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LAND FOR HOMES
IGLUQPIURVIKHAT

GJOA HAVEN NU

COMMUNITY SUMMARY

DRAFT

DRAFT January 2025

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COMMUNITY EXECUTIVE SUMMARY



Figure 1: COMMUNITY MAP

Norwegian explorer, Roald Amundsen named the area 'Gjøahavn', noting it was the 'finest little harbour in the world'. The community was founded after the Hudson's Bay Company opened a trading post in 1927, followed by Roman Catholic missionaries. It has a population of 1,349 as of the 2021 Census.

The report highlights various aspects of the community, including development priorities and concerns. There are municipal capacity and financial concerns regarding maintaining new infrastructure for future housing development. Additionally, there are possible concerns about unmarked graves throughout the community. The common residential building forms include single-family homes, rowhouses, and walk-up apartments, with more recent developments of 4-8 plexes.

The land in Gjoa Haven is characterized by sandy conditions, making it vulnerable to erosion. The community is developed on flat to gently undulating terrain, dissected by two large gully systems. The area is also subject to polygonal networks of ice wedges, indicating continuous permafrost. The climate is high arctic, with warming air temperatures in summer causing ice melt and open water areas around the community.

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Infrastructure details reveal staffing issues affecting water and sewer services, leading to inconsistent delivery schedules, especially on weekends. There are significant granular supply challenges, with limited sources near the hamlet and concerns about the quality and management of aggregate materials. The community's power infrastructure is adequate until 2027, with a new power plant planned for completion in the next 3-5 years.

In Neighbourhood 'A', the land is on an elevated ridge, and there are concerns about drainage and ponding issues. The hamlet is working to address capacity and financial challenges related to land preparation.

Neighbourhood 'B' includes commercial, and community uses such as an elementary school and fire hall. The area is hilly with major drainage ways, making it susceptible to erosion. The road infrastructure is partially complete, but drainage infrastructure is lacking, and power distribution infrastructure needs to be extended.

In summary, though Gjoa Haven has a substantial inventory of surveyed land, this is impacted by significant suitability challenges and a need for infrastructure such as roads, drainage and power. Without action, a lack of suitable land is presents and high to extreme risk to new housing within the two to five years. Risks can be mitigated by responsive design, infrastructure investment, utilizing redevelopment sites, and efficient use of land.

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COMMUNITY LAND GAP ASSESSMENT

