



NIRB File No.: 19WA041
NWB File No.: 3AM-IQA1626
DFO File No.: 19-HCAA-00969
NRI File No.: 01 028 19N-M

January 17, 2020

The Honourable Carolyn Bennett M.D. P.C., M.P.
Minister of Crown-Indigenous Relations
Government of Canada
House of Commons
Ottawa, ON K1A 0A6

The Honourable Daniel Vandal, P.C., M.P.
Minister of Northern Affairs
Government of Canada
House of Commons
Ottawa, ON K1A 0A6

Sent via email: Carolyn.Bennett@parl.gc.ca; Dan.Vandal@parl.gc.ca

Re: NIRB Report regarding the City of Iqaluit’s “Iqaluit 2019 Emergency Water Supply Project”

Dear Honourable Ministers:

On December 2, 2019 the Nunavut Impact Review Board (NIRB) received the Final Report for the City of Iqaluit’s “Iqaluit 2019 Emergency Water Supply Project” pursuant to s.152(2) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c.14, s2 (*NuPPAA*) in addition to copies of the permits associated with the undertaking, specifically the Type “A” Water Licence 3AM-IQA1626 Amendment No. 3, *Fisheries Act* Letter of Advice (19-HCAA-00969) and Scientific Research Licence 01 028 19N-M.

Attached is the NIRB’s report submitted pursuant to the Minister as contemplated by s.152(4) of the *NuPPAA*. The NIRB’s report acknowledges the results of this emergency undertaking and highlights key issues raised by the Proponent in its Final Report. As a result of reviewing the documents provided to the NIRB, the Board is recommending:

- The scope of activities undertaken and integrally-linked to the emergencies should be clearly defined;

- Activities required for ongoing operations in the area should be appropriately assessed and permitted, not grouped within the scope of the activities, works and undertakings associated with responding to the emergency circumstances; and
- As a result of multiple declared emergencies in the area and based on consistent community need, the City of Iqaluit should undertake or support research into advance planning to ensure that the needs of the community can be met recognizing that the City of Iqaluit is projected to continue to grow in future.

Enclosed with the NIRB's report is the Proponent's Final Report for your reference. All documents can be accessed by parties via the NIRB's public registry at www.nirb.ca/project/125501.

If you have any questions or require additional clarification, please contact the undersigned directly at 1-867-983-4611 or tarko@nirb.ca.

Sincerely,



Tara Arko
Director, Technical Services
Nunavut Impact Review Board

Attachments: Nunavut Impact Review Board Report on the City of Iqaluit's "*Iqaluit 2019 Emergency Water Supply Project*", NIRB File No. 19WN041 (January 17, 2020)

Enclosures: Final Report: Iqaluit 2019 Emergency Water Supply Project: Report of Activities (November 27, 2019)

cc: The Honourable Bernadette Jordan, P.C., Minister of Fisheries, Oceans, and the Canadian Coast Guard
The Honourable Patterk Netser, Minister Responsible for Nunavut Arctic College
Sharon Ehaloak, Nunavut Planning Commission
Lootie Toomasie, Nunavut Water Board
Stephanie Autut, Nunavut Water Board
Daniel Coombs, Fisheries and Oceans Canada
His Worship Kenny Bell, Mayor of Iqaluit
Matthew Hamp, City of Iqaluit
Amy Elgersma, City of Iqaluit
Erica Bonhomme, Nunami Stantec Ltd.



Nunavut Impact Review Board
Report on the City of Iqaluit's
2019 Emergency Water Supply Project
NIRB File No. 19WA041

January 17, 2020

On July 31, 2019 the Government of Nunavut's Minister of Community and Government Services, pursuant to section 11(1) of the *Emergency Measures Act*,¹ declared a state of emergency having formed the opinion that: "*the current water shortage in Lake Geraldine, combined with historic low water levels in the Apex River constitutes an emergency*".²

