

City of Iqaluit Water Licence Amendment and Renewal Nunavut Water Board Technical Meeting / PHC Aug 11-12, 2026



Outline

Licence Scope (current licence, proposed amendments)

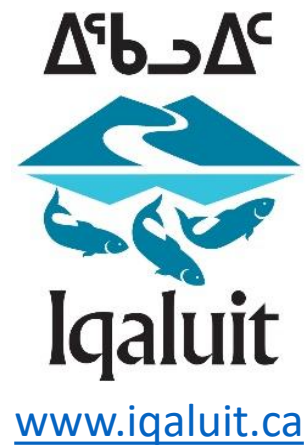
City's responses to technical comments

Compliance assessment

Proposed licence modifications



Licence Scope



Scope of the Current Licence 3AM-IQA1626

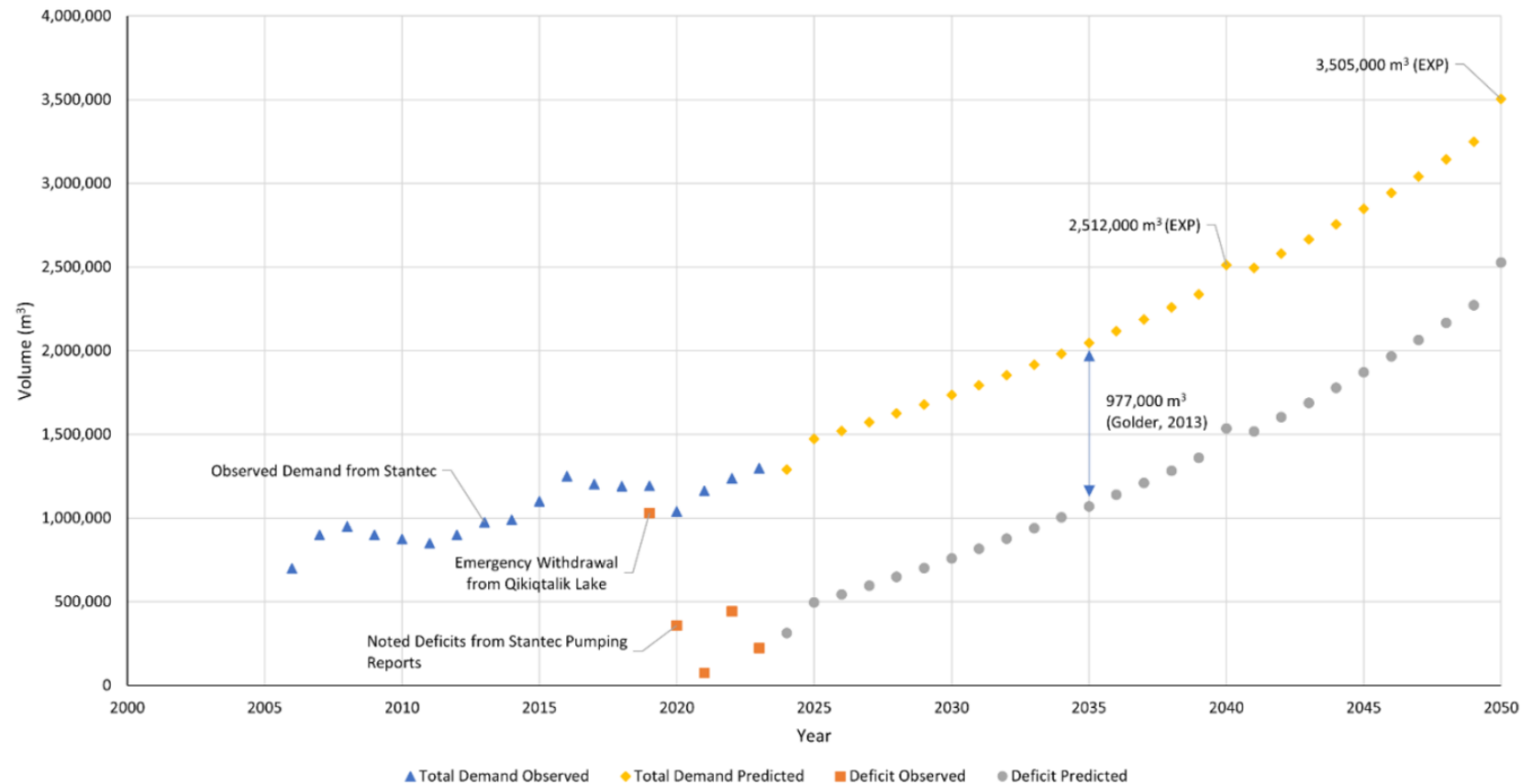
- Issued June 2016; expires Dec 13, 2026
 - Lake Geraldine Reservoir and water treatment plant
 - Wastewater treatment plant; upgraded in 2020
 - Sewage lagoon
 - West 40 landfill
- Amendments
 - Between 2018 and 2022, emergency amendments no. 1, 2, 3, 4, 6 and 7 were granted for supplemental water pumping
 - In 2021, Amendment No. 5 authorized the new North 40 landfill and waste transfer station (constructed, not yet operational)

