



CANADIAN ENVIRONMENTAL LAW ASSOCIATION
L'ASSOCIATION CANADIENNE DU DROIT DE L'ENVIRONNEMENT

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BY EMAIL

Julie Schroeder
Manager, Water Standards
Environmental Sciences and Standards Division
Standards Development Branch
Ministry of the Environment
40 St. Clair Avenue West, 7th Floor
Toronto, Ontario M4V 1M2

Dear Ms Schroeder:

**RE: EBR Registry Number 010-0548
Design Guidelines for Drinking Water Systems 2007**

**EBR Registry Number 010-0547
Design Guidelines for Sewage Works 2007**

The Canadian Environmental Law Association (CELA) is a non-profit, public interest group established in 1970 to use and improve laws to protect the environment, conserve natural resources, and safeguard public health. Funded as a community legal clinic specializing in environmental law, CELA represents individuals and citizens' groups before trial and appellate courts and administrative tribunals on a wide variety of environmental protection and resource management matters.

Since its inception, CELA has advocated the timely development of effective laws, regulations and policies to protect water resources within Ontario and across Canada. Among other things, CELA represented the Concerned Walkerton Citizens at the Walkerton Inquiry, and was actively involved in the development of the *Safe Drinking Water Act, 2002* ("SDWA"), the *Clean Water Act, 2006* ("CWA"), and regulations, policies and guidelines thereunder.

Because of the similarity in the above-noted EBR postings, CELA is jointly responding to both proposals within this submission. While CELA is generally supportive of the overall direction of the two proposals, there are nevertheless several comments that we wish to make in relation to these proposals, as described below.

Design Guidelines for Drinking Water Systems

CELA's comments in relation to the proposed Design Guidelines for Drinking Water Systems may be summarized as follows:

1. **Section 1.4 (Other Applicable Legislation):** This section contains the following statement:

Additionally, although not in force, the *Sustainable Water and Sewage Systems Act, 2002*, is a provincial statute which many municipalities reference when preparing drinking-water business plans and when considering the economic viability of proposed projects. This statute will be brought into force when regulations are developed.

In CELA's view, this statement should be replaced by a reference to the financial plan requirements (O.Reg. 453/07), which are in force pursuant to the *Safe Drinking Water Act, 2002*.

2. **Section 3.4.5.2 (Outdoor Water Use):** It is assumed that a maximum of 25 per cent of community residents will be using their outdoor tap at any given time. This is far in excess of a realistic provision for outdoor water use. The figure should be decreased to 10 per cent at most.
3. **Section 3.5 (Water Conservation Measures):** The provision that designers should "consider" water conservation measures does not go far enough. Such measures should be strongly advised if not expressly required as conditions of approval. CELA further recommends that the MOE proceed to amend regulatory requirements so as to mandate the inclusion of conservation measures together with the planning, siting and designing or expansion of water systems.
4. **Section 3.7 (Siting):** In addition to the factors mentioned in the proposed Guidelines, additional factors should be included in siting decisions such as: quality of the anticipated source water; proximity to pre-existing uses that may impact the system; results of source water protection planning vulnerability and hazard assessments in the planning region; avoidance of near up-stream sewage treatment plants and other point-source discharges that could affect quality of influent water and the stability and effectiveness of treatment processes; consideration of contaminant flow plumes in storms and heavy precipitation or wind events; circulation patterns in water bodies for surface water supplies; and proximity of known or probable contaminant plumes in groundwater aquifers. These are all factors that should more explicitly be considered for siting decisions of new systems and significant expansions of existing systems.
5. **Section 3.28 (Energy Conservation):** There is an important link between water conservation and energy conservation. Reducing water demand in the community through lawn watering by-laws and restrictions, the encouragement of low- or no-water landscaping, the reduction of water consumption by toilets, and other water

conservation measures by industry, commerce and local government would result in a very significant reduction in energy use. This would contribute to a reduced demand for electricity and greenhouse gas reductions.

6. **Chapter 12 (Challenging Conditions):** A requirement for new systems should be the consideration of the potential impacts of climate change on the environment surrounding the system and its community. For example, design should consider potential variation in water levels of surface waters over the next 15 to 40 years. Water temperatures, depth of frost, and the number of frost-free days may vary considerably. Permafrost conditions may also change. Similarly, the amount of snow cover, and duration, and speed of spring melt may all vary. Frequency and size of storm events may vary well beyond the often assumed 2, 20 or 100 year storm size. Systems should be designed to be responsive to these very possible variations, particularly given that the anticipated timeframe for potential climate change impacts is well within the expected lifespan of these types of facilities.

