater and stormwater as a resource: It is important to distinguish between wastewater and stormwater generated in urban, industrial and rural areas and treat them according to their composition. The treated water then can be returned to the environment. Where feasible, the municipalities should be encouraged to safely reuse and recycle wastewater thereby conserving water and nutrients. The goal should be to achieve full cost recovery for wastewater and stormwater services.
6. Rewarding and incentivizing: Rewarding and incentivizing innovation will support movement beyond current minimum regulatory standards, thus continuing to minimize risk and maximize benefits for society and the environment. Pilot projects undertaken by various municipalities need to be encouraged and supported by providing more funding and better technologies. In turn, these projects will generate a menu of solutions to guide investment decisions more efficiently and promote co-benefits leading to optimization and innovation in wastewater management.

Recommendation No. 1: CELA recommends increasing the time frame for mandatory financial planning, stipulated in Section 2 of O. Reg. 453/07 under the Safe Drinking Water Act, from 6 years to minimum 10 years, with preference for 15 years.

Recommendation No. 2: CELA recommends supporting a site-specific, risk-based receiving environment approach to regulations, monitoring and water quality objectives. This would incentivize jurisdictions to develop source water protection programs and prioritize options for source control. There is a need to recognize where keeping contaminants out of systems is more effective than trying to remove them from wastewater through treatment.

Recommendation No. 3: CELA recommends adequate investment in infrastructure to ensure that the combined sewers wherein stormwater and raw wastewater be upgraded. A time bound plan needs to be made to immediately work towards the separation to avoid flooding when the collection system capacity is exceeded during heavy rain and other extreme weather conditions.

Recommendation No. 4: CELA recommends incentivizing and rewarding innovation to move beyond current minimum regulatory standards, thus continuing to minimize risk and maximize benefits for society and the environment. Encouraging an assessment of new or amended treatment technologies, using research and pilot testing, will generate a menu of solutions to guide investment decisions. New treatment methods which promote reuse and encourage co-benefit are the need of the hour.

(iii) Minimum effluent standards need to be updated

The *Fisheries Act* is the primary federal tool to control the environmental impacts of wastewater release. The Act prohibits the deposition of deleterious substances in water frequented by fish. The *Wastewater Systems Effluent Regulations*,⁵ under the *Fisheries Act*, establish baseline quality standards for wastewater and include limits for suspended solids, carbonaceous biochemical oxygen-demand, total residual chlorine, and un-ionized ammonia. As these standards came into force in 2015, many wastewater treatment systems still do not meet the standards. CELA **submits** those systems must be directed to upgrade within a specific time frame, depending on the risk imposed by their continuous discharge.

Moreover, in Ontario, most waste water treatment plants have zero standards. To give an example, the phosphorus levels are regulated depending on the sensitivity of the water receiving the effluent, which is assessed by the Environmental Compliance Approval process. As a result, wastewater treatment facilities discharging to sensitive water bodies such as Lake Simcoe are subject to more stringent limits. CELA **recommends** that minimum provincial Wastewater Effluent Standards be

⁵ <https://laws-lois.justice.gc.ca/eng/regulations/sor-2012-139/fulltext.html>

made applicable to wastewater treatment facilities during the licensing and permitting process. CELA also **recommends** the Ontario Provincial Water Quality Objectives be reviewed to determine which of them should become minimum provincial Wastewater Effluent Standards. The categories for review should include synthetic organic chemicals, pesticides, metals, inorganic chemicals, basic physical and chemical properties and bacteria. Special attention should be paid to priority toxic pollutants identified under the *Canadian Environmental Protection Act* (“CEPA”).

Recommendation No. 5: CELA recommends that minimum provincial Wastewater Effluent Standards be made applicable to wastewater treatment facilities during the licensing and permitting process.

Recommendation No. 6: CELA recommends that the Ontario Provincial Water Quality Objectives should be reviewed to determine which of them should become minimum provincial Wastewater Effluent Standards.

The categories for review should include:

- a. synthetic organic chemicals
- b. pesticides
- c. metals
- d. inorganic chemicals
- e. basic physical and chemical properties
- f. bacteria

Special attention should be paid to priority toxic pollutants identified under CEPA.

Recommendation No. 7: CELA recommends embedding wastewater management considerations, wherever possible, within an integrated watershed approach to water management and governance. In addition to source control, other non-technical opportunities could be considered to address and reduce risk to local communities and the environment.

