ᐃᖃᓗᐃᑦ

ᐃᖅᑲᓱᒪ ᓄᓇᕗᑦᑕᐅᔭᖅ ᓄᓇᕗᒻᒥ ᐃᓕᓴᕆᔨ ᑲᑎᓕᔨᓐᓂᑦ ᐊᑲᐹᒋᐊᖅᓯᔪᓕᒫᓂ ᐅᖃᐅᓯᐅᓯᓕᓚᖅᑐᑦ ᐅᖃᓕᖅᐸᒃᑐᓕᕆᓚᒥᒃ ᐃᓗᓯᒪᖅᑐᒃᑐᑦ

City of Iqaluit

Type A Water Licence Amendment and Renewal Application

Demande de modification et de renouvellement d'un permis d'utilisation de l'eau de type A

December 23, 2025

ᐊᐅᓚᑦᑎᔨᓃᙶᖅᑐᖅ ᓇᐃᓈᖅᓯᒪᔪᖅ

ᖃᓄᐃᑦᑑᓂᖓ ᐃ ᐃᒥᕐᒧᑦ ᓚᐃᓴᓐᓯ 3AM-IQA1626 ᒫᓐᓇᐅᔪᖅ ᐱᔪᓐᓇᕐᓂᖃᖅᑎᑦᑎᔪᖅ ᓄᓇᓕᐸᐅᔭᒃᑯᓐᓂᑦ ᐃᖃᓗᓐᓂᑦ ᐊᐅᓚᑕᐅᓂᖏᓐᓄᑦ ᓄᓇᓕᓐᓂᑦ ᐃᒥᖅᑕᕐᕕᖏᑦ ᐊᒻᒪ ᐊᑦᑕᕐᕕᖏᑦ. ᓄᓇᓕᐸᐅᔭᒃᑯᑦ ᓄᑖᒥᒃ ᓚᐃᓴᓐᓯᑖᕈᔪᒪᑦ ᐃᓱᓕᕝᕕᔅᓴᖃᒪᑦ ᔫᓂ 16, 2026–ᒥ.

ᐱᓕᕆᕖᑦ ᐊᐅᓚᐅᑕᐅᔪᑦ ᐆᒪ ᓚᐃᓴᓐᓯᐅᑉ ᐃᓚᖃᖅᑐᑦ ᐅᑯᓂᖓ:

- ᐃᒥᖅᑕᕐᕕᐅᖏᓇᕐᓂᐊᓕᕐᓗᓂ, ᐱᖃᓯᐅᑎᓗᒍ ᐃᖃᓗᐃᑦ ᑕᓯᖓᓂ ᐃᒥᖅᑕᕐᕕᒃ ᐊᒻᒪ ᐃᒥᕐᒧᑦ ᓴᓗᒻᒪᖅᓴᐃᕕᒃ
- ᐱᖓᓇᖅ 40 ᐊᑦᑕᕐᕕᒃ
- ᐅᐊᓇᖅ 40 ᐊᑦᑕᕐᕕᒃ ᐊᒻᒪ ᐊᑦᑕᑯᓂᒃ ᓄᑦᑎᓇᕕᒃ, ᐃᓚᔭᐅᔪᖅ ᒫᓐᓇᐅᔪᖅ ᓚᐃᓴᓐᓯᒧᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᓪᓗᓂ 2021-ᒥ
- ᑭᓈᓗᖃᕐᕕᒻᒧᑦ ᓴᓗᒻᒪᕐᓴᐃᕕᒃ, ᕿᓈᓗᖃᕐᕕᒃ ᐊᒻᒪ ᒪᕐᕋᓂᒃ ᐊᐅᓚᑦᑎᕕᒃ.
- ᐃᒥᖅᑕᐅᕐᕕᐅᑲᐃᓇᖅᑐᖅ ᐃᒥᖅᑕᕐᕕᐅᖏᓇᓕᕐᓂᐊᖅᑐᒧᑦ.

ᐊᑯᓐᓂᖓᓂ 2018 ᐊᒻᒪ 2022, ᓄᓇᓕᐸᐅᔭᒃᑯᑦ ᑐᒃᓯᕋᓚᐅᖅᑐᑦ ᖃᔅᓯᑲᓪᓚᓐᓂᒃᑭᐊᖅ ᑐᐊᕕᕐᓇᖅᑐᓂᒃ ᐋᖅᑭᒋᐊᖅᓯᔪᒪᓪᓗᑎᒃ ᓚᐃᓴᓐᓯᒋᔭᒥᓂ ᐃᒥᖅᑕᖃᑦᑕᕈᒪᓪᓗᑎᒃ ᓄᑖᓂᒃ ᐃᒥᖅᑕᕐᕕᓂᒃ ᐊᖑᒻᒪᑎᔪᒪᓪᓗᑎᑦ ᐊᒥᓱᕈᖅᐸᓕᐊᑐᐃᓐᓇᕐᓂᖏᓐᓄᑦ ᐃᒥᖃᖅᑕᐅᔭᕆᐊᓖᑦ. ᓄᓇᓕᐸᐅᔭᒃᑯᑦ ᒫᓐᓇᕈᓘᓚᐅᖅᑐᖅ ᓴᓇᓚᐅᖅᑕᖓᑦ ᐊᑯᓂᐅᔪᒃᑯᑦ ᐃᒪᖃᖅᑎᑦᑎᓂᕐᒧᑦ ᐱᓕᕆᐊᖅ ᒪᓕᓐᓂᐊᖅᑐᖅ ᓄᓇᓕᐸᐅᔭᒃᑯᑦ ᐱᕈᖅᐸᓪᓕᐊᖏᓇᕐᓂᖓᓄᑦ ᐊᕐᕌᒍᓄᑦ 100-ᓄᑦ ᑕᐃᒪᐃᒻᒪᑦ, ᑖᓐᓇ ᑐᒃᓯᕋᐅᑦ ᓄᑖᙳᓇᐊᖅᑎᑦᑎᓇᓱᐊᖅᑐᖅ ᒫᓐᓇᐅᔪᖅ ᓚᐃᓴᓐᓯᒥᒃ ᐱᖃᓯᐅᔾᔨᖁᓪᓗᒍ ᖁᓛᓂ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ ᐃᒪᕐᒥᒃ ᐊᑐᖅᑕᐅᔭᕆᐊᖃᖅᐸᑦᑐᓂᒃ ᐊᒻᒪ ᐊᑦᑕᕐᕕᓕᓇᕕᓂᒃ ᐊᒻᒪᓗᑦᑕᐅ ᐋᖅᑭᒋᐊᖅᑕᐅᖁᓪᓗᒍ ᓚᐃᓴᓐᓯᒥᒃ ᐃᓚᓕᐅᔾᔭᐅᓂᐊᕐᓗᓂ ᐊᑯᓂᐅᔪᒃᑯᑦ ᐃᒪᖃᖅᑎᑦᑎᓂᕐᒧᑦ ᐱᓕᕆᐊᒥᒃ.

ᐊᑯᓂᐅᔪᒃᑯᑦ ᐃᒪᖃᖅᑎᑦᑎᓂᕐᒧᑦ ᐱᓕᕆᐊᖅ ᐱᖃᓯᐅᔾᔨᓯᒪᔪᖅ ᓴᓇᔭᐅᓂᖏᓂ ᐊᒻᒪ ᐊᐅᓚᑕᐅᓂᖏᓐᓂ ᐅᑯᐊ ᐃᒥᖅᑕᕐᕕᐅᖏᓇᕐᕋᔭᖅᑐᒧᑦ ᒪᑭᒪᔾᔪᑏᑦ.

- ᐃᒥᖅᑕᕐᕖᑦ ᓂᐊᖁᓐᖒᒃ (ᓂᐊᖁᙴ) ᑰᖓᓂ ᐊᒻᒪᓗ ᕿᑭᖅᑕᓕᒃ ᑕᓯᖓᓂ, ᐊᒻᒪᓗ ᒥᑦᓗᐊᕈᑎᑦ ᐊᑐᓂ ᐃᒥᖅᑕᕐᕖᑦ ᓴᓂᐊᓂ
- ᓄᑖᖅ ᐃᒥᖅᑕᕐᕕᒃ ᐃᓂᖃᖅᑐᖅ ᐅᐊᓐᓇᖓᓂ ᐃᖃᓗᐃᑦ ᑕᓯᖓᓂ ᐃᒥᖅᑕᕐᕕᒻᒥ
- ᓯᓪᓗᓛᑦ ᐃᒪᕐᒥᒃ ᓄᑦᑎᓇᒋᐊᖃᕐᓂᐊᖅᑐᑦ ᒪᖀᓐᓄᑦ ᓄᑖᓄᑦ ᐃᒥᖅᑕᕐᕖᓐᓂᒃ ᑕᐃᑯᖓ ᓄᑖᒧᑦ ᐃᒥᖅᑕᕐᕕᒧᑦ.
- ᓯᓪᓗᓕᒃ ᐊᒻᒪ ᐃᒥᖅᑕᕐᓂᖅ ᓄᑖᒥᒃ ᐃᒥᖅᑕᕐᕕᒻᒥ ᑕᐃᑯᖓ ᐃᖃᓗᐃᑦ ᑕᓯᖓᓄᑦ.
- ᓯᓚ ᖃᓄᐃᒃᑲᓗᐊᖅᐸᑦ ᐊᖅᑯᑎᑦ ᐊᑐᐃᓐᓇᐅᓂᐊᖅᑐᑦ ᐊᑯᓐᓂᖓᓂ ᓄᑖᑦ ᐃᒥᖅᑕᕐᕖᑦ.

ᐃᓚᒋᐊᕈᑕᐅᔪᑦ ᐃᒪᐃᑦ ᐊᒻᒪᓗ ᑐᖅᑯᐃᕕᐅᔪᓄᑦ ᐃᓚᒋᐊᕈᑕᐅᓂᐊᖅᑐᑦ ᒫᓐᓇᐅᔪᖅ ᐃᒪᖃᖅᑎᑦᑎᓂᐅᔪᓂᒃ ᐊᒻᒪᓗ ᐃᒪᕐᒧᑦ ᓴᓗᒻᒪᖅᓴᐃᕕᐅᔪᓄᑦ. ᑕᒪᕐᒥᒃ ᑐᒃᓯᕋᐅᑕᐅᓯᒪᔪᑦ ᐱᓕᕆᕖᑦ ᐃᓂᖃᖅᑐᑦ ᓄᓇᓕᐸᐅᔭᒃᑯᑦ ᓄᓇᖏᑦ ᑭᓪᓕᖏᓐᓂ.

ᓄᓇᓕᐸᐅᔭᒃᑯᑦ ᓴᓇᒍᒫᕐᓂᐊᖅᑐᑦ ᓄᑖᓂᒃ ᐱᓕᕆᕕᓂᒃ ᕿᑎᐊᓂ 2026 ᐊᒻᒪ ᐊᒃᑑᕝᕙ 2029–ᒥ. ᐱᕙᓪᓕᐊᑎᑦᑎᓂᐊᖅᑐᑦ ᖃᔅᓯᒐᓚᓂᒃ ᐅᔭᕋᕐᓂᐊᕕᓂᒃ, ᐊᐅᓚᑕᐅᓂᖏᓂᒃ ᐅᖁᒪᐃᑦᑐᓂᒃ ᐱᖁᑎᓂᒃ, ᐊᒻᒪᓗ ᑐᖅᑯᐃᕕᐅᓂᐊᖅᑐᒥᒃ ᐊᒻᒪ ᐊᑐᖅᑕᐅᓂᖏᓐᓄᑦ ᐅᖅᓱᐊᓗᐃᑦ, ᖃᖅᑕᔫᓂᒃ, ᐊᒻᒪᓗ ᐅᖅᓱᐊᓗᓐᓂᒃ ᐊᒻᒪ ᐅᖅᓱᓴᓂᒃ ᐱᖁᑎᓄᑦ ᐋᖅᑭᐅᒪᑎᑦᑎᔾᔪᑎᒃᓴᓄᑦ. ᐃᖅᑲᓇᐃᔭᖅᑎᖃᕆᐊᖃᖅᑐᒋᔭᐅᓂᐊᖅᑐᑦ 65-ᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᓂᒃ, ᐊᒻᒪᓗ ᐃᖅᑲᓇᐃᔭᖅᐲᑦ ᑐᔪᕐᒥᑎᑕᐅᓂᐊᖅᑐᑦ ᒫᓐᓇᐅᔪᖅ ᑐᔪᕐᒥᕕᐅᔪᓂᒃ ᓄᓇᓕᐸᐅᔭᐅᑉ ᐃᓗᐊᓂ.

