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Re: Plan for Long Term Water Use in Edzo and Rae

Alternate Water Supply Plan for Edzo

Introduction

On December 15, 2014 the Wek'èezhii Land and Water Board (WLWB) approved the use of alternative water sources for Edzo and Rae in Behchoko until June 1, 2015. The Community Government of Behchoko (CGB) required Board approval for alternative water sources as a result of low water levels and ice build-up in both West Channel and on Marion Lake. In granting approval for the use of alternative water sources, the WLWB requested that the CGB provide a plan that outlines the steps and timelines related to long term water use in Edzo and Rae.

Background and Options

Last spring, as a result of the continued low water levels in the area, the West Channel froze to the point where the intake line for Edzo water supply was not able to function. Trucking of water was required over a period of several weeks. The same problem has occurred again this winter and the CGB made application to the Board for approval of alternate approaches.

This winter the CGB has arranged for temporary storage beside the water treatment plant and for trucking of raw water from Frank Channel.

The CGB, in conjunction with WESA Engineering, has looked at options to address this issue. The options included the construction of an embayment on West Channel and the provision of different sorts of storage facilities for raw water beside the Edzo water plant, which would be combined with trucking raw water from Frank Channel. Opportunities for a new intake, in a different location, for the Edzo water supply have also begun to be reviewed.

Decisions

Based on review and further discussion with WESA, a plan going forward has now been approved by Chief and Council. This approach includes a short term approach and a longer term more permanent solution, the elements of which are:

Short Term

- Use of CGB water truck to haul raw water from Frank Channel to the Edzo water plant
- Water storage in a tanker beside the water plant

Long Term

- Establishing a reserve fund for the study of options and the eventual replacement/relocation of the Edzo water intake

The short term approach is similar to what the CGB staff has arranged during this winter's low water levels. A CGB water truck with a capacity of 13,500 litres is hauling water from Frank Channel to a tanker (currently rented from Rowe's Trucking) with a capacity of 36,000 litres. The CGB would purchase a used tanker for any future years when the intake is not functioning. Both water truck and tanker could be used for other duties when not required during times of low water levels.

Further to the Edzo Option B as set out in the CGB's application in the fall of last year, it is noted that:

- There will be no disturbance of sediment in the pumping activity at Frank Channel
- If there is an emergency decant of the Rae lagoon, water withdrawal will cease and immediate SNP testing samples will be taken, and water withdrawals will not resume until acceptable results are confirmed
- All refuelling for any pumps required will occur in a controlled and managed environment

The rationale for this approach is based on an expectation that the problem of severe low water levels will not occur every year, therefore solutions with a high capital cost may not be the best approach. When the problem does occur, the CGB can ready itself with its own resources – water truck and storage tanker – to handle the issue.

Next Steps

It is recommended that any large capital expenditures should be focused on a permanent solution, such as the establishment of a new location for the Edzo water intake, one which will not be affected by low water levels.

The establishment of a fund for a permanent solution involving a new intake location is seen as the best overall option for the community. A feasibility assessment and options analysis will be considered in order to determine where a new intake would be located. There are a number of factors that will influence the selection of a preferred location for such a project including:

- Distance from plant
- Changes in raw water chemistry (as it impacts the operation of the treatment plant i.e. turbidity, organics)
- Risks to source water quality (distance from roads, distance and direction from sewer decant locations, prevailing winds, current flow patterns)
- Risks to long term source water supply (water body elevation, trends, depth of intake, 20+ year demands)
- Capital infrastructure costs
- O&M costs

The size of such a fund will be directly dependent on the above and further review will be required. Staff will be recommending the establishment of a fund as part of the 2015/2016 budget process. CGB staff will also be seeking MACA advice in establishing and budgeting for the reserve fund for the permanent solution of a new water intake.

The CGB will inform the WLWB of further specific steps and timelines for this permanent solution as the information becomes available.

Alternate Water Supply for Rae

No plans for future alternatives are being considered at this time for the Rae intake, owing to the fact that current water levels are not endangering water supply at Marion Lake.

Yours truly,



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Cc
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