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ᑦᑲᓗᐃᑦ 2022

City of Iqaluit

# Evaluation of Options for Long-Term Water Supply

June 2022





# ԵՈՒՆՔՈՒՄ

## Agenda

1. Գեօժեոլոգիական ճիշտագրություն
2. Գեօժեոլոգիական և Գեոտեխնիկական գնահատում
3. Գրգռման գնահատում
4. Բնօրինակի Գեոտեխնիկական Գնահատում

1. Status of Water Supply
2. Overview of Options
3. Evaluation of Options
4. Next Steps

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City of Iqaluit Water Supply Update









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## Overview of Options







## σΔϑδϙϑϑ ϑϙϑ ΔϑΔϑ Δϑϑϑϑϑϑϑϑ ϑϑϑ

# Apex River (Niaqunguk) and Unnamed Lake

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ϑϑϑ(EXP, 2014; Nunami Stantec 2022)

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Unnamed Lake (UNL) – as a headwater lake of the Apex River, has been identified as an option which would provide supply and storage.

The Apex River could supply enough additional water to refill the reservoir if all the water in the river was available (EXP, 2014; Nunami Stantec 2022)

Flows are highly variable, however, and could not provide guaranteed water supply to the City on it’s own.



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## Sylvia Grinnell River

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Water supply is enough in summer (City would need to take less than 2% of its flow)

Water taking in winter is not recommended

The City recognizes the cultural and recreational importance of the river – HTA has voiced strong concerns about taking water from this river

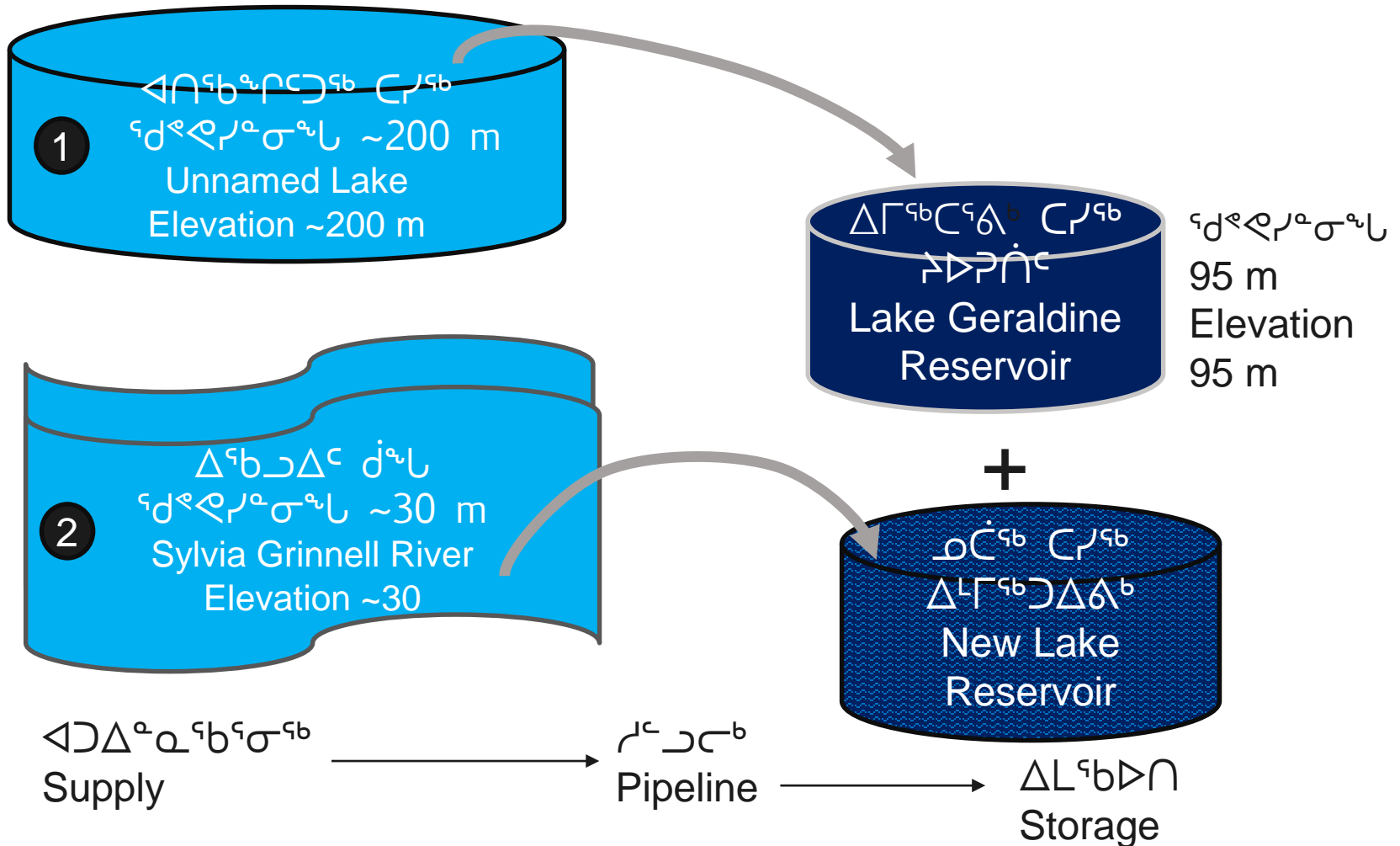
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# Water Supply Concepts