ᖃᓄᐃᓕᒋᑦ ᐱᓕᕆᔨᒃᑯᑦ ᐊᐅᓚᓂᖅᑎᓚᐅᖏᓐᓂᖅᓂ, ᑲᔪᓯᕆᐊᖃᖅᖢᓂᐊᖅᑐᑦ ᐊᐅᓚᑕᐅᖏᓐᓂᓕᕆᓂᑦ ᐃᓐᓇᐅᑉᑯᑦ ᐱᓕᕆᔨᐅᑲᐃᓐᓇᖅᑐᑦ ᑎᒍᑐᐊᕐᓇᖅᑐᑦ ᓂᐊᖃᓄᖅᑐᒃ (ᓂᐊᖃᓄᖅᑐᒃ) ᑯᓘᓂᒃ, ᑕᐃᒪᒃ ᐱᔪᓇᖅᑎᑕᐅᓚᕐᖓᓂᒪᓕᒐ ᑐᐊᕕᖃᖅᑐᒃᑯᑦ ᐊᒋᖀᑎᐊᕈᑎᒍᒪᔪᑦ.

ᐊᑯᓂᐅᔪᒃᑯᑦ ᐃᒪᖃᖅᑎᕋᑎᓂᒧᑦ ᐱᓕᕆᐊᖅ ᓄᓇᒥᒃ ᐊᑐᖃᓂᒧᑦ <ᖃᓇᐃᓂᒧᑦ ᒪᓕᔪᓕᕆᐊᖃᕐᓗᒪᓘᑦ ᖃᑎᒌᖃᓕᕆᔨᖅᑐᖅ ᓄᓇᕗᒻᒥ <ᖃᓇᐃᔨᓄᑦ ᐃ>ᑭ 2025-ᒥ (NPC-ᑯᑦ ᑎᑎᖅᑲᖃᑎᖏᓐᓂᑦ ᓇᓴᐅᑎᓕᓂᒃ 150798). ᐃᑲᔪᑕᐅᓂᐊᖃᓐᓇᓂ ᐋᖅᑭᑦᑕᐅᔪᓕᔪᑦ ᑎᑭᐅᒪᖃᑯᓕᓂᑦ, ᓄᓇᓕᓪᓕᐅᕆᐃᐃᑦ ᐃᖃᓗᓐᓄᓂ ᑐᕐᔪᕐᖃᖅᑐᑦ ᓄᓇᕗᒻᒥ ᐊᑐᖃᖅᑕᐅᓂᒧᑦ ᖃᑎᒌᖃᕐᓂᔅᓴᑦ ᑲᑎᒪᓕᕐᓂᓐᓂ ᐊᖏᑎᓕᓂᒧᑦ ᖃᑲᐅᔪᕐᖃᖅᖢᓂᐊᖅᑐᑦ ᐊᑕᐅᑎᖅᑯᑦ ᓄᓇᕗᒻᒥ ᐃᒪᓕᓚᓂᒧᑦ ᑲᑎᒪᓕᕐᓂᓐᓂ ᐱᓕᕆᐊᖏᑎᓐᓄᑦᓴᐃ ᑕᔪᔪᒥᖏᓪ ᐃᒪᖃᑦ ᓪᓚᐃᖅᔪᑦ ᑐᔪᕐᖃᐅᑎᒥᖅ ᑐᑭᑎᕆᐊᕐᓇᖅᑐᖅ.

Executive Summary

Type A Water Licence 3AM-IQA1626 currently authorizes the City of Iqaluit to operate its municipal water supply and waste management facilities. The City is seeking to renew the licence as it expires on June 16, 2026.

Facilities operated under the current licence include:

- Permanent water supply infrastructure including the Lake Geraldine Reservoir and water treatment plant
- West 40 Landfill
- North 40 Landfill and Waste Transfer Station, added to the current licence under an amendment in 2021
- Sewage treatment plant, sewage lagoon and sludge management facility
- Temporary water supply facilities to supplement the permanent water supply

Between 2018 and 2022, the City sought several emergency amendments to the current licence to withdraw water from new sources to meet the City's growing water demand. The City's recently developed Long Term Water Supply Project will meet the City's continued growth for the next 100 years. Thus, this application seeks to renew the current licence to include the above-listed water use and waste management facilities as well as to amend the licence to incorporate the Long Term Water Supply Project.

The Long Term Water Supply Project includes the construction and operation of the following permanent raw water supply infrastructure:

- Water intakes in the Niaqunngut (Apex) River and Lake Qikiqtalik, and pumphouses adjacent to each intake
- A new reservoir located immediately east of Lake Geraldine Reservoir
- Pipelines to convey raw water from the two new water sources to the new reservoir
- A pipeline and outfall to feed water from the new reservoir to Lake Geraldine
- All weather access roads between the new facilities

The additional water supply and storage will add to the existing water supply and water treatment facilities. All the proposed facilities are situated inside the City's boundaries.

The City plans to construct new facilities over the period of mid-2026 to October 2029. It will require the development of several quarries, the operation of heavy equipment, and the storage and use of fuel, explosives, and lubricating oils and greases for equipment maintenance. A workforce of approximately 65 personnel is expected, and workers will be housed in existing accommodation within the city.

Until the above facilities are operational, it will be necessary to continue to operate existing temporary facilities to provide pumping water from Niaqunngut (Apex) River, as previously authorized under an emergency amendment.

The Long Term Water Supply Project was subject to a land use planning conformity review by the Nunavut Planning Commission in April 2025 (NPC File No. 150798). To help meet the schedule, the City of Iqaluit is requesting the Nunavut Impact Review Board to conduct its environmental screening concurrently with the Nunavut Water Board's processing of this water licence application in a coordinated manner.

Résumé

Le permis de type A – 3AM-IQA1626 – permet actuellement à la Ville d'Iqaluit d'exploiter ses installations d'approvisionnement en eau et de gestion de déchets. La Ville souhaite le renouvellement du permis qui arrive à échéance le 16 juin 2026.

Les installations exploitées en vertu du permis actuel incluent :

- L'infrastructure d'approvisionnement en eau permanente, y compris le réservoir du lac Geraldine, et l'usine de traitement de l'eau
- Le site d'enfouissement West 40
- Le site d'enfouissement North 40 et la station de transfert de déchets, ajoutés au permis actuel en vertu d'un amendement en 2021
- L'usine de traitement des eaux usées et l'installation de gestion du bassin d'eaux usées et des boues
- Les installations d'approvisionnement en eau temporaire pour compléter l'approvisionnement en eau permanent

Entre 2018 et 2022, la Ville a demandé plusieurs modifications d'urgence à son permis actuel pour puiser de l'eau à partir de nouvelles sources afin de répondre à sa demande croissante en eau. Le projet d'approvisionnement en eau à long terme récemment élaboré par la Ville assurera sa croissance au cours des 100 prochaines années. Ainsi, cette demande vise à renouveler le permis actuel en incluant les installations d'approvisionnement en eau et de gestion de déchets ci-dessus, de même qu'à modifier le permis pour incorporer le projet d'approvisionnement en eau à long terme.

Le projet d'approvisionnement en eau à long terme prévoit la construction et l'exploitation de l'infrastructure suivante d'approvisionnement en eau non traitée permanente :

- Des prises d'eau dans la rivière Niaqunngut (Apex) et le lac Qikiqtalik, et des stations de pompage adjacentes à chaque prise d'eau
- Un nouveau réservoir situé juste à l'est du réservoir du lac Geraldine
- Des conduites destinées à acheminer l'eau non traitée depuis les deux nouvelles sources d'approvisionnement vers le nouveau réservoir
- Une conduite et un exutoire pour acheminer l'eau à partir du nouveau réservoir du lac Geraldine
- Des chemins d'accès entre les nouvelles installations accessibles toute l'année

L'approvisionnement et le stockage supplémentaires en eau viendront s'ajouter aux installations actuelles d'approvisionnement et de traitement de l'eau. Toutes les installations proposées sont situées à l'intérieur des limites de la ville.

La Ville prévoit construire les nouvelles installations entre la seconde partie de 2026 et octobre 2029. Ces travaux exigeront l'aménagement de plusieurs carrières, l'opération de machinerie lourde et le stockage et l'utilisation de combustible, d'explosifs, d'huiles de graissage et de graisses lubrifiantes pour l'entretien de l'équipement. Une main-d'œuvre composée d'environ 65 personnes est envisagée; les travailleur·euse·s seront logé·e·s dans les logements existants de la ville.

En attendant que les installations ci-dessus soient opérationnelles, les installations temporaires devront continuer à être exploitées pour pomper l'eau de la rivière Niaqunngut (Apex), conformément à l'autorisation obtenue dans le cadre d'une modification d'urgen ce.

Le projet d'approvisionnement en eau à long terme a fait l'objet d'un examen de conformité de la planification de l'utilisation des terres par la Commission d'aménagement du Nunavut en avril 2025 (dossier nº 150798 de la CAN). Dans le but de respecter l'échéancier, la Ville d'Iqaluit demande à la Commission du Nunavut chargée de l'examen des répercussions de réaliser son examen environnemental préalable parallèlement au traitement de cette demande de permis d'eau par l'Office des eaux du Nunavut, dans un effort concerté.

Contents

Tables

Figures

1.0 Introduction

1.1. Overview

Type A Water Licence No. 3AM-IQA1626 authorizes the City of Iqaluit to use water and deposit waste in support of municipal undertakings as classified under Schedule 1 of the Nunavut Water Regulations. Licence No. 3AM-IQA1626 was issued on June 17, 2016, and expires June 16, 2026.

The City of Iqaluit is submitting this Application to the Nunavut Water Board (NWB) to renew this Licence for a period of 20 years, until ~June 2046. A completed NWB application form is presented as Attachment 1. The main components subject to the new water licence (including additions to be incorporated as an amendment in the licence) are shown on Figure 1.1.

An amendment is also requested to incorporate the City's Long-Term Water Project (LTWP). The current Licence has been amended seven times since 2018 to temporarily allow the City of Iqaluit to draw additional water because the Lake Geraline Reservoir cannot meet the City's current and growing demand. The City has been rapidly developing into a regional center for the territory, which has led to a rapid growth in population. The City of Iqaluit's population was 7,429 in 2021 (Government of Canada, 2025), and the forecasted growth rate is 3% - 4% annually (Arcadis Canada Inc., 2025a).

Water Licence No. 3AM-IQA1626 authorized the City to withdraw 1,100,000 m^3/year of water from the Lake Geraldine Reservoir. This was increased to 2,000,000 m^3/year in the latest amendment to the licence (Amendment #7; NWB, 2022), which expires when the current Licence expires on June 16, 2026. A study by EXP Services Inc. (2020) predict that the City's annual water demand will increase to about 1,500,000 m^3 by 2025 and will reach about 2,500,000 m^3 by 2040 and 3,500,000 m^3 by 2050 (Figure 1.2).

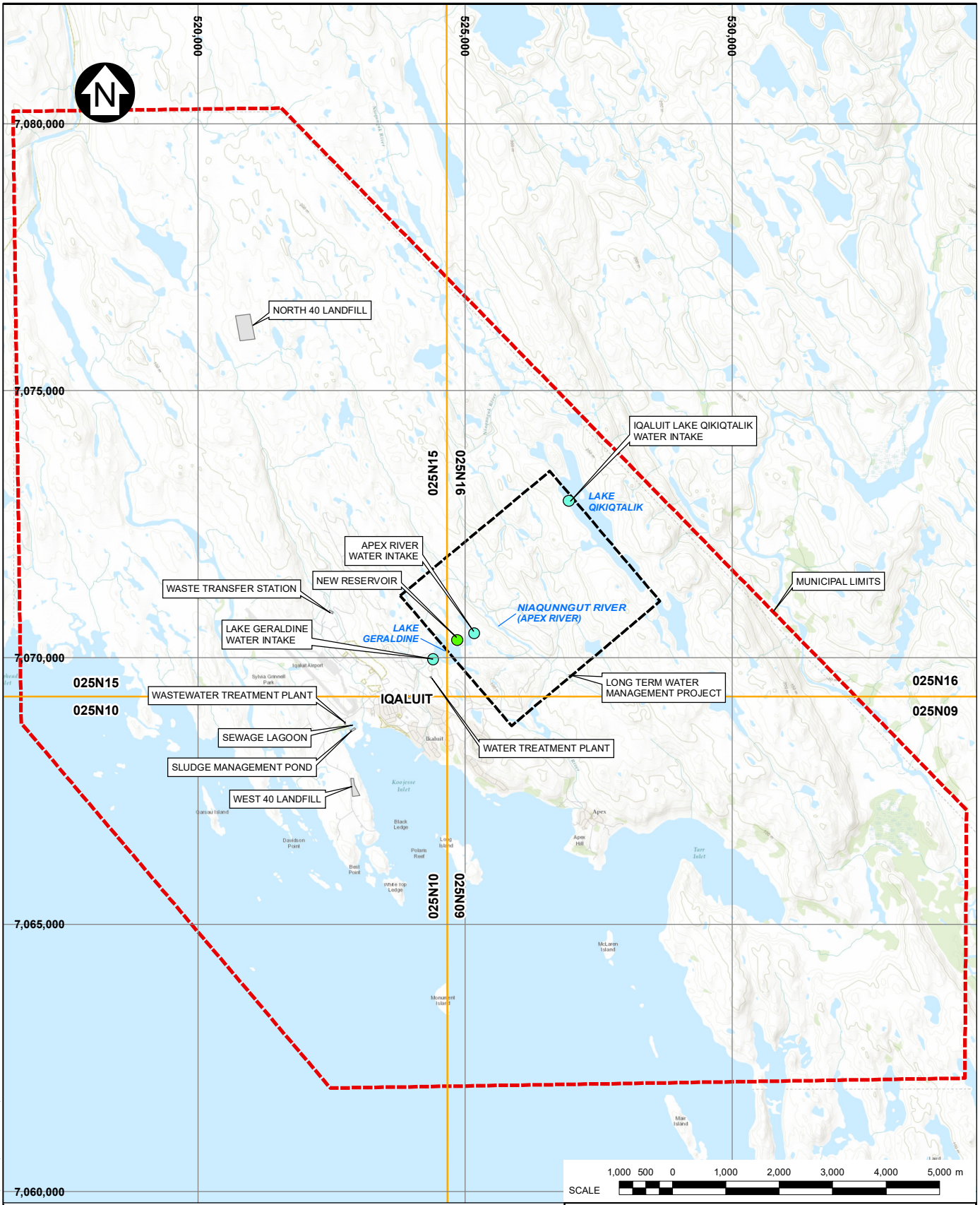
This application provides a description of the City's LTWP, so that the NWB can consider incorporating the LTWP in an amendment to the current Licence.