Proposed Licence Amendments

- Continue operating existing facilities:
 - Water treatment plant and Lake Geraldine reservoir
 - Wastewater treatment plant and sewage lagoon
 - West 40 landfill (to be closed in the next 2-3 years)
 - North 40 landfill and waste transfer station (to be commissioned at the same time)
- Amend to incorporate the City's Long Term Water Plan
 - New water reservoir
 - Pump stations at Lake Qikiqtaalik and Niaqunngut (Apex) River
 - Pipelines

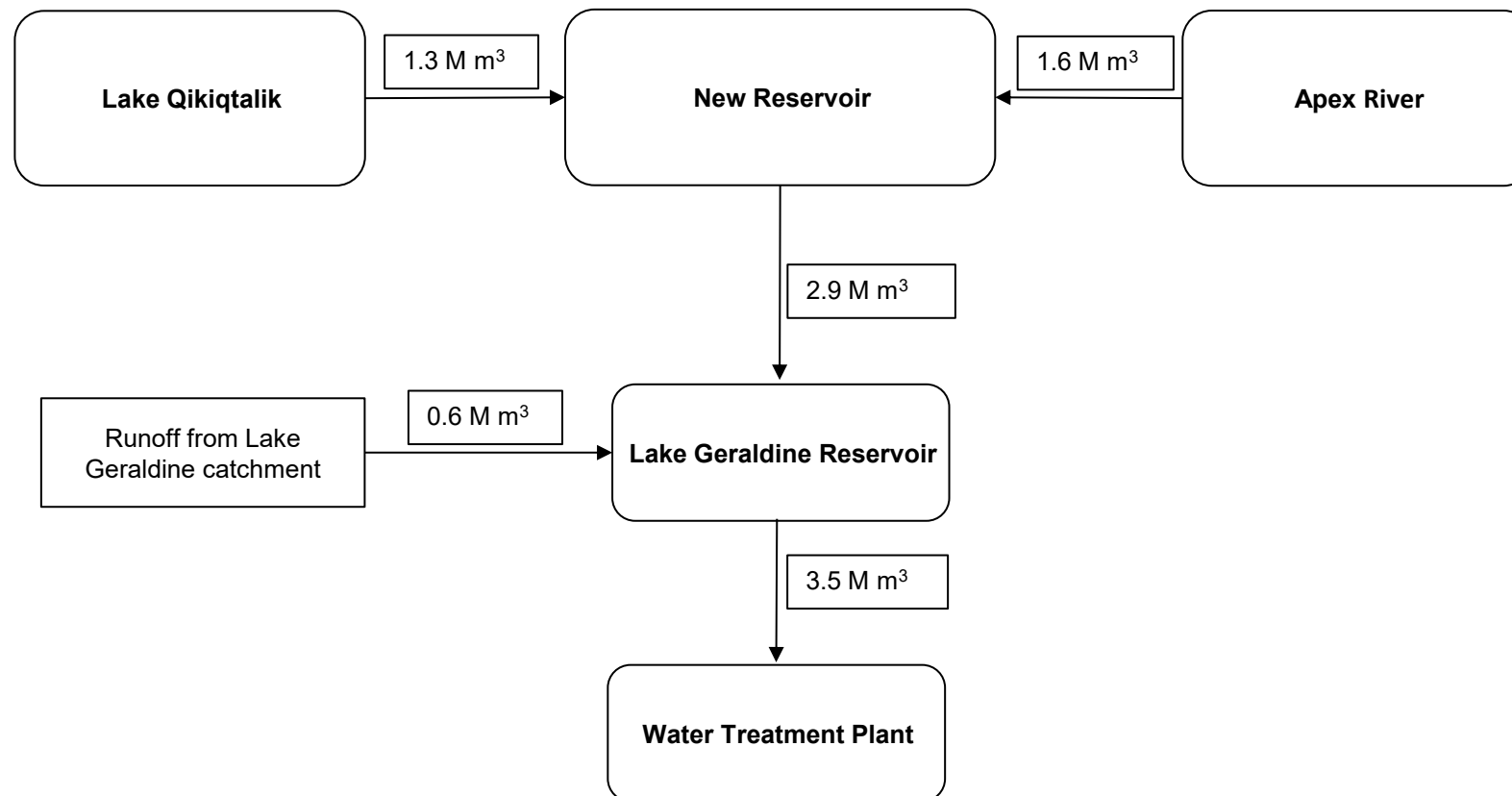
Proposed Licence Amendments

Long Term Water Plan

