Meeting to Brainstorm Alternatives to Mitigating Impacts Related to Adam Creek

Date: December 19, 2011, 10 am to 4 pm
Location: Moose Cree Offices in Timmins
Contact: Rob Galloway, MECC Chair
Participants: See Appendix 1

Meeting Summary:

Presentations (all slides available at www.lowermattagami-MECC.com):

- Introduction and Objectives of Meeting (Rob Galloway, MECC Chair)
- History of the Lower Mattagami Complex (Mario Durepos, OPG)
- Adam Creek Erosion Studies (Collin Graham, Environmental Resource Development Engineering)
- Adam Creek Fisheries Presentation (Dan Gibson, OPG)

Open Discussion (main points that were discussed):

Issues raised regarding Adam Creek:

- Sediment build up, resulting from Adam Creek erosion, around Moose Factory/Moosonee is not being flushed by the spring flood (choking up the river).
- How would OPG build the Lower Mattagami Complex today? It is not likely they would be allowed to use Adam Creek as a spillway.
- Fisheries impacts from Adam Creek include entrainment and the impact on Sturgeon.

Suggested Studies/Mitigative Measures:

- The literature should be looked at and updated based on new technologies (2000 to the present). Context is key, we need to know what will work for Adam Creek (it is unique). The relation between how sluiceways are configured to minimize impacts to fish (hitting rocks) during high flows.
- A study could be done that will determine the mortality of fish entrained through Adam Creek.
- The Fish (Sturgeon) Relocation Program could be modernized where possible.

- Monitoring program would be needed to include indicators that will help with the Fish Relocation Program.
- Need to quantify the factors that impact the success/failure of fisheries.
- Mitigation of fish populations would be more useful if they were done around Moose Factory, not just the LMRP study area. The area of impact should go all the way to Moose Factory.
- Consider a way to create natural spill diversions down the Mattagami River similar to those on the Missinaibi River.
- Sturgeon responds well to engineered habitat creation, so this can be done at Moose Factory. Also can use a donor population to repopulate the downstream population.
- Have to know how the system (flows from LMC/Adam Creek to Moose Factory) is working before mitigation is proposed.
- Need to get information on areas that are productive and determine impact (look at life cycle).
- OPG has someone who can do modelling on sediment loads using LiDAR and determine what sediment is being transported from Adam Creek to Moose Factory.
- The way to mitigate (sedimentation/erosion) is to reduce the amount of flow into Adam Creek and decrease the duration of flows within Adam Creek.
- Adam Creek should be broken down in sections when conducting an erosion analysis.
- Could dig down into Adam Creek to make it deeper to minimize erosion and fisheries impacts.
- Sediment traps could be created within Adam Creek. Large pools that can be excavated.
- The mapping, similar to 2002, should be repeated. A monitoring program should be created to find something meaningful that can be done rather than a hit and miss method (when proposing mitigation of impacts down Adam Creek).
- Re-vegetation and planting (Soil Bioengineering) could be conducted to stabilize bank erosion. The types of plants that can be used are found on the Federal website (Trans-Canada Pipeline). Toe reinforcement should also be used.
- Look at an engineered method (rebar) to keep rocks in place (at the mouth of Adam Creek spillway).
- Use Smoky Creek as a natural spillway diversion during high flow periods.
- The Adam Creek Spillway can be refurbished to have fish friendly gates (top-draw rather than current bottom-draw gates). A sequence of events of spilling down Adam Creek can maximize the mitigative effects.

- Consider adding more water down the main stem (LMC) by adding more spillway gates (up to 10 gates).
- One mitigative measure may not be enough, but several in combination may be more effective.
- The fish relocation Program can be modernized by looking at a partnership between OPG, government, and First Nations to analyse Sturgeon populations to determine when Sturgeon should be released upstream or downstream of Adam Creek to propagate genetic diversity. A benchmark of Sturgeon populations needs to be established downstream (of Adam Creek confluence).
- Electric and/or magnetic barriers can be used to keep fish away from the Adam Creek Spillway (a Russian study indicates 3 frequencies that can be used).

Appendix 1

Participant List

- Rob Galloway, MECC Chair
- Jamey Deforge, OPG, MECC Member
- John Turner, MCFN, MECC Member
- Gaby Archibald, TTN, MECC Member
- Colin Graham, ERDE
- Rich Pyrce, Hydrologist, MNR
- Steve McGovern, Aquatic Ecosystem Team Leader, MNR
- Bill Greenaway, MNR
- Dave Barbour, MNR
- Mario Durepos, Public Affairs, OPG
- Paul Burroughs, LMRP Project manager OPG
- Ed Naval, LMRP Senior Environmental Specialist OPG
- Peter Hassan, Section Manager, Hydro Engineer, OPG
- Wendy Cudmore, Senior Environmental Advisor, OPG
- Dan Gibson, Senior Environmental Scientist, OPG
- Jan Bielenberg, Hydrotechnical Engineer, Hatch
- Stan Loutit, Environmental Coordinator, MCFN
- Alex Litvinov, MERC
- Jack Rickard, Environmental Coordinator, TTN
- Kira Dunham, TTN