1.2. Applicant

The Applicant/Licensee is the City of Iqaluit, and the primary point of contact is:

Kevin Kerr, P.Eng.
Director of Engineering and Capital Projects
City of Iqaluit
902 698-7872 / 867 979-5636
Email: k.kerr@iqaluit.ca

The City of Iqaluit became a City on April 19, 2001 (https://iqaluit.ca/visitors/explore-iqaluit/history).



LEGEND:

- NEW RESERVOIR
- WATER INTAKE
- MUNICIPAL LIMITS
- FACILITY
- LONG TERM WATER MANAGEMENT PROJECT
- 1:50,000 SCALE NTS MAPSHEET

NOTES:

1. COORDINATE GRID IS IN METRES. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N.
2. BASE MAP/IMAGERY: © ESRI AND DATA (ONLINE) SERVICE LAYERS (2025). REDLANDS, CA: ENVIRONMENTAL SYSTEM RESEARCH INSTITUTE. ALL RIGHTS RESERVED.
3. NTS: NATIONAL TOPOGRAPHIC SYSTEM.

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
A	18DEC'25	ISSUED WITH REPORT	RAC	BAC	RAC

CITY OF IQALUIT

TYPE A WATER LICENCE

MUNICIPAL FACILITIES SUBJECT TO WATER LICENCE

Knight Piésold CONSULTING

P/A NO. NB102-537/1

REF NO. 1

FIGURE 1.1

REV A

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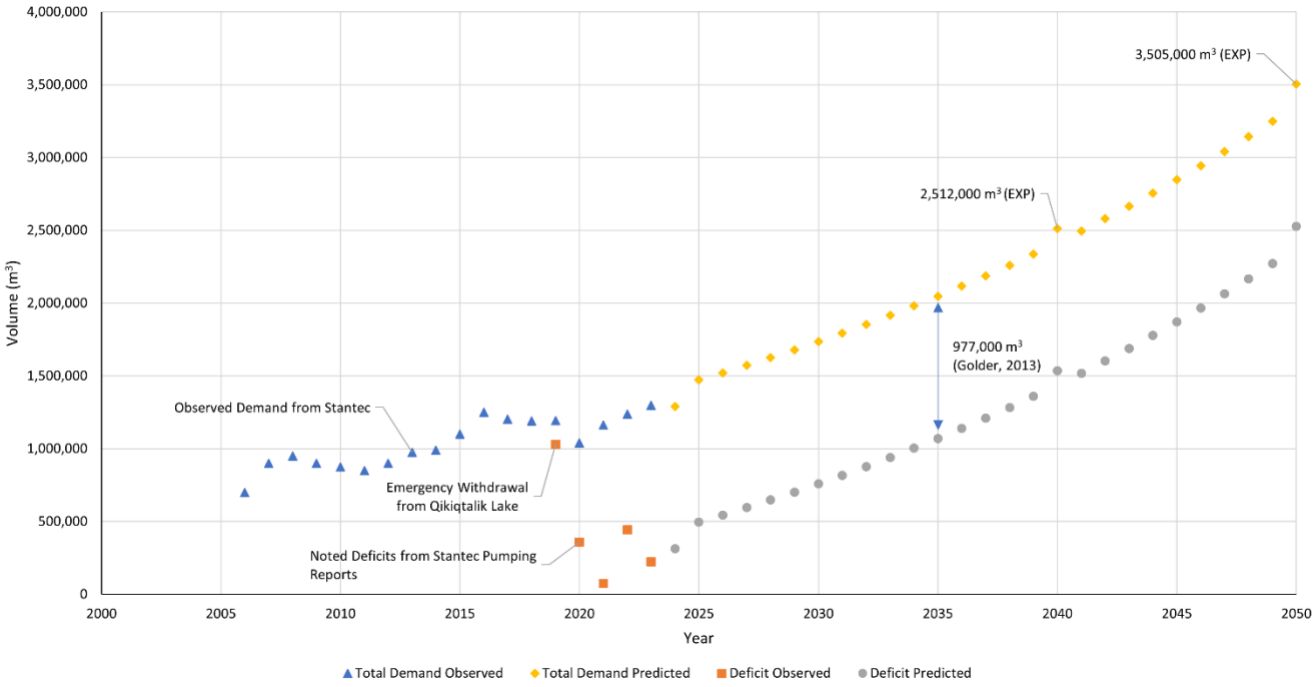


Figure 1.2 Projected City of Iqaluit Water Demand to 2050 (from Tetra Tech, 2025a)

1.3. Licence Amendment History

The current Water Licence was amended seven times between 2018 and 2022 to temporarily authorize the City of Iqaluit to obtain additional water from several water sources on an emergency basis, as summarized in Table 1.1.

Amendment No. 5 obtained in 2021 also approved the construction and operation of new solid waste facilities, including the New North Landfill, a waste transfer station and other associated infrastructure. The latest (Amendment No. 7) authorize the City of Iqaluit to obtain additional water from several water sources on an emergency basis until the licence expires on June 16, 2026.

1.4. Regulatory Status

The Nunavut Planning Commission (NPC) completed its review of the LTWP component of this Application and issued its determination on April 25, 2025, determining that the project proposal is outside the area of an applicable land use plan (NPC, 2025). NPC also determined that the LTWP represented a significant modification to the project and referred the project proposal to the Nunavut Impact Review Board (NIRB). The NPC determination is presented as Attachment 2.

The LTWP portion of the Application is subject to a NIRB screening, and the corresponding NIRB submission will be made concurrent with the submission of this Application to the NWB.

A request for review was submitted to Fisheries and Oceans Canada (DFO) for the proposed intake and water extraction from the Niaqunguk (Apex) River, and the resultant advice from the DFO is included as Attachment 3.

Table 1.1 Amendment History of Water Licence 3AM-IQA1626

Amendment No.	Reason	Issue Date
	Issuance of original licence	June 17, 2016
1	**Temporary water withdrawal**: The temporary withdrawal (in August – October 2018) of Water from the Niaqunguk River (Apex River) watershed to replenish Lake Geraldine Reservoir for the winter of 2018-2019.	Aug 14, 2018
2	**Temporary water withdrawal**: The temporary withdrawal (August 2019 – October 2019) of up to 500,000 m^3 of Water from the Niaqunguk River (Apex River) to replenish Lake Geraldine Reservoir for the winter of 2019-2020; and the increase in the total amount allowed to be withdrawn from Lake Geraldine, from 1,100,000 m^3/year to 2,000,000 m^3/year.	July 22, 2019
3	**Temporary water withdrawal**: The temporary withdrawal (August 2019 – October 2019) of up to 700,000 m^3 of Water from the large unnamed source water lake (Unnamed Lake) and transferring it to the Niaqunguk River (Apex River), and/or subsequently withdrawing up to 700,000 m^3 of water from the Apex River, and transferring it to Lake Geraldine Reservoir for storage over the winter of 2019-2020; and the increase in the total amount allowed to be withdrawn from Lake Geraldine, from 1,100,000 m^3/year to 2,000,000 m^3/year.	Aug 2, 2019
4	**Temporary water withdrawal**: 2,000,000 m^3 annually from Lake Geraldine Reservoir, 500,000 m^3 annually from Niaqunguk River (Apex River) for transfer to Lake Geraldine Reservoir	Sept 4, 2019
5	**Temporary water withdrawal**: 2,000,000 m^3 annually from Lake Geraldine Reservoir, 500,000 m^3 from Niaqunguk River (Apex River) for transfer to Lake Geraldine Reservoir, and 2,500 m^3 annually from Imiqtarviviniq (Dead Dog Lake). **New landfill:** Construction and operation of the new solid waste management facilities, including the Waste Transfer Station, the New North Landfill, and associated infrastructure.	Mar 15, 2021
6	**Temporary water withdrawal**: 2,000,000 m^3 annually from Lake Geraldine Reservoir, 500,000 m^3 from Niaqunguk River (Apex River) for transfer to Lake Geraldine Reservoir, 2,500 m^3 annually from Imiqtarviviniq (Dead Dog Lake), and 350 m^3 daily from Sylvia Grinnell River during state of emergency.	Oct 15, 2021
7	**Temporary water withdrawal**: 2,000,000 m^3 annually from Lake Geraldine Reservoir, 900,000 m^3 in 2022 from Niaqunguk River (Apex River) for transfer to Lake Geraldine Reservoir, 2,500 m^3 annually from Imiqtarviviniq (Dead Dog Lake), and 600,000 m^3 in 2022 from large unnamed source water lake (unnamed lake) to the Niaqunguk River (Apex River).	Aug 22, 2022

1.5. Compliance Assessment

The following documents have been appended to assess the City's compliance with the current licence:

- Attachment 7a – 2024 Annual Report
- Attachment 7b – July 2025 Inspection Report
- Attachment 7c – City's response to 2024 Inspection Report

1.6. Contents of this Application

The following Sections of this Application are organized address the following corresponding parts of the current Licence:

- Section 2 Part A: Scope, Definitions and Enforcement
- Section 3 Part D: Conditions Applying to the Use of Waters and Water Management Plans
- Section 4 Part E: Conditions Applying to the Deposit of Waste and Waste Management Plans
- Section 5 Part H: Conditions Applying to Spill Contingency Planning
- Section 6 Part I: Conditions Applying to Monitoring
- Section 7 Part J: Conditions Applying to Closure and Reclamation

The following parts of the Licence have been omitted since they contain general terms and conditions that do not relate to the specific infrastructure components that are subject to the licence:

- Part B: General Conditions
- Part C: Conditions Applying to Security
- Part F: Conditions Applying to Construction
- Part G: Conditions Applying to Modifications

Attachments to this Application Main Document are listed in Table 1.2.

Table 1.2 Attachments to this Application

Attachment No.	Attachment Title
APPLICATION AND PROPONENT INFORMATION	
1	Application for Water Licence Amendment
2	NPC Determination
3	DFO Advice Letter
4	Application Concordance
5	City of Iqaluit's Financial Statements
6	Consultation Report
7	Compliance Assessment

LTWP DETAILED INFORMATION	
8	LTWP Site Plans
9	LTWP Preliminary Design Report
10	LTWP Preliminary Design Report – Appendix A - Drawings
11	LTWP Preliminary Design Report - Appendix B - Topographic Survey
12	LTWP Preliminary Design Report - Appendix C - Geotechnical Workplan
13	LTWP Preliminary Design Report - Appendix D - Draft Specification
14	LTWP Preliminary Design Report - Appendix E - Pump Calculations
15	LTWP Preliminary Design Report - Appendix F - Pump Curves
16	LTWP Preliminary Design Report - Appendix G - Hydrology Technical Memo
17	LTWP Preliminary Design Report - Appendix H - Liner Material Technical Memo
18	LTWP Preliminary Design Report - Appendix I - Stability Analysis Technical Memo
19	LTWP Preliminary Design Report - Appendix J - Preliminary Blast Assessment
20	LTWP Preliminary Design Report - Appendix K - Preliminary Systems Operation Manual
21	LTWP Preliminary Design Report - Appendix L - Basis of Estimate
22	LTWP Preliminary Design Report - Appendix M - Environmental Management Plan
23	LTWP Preliminary Design Report - Appendix M - Environmental Protection Plan
24	LTWP Preliminary Design Report - Appendix M - Emergency Response Plan
25	LTWP Preliminary Design Report - Appendix M - Erosion and Sediment Control Plan
26	LTWP Preliminary Design Report - Appendix M - Climate Lens Assessment
LTWP TECHNICAL SUPPORTING INFORMATION	
27	LTWP Geotechnical Report
28	LTWP Aggregate Assessment Report
29	LTWP Environmental Screening Report
30	LTWP Fish and Fish Habitat Report
31	LTWP Archaeological Assessment
32	LTWP Lake Qikiqtalik Water Withdrawal Study
33	LTWP Niaqunngut (Apex) River Water Withdrawal Study
34	LTWP Historical Streamflow Statistics for Apex River

35	LTWP Enhanced Phase I ESA
WASTE MANAGEMENT INFORMATION	
36	North 40 Landfill Construction Summary Report
37	Waste Transfer Station Construction Summary Report
38	North 40 Landfill and Waste Transfer Station Closure and Decommissioning Plan

2.0 Proposed Changes to the Scope of the Licence (Part A)

Part A, Item 1 of the current Licence presents the coordinates of the City's municipal boundaries and key water and waste management facilities, which are identified in Table 2.1. Additional facilities not identified in the current Licence appear in blue text in Table 2.1.