# Water Supply Concepts

## Water Supply Concepts



UNL  
ΔΓΛΓ

UNL  
Concept

ΔΓΛΓ ΔΓΛΓ ΔΓΛΓ

# Unnamed Lake Supply

ΔΓΛΓ ΔΓΛΓ ΔΓΛΓ 2019-Γ

ΔΓΛΓ ΔΓΛΓ ΔΓΛΓ 17,000 (ΔΓΛΓ 2040 ΔΓΛΓ ΔΓΛΓ)

ΔΓΛΓ ΔΓΛΓ 2018-Γ ΔΓΛΓ ΔΓΛΓ ΔΓΛΓ ΔΓΛΓ ΔΓΛΓ

ΔΓΛΓ ΔΓΛΓ ΔΓΛΓ ΔΓΛΓ

Unnamed Lake was used for emergency supply in 2019

Lake could provide additional supply to support a population of 17,000 (or 2040 under high growth)

Have been collecting data since 2018 but more lake outflow measurements are needed to confirm water balance

Water is available year-round













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## Year Round Operations

- ΔΓΔΔΔΔΔΔΔΔ ΔΔΔΔΔΔ ΔΔΔΔΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔΔΔΔΔΔ (2+km)  
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  - ΔΔΔΔ
- Similar year-round operation pipelines with insulated supply and return lines of similar lengths (2+ km) are currently in use in other locations in Nunavut including:
  - Rankin Inlet
  - Gjoa Haven
  - Cambridge Bay
  - CFS Alert





ՀԱՅԵՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ  
ՎՊԵՏՈՒԹՅԱՆ ԿՐԹԱԳՐԱԿԱՆ ԿԵՆՏՐՈՆ

Questions on  
Unnamed Lake  
Option?