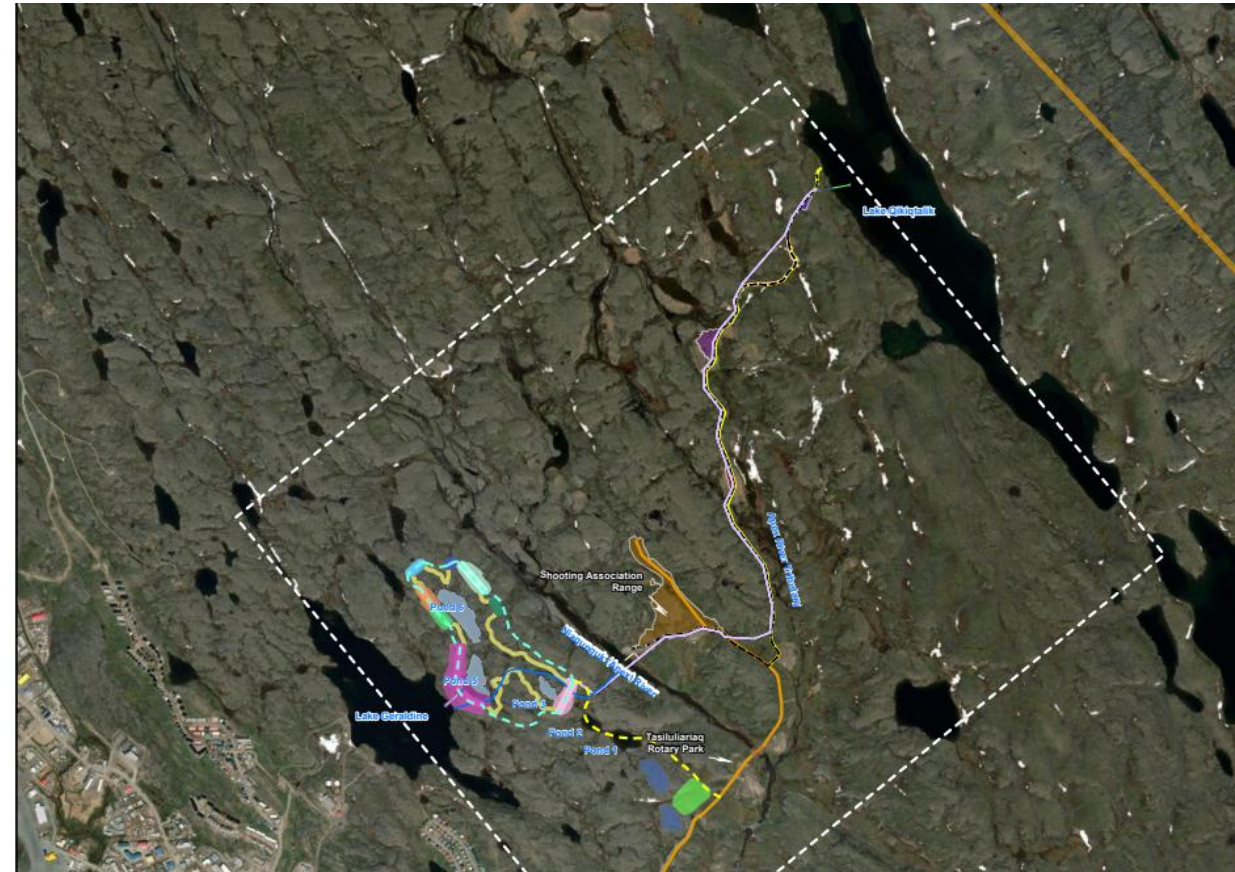


Proposed Licence Amendments

Long Term Water Plan



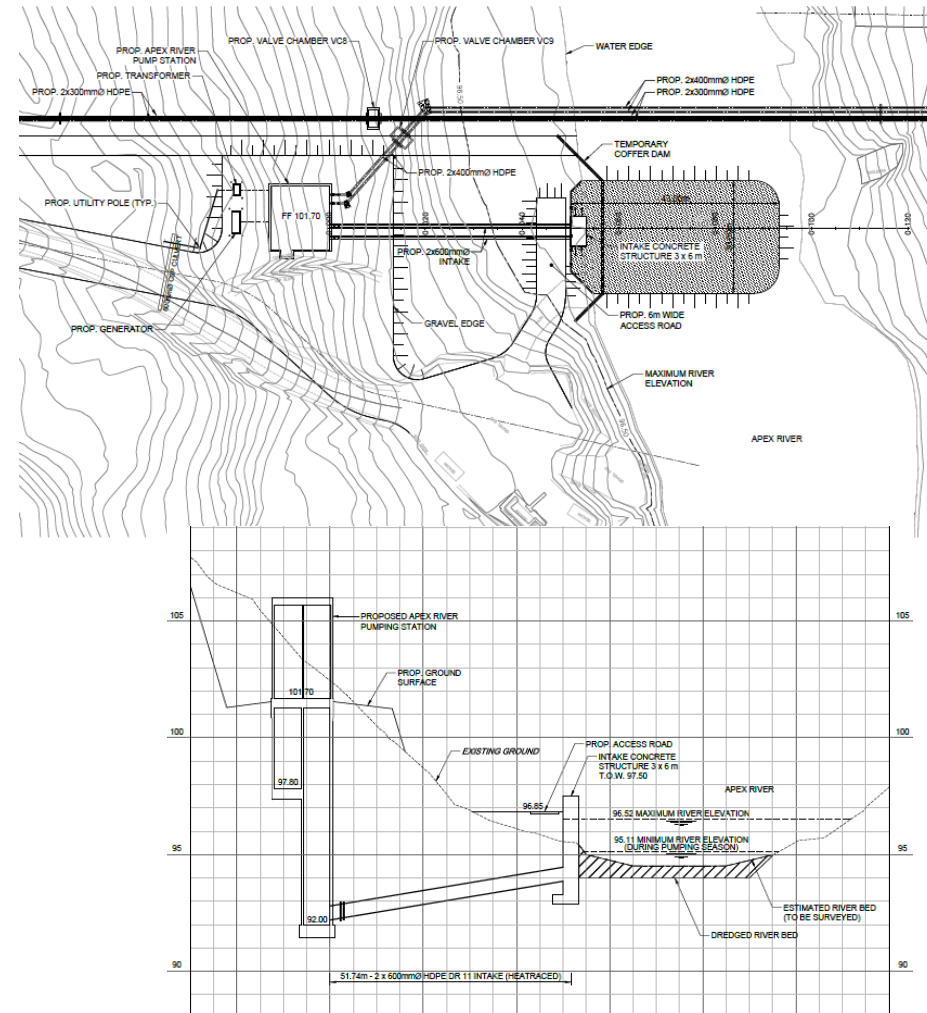
- New reservoir
- Service corridor to Lake Geraldine
- Apex River intake and pumphouse
- Lake Qikiqtaaluk intake and pumphouse