Table 2.1 Municipal Undertaking Geographic Coordinates

Undertaking	Latitude	Longitude	UTM Coordinates (NAD83, Zone 19N)	
			Northing (m)	Easting (m)
Overall extents	63° 50' 56.31" N	68° 39' 49.87" W	7080228	516530
	63° 50' 57.30" N	68° 33' 41.94" W	7080289	521555
	63° 43' 48.91" N	68° 18' 12.53" W	7067143	534395
	63° 41' 06.60" N	68° 18' 18.82" W	7062118	534364
	63° 41' 04.08" N	68° 32' 44.20" W	7061934	522475
	63° 44' 46.02" N	68° 39' 43.1 0" W	7068767	516683
West 40 Landfill	63° 43' 58.15" N	68° 32' 08.54" W	7067325	522926
Water Treatment Plant	63° 45' 12.24" N	68° 30' 22.79" W	7069629	524358
Wastewater Treatment Plant	63° 44' 45.15" N	68° 32' 19.80" W	7068778	522761
Sewage Lagoon	63° 44' 44.24" N	68° 32' 10.59" W	7068751	522887
Waste Transfer Station	63° 45' 52.06" N	68° 32' 38.86" W	7070848	522485
North 40 Landfill	63° 48' 46.71" N	68° 34' 32.95" W	7076243	520886
New water reservoir	63° 45' 38.48" N	68° 29' 22.65" W	7070448	525176
Niaqunngut (Apex) River intake	63° 45' 38.47" N	68° 28' 36.52" W	7070452	525808
Lake Qikiqtalik intake	63° 46' 58.04" N	68° 27' 11.86" W	7072925	526947
Dead Dog Lake dust suppression site	63° 44' 48.87" N	68° 29' 19.58" W	7068913	525231

Part A, Item 1 also presents a bulleted list describing the scope of the Licence. This scope is presented in Table 2.2 along with proposed additions as part of this Application.

Table 2.2 Proposed Modifications to the Scope of the Current Water Licence

Item No.	Current Scope of the Licence (NWB, 2016)	Proposed Modifications /Updates
a.	Use, management, and protection of the Lake Geraldine drainage basin	No change
b.	Management and protection of Waters surrounding the West 40 Landfill site	No change
c.	Management, collection, and monitoring of leachate from the West 40 Landfill site and adjacent Sludge Management Facility	No change
d.	Management of improved drainage works at the West 40 Landfill site	No change
e.	Management, operation, and eventual closure and reclamation of the current West 40 Landfill site and associated solid waste disposal facilities	No change
f.	Upgrades, operation, maintenance, monitoring, and eventual closure and reclamation of a Wastewater Treatment Plant (WWTP)	No change
g.	Operation, maintenance, monitoring, and eventual closure and reclamation of a Sludge Management Facility	No change
h.	Operation, maintenance, monitoring and eventual closure and reclamation of a Sewage Lagoon Facility	No change
i.	Implementation of contingency measures for the Wastewater and Landfill management facilities	No change
j.	Implementation of changes to the monitoring requirements including frequency, parameters, and stations being monitored	No change
k.	~~Construction, operation, and removal of temporary facilities for the Temporary Augmentation Project (TAP). (Amendment No. 1)~~	Expired
k.	~~Construction, operation, and removal of temporary facilities for the Supplementary Pumping Program (SPP). (Amendment No. 2)~~	Expired
k.	~~Construction, operation, and removal of temporary facilities for the Supplementary Pumping Program (SPP). (Amendment No. 3)~~	Expired
k.	~~Construction, operation, and removal of temporary facilities for the Supplementary Pumping Program (SPP). (Amendment No. 4)~~	Expired
k.	Operation and removal of temporary facilities to provide pumping water from Niaqunguk (Apex) River until permanent facilities have been constructed.	As per earlier amendments

l.	Construction and operation of the new solid waste management facilities, including the Waste Transfer Station, the North 40 Landfill, and associated infrastructure. (Amendment No. 5)	No change
l.	~~Construction, operation, and removal of temporary facilities to provide for trucking water from the Sylvia Grinnell River. (Amendment No. 6)~~	Expired
m.	Construction, operation and removal of temporary facilities to provide for pumping water from the Unnamed Lake (Amendment No. 7)	No change; now named Lake Qikiqtalik
n.	Construction and operation of permanent facilities associated with the Long-Term Water Supply Project, including a new reservoir, water intakes and pumphouses at the Niaqunguk (Apex) River and Lake Qikiqtalik, pipelines, and related infrastructure	New
o.	Withdrawal from Imiqtariviviniq (Dead Dog Lake) for dust suppression	As per earlier amendments

The current Water Licence and the attachments to this Application refers to the traditional name for Apex River as "Niaqunguk", and thus this spelling has been used in the tables above. However, the City of Iqaluit's website, online archives of the Government of Canada, and other online sources refer to the river with the spelling "Niaqunngut". Thus, the City of Iqaluit has adopted the spelling "Niaqunngut" throughout the remainder of this Application, and suggests it be used in the new licence.

3.0 Water Use (Part D)

3.1. Current Facilities and Proposed Modifications

The current water supply infrastructure consists of:

- Lake Geraldine Reservoir and associated raw water intake and pumphouse
- Temporary raw water intake on the Niaqunngut (Apex) River and pipeline to Lake Geraldine
- Potable water treatment facility

As noted in Section 1.3, the current Licence has been amended several times to provide short-term water withdrawal increases to account for the increasing demand of water by the growing City of Iqaluit. The City has developed a long-term solution with the LTWP and is seeking an amendment to the current Licence with this renewal to account for the changes. A detailed description of the LTWP is provided in Section 3.2.

The new plan includes the addition of two permanent water supply sources in addition to the existing Lake Geraldine Reservoir: Lake Qikiqtalik and the Niaqunngut (Apex) River. Both water sources have been used to top up the Lake Geraldine Reservoir under the recent emergency amendments to the current Licence. The proposed water extraction volumes are presented in Table 3.1.

Table 3.1 Proposed Water Use

Source	Authorized Water Use Volume (m^3/year)[1]	Proposed Annual Water Use (m^3/year)
Lake Geraldine Reservoir	2,000,000	3,500,000[2]
Niaqunngut (Apex) River	900,000	1,600,000[3]
Lake Qikiqtalik	600,000	1,300,000

NOTES:

1. Approved volume as per Amendment #7. Under this amendment, the 600,000 m^3 withdrawal from Lake Qikiqtalik was for transfer into the Niaqunngut (Apex) River, and the withdrawal from Niaqunngut (Apex) River was for transfer to the Lake Geraldine Reservoir, from which the City draws water.
2. Total volume withdrawn from Lake Geraldine, which includes previously approved supplementation from Niaqunngut (Apex) River and Lake Qikiqtalik.
3. The daily withdrawal rate is subject to the withdrawal rules accepted by the DFO (2024).

While the proposed annual water extraction volume from Lake Geraldine is much higher at 3,500,000 m^3, most of this water will originate from Niaqunngut (Apex) River (1,600,000 m^3) and Lake Qikiqtalik (1,300,000 m^3), and much less (600,000 m^3) will rely on natural inflows from the Lake Geraldine catchment. A block flow diagram showing the relationship between the three water sources is shown graphically on Figure 3.1. The existing water treatment facility will continue to be supplied from the Lake Geraldine Reservoir, and there are no changes to the distribution system downstream of the treatment facility.

Within the Lake Geraldine Reservoir, annual surface runoff and snow accumulation are estimated to contribute a total average runoff volume of 977,000 m^3 (Golder Associates, 2013). Under the proposed plan, the City will only be relying on about 600,000 m^3/year to come from natural runoff into the Lake Geraldine catchment, compared with the original licence limit of 1,100,000 m^3/year. This provides a buffer against low precipitation years impacting water levels in the Lake Geraldine Reservoir.

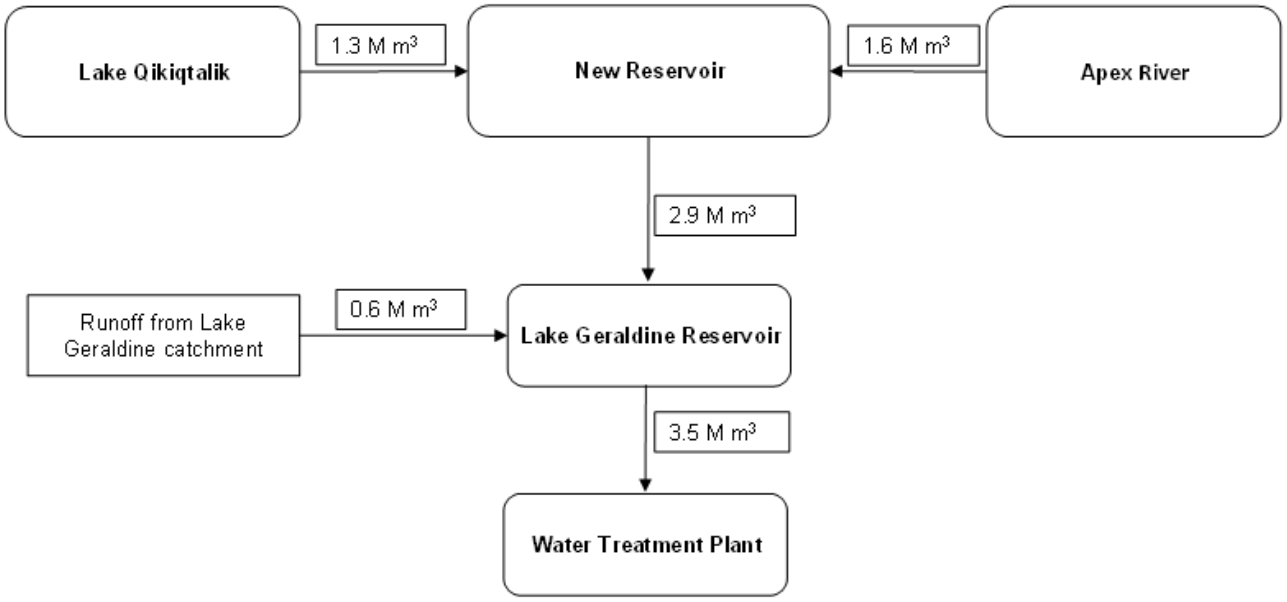


Figure 3.1 Water Supply Block Flow Diagram

Lake Qikiqtalik Withdrawals

The proposed water withdrawal from Lake Qikiqtalik was assessed by Tetra Tech (2025a) and estimated that 1,284,184 m^3 per year (rounded to 1,300,000 m^3/year in this Application) is a reasonable amount to plan for extraction from the lake. This report is presented as Attachment 32.

Niaqunngut (Apex) River Withdrawals

The quantity of water available from the Niaqunngut (Apex) River was also evaluated by Tetra Tech (2025b). The report (Attachment 33) indicates that under average conditions and the withdrawal rules outlined below, that 1,578,096 m^3/year may be available for extraction during the period when flows exceed 30% of mean annual discharge (MAD), which is typically June through October. This is the basis for the proposed 1,600,000 m^3/year limit in Table 3.1. In lower flow years, less than this volume will be available for extraction considering the water withdrawal rules outlined below.