SGR  
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 SGR  
 Concept

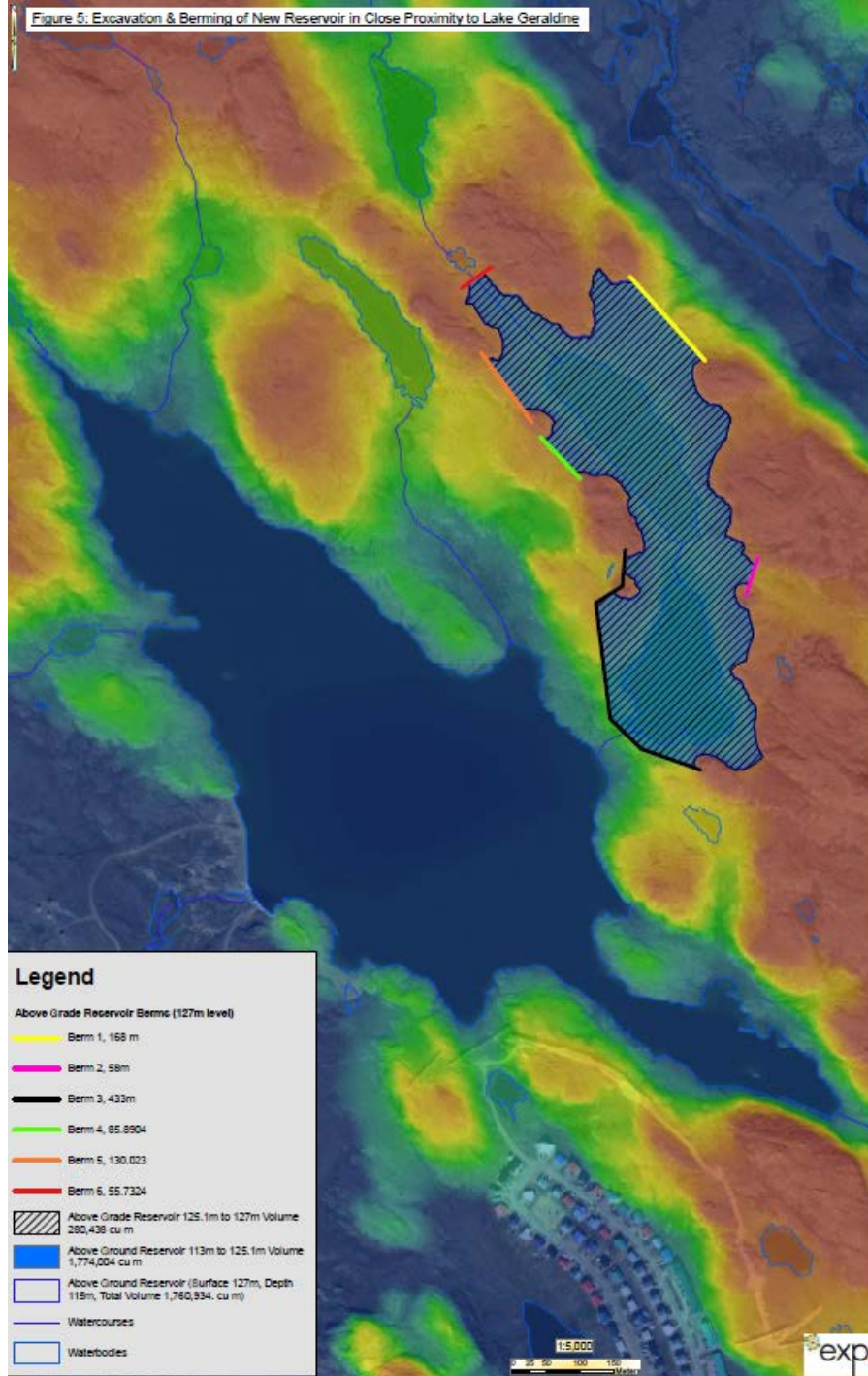
# ግልጽ ስራ ለግልጽ ግልጽ Considerations

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Needs new reservoir to store additional water (because cannot add water in winter)

Minimal impacts to fish and fish habitat but Sylvia Grinnell is important recreational and Indigenous fishery





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ᵈ<sup>ᶜ</sup>ᵇᶜᶜᶜᶜ?

Questions on  
Sylvia Grinnell  
Option?



உள்ளூர்நிலைகளைக் கண்டறிவதற்கான உத்தேசம் - உற்பத்தியாளர்களுக்கு  
பயன்படக்கூடிய உத்தேசம்

Supply Options – Comparison and Next Steps





# ᐅᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦ

## Capital Costs

- ᐅᑦᑎᑦᑎᑦ ᑦᑎᑦ ᐅᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦ - \$9.1 ᑦᑎᑦᑎᑦᑎᑦ
- ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦ - \$5.5 ᑦᑎᑦᑎᑦᑎᑦ
- ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦ - \$7.6 ᑦᑎᑦᑎᑦᑎᑦ
- ᐅᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ. ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ.
- ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ ᐅᑦᑎᑦᑎᑦᑎᑦᑎᑦᑎᑦ.
- Sylvia Grinnell Summer Operations - \$9.1 M
- Unnamed Lake Year Summer Operations - \$5.5 M
- Unnamed Lake Year Round Operations - \$7.6 M
- Either of the summer operations require a reservoir in addition to Lake Geraldine to provide water in the winter to the community. That reservoir is not included in the above costs.

Year round operations maintain Lake Geraldine at near full level and do not require an additional reservoir.