(iv) Public right to know

CELA appreciates that Ontario has committed \$10 million to improve monitoring and public reporting of sewage overflow in municipalities. Detailed reporting of wastewater and stormwater spills, if made accessible to the public, will serve a dual purpose of creating awareness as well as creating a data pool to better understand how to control spills. The importance of public reporting has already been successfully witnessed in Kingston where the municipality successfully transformed Breakwater Park which constantly suffered from massive discharge of sewage bypass

and overflow. Various steps were taken by the Municipality to clear the waters including Municipality working with Utilities Kingston and posting real-time information on wastewater and stormwater bypass as well as informing Environment Ministry, public health unit officials and downstream communities.⁶

CELA **submits** public reporting can be enhanced by making sure the public is made aware of any wastewater or stormwater spill by reporting it on the municipality website and other social handles within a short time frame. The public notice of pollution can include:⁷

1. Name, address, and telephone number of person reporting
2. Name, address, and telephone number of person who first arrived on the scene of incident /or was responsible person for discharge
3. Date and time of the discharge and status of discharge (ongoing or ceased)
4. Characteristics of the spill (untreated or treated, industrial or domestic)
5. Estimated amount of discharge
6. Source and cause of discharge
7. Whether the discharge was contained on-site, and cleanup action plan
8. Description of area affected by discharge, including name of water body affected, if any
9. Persons/ agencies contacted/ responsible for the incident
10. Location or address of discharge
11. Misc. Information

CELA stresses that mandatory reporting is critical to public awareness and will only be successful if it is supported by legislation.

Recommendation No. 8: CELA recommends establishing a coordinated and meaningful national system of collecting, assessing, and sharing data on wastewater treatment among municipalities and utilities in Ontario. As well as detailed public reporting of overflows to keep the public safe and informed.

(iv) Bringing an equity lens to wastewater and stormwater management

CELA would like to point out that, although the Discussion Paper mentions working with the public, it fails to acknowledge the issue from an equity lens.

CELA is aware the government plans to invest in 37 clean water, wastewater and stormwater infrastructure improvement projects for First Nation communities across the province. CELA

⁶ <https://cela.ca/taking-back-lake-ontario-the-gord-downie-pier-opens-in-kingston/>

⁷ <https://www.waterqualityplaybook.org/1-4-improve-fdep-public-reporting-of-wastewater-discharges/>

acknowledges this initiative made by the government and hopes it helps restore the trust of those communities in the water system.⁸ However, seeing the silence of the Discussion Paper on all other communities, it is important that we reiterate that social perspective plays an important role in the effective management of wastewater and stormwater. Historically, low-income housing areas and Indigenous communities have suffered various health risks due to unmanaged wastewater and stormwater. In order to create a successful and sustainable management plan, engaging those who have suffered most is important. To make the solution sustainable, it is important to reduce overall volumes and harmful content of wastewater production.

As stated above, solutions to wastewater and stormwater management are specific to their location. There is no one solution fits all and this should be kept in mind by the government. A comprehensive and province-wide environmental protection policy is good to set standards but the municipalities should be given power to create detailed guidelines based on their social, environmental and economic demography.

Recommendation No. 9: CELA recommends that the government work with all stakeholders (provincial, territorial, local, and Indigenous rights holders) to continue to apply and further develop an effective risk management approach to deal with the complexity and changing nature of chemical mixtures in wastewater and their observed effects in the environment and on human health. The precautionary principal approach, based on best science and Indigenous knowledge, and inclusive of uncertainty and adaptive management, would be core to this work. flexibility to choose community-tailored solutions will have the greatest beneficial impact.

Recommendation No. 10: CELA recommends coordinating investment in science and Indigenous knowledge-based research and technology transfer to improve the understanding of risks and recognize meaningful benefits (e.g., centres of excellence, data dissemination, success/failure case studies, pilot plant studies, coordination of research, process certification).

(v) Promoting recovery and reuse of water – lessons from all over the world

At present, Ontario lacks a comprehensive framework to guide municipalities, industries and others interested in water reuse. The Discussion Paper points out that some of the reasons for water reuse not being a success includes lack of infrastructure and the ‘yuck’ factor. The Discussion Paper mentions the government will counter these setbacks by education and outreach. CELA agrees and would like to point out various examples from all over the world where water is being re-used in both urban and rural settings with public support.

⁸ <https://www.newswire.ca/news-releases/canada-and-ontario-invest-in-37-clean-water-wastewater-and-storm-water-infrastructure-improvement-projects-for-first-nation-communities-across-the-province-813779729.html>

In Mexico City, wastewater and storm water is being successfully used for irrigation. The success of this project was attributed to the cooperation between Mexico City authority and the farmer's association for decades.⁹ Similarly, Australia's Sailsbury Aquifer Storage, Transfer and Recovery ("ASTR") scheme harvests stormwater from urban residential, retail business and mixed industrial areas. This water is then used in Michell Australia wool processing plant and injected into aquifers.