Water withdrawals from Niaqunngut (Apex) River will occur during high flows according to the following rules:

- Withdraw water only when flow of the Apex River exceeds 30% of Mean Average Discharge (MAD)
- Withdraw water at a rate of 10% of instantaneous discharge when flow of the Apex River is between 0.143 m^3/s and 0.156 m^3/s (between 30% and 33% of the MAD)
- Withdraw water at a rate of 20% of instantaneous discharge when flow of the Apex River is greater than 0.156 m^3/s (>33% of the MAD)

The DFO's Letter of Advice (Attachment 3) has confirmed that following the above withdrawal rules for the Niaqunngut (Apex) River, as well as other best practices, should be adequate to avoid and mitigate the potential for prohibited effects to fish and fish habitat.

The other best practices included:

- Avoid killing fish by means other than fishing; monitor for fish stranding caused by reduced water level and conduct fish rescues as needed.
- Limit the duration of in-water works, undertakings, and activities to not diminish the ability of fish to carry out one or more of their life processes (e.g., spawning, rearing, feeding, migrating).
- Ensure intake pipes are screened and sized appropriately to prevent entrainment or impingement of fish; adhere to the Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater.
- Maintain an appropriate depth and flow (i.e., base flow and seasonal flow of water) for the protection of fish and fish habitat.
- Monitor the Apex River discharge using WSC stations 10UH015 and 10UH002 to ensure water is not withdrawn when flow is below 30% of MAD.
- Develop and immediately implement a spill response plan that minimizes risk of deleterious substances from entering a watercourse or water body and ensure containment kits are available during all phases of the pumping.

The City also proposes to extract smaller volumes of water using water trucks during the open water season from the four sources listed in Table 3.2 for non-domestic uses including concrete manufacture during reservoir construction, and for dust suppression during and following construction of the LTWP.

Table 3.2 Proposed Industrial Water Use

Source	Total Water Use (m^3/day)
Lake Geraldine	300
Niaqunngut (Apex) River	300
Lake Qikiqtalik	300
Imiqtarviviniq (Dead Dog Lake)[1]	300

NOTES:

1. The water withdrawal from Imiqtarviviniq (Dead Dog Lake) was previously approved under Amendments No. 6 and 7.

Several ponds in the LTWP area will be permanently dewatered, as described in Section 3.2.8. Because the water from these ponds will not be used but instead will be discharged to a nearby waterbody (Lake Geraldine), these have not been considered in the above domestic or industrial water use.

3.2. Long Term Water Project

3.2.1. Overview

The Project will comprise three key aspects: raw water extraction, raw water conveyance, and raw water storage. The main project components are as follows:

- Raw Water Extraction
    - Lake Qikiqtalik intake and raw water pump station
    - Niaqunngut (Apex) intake and raw water pump station
- Raw Water Conveyance
    - Conveyance pipeline from the Lake Qikiqtalik pump station to the new reservoir, including a discharge pipe in the new reservoir.
    - Conveyance pipeline from the Niaqunngut (Apex) River pump station to the new reservoir, including discharge pipe at the new reservoir and another at Lake Geraldine.
    - Pipe bridge for river crossing at the Niaqunngut (Apex) River for new water pipelines from Lake Qikiqtalik.
    - Below grade service corridor with pipe connection and control valves between the new reservoir and Lake Geraldine including discharge pipe to Lake Geraldine.
    - Access structure to the service corridor between the new reservoir and Lake Geraldine.
- Raw Water Storage
    - Eight retention structures (one dam and seven dykes) creating the new reservoir with a perimeter road around the new reservoir.
    - One spillway from the new reservoir into the Niaqunngut (Apex) River. A second spillway may be added to the design if necessary.
- Enabling Elements
    - Upgrading as required of the existing road and culverts on the Road to Nowhere to Lake Qikiqtalik.
    - Upgrade of the existing bridge crossing the Niaqunngut (Apex) River for construction (if required).
    - New access road from the Road to Nowhere to the new reservoir requiring the dewatering and filling of three existing shallow ponds.
    - Perimeter road around the new reservoir.
    - Laydown areas near the two pump houses and shooting range including access roads.
    - Electrical utility lines to the two pump houses and the new reservoir (by QEC).
    - Backup power generators at both pump houses and the reservoir access structure and service corridor.

Temporary structures and equipment to be used during the construction phase of the Project are as follows:

- Temporary concrete plant(s).
- Quarries for rock at the new reservoir, construction laydown area and access roads.
- Borrows for sand materials, including access roads.
- Fossil fuel-fired generators for temporary power until permanent power is available.

- Trailers and Sea-Cans to serve as office and storage space onsite and at the laydown areas.
- Portable chemical toilets and wash stations.

Figure 3.2 provides an overview of the LTWP. Additional figures showing the LTWP are presented as Attachment 8.

The LTWP will be completed in several phases, as follows:

- Phase I: Project Definition and Concept Design
- Phase II: Preliminary Design Report (30% Submission)
- Phase Ill: Design Development (50% Submission)
- Phase IV - Final Design (90 % and 100 % Submission Milestones)
- Phase V - Tendering Support
- Phase VI - Contract Administration, Site Inspection and Engineering Support Services, during construction.
- Phase VII - Closeout Phase.

The LTWP has completed Phase II, and the preliminary design report is presented as Attachment 9. The various appendices of Attachment 9 are presented as Attachments 10 through 35, as listed in Table 1.2.

Issued for construction drawings completed during Phase IV will be provided to the NWB prior to construction in accordance with Part F, Item 1 of the Licence.

A brief discussion of alternatives considered leading to the development of the LTWP is provided in Section 3.2.2, and a summary of stakeholder consultation undertaken regarding the LTWP is provided in Section 3.2.3, with a more detailed consultation report presented as Attachment 6.

A description of the main components of the LTWP are provided in Sections 3.2.4 through 3.2.12.

3.2.2. Alternatives Considered

The City and its consultants have engaged in an iterative process to identify the best solution to meet its current and future water supply needs. The alternatives for raw water supply for the Project included:

- Desalinization of sea water pumped from Frobisher Bay
- Pumping water from the Sylvia Grinnell River to Lake Geraldine
- Damming of the Niaqunngut (Apex) River or other water courses
- Extracting water from Lake Qikiqtalik by truck temporarily under emergency conditions
- Extracting water from Niaqunngut (Apex) River by a temporary pipeline under emergency conditions
- Transferring water via a permanent pipeline from Lake Qikiqtalik to a new reservoir to be constructed adjacent to Lake Geraldine.
- Transferring water via a permanent pipeline from Niaqunngut (Apex) River via permanent pipelines to the new reservoir and Lake Geraldine, to augment the Lake Qikiqtalik water source.
- Constructing a new reservoir at Lake Qikiqtalik and a new water pipeline to transfer water to Lake Geraldine.

The alternative being put forth in this Application was selected based on technical feasibility, cost, and the need for a long-term solution out to 2050.

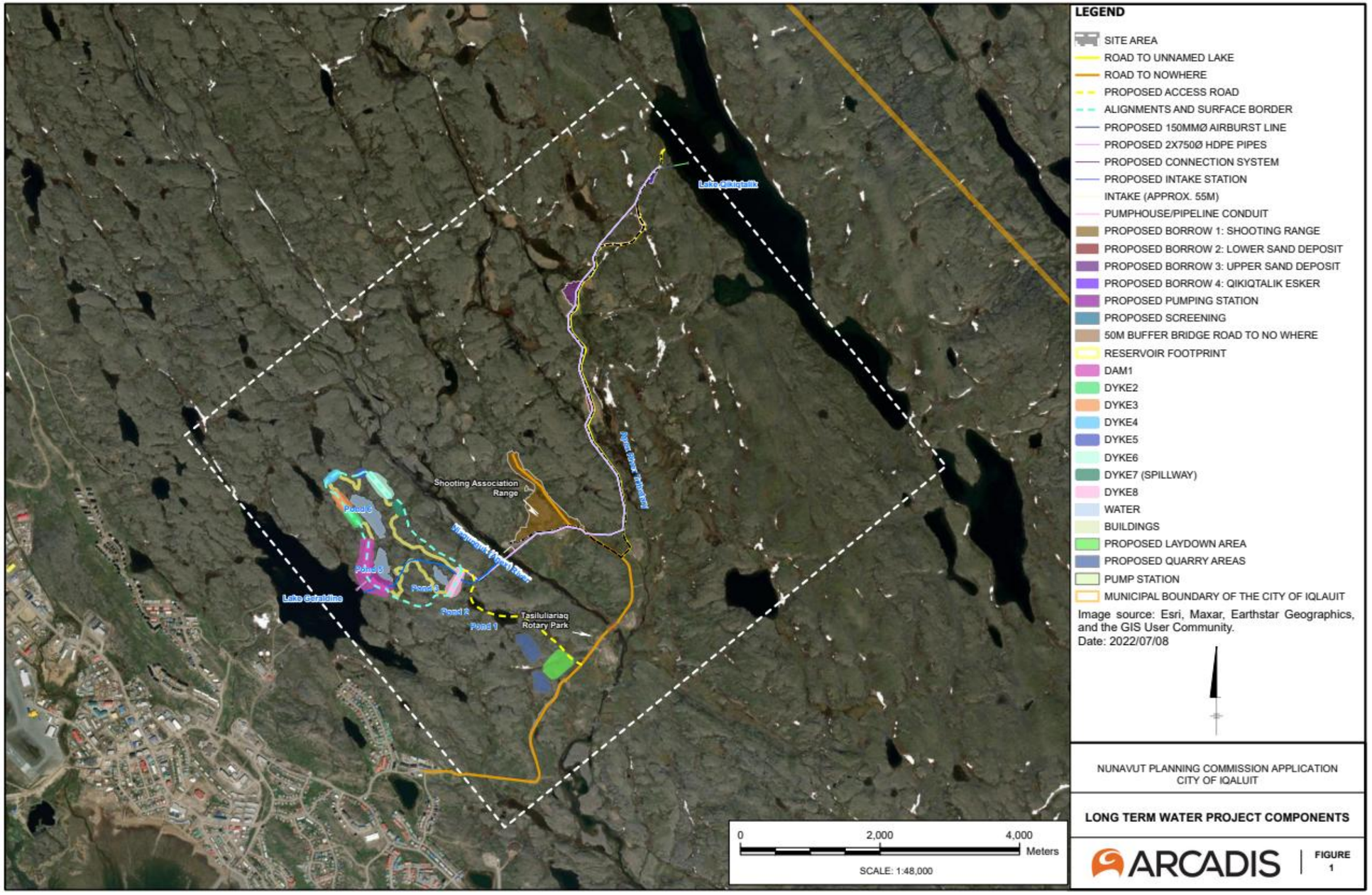


Figure 3.2 Long Term Water Project Components

3.2.3. Stakeholder Engagement on the LTWP

The City of Iqaluit undertook various consultation activities regarding its LTWP between 2023 and 2025, as summarized in Table 3.3. A Stakeholder Engagement Report is included as Attachment 6.

Table 3.3 Stakeholder Engagement Summary

Organization	Dates/Location
Nunavut Impact Review Board (NIRB)	February 6, 2023 (virtual), July 18, 2023 (virtual), March 04, 2024 (virtual), and November 1, 2024 (virtual)
Nunavut Water Board (NWB)	March 13, 2023 (virtual), April 27, 2023 (in person), February 26, 2024 (virtual), November 7, 2024 (virtual), and April 30, 2025 (virtual)
Fisheries and Oceans Canada (DFO)	March 22, 2023 (virtual) and October 30, 2024 (virtual)
Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)	March 22, 2023 (in-person and virtual), February 28, 2024 (virtual), and October 30, 2024 (virtual), and June 23, 2025 (in-person)
Qikiqtani Inuit Association (QIA)	March 23, 2023 (virtual), April 27, 2023 (in-person), and October 29, 2024 (in-person)
Public: open houses	June 7 and 9, 2023 and November 27 and 28 2024
Nunavut Tunngavik Incorporated (NTI)	April 27, 2023 (in-person)
Nunavut Planning Commission (NPC)	April 28, 2023 (virtual), October 12, 2023 (in-person), and October 29, 2024 (in-person)
Government of Nunavut (GN), Dept. of Environment	April 28, 2023 (in-person), and November 28, 2024 (in-person)
GN Depart. of Culture and Heritage	March 23, 2023 (virtual)
GN Depart. of Health	May 01, 2023 (virtual), and November 27, 2024 (in-person)
GN Climate Change Secretariat	December 18, 2023 (virtual), and November 01, 2024 (virtual)
Nunavut Research Institute	June 7, 2023 (virtual), and November 28, 2024 (in-person and virtual)
Hunters and Trappers Association (HTA)	June 8, 2023 (in-person) and March 19, 2025 (in-person)
Qulliq Energy Corporation (QEC)	October 18, 2024 (virtual), and March 17, 2025 (in-person)
Iqaluit Shooting Association	March 18, 2025

3.2.4. Lake Qikiqtalik Raw Water Intake and Pump Station

A raw water intake and pump station will be constructed in and next to Lake Qikiqtalik. The intake at Lake Qikiqtalik will provide raw water to a pump station on the west shore of Lake Qikiqtalik. The intake will be a 750 mm high density polyethylene (HDPE) DR 11 pipe extending into Lake Qikiqtalik, into a minimum of 8 m water depth. The intake will be 4 m below the assumed 2 m of ice expected to be present during winter, as measured from the design low water level of 202.1 m. Preliminary design drawings C101 and C201 are provided in Attachment 10.