Proposed Licence Amendments

Long Term Water Plan - Construction

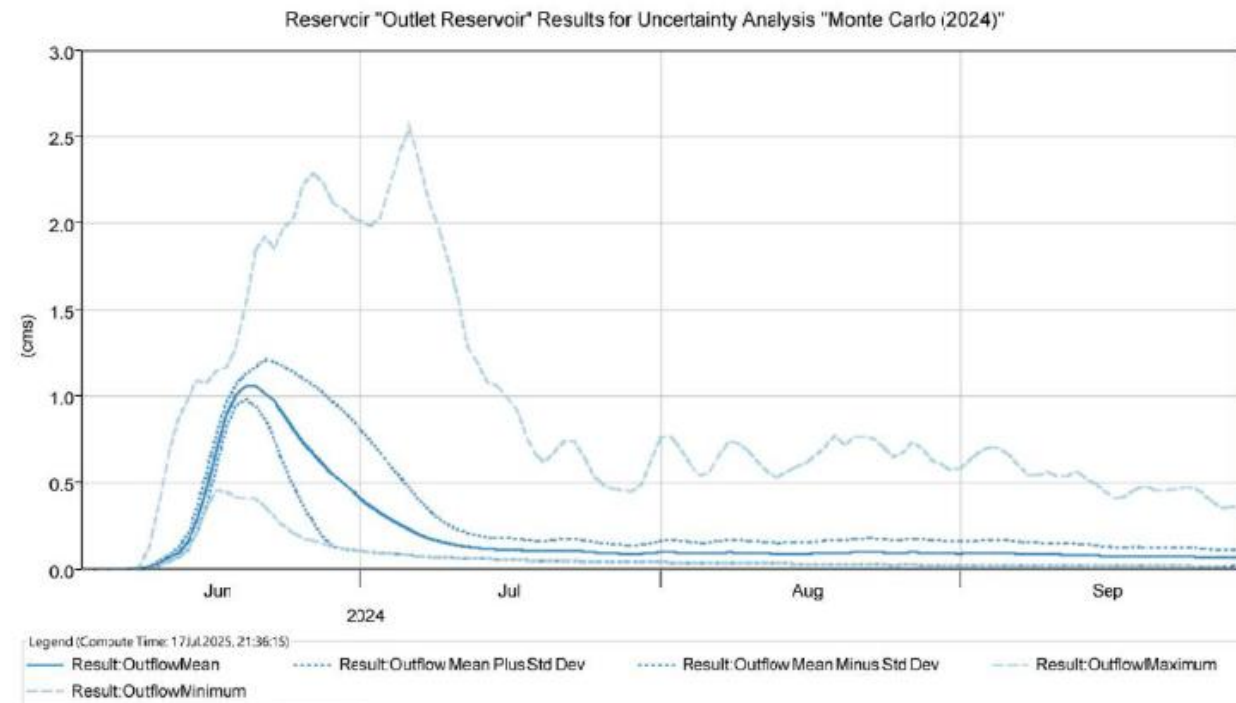
- Construction of Apex River and Lake Qikiqtaaluk intakes and pump stations
 - Wet wells excavated below pump house
 - Dredging (Apex River only) and concrete intake structures within the river/lake
 - Lake Qikiqtaaluk pipeline crossing of Apex River
- Key mitigation measures
 - DFO's Nunavut timing windows
 - Temporary cofferdams
 - Blasting mitigation to meet DFO's recommended 50 kPa overpressure limit
 - Construction monitoring



Proposed Licence Amendments

Long Term Water Plan – Lake Qikiqtalik Water Withdrawal Operation

- Proposed water withdrawal rules
 - Lake water levels governed by outlet elevation
 - Water levels in the summer drop below the outlet elevation
 - Pumping proposed during freshet in June, when there is an abundance of water in the lake and downstream



Proposed Licence Amendments

Long Term Water Plan – Apex River Water Withdrawal Operation

- Proposed water withdrawal rules
 - Only when flows >30% of mean annual discharge (MAD)
 - Pumping rate of 10% of instantaneous discharge when flow of the Apex River is between 0.143 m³/s and 0.156 m³/s
 - Pumping rate of 20% of instantaneous discharge when flow of the Apex River is >0.156 m³/s (33% of MAD)
- September 2022 emergency withdrawals ranged from 18% to 42% (average of 31%), and fish habitat monitoring detected 10% change in key fish habitat parameters



Technical Review Comments



Technical Review Comments

Crown-Indigenous Relations and Northern Affairs Canada

20 multi-part technical review comments

- Surface water quality and dewatering, explosives use and potential impacts to water
 - *City committed to filing a Construction Water Management and Monitoring Plan by technical meeting*
- Potential lead contamination of borrow materials from shooting range
 - *City committed to apply GN's soil quality guidelines for any borrow material reuse; Borrow Area #1 at shooting range will have limited extraction*
- Lake Geraldine intake valve replacement
 - *City will be filing Issued for Construction drawings in the coming weeks*
- Dam safety deficiencies
 - *City provided its dam safety deficiencies action plan*
- Construction of reservoir in permafrost
 - *City provided responses to the technical comments/recommendations*

