



22 August 2019

Phil Shantz
Environmental Planning Leader (Canada)
Arcadis Canada Inc.
121 Granton Drive
Richmond Hill, ON
L4B 3N4

By Email: Phil.Shantz@arcadis.com

**Re: Calabogie Generation Station Redevelopment, Madawaska River
Review of Draft Environmental Report**

Dear Mr. Shantz:

The Ontario Rivers Alliance (ORA) is a Not-for-Profit grassroots organization acting as a voice for a coalition of members that have come together to protect, conserve and restore healthy riverine ecosystems.

I have had an opportunity to review your draft Environmental Report (ER) and have a few questions and comments.

Fish Passage:

Section 2.4.3.5 of the ER indicates that the redeveloped Calabogie GS will be “*eel ready*”, meaning it “*will be planned, designed and executed in anticipation of adaptive management strategies that can be applied as circumstances change around the presence of American Eel in the vicinity of the station*”.

Q1: I just want to verify that this means that eel passage will be fully completed and in place by the time the redeveloped GS is up and running?

Q2: Has OPG considered including fish passage for other species of fish, such as Walleye and River Redhorse? If not, why?

Water Levels and Flow Velocity:

Peaking operations, with the variable flow discharge and ramping patterns, the rate and frequency of water level changes, and the amount of time the station is at its maximum discharge level, can all have a significant impact on the degree of channel and bank erosion.

Q3: What mitigation measures will be implemented to reduce channel and bank erosion resulting from the increased flow velocity from 60 to 160 cms²?



In Table 6-2, Page 6-6 of the ER, you make comment that “*OPG will continue to operate the Calabogie GS and the other plants on the Madawaska River in full accordance with all flow and water level targets and compliance conditions in the Madawaska River Water Management Plan, including the summer conditions.*”

Q4: A common practice amongst hydroelectric proponents has been to use seasonal flows and water level targets to peak on a daily basis to service peak demand. Has this been your common practice to date?

You said, “*Daily flow and water level conditions will remain unchanged from the existing situation*”.

Q5: Will the number and frequency of daily water level fluctuations increase in the new operating strategy?

Q6: With total flow velocity increasing from 60 or 66 to 160 cms², what will the tailrace substrate consist of and how will it and habitat be protected against erosion and shifting?

Q7: What species will be targeted?

Turbines:

Q8: Will OPG consider installing fish/eel friendly turbines?

Climate Change:

The effect of damming on methane emissions conducted in a central European impounded river revealed that the reservoir reaches are a major source of methane emissions and that areal emission rates far exceed previous estimates for temperate reservoirs or rivers. It showed that sediment accumulation correlates with methane production and subsequent ebullitive release rates. Results suggested that sedimentation-driven methane emissions from dammed river hot spot sites can potentially increase global freshwater emissions by up to 7%.¹

Q9: Section 4.7.1, P-4-50 of the ER states, “*OPG has been an active corporation in better understanding the effects of climate change on its facilities and operations*”, but will OPG consider the effects that a redeveloped Calabogie Dam will have on climate change over the next 100 years?

Q10: Will the dam design have adequate spill capacity and resilience to withstand the extremes of climate change?

Thank you for this opportunity to review and comment on the draft ER – much appreciated.

Respectfully,

Linda Heron
Chair, Ontario Rivers Alliance
(705) 866-1677

¹ 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>