## ბიზნესის ინჟინერინგის სექტორი

# Engagement

- რეგულაციების განხორციელების მიზნით 2018 წლიდან გაიმართა სამსჯელობო სესიები.
- რეგულაციების განხორციელების მიზნით განხორციელდა სამსჯელობო სესიები.
- რეგულაციების განხორციელების მიზნით გაიმართა სამსჯელობო სესიები.
- რამდენიმე შეხვედრა გაიმართა HTA-სთან 2018 წლის შემდეგ.
- HTA-ს არ აქვს მხარდაჭერა სილვია გრინელი მდინარის წყლის გამოყენებას.
- HTA-ს სთავაზობს განიხილოს უცხოდანამოხრებული ტბის და აპექსის მდინარის წყლის მიწოდება.





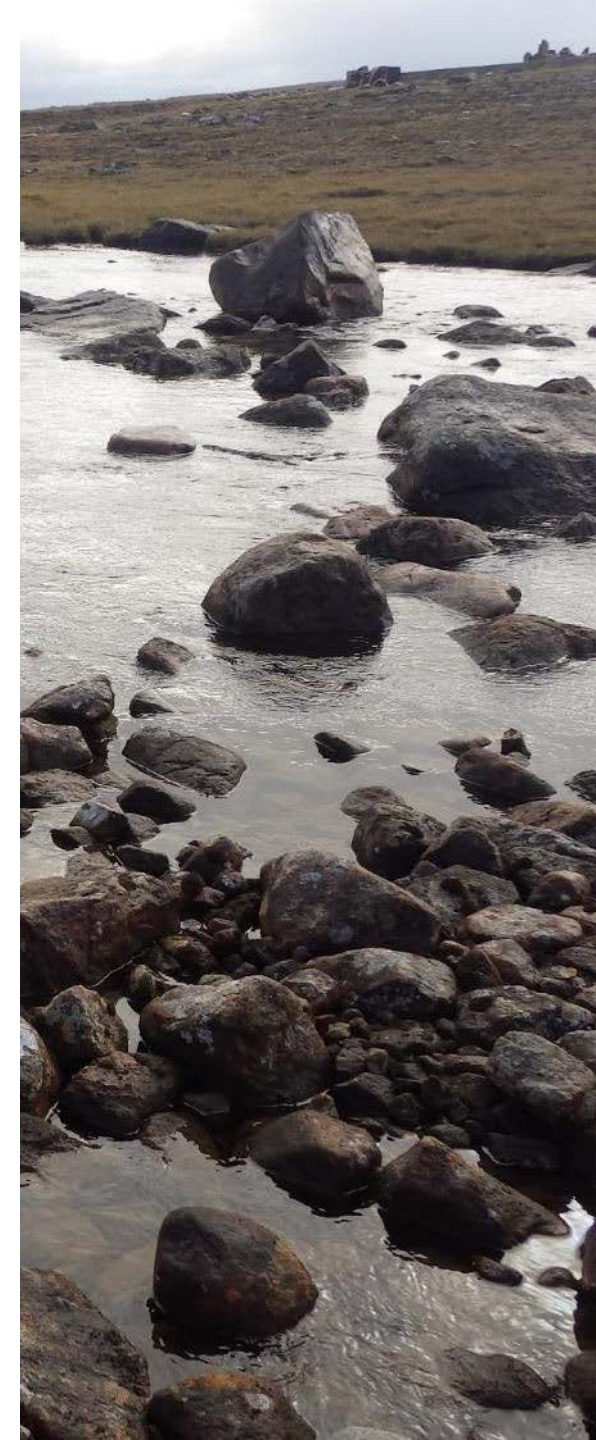
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Supply Options – Next Steps



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## Next Steps

- ማጠናቀቅ ደንብ ማውጣት ማዘጋጀት (ጥር 2022)
  - ለአዲስ አበባ ከተማ አስተዳደር ለተጨማሪ ምርመራና ለተጨማሪ ምርመራ ማድረግ (ሐምሌ 2022)
  - የአካባቢ ጥበቃ ማረጋገጫ ለማድረግ ማዘጋጀት
  - ለደረሰው ስራዎች ለተጨማሪ ምርመራ ለማድረግ ማዘጋጀት (2022-2023) – ለተጨማሪ ምርመራ ማድረግ ለማዘጋጀት ማዘጋጀት
- City to confirm preferred option (June 2022)
  - Complete additional site investigations and environmental studies (summer 2022)
  - Ongoing engagement and consultation
  - Progress design and permitting (2022 – 2023) – Note that an amendment to the water licence will be required for all options





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Questions on  
Next Steps ?