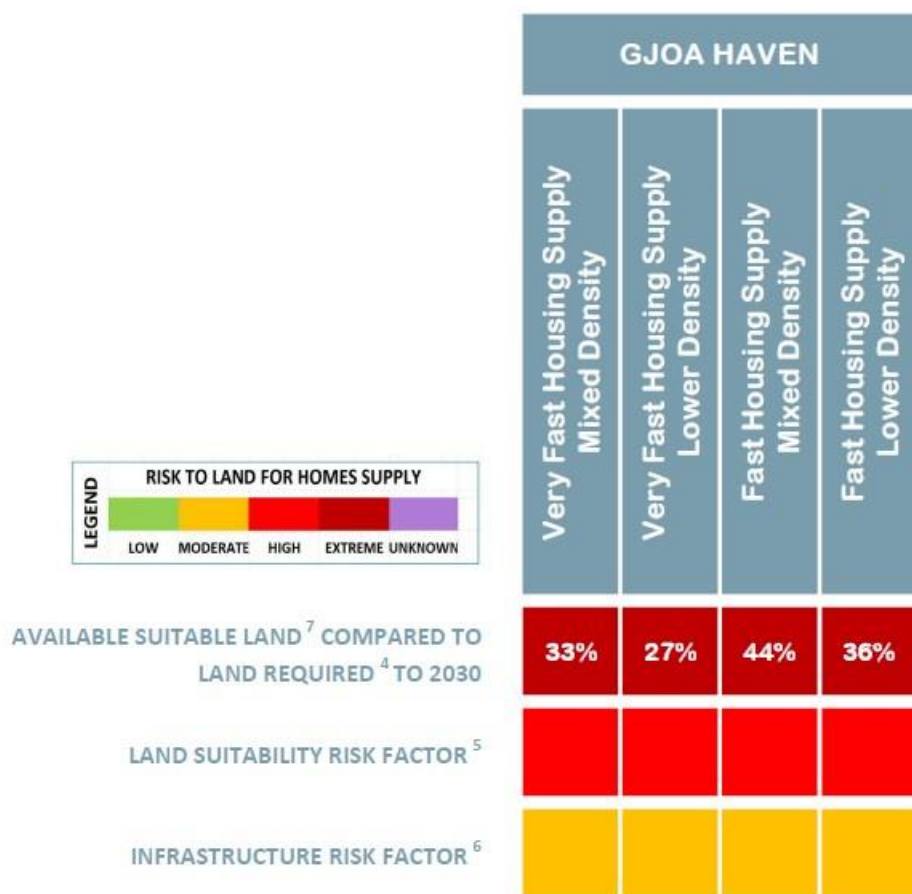


Figure 2: LAND SUPPLY RISK TO 2030 (existing infrastructure only)

Overview

For more information, see L4H Nunavut Land Gap Assessment charts and L4H Guides.

The Community Land Gap Assessment chart estimates the risk for a shortage of suitable land prior to 2030. L4H extracted the GN's land inventory (legally surveyed, vacant, and greater than 500m² in area), and adjusted for lots known to be already reserved or leased. Infrastructure Risk and a Land Suitability Risk factors were applied to arrive at an estimate of suitable, build-ready land, which was compared to estimated land needs.

Housing Supply and Density Scenarios

Risk assessment scenarios allow for variables in the rate of new home supply ("Very Fast" assumes Nunavut 3000 targets; "Fast" assumes 75% Nunavut 3000 targets) and the amount of

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land required for each new home ("Mixed Density" assumes public housing at 275m² per unit and other housing at 675m² per unit; "Lower Density" assumes all housing averaging 675m² per unit).

Land Suitability Risk Factor

An overall Land Suitability Risk Factor was applied based upon social-cultural, legal, technical, environmental, and constructability characteristics. A High-risk assessment was assumed to reduce available lots by 40%; a Moderate risk assessment was assumed to reduce available lots by 20%.

Infrastructure Risk Factor

An overall Infrastructure Risk Factor was applied based upon the general status, condition, and capacity of the roads and drainage, power and water/wastewater services to development areas and lots. A High-risk assessment was assumed to reduce available lots by 40%; a Moderate risk assessment was assumed to reduce available lots by 20%. Timely infrastructure improvements can be expected to reduce the overall risk of land shortages.

COMMUNITY - PLANNING AND LANDS

Community Name

Gjoa Haven

Community Identifier Number

415

Demographic Characteristics

Current Population: 1,349 (2021 Census)

Zoning Bylaw Data

2023 L4H: Areas zoned residential but not surveyed; some impacted by the 450-meter waste site and wastewater lagoon setbacks

COMMUNITY - GENERAL

Community geographic and historical context

(www.gov.nu.ca) Norwegian explorer, Roald Amundsen named the area 'Gjøahavn', noting it was the 'finest little harbour in the world'. The permanent community was

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founded after the Hudson's Bay Company opened a trading post in 1927, which was followed by Roman Catholic missionaries. In the 1950's, the population was only 110 people.

2024 L4H Tour: Amundsen expedition land. Historical placards indicate Gjoa Haven near location where Franklin Expedition ships found.

Community Input - Development Priorities or Concerns

2024 L4H Tour: SAO notes municipal capacity and financial concerns regarding maintaining new infrastructure regarding future housing development. Land Development Fund is low. Limited staff capacity, struggling to follow basic administrative procedures hampering ability to fulfil role in housing. Desire for more staff housing, hotel capacity and small craft harbour to support cruise ships. Indicated 6 bay garage, 26 bed shelter, new recreational complex study, new power plant, new Land administrator, granular study.