Technical Review Comments

Crown-Indigenous Relations and Northern Affairs Canada

- Lake Geraldine water balance update (Part D, Item 11)
 - *City provided a PDF copy of its water balance planning tool for Lake Geraldine*
- Various questions regarding hydrology used in water withdrawal estimates
- Climate change lens did not extend to the end of the operational life of the project (2128)
 - *City suggested this isn't necessary given the uncertainties predicting climate change in 100 years*
- Comparison of water quality data to predictions/standards for the annual reports and a section relevant to the NIRB screening
 - *Water licences do not require monitoring the quality of water; there are no predictions of water quality in Lake Geraldine; licences do not require demonstration of compliance with NIRB screening decision conditions*
- Role of sewage lagoon
 - *City confirmed the intended use for storage of untreated sewage and sewage sludge during periods of upset conditions in the wastewater treatment plant; proposed new clause for Part E of licence*

Technical Review Comments

Crown-Indigenous Relations and Northern Affairs Canada

- Seasonal water quality characterization
 - *City replied that the available water quality has been sufficient to confirm its suitability as water sources*
- Construction monitoring – identification of parameters and frequency, baseline conditions
 - *City proposed standard water licence parameters and discharge limits for monitoring runoff during construction (pH, total suspended solids, ammonia), and frequency (prior to discharge)*
 - *City suggested defining baseline conditions not required for construction monitoring*
- Operation and maintenance manual for current and proposed water supply facilities
 - *Manual for existing water treatment plant included in the Application; future manuals to be developed for Long Term Water Plan components (or incorporate into existing manual)*
- Emergency Response / Spill Contingency Plans – single plan for all City operations
 - *The City suggests that it is appropriate to have longer-term emergency response and spill contingency plans separate from those focused on construction of the LTWP, as the latter will need to contain site-specific and temporary information such as spill kit contents and locations, emergency contacts, etc.)*

Technical Review Comments

Crown-Indigenous Relations and Northern Affairs Canada

- Risk-based wastewater effluent monitoring
 - *City's wastewater treatment plant is designed to meet CCME's National Performance Standards; City suggested focus should be on consistently meeting design criteria rather than establishing discharge limits the City cannot currently meet consistently*
- Monitoring plans – single monitoring plan requested, corrections to sewage lagoon plan, landfill monitoring
 - *Corrections to Sewage Lagoon O&M Manual were filed;*
 - *Environmental Monitoring Program and QA/QC Plan is the single monitoring plan for operations*
 - *Construction activities will be governed by Construction Phase Water Management & Monitoring Plan*
 - *Landfill monitoring methods and frequency – City proposed low tech groundwater sampling method; frequency should be summer and fall*
- Environmental investigation requirements
 - *The City's contractor will file its Environmental Protection Plan (and Spill Contingency Plan) prior to construction*

Technical Review Comments

Crown-Indigenous Relations and Northern Affairs Canada

- Updated compliance assessment (information request)
 - *The City filed an updated compliance assessment prior to this technical meeting*

Technical Review Comments

Government of Nunavut

Four multi-part technical comments

- Water monitoring
 - City provided updated Environmental Monitoring & QA/QC Plan
- Spill contingency planning
 - Referred to latest plan in Application; commitment for the City's contractor to provide its spill contingency plan specific to the Long Term Water Plan
- Watercourses – request for details
 - *City will not be providing details on existing crossings; proposes to submit IFC drawings (when available) for Road to Nowhere crossing upgrade in accordance with licence requirements*
- Request for the City to identify the waste/effluent source, discharge criteria, management, and parameters
 - *City believes the current licence, Application, and management plans adequately identify this information*

Technical Review Comments

Fisheries and Oceans Canada

- Three main comments
 - Use of explosives
 - *City reaffirmed commitment to apply DFO's recommended 50 kPa overpressure threshold*
 - Apex River water withdrawal – recommended field monitoring, updated hydraulic modelling, and contingency measures
 - *City referred to monitoring of fish and fish habitat and hydraulic modelling completed at higher withdrawal rates than proposed (18% to 43%; average 31%) that identified impacts within 10% of baseline*
 - Lake Qikiqtalik water withdrawal – recommended field monitoring, updated hydraulic modelling, and contingency measures
 - *City indicated that water withdrawals will target freshet when flows are highest and impacts to lake levels are minimized*

Proposed Licence Changes



Proposed Licence Changes

City of Iqaluit's requests

- Carry over the requirement for a West 40 landfill closure plan
- Remove reference to Solid Waste Management Plan – this was a planning document no longer relevant
- Include requirement in licence to file dam breach analysis prior to filing a construction notification with IFC drawings
- Remove water quality monitoring requirement from Lake Geraldine station IQA-01
- Remove monitoring well 19MW-05 from waste transfer station groundwater monitoring (upgradient)