On August 2, 2019 the Nunavut Water Board (NWB) requested the Minister of Crown-Indigenous Relations and Northern Affairs (as the Minister was at that time) to consent to the NWB's processing of Amendment No.3 for Water Licence 3AM-IQA1626 in emergency circumstances as permitted by ss. 52(2)(c) and 55(5) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA)*,³ allowing the NWB to waive the normal notice, public hearing and comment requirements typically associated with the NWB's consideration of an application to amend a Type "A" Water Licence⁴, and also provided notice to the Nunavut Planning Commission. On August 9, 2019 the Minister of Crown-Indigenous Relations and Northern Affairs declared, pursuant to subsection 56(2) of the *NWNSRTA*, that the Minister consented to the Nunavut Water Board's processing of the City of Iqaluit's amendment to its Type "A" Water Licence No: 3AM-IQA1626 on an emergency basis and approved the issuance of Amendment No. 3 as recommended by the NWB.⁵

On December 2, 2019 the Nunavut Impact Review Board (NIRB or Board) received the Final Report for the City of Iqaluit's "Iqaluit 2019 Emergency Water Supply Project" project, accompanied by copies of the Government of Nunavut's Emergency Declaration Letter, and the Type "A" Water Licence No: 3AM-IQA1626, Amendment No.3 issued by the NWB.

¹ S. Nu. 2010, c. 14, s. 5.

² NIRB Public Registry ID No. 328029

³ S.C. 2002, c. 10.

⁴ NIRB Public Registry ID No. 328030

⁵ NIRB Public Registry ID No. 329035

The NIRB has prepared this report as permitted by s. 152(4) of the *Nunavut Planning and Project Assessment Act (NuPPAA)*,⁶ to acknowledge receipt of the City of Iqaluit’s Final Report on the emergency undertaking and convey the Board’s recommendations associated with the emergency undertaking. All documents can be accessed on the NIRB’s public registry via www.nirb.ca/project/125501.

Procedural History

As noted in the NIRB’s previous determination in respect of the City of Iqaluit’s water use activities, in the summer of 2018 the City of Iqaluit (the City or Proponent) identified that the water level in their water reservoir at Lake Geraldine was exceptionally low and expressed concern that if not replenished, the City may subsequently be unable to provide adequate potable water to the community through the 2018/2019 winter season. The City of Iqaluit requested, and was granted by the Minister of Crown-Indigenous Relations (the responsible Minister at the time), an emergency amendment to use additional water, and specifically to extract water from the Niaqunguk River (Apex River) for a period of one pumping season (August-October 2018; Amendment No. 1) to replenish the Lake Geraldine water reservoir. Although the City had applied for a two year pumping program, the Minister limited the term of the amendment to one pumping season and the City was given direction by the Minister and the NWB to submit an amendment application by the end of October of 2018 if they anticipated it would be necessary to conduct a longer-term supplemental pumping program from Niaqunguk (Apex) River for the remaining term of the Licence. (2019-2026).

Subsequently, in early 2019, the City of Iqaluit determined that a longer-term supplemental pumping would be required and applied for this amendment to its Type “A” Water Licence to allow the City to supplement the Lake Geraldine Reservoir from the Niaqunguk (Apex) River on an annual basis until 2026. In January 2019 the NIRB received the referral to assess the longer-term amendment and commenced screening of the City of Iqaluit’s “Apex Drinking Water Proposal” (NIRB File No. 19UN013) and provided its determination on April 17, 2019 to the Minister of Crown-Indigenous Relations and Northern Affairs. The NWB held an in-person Public Hearing to consider the amendment in August 2019. On September 4, 2019, the NWB recommended to the Minister that the longer-term supplemental program be approved and accordingly recommended the issuance of Water Licence No: 3AM-IQA1626 – City of Iqaluit; Amendment No. 4 – Seasonal Replenishment of Lake Geraldine Reservoir from the Niaqunguk (Apex) River. On December 3, 2019 the Minister of Northern Affairs approved the amendment to the Licence and the issuance of Water Licence No: 3AM-IQA1626, Amendment No. 4.

While the longer-term supplemental program amendment was being considered, in July 2019 the City identified that due to record low snowfalls and minimal precipitation in 2018-2019 to date, water levels in Lake Geraldine remained exceptionally low, and supplementation was urgently required to fill the water consumption needs of the community; however, the water licence amendment process was still being undertaken and the NWB’s and Minister’s decision-making for the longer-term amendment would not be completed in time to authorize the immediate supplementation of the water reservoir at Lake Geraldine in August-October as needed. Additionally, the City identified that flows in the Niaqunguk (Apex) River were below the 30%

⁶ S.C. 2013, c. 14, s. 2.