Local or Traditional Knowledge-Culturally Important Elements, Activities or Historical Events

2024 L4H Tour: SAO noted possible concerns about unmarked graves throughout the community

Common Residential Building Forms

- 1 storey
- 2 to 3 storeys
- Single family rowhouse (4 to 6 units)
- Walk up apartments

2024 L4H Tour: Mainly SUDs, 4-8 plexes more recently

Notable Land Form Characteristics

- Ocean (tides 1.2 to 3m)
- Hilly
- Beach

2024 L4H Tour: Much of Gjoa Haven is sandy and vulnerable to erosion.

2023 Stantec Technical Report: Most of the community was developed on flat to gently undulating terrain which is dissected by two large gully systems.

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Notable Flora/Fauna Characteristics

- Fish
- Arctic Char

2024 L4H Tour:

Risk to planning, design or construction Not known

Notable Views and Vistas

- Ocean
- Tundra
- Hills

2024 L4H Tour:

Risk to planning, design or construction Low

General Comment

2024 L4H Tour: SAO indicates lack of funds in LDF, equipment falling apart, management challenges (e.g., lack of process controls, permitting, leases); deficiencies in all aspects of mun operations.

Risk to planning, design or construction Medium

COMMUNITY - TECHNICAL

Geotechnical Characteristics

2024 L4H Tour: Much of the hamlet is sandy and vulnerable to erosion.

Surface Drainage Characteristics

2024 L4H Tour Challenging development due to drainage and slopes.

Permafrost Characteristics

2023 Stantec Technical Report: Polygonal networks of ice wedges were identified from desktop assessment throughout the study area; however, they appear predominant in planned future subdivisions

2023 Stantec Technical Report: Based on the geotechnical evaluation, it is expected that an overall low to moderate ice content permafrost generally occurs within the planned

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future subdivisions (with recorded moisture contents varying between 14.2% and 49.9%, and VIC varying between 40.0% and 78.5%)

Climate Characteristics

2023 Stantec Technical Report: Gjoa Haven has a high arctic ecoclimate. Warming air temperatures during summer trigger ice melt and breakup with open water areas developing around the community. During the winter, local weather is often subject to winds from the northwest which typically causing blowing snow.

General Comment - Technical

2024 L4H Tour Much of area vulnerable to erosion due to sandy conditions. Sandy conditions can weather building exteriors more rapidly.

Risk to planning, design or construction Medium

COMMUNITY - INFRASTRUCTURE

General Comment - Wastewater Infrastructure

2023 L4H Tour: Staffing Issues.

Risk to planning, design or construction Medium

2023 NHC Tour: Water and Sewer capacity not an issue (they have enough trucks) but Inconsistent work attendance leading to inconsistent delivery schedule especially weekend service not good. People run out of water over weekends

General Comment - Water Infrastructure

2024 L4H Tour: Staffing Issues.

Risk to planning, design or construction Medium

2023 NHC Tour: Water and Sewer capacity not an issue (they have enough trucks) but Inconsistent work attendance leading to inconsistent delivery schedule especially weekend service not good. People run out of water over weekends

General Comment - Aggregate or Granular Supply

- Gravel Pits (Stantec Presentation July 12, 2024)

Risk to planning, design or construction: High

Aggregate supply by Municipality:

2024 L4H Tour: Equipment available but limited ability to maintain

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Aggregate Quality: Not known –

2024 L4H Tour: Awaiting testing results

Risk to planning, design or construction: High

Aggregate Quantity:

- Indeterminate to 2030
- Inadequate to 2027

2024 L4H Tour: Estimated 32,000m³ in two pairs. 25000m³ will require processing to remove fines

Risk to planning, design or construction: Medium

Aggregate Management & Production Capacity:

- Indeterminate to 2027

Note on aggregate management & production capacity:

2024 L4H Tour: Lack of management controls, oversight (SAO), have equipment but limited ability to maintain

Risk to planning, design or construction: Medium

Note on aggregate cost: Unknown –

2024 L4H Tour: Municipality had not established pricing

Risk to planning, design or construction High

2024 L4H Tour: Significant granular shortage, lack of sources near hamlet. Potential to extract more materials from two existing sources being studied.