The intake will have a screen that is sized in accordance with the *Freshwater Intake End-of-Pipe Fish Screen Guidelines* (DFO, 1995) for the fish that may be present in Lake Qikiqtalik. Previous studies identified the presence of Arctic Char in Lake Qikiqtalik however, Ninespine Stickleback may also be present. Using a screen approach velocity of 0.11 m/s per the DFO guidelines, a screen with a clear area of 4.82 m^2 is required to prevent entrainment and impingement. The screen slot size will be no larger than 2.54 mm in accordance with the DFO guidelines.

The screen will be fitted with an air scour system that is operated by an airline running in parallel with the raw water line and connected to a compressor in the pump station. The air scour is designed to operate at programmed, adjustable intervals in winter to mitigate frazil ice or in bursts to control biofouling.

The raw water intake screen design is for a flow of 556 L/s with an inlet flow velocity of 0.11 m/s. The screen will be a "TEE" type, 914 mm in diameter, with an overall length of approximately 3.56 m long with #69 wire screen providing a slot size of 2.54 mm. The screen will be equipped with a 750 mm flanged outlet and a 150 mm airburst connection. All material will be 316 stainless steel which is marine grade with superior corrosion resistance.

3.2.5. Niaqunngut (Apex) River Raw Water Intake and Pump Station

A raw water intake and pump station will be constructed in and next to Niaqunngut (Apex) River. The river flows in a north-to-south direction. To effectively manage and capture water flow in its shallow environment, an intake crib is proposed to be constructed adjacent to the riverbank. Water will enter the intake crib through two slide gates located on the north side. Once inside, the flow will follow one of two paths:

- Screened Flow Path: Water passes through intake screens and is directed to the wet well for further processing.
- Bypass Flow Path: Water bypasses the screens and exits the crib via two downstream slide gates positioned on the south side.

During non-pumping seasons, all slide gates will remain closed to prevent ice formation within the crib structure thereby protecting internal components and maintaining operational integrity. Figure 3.3 presents a general layout of the intake crib and screens. Preliminary design drawings C1102, C1204 and C1205 are provided in Attachment 10.

The intake screen is sized in accordance with the *Freshwater Intake End-of-Pipe Fish Screen Guidelines* (DFO, 1995) for Arctic Char, which have been confirmed to be present in the Apex River. Arctic Char have a subcarangiform mode of swimming. Using a screen approach velocity of 0.11 m/s per the DFO guidelines, a screen with a clear area of 3.64 m^2 is required for a flow rate of 400 L/s to prevent entrainment and impingement. The screen openings will be no larger than 2.54 mm in accordance with the DFO guidelines. The intake itself consists of two retractable self cleaning cylinder screens. The cleaning is accomplished by rotating a screen cylinder between internal and external brushes. The internal mechanism that turns the barrel can either be electrically driven, or propeller driven (using the river's flow through the barrel to turn the screen). These options will be explored further during detailed design. During the non-pumping seasons, the intake screens can be removed from the water to prevent damage via built-in lifting mechanisms. The screens would then need to be lifted onto a crib and taken in to be stored. The cylinder screens are also equipped with blanking plates to seal off the openings when the screens are lifted during the non pumping seasons.

The Niaqunngut (Apex) River, Lake Geraldine, and Lake Qikiqtalik will have in-water works to complete construction of inlet/outlet piping for water taking and discharge. The intake/outlet pipes will require alteration to the localized area

where constructed, as will be outlined in the design drawings. DFO will be consulted on these required alterations. Otherwise, these water bodies will not be changed from their existing condition.

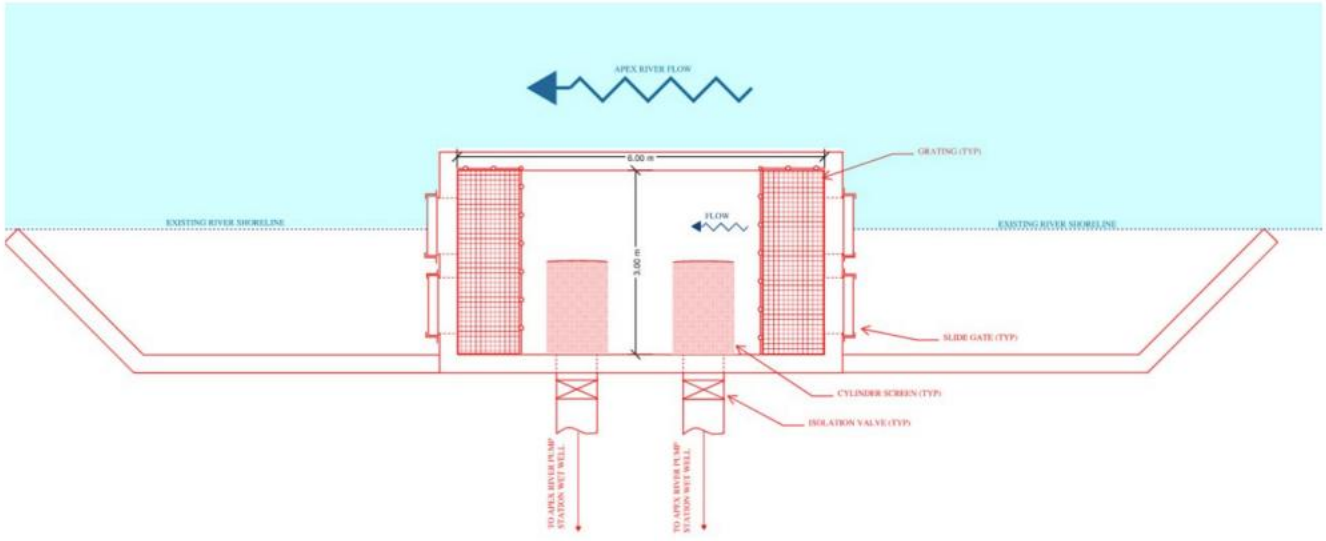


Figure 3.3 Niaqunngut (Apex) River Intake Crib Layout

3.2.6. Water Storage

As part of the undertaking there is a water storage facility, which is a New Reservoir east of Lake Geraldine. It will have a capacity of 1,834,300 m^3. The reservoir system comprises eight retention structures in addition to peripheral utilities (e.g., access road). The basic characteristics of each are summarized in Table 3.4, and the preliminary layout is presented as Figure 3.4. Preliminary design drawings are presented in Drawings C301 to C318 of Attachment 10.

Table 3.4 Dam Structure Characteristics

Structure	Number	Max Height* (m)	Approximate Length (m)
Dam	1	12.0	370
Dyke	2	5.0	100
Dyke	3	5.0	130
Dyke	4	4.0	90
Dyke	5	3.5	45
Dyke	6	10.0	190
Dyke (Spillway)	7	At existing grade	75
Dyke	8	9.0	170

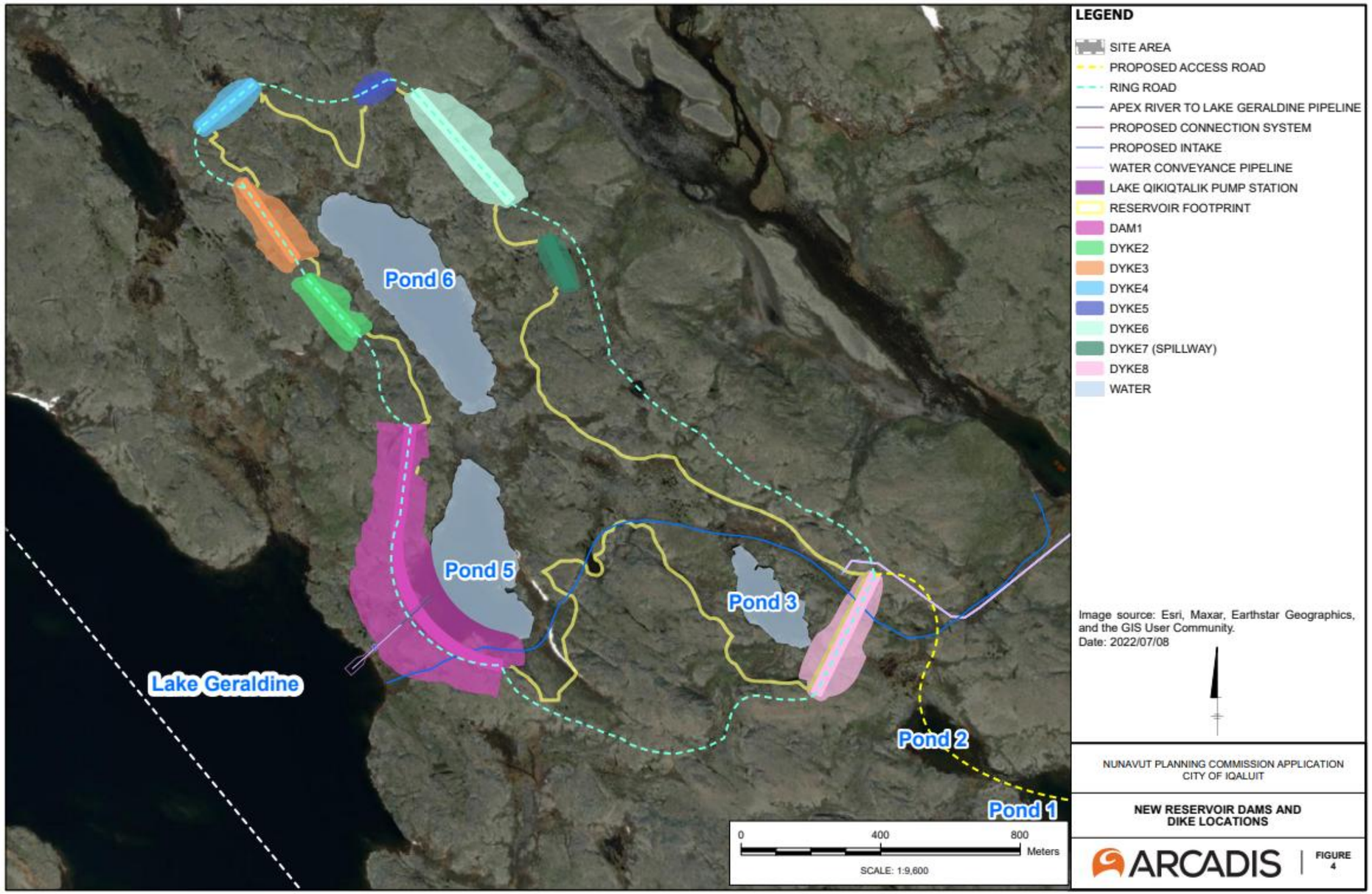


Figure 3.4 Preliminary Layout of the New Reservoir

The dams and dykes are to be designed considering all applicable loadings under end of construction, operating, and seismic conditions. As per Table 6-2 and 6-3 of the CDA guidelines, the required minimum Factors of Safety (FoS) are outlined in Tables 3.5 and 3.6.

Table 3.5 Factor of Safety Through Operations

Loading Condition	Minimum FoS	Slope
End of construction (prior to filling)	1.3	Upstream and downstream
Long- term (steady state, normal reservoir level)	1.5	Upstream and downstream
Full or partial rapid drawdown	1.2 – 1.3	To be completed once material properties have been obtained through laboratory testing.

Table 3.6 Factor of Safety Through Seismic Activity

Loading Condition	Minimum FoS
Pseudo-static	1.0
Post-earthquake	1.2-1.3

The following information and limitations have also been considered in the design:

- Construction is expected to be a staged process over about three years (2027 to 2029).
- The new reservoir will have a relatively small catchment area; the majority of inflow will be from the pipeline conveyance from Lake Qikiqtalik and the Niaqunngut (Apex) River and thus controlled.
- Reservoir filling will be conducted during the ice-free months, any inputs outside this period will be from precipitation events and the spring freshet.
- The reservoir will be steadily discharged over the course of the winter to Lake Geraldine to prevent it from falling below a target elevation.
- The new reservoir will likely not reach full operating level in the first year of operation – filling is anticipated to be a staged process.
- The crest of the dam and dykes will be used for vehicle travel. Crest width has been specified at 10 m.
- The dam and dykes will be founded on bedrock, with founding surface preparation as necessary.
- Suitable on-site and/or locally available materials can be used for the dam, dyke and access road construction. Blasted rock from the excavation will need to be further crushed and/or graded to meet material specifications for the internal cushion layers.
- Spillway locations and designs are to direct flow away from the Lake Geraldine catchment area.
- Seepage through the rock-fill dam and dykes will be minimized via the use of an impermeable liner on the upstream slopes, anchored to the bedrock.
- Bedrock surfaces under the geosynthetic liner contact zone will be appropriately treated with slush grout or similar surface dressing. Surface irregularities, cavities, or overhangs will be treated by reshaping using dental concrete, as required.