Design Guidelines for Sewage Works

CELA's comments in relation to the proposed Design Guidelines for Sewage Works may be summarized as follows:

1. The draft Guidelines should be integrated with the Great Lakes Charter Annex and the amendments to the *Ontario Water Resources Act*, including the commitment of the province to review intra-basin transfer issues across a range of approval and planning instruments.
2. **Section 1.3 (Other Applicable Legislation):** The text states that the '*Sustainable Water and Sewer Systems Act* is not in force...and will be brought into force when regulations are developed.' This statement should be replaced by a reference to the financial plan requirements (O.Reg. 453/07), which are in force pursuant to the *Safe Drinking Water Act, 2002*. Under the *Safe Drinking Water Act, 2002*, these financial plans can cover both drinking-water systems and sewage systems.
3. **Section 2.3 (Stage 2 Documents):** There is a reference to providing for future expansions to accommodate additional service areas and population growth. We believe that the draft Guidelines should contain measures to ensure that limits on the size of sewage works are in place. Providing for limitless expansion of systems raises the issue of creating long-term financially unsustainable systems. Furthermore, such an approach to dealing with additional service areas, and particularly with population growth, provides a strong counter-incentive to conservation measures and sustainable land use planning. Such size-limiting measures should also be reflected in design specifications and tributary area designation (section 5.5.1).

4. **Section 3.3 (Site Selection):** The site selection of sewage pumping stations and treatment plants should include consideration of downstream users of the waterway. Potential impacts from the perspective of source water protection of drinking water should also be considered. Siting should also consider the potential that the outflows from the system will constitute an intra-basin transfer, as that term is defined in Bill 198, *An Act to amend the Ontario Water Resources Act*, as well as in the Great Lakes Charter Annex.
5. **Section 3.5 (Flood Protection):** As a result of the recent and anticipated changes in weather patterns and extreme events resulting from climate change, the historical 100-year event is no longer a sufficient ‘worst case’ flooding design scenario. New plants should be designed to withstand and function well beyond that design event in anticipation of an increase in the frequency and magnitude of severe events in the near and mid-term future, as described above.
6. **Section 3.8 (Reliability and Redundancy):** There is a need to ensure there are no impacts from sewage by-passes and overflows in various circumstances. CELA wishes to stress that this is a particularly critical function in newly sited and constructed or retrofitted sewage treatment plants. Historically, by-passes and overflows have constituted a very significant portion of the loadings of a wide variety of contaminants to Ontario’s surface waters, including the Great Lakes and the St. Lawrence River. Ultimately, these events must be fully eliminated. In addition, existing plants must be retrofitted to avoid such impacts in the future.
7. **Section 3.13 (Hydraulics):** Utilization of gravity flow in sewage systems should not be overly relied upon or encouraged, particularly if it will lead to ill-advised decisions by municipal proponents to locate sewer lines in creek and river floodplains or in close proximity thereto. Any further location of sewer lines in these areas should be avoided.
8. **Section 5.2 (Separate vs. Combined Sewers):** CELA strongly supports the Ministry’s decision not to approve new combined sewers. No exceptions should be made. Furthermore, the Guideline should much more emphatically require the separation of existing combined systems rather than merely requesting justification for their continued use.
9. **Section 5.4 (Storm Sewers):** CELA supports the exploration and utilization of measures (including retrofitting) which allow for more natural drainage, water retention, and infiltration, rather than using hard surface and channelling methods. Examples of such measures include green roofs, wetlands, and infiltration programs, many of which are being piloted in Ontario and elsewhere.
10. **Section 5.5.2.5 (Extraneous Flows):** CELA supports and wishes to reiterate the necessity that down-spouts not be connected to storm or sanitary sewer systems. Furthermore, in locations where there are historic connections, an aggressive program of disconnection should be pursued.

11. **Section 18.4 (Land Application):** Land application of sewage sludge and biosolids in various categories of vulnerable areas which pose a threat to drinking water sources should be prohibited or constrained in accordance with site-specific characteristics and pathways.
12. **Section 19.1.3 (Treatment):** It is imperative that sewer treatment facilities across the province be designed for the effective treatment of septage, so as to facilitate the expeditious phase-out of land application of untreated septage throughout Ontario. All new plants should be required to plan for these loadings as a condition of both public funding and Ministry approval.

In closing, CELA appreciates this opportunity for providing comments on the draft Design Guidelines for Drinking Water Systems and Sewage Works. We trust that our comments will be taken into account as your Ministry finalizes the two design guidelines.

Please contact the undersigned if you have any questions or comments on this submission.

Yours truly,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION



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