Risk to planning, design or construction High

2024 L4H Desktop Review: Hamlet of Gjoa haven recently hired stantec to do a gravel study and found 2 pockets of granular material around the community (1st area had 7000m³ of material and 2nd area had 250000m³ of material but you would need to sort and screen to get to good material). The hamlet also owns the crusher and they are looking to sell granular but their equipment isn't in the greatest shape and repairs are needed. 2023 L4H-No survey response. NCCD advises in 2024 that local material is native gravel, low quality (via NCCD).

General Comment - Power Infrastructure Readiness

Community generation capacity:

2024 L4H Tour:

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- Adequate to 2027
- Inadequate to 2030

Note on community generation capacity:

2024 L4H Tour: New power plant planned

Risk to planning, design or construction: Medium

Community distribution system status:

2024 L4H Tour:

- Adequate to 2030

Risk to planning, design or construction: Low

2024 L4H Tour: Construction of new power plant to be completed in next 3-5 years.

Consultation. Risk to planning, design or construction Medium

NEIGHBOURHOOD 'A'- PLANNING AND LANDS

Plan Number: 4840

Block Number: 6

General Description: North Subdivision (Phase 1)

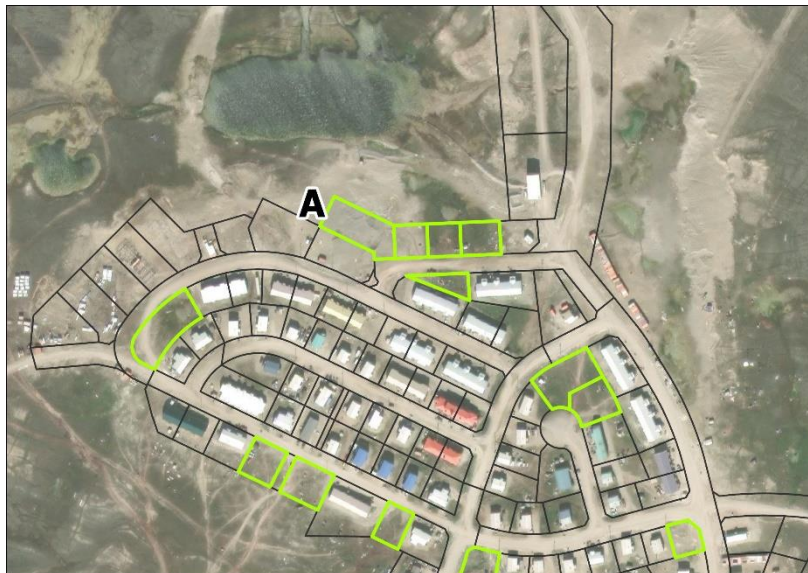


Figure 2: NEIGHBOUHOOD 'A' MAP

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NEIGHBOURHOOD 'A' - GENERAL

Land Form Characteristics - Neighbourhood

2023 Stantec Technical Report: On an elevated ridge sitting approximately 5 m above surrounding terrain.

General comment

2024 L4H Tour: Hamlet currently working to address capacity and financial challenges with respect to land preparation.

NEIGHBOURHOOD 'A' - TECHNICAL

Surface Drainage Characteristics - Neighbourhood

2024 L4H Tour: Concerns regarding drainage and ponding issues

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NEIGHBOURHOOD 'B' - PLANNING AND LANDS

Plan Number: 4589

Block Number: 5

General Description: East Subdivision (Phase 2)

