



3 February 2020

Stacey Vojtek
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By email: Stacey.Vojtek@Ontario.ca

Re: ERO-019-1060 - Proposal to amend Ontario Regulation 454/96 (Construction) to provide alternative regulatory approval requirements for repairs to existing low hazard wetland dams

Dear Ms Vojtek:

The Ontario Rivers Alliance (ORA) is a Not-for-Profit grassroots organization with a mission to protect, conserve and restore healthy riverine ecosystems.

ORA is commenting on the proposal to amend Ontario Regulation 454/96 (Construction). If passed, this amendment would provide an alternative optional rules in regulation approach to wetland dam owners for alterations, improvements and repairs to existing low hazard wetland dams without obtaining approval under Section 16 of the Lakes and Rivers Improvement Act (LRIA) if they meet the requirements in the regulation. This approach is based on a six-year risk-based pilot project which provided evidence to support the option of an alternative risk based regulatory model for alterations, improvements and repairs to wetland dams.

As I have mentioned in comments on previous Environmental Registry postings, there is insufficient information contained in the posting, which leaves a number of unanswered questions and concerns. For instance, why was the six-year pilot program on which this approach was based not made available for review. ORA is requesting much more detail to be included in Environmental Registry postings in future so that we may offer more meaningful input.

1. What is the definition of a wetland dam?

Could an old millpond that has filled with sediment and over time turned into a wetland be considered a “wetland dam”?

A case in point is the Rudd Dam. In 2017, ORA partnered with the Ministry of Natural Resources and Forestry (MNR), the Credit Valley Conservation Authority and several other partners to remove the Rudd Dam on the West Credit River – a coldwater brook



trout stream. The project was undertaken in accordance with the Grand River Fisheries Management Plan which had an objective and management strategy to improve brook trout habitat in cold water tributaries of the Speed River Basin.

The Rudd Dam's headpond had essentially turned into a large wetland created by over 100 years of sediment accumulating behind the dam, and the shallow pond's water temperature was no longer viable brook trout habitat. After the removal of the Rudd Dam the water temperature was reduced and brook trout habitat was made more resilient to a warming climate. It was also an earthen dam that had already failed once, and the dam owner's objective was to reduce his risk and liability.

ORA Recommendations:

1. There must be a clear definition of a wetland dam that differentiates between wetlands behind old and unnecessary millpond dams and a "Ducks Unlimited" type of "wetland dam".
 2. Stipulate that the regulation only applies to existing dams that were originally constructed for the purpose of creating a wetland.
2. Is there any chance a "wetland dam" could be altered to insert a hydroelectric turbine?

The Rudd Dam had a reasonable flow that could have turned a small turbine to produce electricity for homeowner consumption, and yet the headpond was basically a large wetland.

Waterpower has resulted in significant and ongoing impacts to fish and wildlife populations and habitat, ecological processes, and aboriginal communities.¹ The benefits of waterpower must be weighed in the context of the significant costs to the environment, to biodiversity, and to ecological, social, cultural and natural heritage values.

Hydroelectric of any size is not without its social and environmental impacts and must not qualify for a streamlined process.

ORA Recommendation:

3. The regulation must stipulate a narrow list of the allowed alterations and modifications that can be made and under what circumstances.
 4. Hydroelectric not be included as an allowable alteration.
3. As described above, what started out as a millpond ended up as a wetland, so how broad and sweeping would this regulation be – would it include these types of millpond dams that were never intended to be a wetland?

There are a great many dams left over from the late 1800s and early 1900s, that no longer serve any useful purpose and create a risk to public safety. ORA is actively pursuing more of these types of projects.

There are a number of compelling reasons for removing these old dams, i.e. to increase resilience to a warming climate, improved river connectivity and flow, increased habitat for fisheries, improved thermal regime and water quality, and improved public safety.



Dam safety is a huge issue for dam owners, for instance, on the North Maitland River on the 23rd and 24th of June 2017, the Gorrie Dam failed and the downstream Howson Dam was at capacity during an extreme rain and flood event when 175 mm of rain fell in just 7 hours, placing more than 150 property owners at risk and resulted in an estimated \$11-million in damages in the Town of Harriston. This severe rain event broke previous records by approximately 40% and was the second highest flow on the North Maitland in the 48 years of record. Fortunately, no one was killed; however, it could have been much worse as in October of 2015, when a South Carolina flood breached 18 dams, and resulted in 16 deaths.²

If a streamlined process makes it quicker, easier and cheaper to repair a dam than to remove it, then a dam owner will be encouraged to repair, and less likely to remove it if they are required to undertake an Environmental Assessment and obtain a number of permits.