mean annual discharge, the general threshold that Fisheries and Oceans Canada generally indicated as necessary to maintain to be protective of fish in the River. Therefore, on July 31, 2019 the Government of Nunavut's Minister of Community and Government Services, pursuant to section 11(1) of the Nunavut *Emergency Measures Act*, declared a state of emergency having formed the opinion that: "*the current water shortage in Lake Geraldine, combined with historic low water levels in the Apex River constitutes an emergency*". Subsequently, the City of Iqaluit applied for an amendment to their Type "A" Water Licence to be processed by the NWB on an emergency basis in order to allow the short-term supplementation of the Lake Geraldine reservoir from both the Niaqunguk (Apex) River and Unnamed Lake (Water Licence No: 3AM-IQA1626, Amendment No. 3).

On August 2, 2019 the Nunavut Water Board requested the Minister of Crown-Indigenous Relations and Northern Affairs consent to the Board's processing of Amendment No.3 for Water Licence No: 3AM-IQA1626 in emergency circumstances as permitted by ss. 52(2)(c) and 55(5) of the *NWNSRTA*, allowing the Board to waive the normal notice, public hearing and comment requirements typically associated with the Board's consideration of an application to amend a Type "A" Water Licence. On August 9, 2019, the Minister of Crown-Indigenous Relations and Northern Affairs declared, pursuant to s. 56(2) of the *NWNSRTA* that the Minister consented to the processing of the City of Iqaluit's amendment to its Type "A" Water Licence 3AM-IQA1626 on an emergency basis and also approving the issuance of Amendment No. 3 as recommended by the NWB.

Technical Assessment

In accordance with s. 152(4) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*) the NIRB has prepared this report to acknowledge receipt of the Final Report submitted by the City of Iqaluit on the 2019 Emergency Water Supplementation Project, to highlight key issues, and to provide clarity on the issues that should be considered in future undertakings.

The scope of activities and components related to the Iqaluit 2019 Emergency Water Supply Project, as determined from materials received by the NIRB to date, included:

- construction of an access trail from the Road to Nowhere to Unnamed Lake, including the installation of culverts;
- construction of a semi-permanent pipeline from Niaqunguk (Apex) River to Lake Geraldine;
- mobilization, operation, maintenance and demobilization of equipment and infrastructure (except semi-permanent pipeline), to Niaqunguk (Apex) River and Unnamed Lake pumping sites;
- installation and operation of temporary pumps and a pipeline approximately 1.2 kilometres (km) to transfer water from Unnamed Lake to the Niaqunguk (Apex) River;
- temporary withdrawal (August 2019-October 2019) of up to 700,000 cubic metres (m³) of water from Unnamed Lake;
- withdrawal of up to 700,000 m³ water from the Niaqunguk (Apex) River;
- increase in the total amount of water allowed to be withdrawn from Lake Geraldine, from 1,100,000 m³/year to 2,000,000 m³/year;
- conduct research on depth, waterflow and water quality in Unnamed lake; and

- monitor project activities in accordance with an Operational Monitoring Plan, to maintain compliance with the City of Iqaluit's Type "A" Water Licence 3AM-IQA1626 (Amendment No. 3) and with advice provided by DFO in a *Letter of Advice* (19-HCAA-00969).

Key observations documented in the final report⁷:

- 1) The pumping took place between August 25, 2019 and October 1, 2019 where 462,394 cubic meters (m³) were withdrawn from Unnamed Lake (as measured at SNP IQA-10) and pumped 1.2 kilometers (km) overland to the to the Niaqunguk (Apex) River, approximately 2.3 km upstream of the Niaqunguk (Apex) River to the Lake Geraldine pumping location. A total of 568,103 m³ of water was withdrawn from the Niaqunguk (Apex) River (as measured at SNP UNL-01) and transferred to Lake Geraldine. Permitted extraction rates for the 2019 Emergency Water Supplementation Program were limited to 10% of the instantaneous flow at the withdrawal location when flows were above 30% of the Mean Annual Discharge in the River. Nunami Stantec reported that pumping rates exceeded the 10% instantaneous flow threshold permitted marginally on six (6) of the 38-day pumping program. Adjustments in pumping were made when required. There were no exceedances in the total allowable pumped volumes from either Unnamed Lake or the Niaqunguk (Apex) River.
- 2) Nunami Stantec Limited conducted field observations and monitoring prior to and during the supplementation activities in accordance with the Operational Monitoring Plan. Hydrologic conditions were observed, recorded and analyzed daily in the Unnamed lake, the Unnamed Lake outlet, and Niaqunguk (Apex) River during pumping. Information was also supplied from established Water Survey of Canada hydrometric monitoring locations. Adjustments to the pumping rates were made accordingly in order to limit the effects to the natural system.
- 3) Temporary infrastructure and equipment were demobilized in October 2019; however, the access trail to Unnamed Lake and the semi-permanent pipeline between the Niaqunguk (Apex) River and Lake Geraldine have remained in place.
- 4) Monitoring results provided:
 - The Niaqunguk (Apex) River and in Unnamed Lake respond quickly, with levels rising following significant rainfall event;
 - Outflow at Unnamed Lake maintained flow throughout the program and appeared to recover from the pumping program drawdown with precipitation events;
 - Outflows from Unnamed lake measured at the end of the pumping program were similar to those measured during the baseline monitoring program;
 - Flow data was unable to be collected on 13 of the 38 days as the equipment used to measure the Niaqunguk (Apex) River was not reliable and was sent for repairs;
 - There were several days where the flows in the Niaqunguk (Apex) River exceeded the thresholds where data could be safely collected by staff and the Water Survey of Canada station data was relied on for adjustments;
 - Unknown whether Arctic Char occupy the portion of the River above the Road to Nowhere bridge;
 - Exceedances in pumping rates were only marginal and no adverse effects to fish and fish habitat were projected; and

⁷ NIRB Public Registry ID No. 328048

- Nunami Stantec suggested that adding flow to the Niaqunguk (Apex) River from Unnamed Lake may have had a positive effect on fish and fish habitat, by increasing flow when water levels were at historical lows.

In its Final Report on the previous 2018 *Temporary/Emergency Supplemental Water Supply project*⁸ for the City of Iqaluit, the NIRB noted the following points in relation to the potential for impacts from the project, which remained relevant during the 2019 emergency undertaking:

- 1) The area has been experiencing decreased precipitation in recent years;
- 2) Increased municipal demand for water has contributed to the drawdown of the reservoir where up to 80% of available water stored within the reservoir is used in the winter months; and
- 3) Seasonal supplementation of the reservoir has become necessary prior to freeze-up to ensure adequate supply of potable water through the winter.

Components of the environment that could be adversely impacted from this project included:

- 1) Quantity and quality of freshwater resources; fish, birds, other wildlife and their habitat; and use of the land and its resources for recreational and traditional pursuits.
 - a. The Proponent has provided information on the resources that have the potential to be most acutely affected by the project (i.e., fish and fish habitat), and due to the temporary nature of the activities and short duration of the undertaking it is unlikely that the residual or cumulative effects from the temporary emergency water extraction will significantly impact fish.
 - b. The Final Report did not provide specific wildlife observation data on birds and other wildlife, therefore the potential for interaction and adverse impacts to other wildlife and birds is unclear. Due to the project's proximity of the project to the City of Iqaluit and associated traditional land use from the residents, it is likely that accessing the lake for the pumping activities is not creating new impacts to birds, wildlife, and their habitats; however the additional use of heavy equipment to establish or maintain the access trail may create additional adverse impacts. If the access trail remains and is expected to be open for public access, the effects and cumulative effects may need to be assessed to ensure appropriate monitoring and mitigation are considered to reduce residual or cumulative effects to birds, wildlife, and their respective habitats.
- 2) Terrestrial and freshwater environment could be impacted by additional use of the access trail. As the new access trail, which was developed to allow activities around Unnamed Lake has remained in place but without clear plans for its use and management, it is unclear if this access point will change the frequency and access of this area from the public. No information has been provided with this Final Report on plans to manage access to the area or the potential impacts this new access trail may generate to Unnamed Lake from use of the trail by the public for recreational or traditional pursuits. It is important that such materials left in place be assessed, as impacts could compound. The Proponent must provide more clear direction regarding how this trail will be managed and any potential impacts it may have. It is also noted that while the use of Unnamed Lake was part of the emergency undertaking the use of this or other sources have water have not been assessed as part of the scope of the City of Iqaluit's Amendment No. 4 of the Type "A" Water

⁸ NIRB Public Registry ID No.: 323729

Licence. It is unclear what other sources are being investigated for use if this situation should arise in the future.