In many countries, water is being recycled for domestic use as well by grey water scaling. Vietnam and Singapore are known to use their wastewater from kitchen sinks and bathrooms from University campus and hotels for toilet flushing. Belgium too, since 2002, has been producing infiltration water from waste water effluent which is used for ground water recharge.¹⁰ The success of the indirect wastewater reuse in Belgium is attributed to the high level of communication with the community and its involvement prior to, during the project and throughout the operation; and, the fact that the project follows federal and state regulations relating to recycled water.

Developing a regulatory framework or guidelines for water reuse would put the public mind at ease and debunk any misinformation. It can also be a tool to ensure use of reused water by at-least commercial and industrial sectors. Taking Mexico as an example, the government can also offer rebate of some kind to those industries and commercial buildings that use the reused water.

C. Conclusion and Recommendations

Proper management of wastewater and stormwater is everyone's concern. Creating awareness to help change behaviour to both reduce wastewater discharge and also see the opportunities of managing wastewater is part of the solution.¹¹ Ontario needs to focus on understanding the links between these water and health, ecosystem functioning and the potential benefits of wastewater reuse in contributing to development. This requires education, awareness, advocacy, and stewardship at multiple levels of the society.

Based on the above, CELA makes the following recommendations:

1. CELA recommends increasing the time frame for mandatory financial planning, stipulated in Section 2 of O. Reg. 453/07 under the Safe Drinking Water Act, from 6 years to minimum 10 years, with preference for 15 years.
2. CELA recommends supporting a site-specific, risk-based receiving environment approach to regulations, monitoring and water quality objectives. This would also incentivize jurisdictions to develop source water protection programs and prioritize

⁹ https://collections.unu.edu/eserv/UNU:6216/Proceedings_WastewaterIrrigation_Mexico.pdf

¹⁰ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2672392/>

¹¹ https://gridarendal-website-live.s3.amazonaws.com/production/documents/s_document/208/original/SickWater_screen.pdf?1486721310

options for source control. There is a need to recognize where keeping contaminants out of systems is more effective than trying to remove them from wastewater through treatment.

3. CELA recommends adequate investment in infrastructure to ensure that the combined sewers wherein stormwater and raw wastewater be upgraded. A time bound plan needs to be made to immediately work towards the separation to avoid flooding when the collection system capacity is exceeded during heavy rain and other extreme weather conditions.
4. CELA recommends incentivizing and rewarding innovation to move beyond current minimum regulatory standards, thus continuing to minimize risk and maximize benefits for society and the environment. Encouraging an assessment of new or amended treatment technologies, using research and pilot testing, will generate a menu of solutions to guide investment decisions. New treatment methods which promote reuse and encourage co-benefit are the need of the hour.
5. CELA recommends that minimum provincial Wastewater Effluent Standards be made applicable to wastewater treatment facilities during the licensing and permitting process.
6. CELA recommends that the Ontario Provincial Water Quality Objectives should be reviewed to determine which of them should become minimum provincial Wastewater Effluent Standards.

The categories for review should include:

- a. synthetic organic chemicals
- b. pesticides
- c. metals
- d. inorganic chemicals
- e. basic physical and chemical properties
- f. bacteria

Special attention should be paid to priority toxic pollutants identified under CEPA and or the former provincial Toxic Reduction Act."

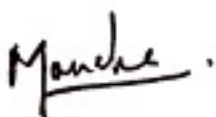
7. CELA recommends embedding wastewater management considerations, wherever possible, within an integrated watershed approach to water management and

- governance. In addition to source control, other non-technical opportunities could be considered to address and reduce risk to local communities and the environment.
8. CELA recommends establishing a coordinated and meaningful national system of collecting, assessing and sharing data on wastewater treatment among municipalities and utilities in Ontario. As well as detailed public reporting of overflows to keep the public safe and informed.
 9. CELA recommends that the government work with all stakeholders (provincial, territorial, local and Indigenous rights holders) to continue to apply and further develop an effective risk management approach to deal with the complexity and changing nature of chemical mixtures in wastewater and their observed effects in the environment and on human health. The precautionary principal approach, based on best science and Indigenous knowledge, and inclusive of uncertainty and adaptive management, would be core to this work. flexibility to choose community-tailored solutions will have the greatest beneficial impact.
 10. CELA recommends coordinating investment in science and Indigenous knowledge-based research and technology transfer to improve the understanding of risks and recognize meaningful benefits (e.g., centres of excellence, data dissemination, success/failure case studies, pilot plant studies, coordination of research, process certification).

Thank you for the opportunity to comment on the Discussion Paper. We would be pleased to discuss these submissions further and we look forward to opportunities for future engagement.

Yours sincerely,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION



Maneka Kaur
Student-at-law



Theresa McClenaghan
Executive Director

cc. Tyler Schultz, Assistant Auditor General, Commissioner of the Environment
(tyler.schulz@auditor.on.ca)