- Shoreline protection will be instituted through use of rip rap at discharge points, the dykes, and the spillway, as well as the liners and membranes noted above.
- A seepage management system will be installed at each retaining structure.
- Snow capture measures have not been considered as the potential volume is not expected to be significant.
- A severe wind speed of 216 km/h is noted for the Region and has been used in design calculations (e.g., wave height calculations). CSA S505:20 for considerations for high winds and snow drifting has been reviewed and will continue to be referenced during the subsequent design phases.

3.2.7. Conveyance Pipelines

This project has three main conveyance pipelines:

1. Conveyance pipeline from Lake Qikiqtalik to New Reservoir, to facilitate filling New Reservoir.
2. Conveyance pipeline from Niaqunngut (Apex) River with outlet at New Reservoir and Lake Geraldine, to facilitate filling New Reservoir or Lake Geraldine.
3. Interconnection from New Reservoir to Lake Geraldine, to facilitate filling Lake Geraldine.

Preliminary design drawings C202, U201-U302, I107, I108 are presented in Attachment 10. Brief descriptions of each conveyance pipeline are provided below.

3.2.7.1. Conveyance Pipeline, Lake Qikiqtalik to New Reservoir

A 600 mm HDPE DR11 Raw Water Transmission Main (RWTM) is proposed, running from the Lake Qikiqtalik pump station to a valve chamber where it splits via a wye connection into two parallel 400 mm HDPE DR11 RWTMs.

The pipes will follow the route of the existing roads where feasible. They will be laid on the existing ground that will be slightly sub-excavated following clearing and grubbing (if applicable), bedded, and covered/backfilled with selected material to construct a berm for protection. The depth of cover will be 1.0 m layer on top and extend 2.5 m on either side, in the form of a berm of sand, wrapped with geotextile, and crushed stone.

The total length of the 600 mm pipe is estimated to be approximately 65 meters, while each of the two parallel 400 mm pipes will have a total length of approximately 3.9 kilometers.

3.2.7.2. Conveyance Pipeline, Niaqunngut (Apex) River to New Reservoir

Two 400 mm HDPE DR11 RWTM are proposed from the Niaqunngut (Apex) River with distinct routes.

Route 1 is proposed to run from the Niaqunngut (Apex) River pump station to the new reservoir with an approximate length of 286 meters.

Route 2 is proposed to convey raw water from the Niaqunngut (Apex) River pump station to a valve chamber. At this chamber, the flow can be directed based on operational requirement to either the new reservoir via approximately 500 meters of 400 mm HDPE DR11 RWTM or to Lake Geraldine via approximately 800 meters of HDPE DR11 RWTM.

Where feasible, the proposed pipelines will be aligned along existing road corridors to enhance accessibility and reduce environmental disturbance. Installation will involve minor sub-excavation of the existing ground surface,

following clearing and grubbing as necessary. The pipelines will be placed on prepared bedding and backfilled with selected material to form a protective berm.

3.2.7.3. Service Corridor, New Reservoir to Lake Geraldine

Two 750 mm HDPE pipes will be used to connect the reservoirs and will provide redundancy. To facilitate access for personnel, the two 750 mm pipes will be housed within a 3000 mm steel pipe with a thickness of 19 mm. Part of the bottom of the steel pipe will be filled with grout to provide a level surface, facilitating the placement of the pipes inside and allowing personnel access. This entire assembly will be positioned within a trench and encased with concrete to reinforce the steel pipe, ensuring it can effectively withstand both live and dead loads. The service corridor will be maintained at a minimum temperature to prevent freezing. Heat trace may be required on portions of the pipe (i.e., at entrance/exit), which will be further evaluated.

Manual isolation valves inside the service corridor will serve as backup and double isolation for maintenance purposes. Level monitoring will be provided for both Lake Geraldine and the new reservoir. Actuated valves will be used to control filling of Lake Geraldine based on the water level readings, with the goal to maintain the reservoir within a working range to be finalized with the City, but no greater than 111.3 m. Level monitoring and valve control will be similar to that of the pump station and will be accessible through the City's SCADA system. Drain valves will also be included in the enclosure.

A diffuser pipe arrangement will discharge water into Lake Geraldine and will be situated below expected freezing level to protect the pipe from being damaged. An intake structure in the new reservoir will be required to support the inlet location.

3.2.8. Dewatering of Ponds

Five ponds will be dewatered during construction, as they are located within the project footprint (Figure 3.5). eDNA testing of Ponds 1, 2, 3, 5 and 6 conducted between July 15 and 19, 2024 all showed negative results for fish presence, strongly suggesting there are no fish species inhabiting these waterbodies (Attachment 29).

Each of the ponds will be dewatered during construction, with the water discharged such that it will runoff into Lake Geraldine.

Two small unnamed ponds (Ponds 1 and 2 on Figure 3.5) located within the access road alignment to the new reservoir will be dewatered and infilled as part of road construction. Additionally, three small unnamed ponds within the footprint of the new reservoir (Ponds 3, 5 and 6 on Figure 3.5) will also be dewatered and then incorporated into the New Reservoir once filled.

Based on the specification of a typical mobile water pump expected to be used, the rate of dewatering is estimated to at 485 m^3/h x 10 hours per day = 4,850 m^3/day.

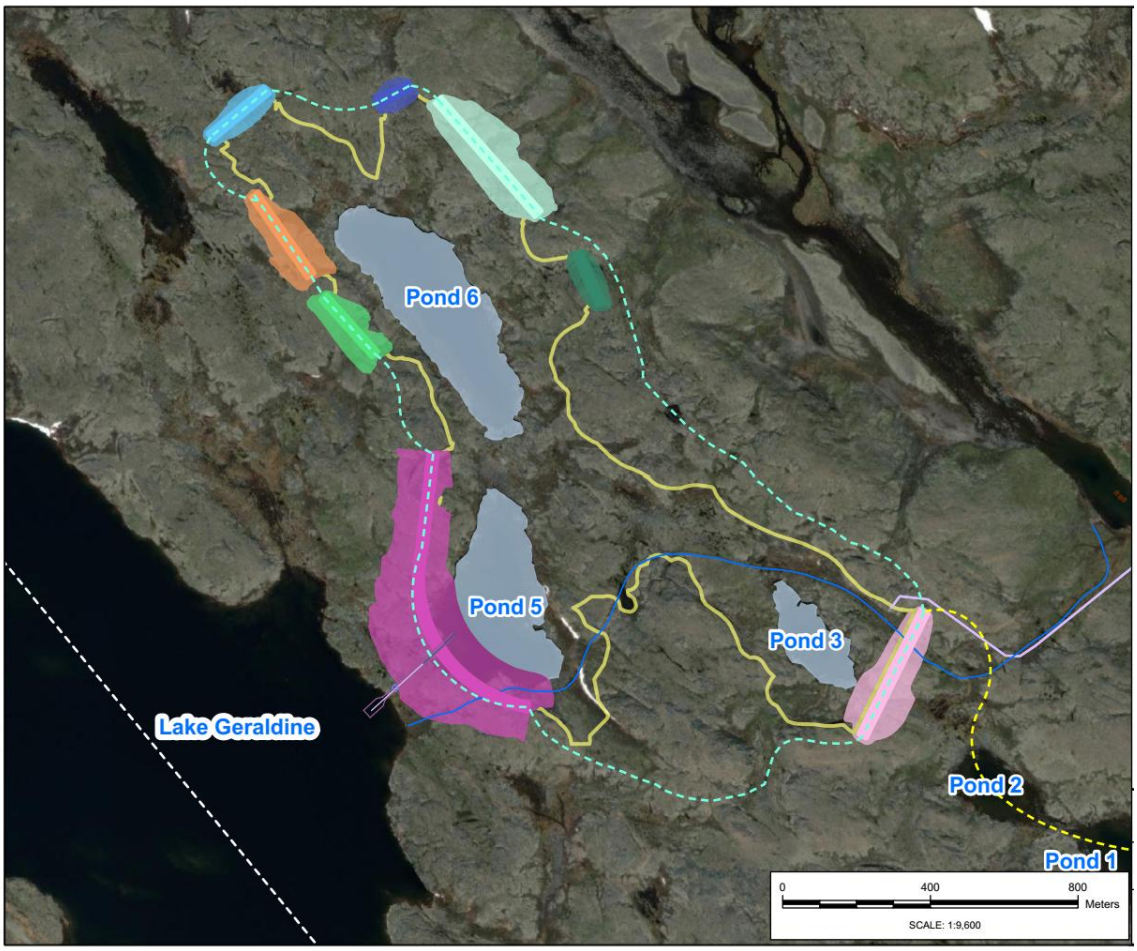


Figure 3.5 Ponds Requiring Dewatering During Construction

3.2.9. Access Roads and Water Crossings

Access roads for operation and maintenance of the new water supply system are either existing or will be constructed as needed. These roads are shown on Figure 3.2.

To support construction of the new water supply facilities, new or upgraded water crossings will be required as follows:

- Pipe bridge for river crossing at the Niaqunngut (Apex) River for new water pipelines
- Upgrading as required of the existing road and culverts located between Lake Qikiqtalik and the Road to Nowhere.
- Upgrades of the existing bridge crossing the Niaqunngut (Apex) River for construction (if required)

Preliminary design drawings C319 and C320 are provided in Attachment 10. Issued for construction drawings will be provided for these crossings when available.

3.2.10. Pumping Operation

Reservoir filling time approximately 3-4 months. This will be achieved with peak pumping during the Spring freshet and lower pumping rates during subsequent months until the reservoir volume is reached. Pumping rates at Lake Qikiqtalik will be 556 L/s (two pumps running) during spring freshet and approximately 278 L/s (one pump running) during lower flow months. Two pumps will pump an additional 400 L/s from the Niaqunngut (Apex) River.

4.0 Waste Disposal (Part E)

4.1. Current Facilities

The City's current solid waste management facilities and sewage treatment and disposal facilities include:

- West 40 Landfill
- North 40 Landfill
- Sewage treatment plant
- Sewage lagoon

The West 40 Landfill has been in operation for several decades, and continues to operate today, though its closure is anticipated in the next few years once it reaches capacity. The City plans to file a Final Closure and Reclamation Plan at least one year prior to closure of the West 40 Landfill, in accordance with Part J Item 2 of the Licence.

A new North 40 Landfill, Waste Transfer Station, and associated infrastructure were added into the scope of the current Licence in Amendment No. 5 of the current Licence in 2021. Issued for Construction drawings of these facilities were submitted in 2022 in accordance with Part F, Item 1 of the current Licence, and the facilities have been constructed but are not currently in operation. A construction summary report with as-built drawings of the North 40 Landfill and Waste Transfer Station is being submitted to the NWB with this Application (Attachments 36 and 37).

No changes to the current waste disposal are being proposed with this Application. A description of the general conditions of the City's waste management facilities is provided in the 2024 Annual Report (Attachment 7a).

4.2. Waste Generation during LTWP Construction

Waste will be generated during the construction of the LTWP, which is expected to occur from 2026 through to 2029. The City will aim to minimize waste generation through purchasing the appropriate quantity of materials required for construction, where feasible any left-over material will be saved to be used by the City in the future.

The types, volume and forms of waste disposal during construction are presented in Table 4.1.

The construction of the LTWP does not involve wastewater or grey water generation. Wastewater generated during construction will be managed through portable toilet facilities and treated at the City's existing wastewater treatment plant. Wastewater generated from the new pump stations will be held on site to be emptied by pump truck and treated at the City's existing wastewater treatment plant.

Table 4.1 LTWP Construction Waste

Type of Waste	Projected Amount	Method of Disposal
Wood recycled or reused	N/R	City landfill
Oil and grease	5,500 Liters	City landfill – Non-Haz Waste Department
Waste oil	5,500 Liters	City landfill – Non-Haz Waste Department
HDPE pipe	223 m	City landfill
Non-woven geotextile and liner	2,000 m^2	City landfill
Domestic waste	1,920 yards	City landfill
Grey water	Unknown	City or contractor sanitary truck to City Wastewater Treatment Plant
Black water	Unknown	City or contractor sanitary truck to City Wastewater Treatment Plant
Overburden (organic soil, waste material)	2,000 m^3	Deposed onsite

5.0 Spill Contingency Planning (Part H)

The City has been maintaining and using a Spill Contingency Plan approved by the Board, in accordance with Part H, Item #1 of the current Water Licence (City of Iqaluit, 2016).