- 3) There is a requirement for the Proponent to provide a clear scope of project activities and consistency of observations to inform adverse effects and determine appropriate mitigation. The NIRB appreciates that the need for this project was established as constituting an emergency, but would remind the Proponent that to the extent possible other associated activities that are not directly linked to the emergency circumstances should be appropriately permitted, simply because an activity may be associated with the declared emergency, doesn't necessarily make that component appropriate to be assessed and regulated within the scope of the emergency undertaking.
 - a. Through the application process for the 2019 municipal water use activities, it became apparent that additional research and observations were required to understand water resources in the area and plan for additional water withdrawal to meet the needs of the community.
 - b. When receiving the application materials for the 2019 activities, it was understood that a research license was required for the activities proposed, however due to the Proponent withdrawing their application to the Nunavut Planning Commission and NIRB, citing that the activities were already referenced in the application to undertake emergency withdrawal, these research activities were applied for independently and in accordance with the normal processing of such activities.⁹ Research activities, as much as they may inform immediate field activities, were not, strictly speaking required on an emergency basis, and these research activities and observations would continue beyond the immediate draw down activities undertaken under emergency circumstances. The scope of the research activities extended beyond the emergency circumstances and was generally required to provide the baseline information required to better inform water use strategies for the City. As such, the NIRB observes that the scope of the research activities included under the emergency amendment should be limited to the collection of baseline data required to support the emergency undertaking.
 - c. The basis of information for the research license was the Type "A" Water Licence application as a brief reference to samples being taken around the emergency withdrawal activities and did not provide a clear scope of the sampling activities, methodology, equipment, frequency and protocols for sampling. The actual details were provided by the Proponent by separate application, which was subsequently withdrawn by the Proponent to group the activities into the emergency undertaking. While the NIRB supports timely provision of appropriate permits to enable such responsiveness to declared emergencies, the vague references to research in this current year's paperwork should be clearly limited and should not be extended into assessment of the long-term needs of the community and the increasing demand for water as well as the permanence of the City's function in the area. The necessary research should be planned for in advance and should not be limited to a short-term, stop-gap measure to take observations related to an emergency. The on-going, planned research program to support the City's strategic advance planning of water conservation and supply should be undertaken with standard methodology to

⁹ www.nirb.ca/project/125484

inform baseline understanding of the area and then used to plan for the long-term water needs of the community.

The NIRB would like to note that as the need for this project arose due to various factors, some of which were the effects of climate on long term re-supply of the municipal reservoir, these natural pressures as well as the project activities could compound and result in more significant or longer-term effects, especially if low precipitation and drawdown of the surrounding water bodies continue.

Next Steps

After reviewing the Final Report and supporting documents for the “Iqaluit 2019 Emergency Water Supply Project”, the NIRB respectfully submits this report to the Minister’s office with the following summary of recommendations:

- The scope of activities related to emergencies should be clearly defined;
- Activities required for ongoing operations in the area should be appropriately assessed and permitted, not included within the scope of the emergency undertakings; and
- As a result of multiple declared emergencies in the area and based on consistent community need, the City of Iqaluit should undertake or support research into planning for meeting the needs of the community which will continue to grow. References within supporting documents suggest that some research may be taking place already, however the NIRB would require complete details on the scope of current and proposed research activities on water resources and community needs if an impact assessment was required in the future.

In parallel to this process, the NIRB would also like to reference its decision of April 17, 2019 which provided recommendations related to the City of Iqaluit’s “Apex River Drinking Water Supply” project, which continues to apply to the City’s water use activities in the area, but the scope of which was limited to using existing municipal roads and trails. It should be noted that the NIRB has not assessed any additional permanent or semi-permanent infrastructure or trails related to the access of water resources around the City of Iqaluit, especially due to a lack of information in submitted materials referencing these project components. This lack of information has limited the NIRB’s ability to understand the scale and scope of use of additional infrastructure or trails, or provide recommendations, at this time. The NIRB appreciates the efforts put forward by the Minister and regulators to address this situation in a timely manner, and remains prepared to conduct an impact assessment and provide more detailed recommendations to support the City of Iqaluit’s ongoing water use and development of related infrastructure in the area.