The current process for dam removal of small private dams can be prohibitive for property owners, and yet these dams may be showing signs of failure. It could be helpful to offer a streamlined process for decommissioning these smaller, old and unsafe dams.

ORA Recommendations:

5. A similar streamlined approach for the removal of existing low hazard dams be made available to dam owners.
 6. Equal incentives, education and encouragement are offered to dam owners to encourage them to opt for removal of dams, rather than repair.
 7. The regulation should emphasize that wherever possible dams or stoplogs should be removed to reduce the thermal regime of the watercourse, improve water quality, connectivity and public safety.
 8. Provide step-by-step guidelines for dam owners on how to go about having their dam decommissioned.
4. Would the streamlined process apply if the height of the dam was increased and additional surrounding land is inundated?

The posting makes no mention of whether a repair or alteration could include raising the height of the dam and increasing the size of the inundated land. This is crucial information, as increasing the size of a pond or wetland to flood additional vegetation can increase methylmercury production and greenhouse gas emissions.

Flooding landscapes to create or increase the size of a reservoir causes flooded vegetation and soils to decompose, resulting in net emissions of the GHGs, carbon dioxide (CO₂), and methane into the atmosphere for decades and possibly centuries following flooding.^{3,4} Reservoir flooding also accelerates the bioaccumulation of methylmercury, and these effects can persist for 20 to 30 years or more.^{5,6}

ORA Recommendations:

9. Stipulate clearly that the size and height of the dam or reservoir cannot be altered.
 10. The alteration must not increase the hazard risk.
5. Will there be any type of environmental impact assessment or policy guidelines to determine the project's potential impacts on the environment?



The posting doesn't mention any procedural or best management practices or guidelines that would need to be followed in this streamlined process. Alterations and improvements can conjure up a number of scenarios, but it should be much more specific about what this would include.

It is also crucial to understand whether there would be any type of environmental assessment of the effects of the alteration or improvement on the environment – such as impacts to species at risk, fish spawning, methylmercury production and greenhouse gas emissions.

A Professional Engineer is qualified to make a risk hazard determination but would not be qualified to determine the impacts to the environment. This must be left up to a qualified environmental expert to determine the potential environmental impacts.

ORA Recommendations:

11. Exclude alterations and improvements from the regulation so it only applies to repairs.
 12. If not, then provide detailed guidelines or best management practices requiring a streamlined environmental assessment by an environmental expert to evaluate the potential impacts and mitigation options.
 13. Provide a list in the regulation of the specific types of alterations and improvements that can qualify for the streamlined process.
 14. Provide a middle ground solution to only streamline the process for organizations such as Conservation Authorities, Ducks Unlimited, and other reputable not-for-profit organizations that have earned a high level of trust for their responsible and sustainable development practices.
6. Will the dam owner be required to consult with stakeholders?

The posting fails to mention whether impacted and adjacent property owners and Indigenous communities would need to be consulted in a streamlined process.

ORA Recommendation:

15. The dam owner must be required to consult with all potentially impacted stakeholders.

Thank you for this opportunity to comment!

Respectfully,

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- ¹ PEW Environment Group. 2011. *A Forest of Blue: Canada's Boreal*. Online: <http://www.pewtrusts.org/~media/legacy/uploadedfiles/peg/publications/report/PEGBorealWaterReport11March2011pdf.pdf>
- ² *18 Dams Breached And Death Toll Rises in S.C. Flooding*
- ³ Venkiteswaran, J.J., Schiff, S.L., St. Louis, V.L., Matthews, C.J.D., Boudreau, N.M., Joyce, E.M., Beaty, K.G., and Bodaly, R.A. (2013), Processes affecting greenhouse gas production in experimental boreal reservoirs, *Global Biogeochem. Cycles*, 27, doi:10.1002/gbc.20046
- ⁴ Maeck, A., DelSontro, T., McGinnis, D.F., Fischer, H., Flury, S., Schmidt, M., Fietzek, P. and Lorke, A., 2013. Sediment Trapping by Dams Creates Methane Emission Hot Spots, *Environmental Science and Technology*, 8130-8137, Online: <http://www.dx.doi.org/10.1021/es4003907>
- ⁵ Rosenberg, D.M., et al. 1997. Large-scale impacts of hydroelectric development. *Environmental Reviews*. 5: 27-54.
- ⁶ World Commission on Dams. 2000. *In Dams and development: A new framework for decision-making*; Earthscan Publications: London.