6.0 Monitoring (Part I)

6.1. Surveillance Network Program (Schedule I)

Table 6.1 presents the test groups and associated analytical parameters presented in Table 1 of Schedule I of the current Licence. The City is not proposing any changes to the test groups or parameters.

Table 6.1 Water Quality Parameters

Test Groups	Analytical Parameters	Units
Routine (R)	Alkalinity, Acidity, Chloride, Carbonate, Bicarbonate, Total Hardness, Hydroxide, Sulphate, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Total Organic Carbon (TOC), Total Inorganic Carbon (TIC)	mg/L
	pH (field and lab)	pH units
	Oxidation-Reduction Potential (ORP) (field)	mV
	Conductivity (field and lab)	uS/cm
	Temperature (field)	oC
	Turbidity	NTU
Effluent (E)	Total Suspended Solids (TSS)	mg/L
	Temperature (field)	oC
	Conductivity (field and lab)	uS/cm
	pH (field and lab)	pH units
Acute Lethality (AL)	Based on Environment Canada's *Procedure for pH Stabilization During the Testing of Acute Lethality of Wastewater Effluent to Rainbow Trout* (EPS 1/RM/50, March 2008), if single concentration test fails and un- ionized ammonia concentration is less than or equal to 1.25 mg/L.	"Pass" / "Fail"
ICP- Metals Scan (Total)	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Li, Mn, Mo, Ni, Se, Sn, Ag, Sr, Tl, Ti, U, V, Zn, Hg	mg/L
Nutrients (N)	Ammonia-N, Nitrate-N, Nitrite-N	mg N/L
	Total Phosphorus, Orthophosphate	mg/L
Biological (B)	Biochemical Oxygen Demand	mg/L
	Total and Fecal Coliform	CFU/100 mL
	Fecal Coliform	CFU/100 mL

Potable Water (PW)	ICP Metals (Total and dissolved)	mg/L
	Total Suspended Solids –TSS	mg/L
Flow (F)	Volume	m^3
Landfill Specific (LS)	Polychlorinated Biphenyls (PCBs), Benzene, Toluene, Ethylbenzene and Xylene (BTEX)	mg/L

Table 6.2 presents the surveillance network program (SNP) stations in the current Licence, and proposed changes to be incorporate into the new and amended licence. These changes to the stations would need to be incorporated into Table 2 in Schedule I. The City will identify new SNP stations for the LTWP prior to the start of construction.

Active and inactive SNP monitoring stations are shown on Figure 6.1.

Table 6.2 Surveillance Network Program Monitoring Stations (from Schedule I)

Station ID	Description	Status	Parameter	Testing / Measurement Frequency	Reporting Frequency
IQA-01	Lake Geraldine Reservoir – Raw Water	Active	R, PW	Monthly	Biannually
			F	Monthly	
IQA-01(#)	Based on Part I, Item 4 of Expired Licence	Inactive	N/A	N/A	N/A
IQA-02	Sewage Lagoon – Effluent Discharge Point	Active	B, N, E, ICP	Once prior to discharge; once during discharge; and once prior to the completion of discharge	Annually
			F	During decant	
IQA-03	Sewage Lagoon –Influent	Inactive	N/A	N/A	N/A
IQA-04	Wastewater Treatment Plant – Effluent	Active	B, N, E, ICP	Quarterly – Prior to commissioning of the WWTP	Annually
			B, N, E, ICP	Monthly –Following commissioning of the WWTP	
			AL	Annually – following commissioning of the WWTP	
			F	During Discharge	

IQA-05	Wastewater Treatment Plant – Influent	Active	B, E, N, ICP	Biannually – Prior to commissioning of the WWTP	Annually
				No testing requirements following commissioning of the WWTP	N/A
IQA-06	Sludge – From WWTP	Active	B, E, N, ICP	Quarterly	Annually
IQA-07	Surface Water entering West 40 Landfill – Based on Part E, Item 4 of the Expired Licence	Inactive	N/A	N/A	N/A
IQA-08	West 40 Landfill – Effluent Discharge Point~~;~~ ~~Based on Part E, Item 4 of the Expired Licence~~	Active	B, E, N, ICP, F, LS	Once prior to discharge; once during discharge; and once prior to the completion of discharge	
			F	During Discharge	
IQA-08(#)	Based on E, Item 17, Part F, Item 10 & Part I, Item 4 of the Expired Licence	Inactive	N/A[2]	N/A	N/A
IQA-08A	Station situated up-gradient of West 40 Landfill	Active	B, E, N, ICP, F, LS	Annually	Annually
IQA-08B	Station situated down-gradient of West 40 Landfill	Active			
IQA-09	Contaminated soil accepted at the West 40 Landfill	Inactive	NA	NA	NA
IQA-10	Withdrawal from Upper Niaqunngut River for transfer directly into the Reservoir.	Active	F	Daily when withdrawals occurring at this station.	Annual Report
IQA-11	Withdrawal from Middle Niaqunngut River watershed for transfer directly into the	Inactive	F	Daily when withdrawals occurring at this station.	N/A

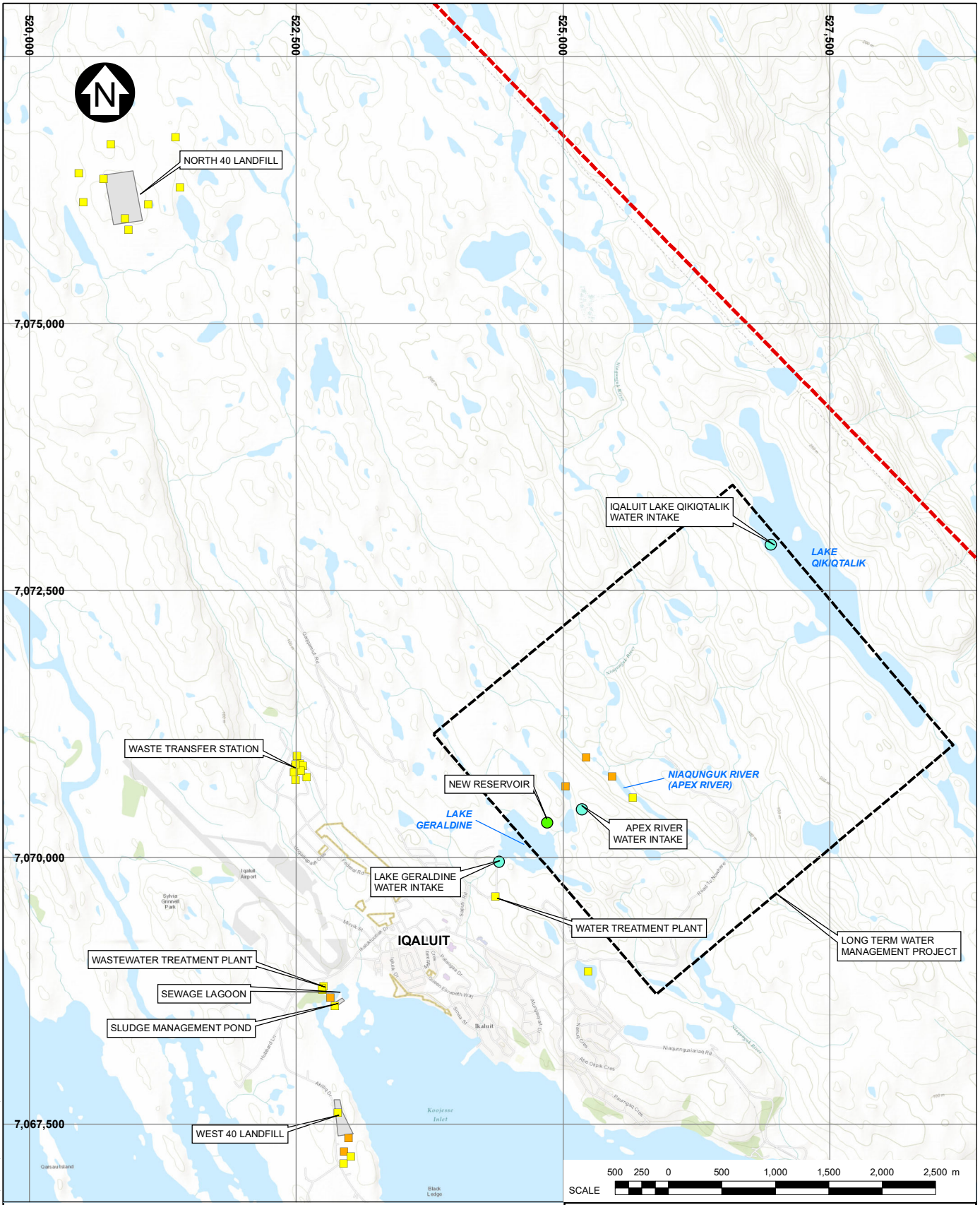
	Reservoir. Withdrawal point to be located on an ephemeral tributary near where it enters the Niaqunngut River or on the river itself just downstream of the confluence with the tributary.				
IQA-12	Withdrawal from small unnamed source water lakes adjacent to Lake Geraldine Reservoir for transfer directly to the reservoir.	Inactive	F	Daily when withdrawals occurring at this station.	N/A
IQA-13	Withdrawal from large unnamed source water lake for transfer into ephemeral tributary to Niaqunngut River. Intent of withdrawal is to provide water to withdrawal point at Monitoring Station IQA-10.	Inactive	F	Daily when withdrawals occurring at this station.	N/A
IQA-14	Withdrawal from Imiqtarivivinig (Dead Dog Lake) for dust suppression.	Active	F	Daily when withdrawals occurring at this station	Annually
IQA-15	Waste Transfer Station Runoff/Leachate Discharge Point	Active	B, N, E, ICP, F, LS	Daily flow measurements; Once prior to discharge; once during discharge; and once prior to completion of discharge	Annually

IQA-16 (WS-103)	Landfill Runoff/Leachate Discharge Point	Active	B, N, E, ICP, F, LS	Daily flow measurements; Once prior to discharge; once during discharge; and once prior to completion of discharge	Annually
IQA-17	Withdrawal from Sylvia Grinnel River	~~New~~ Inactive	F	Daily when withdrawal occurring at this Station	2021 Annual Report
SW1	Waste Transfer Station surface water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
SW2	Waste Transfer Station surface water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
SW3	Waste Transfer Station surface water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
WS-100	New North Landfill surface water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
WS-101	New North Landfill surface water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
WS-102	New North Landfill surface water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
19MW-01	Waste Transfer Station ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
19MW-02	Waste Transfer Station ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
19MW-03	Waste Transfer Station ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
19MW-04	Waste Transfer Station ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
19MW-05	Waste Transfer Station ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	

W-107	New North Landfill ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
W-108	New North Landfill ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
W-109	New North Landfill ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
W-110	New North Landfill ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	
W-111	New North Landfill ground water monitoring	Active	Field	Monthly	Annually
			Laboratory	Twice per Year	

In accordance with Part I, Item 9, the City will confirm the locations of newly proposed monitoring stations through GPS coordinates with an inspector prior to the start of construction for the LTWP.

Sampling will be conducted at each of the stations as per the Monitoring Plan and in accordance to Part I of the licence. The sampling will be completed by qualified City personnel or an experienced environmental consultant on behalf of the City. A certified laboratory will be used to analyse the samples. In 2024, the City used CADUCEON Environmental Laboratories for sample analysis.



LEGEND:

- NEW RESERVOIR
- SNP LOCATION (ACTIVE)
- SNP LOCATION (INACTIVE)
- WATER INTAKE
- MUNICIPAL LIMITS
- FACILITY
- LONG TERM WATER MANAGEMENT PROJECT

NOTES:

1. COORDINATE GRID IS IN METRES. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N.
2. BASE MAP/IMAGERY: © ESRI AND DATA (ONLINE) SERVICE LAYERS (2025). REDLANDS, CA: ENVIRONMENTAL SYSTEM RESEARCH INSTITUTE. ALL RIGHTS RESERVED.

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
A	12DEC'25	ISSUED WITH REPORT	RAC	BAC	AMH

CITY OF IQALUIT

TYPE A WATER LICENCE

SURVEILLANCE NETWORK PROGRAM MONITORING STATIONS

Knight Piésold CONSULTING

P/A NO. NB102-537/1

REF NO. 1

FIGURE 6.1

REV A

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7.0 Closure and Reclamation (Part J)

Part J of the current Licence approved the Iqaluit Solid Waste Management Plan West 40 Landfill Decommissioning Technical Memorandum (AECOM, 2014).

The City will continue to use the West 40 Landfill for several more years until the capacity is reached. A Final Closure and Reclamation Plan will be submitted to the Board for approval at least one year prior to commencing the decommissioning of the West 40 Landfill in accordance to Part J, Item 2 of the current Licence.

A closure and decommissioning plan for the North 40 Landfill and Waste Transfer Station is presented as Attachment 38.

8.0 References

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