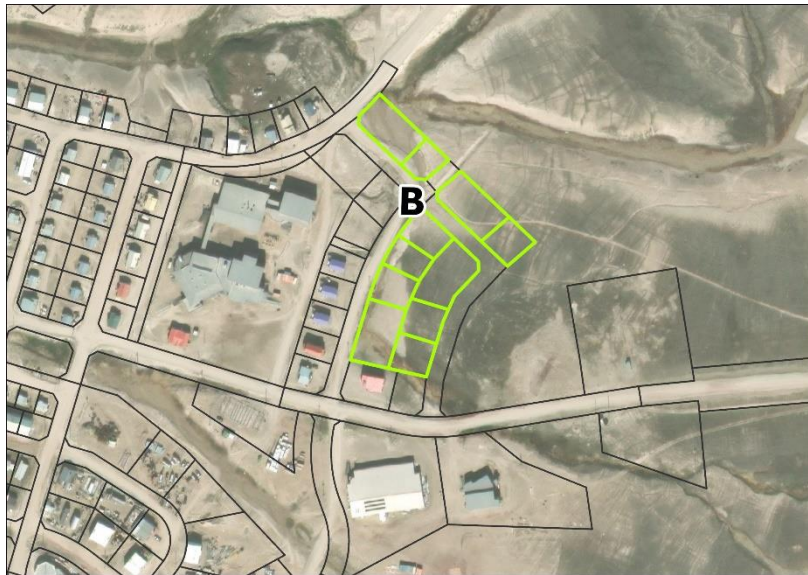


Figure 3: Neighbourhood B Map

NEIGHBOURHOOD 'B' - GENERAL

Current Land Uses and Activities - Neighbourhood

- Commercial
- Community

2024 L4H Tour: Elementary school, fire hall

Risk to planning, design or construction: Low

Land Form Characteristics - Neighbourhood

- Hilly
- Major drainage ways

Risk to planning, design or construction: High

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Built Form Characteristics - Neighbourhood

- Mostly 1 storey

2024 L4H Tour: Mainly community uses (school, future shelter, fire hall)

Risk to planning, design or construction: Low

Important Flora/Fauna - Neighbourhood

Not Known

Neighbourhood views and vistas

- Partial view of Old/New Town,
- Cove below Old Town

2024 L4H Tour:

Risk to planning, design or construction: Low

NEIGHBOURHOOD 'B' - TECHNICAL

Geotechnical Characteristics - Neighbourhood

2023 Stantec Technical Study: Many of east subdivision (Block 5 Plan 4589) surveyed lots deemed unsuitable for development due to drainage / slopes.

2024 L4H Tour: Sand, appear susceptible to erosion due to abutting drainage ways.

Risk to planning, design or construction: High

Surface Drainage Characteristics - Neighbourhood

2024 L4H Tour: Two major drainage ways abut subject lot, consistent flow was observed. Neighborhood partially located within drainage corridor that separates Old and New Town

Risk to planning, design or construction: High

Topography Characteristics - Neighbourhood

2023 Stantec Technical Study: The terrain in the area is mainly flat (< 5%), except for a short steep slope (~50%) present alongside a stream channel. The channel is showing signs of lateral erosion.

2023 Stantec Technical Study: The planned future subdivisions Phase 2, Phase 3, Phase 5 and Phase 6, being located adjacent to the Gullied Area, are the most likely to be

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impacted by accentuated erosion following their development. L4H 2024 Tour: Gentle to moderate slope. Risk due to field observations of sandy material in area.

Risk to planning, design or construction: High

Permafrost Characteristics - Neighbourhood

2023 Stantec Technical Study: A network of ice wedges is present within this proposed subdivision

Climate Characteristics - Neighbourhood

2024 L4H Tour: Vulnerable to erosion due to drainage way thru and abutting neighborhood.

Risk to planning, design or construction: High

NEIGHBOURHOOD 'B' - INFRASTRUCTURE

Road Infrastructure - Neighbourhood

- Partially Complete

2024 L4H Tour: Good Condition

Risk to planning, design or construction: Medium

Drainage Infrastructure - Neighbourhood

- Partially Complete

2024 L4H Tour: No culverts or ditches observed. Drainage way being maintained.

Risk to planning, design or construction: High

Wastewater Utilidor Infrastructure (if applicable) - Neighbourhood

- Not Applicable

2024 L4H Tour: Trucked Service

Risk to planning, design or construction: n/a

Water Infrastructure - Neighbourhood

- Not Applicable

2024 L4H Tour: Trucked Service

Risk to planning, design or construction: n/a

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Power Distribution Infrastructure - Neighbourhood

- Partially Complete

2024 L4H Tour: Only extended to lot 7

Risk to planning, design or construction: Medium

PHOTOGRAPHS

(From 2024 NHC Community Tour)



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APPENDICES



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