



Northern Village of Kangirsujuaq

Community Master Plan 2025-2045

**ADOPTED APRIL 14, 2026
BY-LAW NO. 2026-03**





NORTHERN VILLAGE OF KANGIRSUJUAQ

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NORTHERN VILLAGE OF KANGIRSUJUAQ

By-law No. 2026 - 03

Concerning the adoption of a new Master Plan for the municipal territory.

- Whereas** pursuant to subsection 176 (1) of *An Act respecting Northern villages and the Kativik Regional Government* (OQLR, c. V-6.1; hereinafter the *Kativik Act*), the Municipal Council (hereinafter the *Council*) may adopt a by-law for the making of a Master Plan for the municipal territory, specifying the purposes for which each portion of the territory included in the plan may be used, and to enact that such a Master Plan become obligatory;
- Whereas** pursuant to section 167 of the *Kativik Act*, the Council may provide for the issuing of permits or certificates in relation to the application of a by-law contemplated in section 176 of the *Kativik Act*;
- Whereas** pursuant to By-law No. 04-06 concerning the adoption of the current Master Plan for the municipal territory, which is in force since September 21st, 2004. The master plan currently in effect shall be replaced by the master plan set forth in this by-law.
- Whereas** the ongoing development and anticipated expansion of the Northern Village within municipal boundaries necessitate the adoption of a new Master Plan. This updated plan is required to reflect the numerous changes that have occurred since the previous plan was adopted, including newly available data, revised expansion zones, and upcoming projects
- Whereas** a new Master Plan has been drafted, a copy of which has been appended to and forms an integral part of the present by-law;
- Whereas** the appended Master Plan is the result of comprehensive community planning exercise, initiated in 2016, aimed at providing the community with a roadmap to achieve its desired vision for the future;
- Whereas** the Council has reviewed the new Master Plan and deems it necessary to adopt it in order to update the orientations that will guide the harmonious development of the community;
- Whereas** a notice of motion for this by-law was duly given during the preceding sitting of the Council held on March 17th, 2026.

THEREFORE, the Council of the Northern Village of Kangirsujuaq, by this by-law, enacts and decrees as follow:

1. the preamble is an integral part of this by-law;
2. the appended 2025-2045 Master Plan for the municipal territory be adopted;
3. the poster (*Land Use Plan 2025-2045*) is an integral part of the Master Plan;
4. the appended Master Plan replaces any previous Master Plan adopted by the Council;
5. this by-law shall come into effect the date of its publication in accordance with section 138 of the *Kativik Act*;
6. once published, the Secretary-Treasurer shall transmit a copy of the present by-law without delay to the *Kativik Regional Government* as per section 160 of the *Kativik Act*.

IN FAVOUR: 5
 OPPOSED: 0
 ABSTENTIONS: 0
 ABSENTEES: 2
 DATE OF ADOPTION: April 14, 2026
 MAYOR'S SIGNATURE: (S) [Signature]
 SECRETARY-TREASURER'S SIGNATURE: (S) [Signature]
 DATE OF PUBLICATION: April 15, 2026

(S) [Signature]
 (S) [Signature]



BY-LAW NUMBER	DATE OF ADOPTION
2026-03	April 14, 2026

List of Maps

Map 1	Location of Kangiqsujuaq within its Context	11
Map 2	Satellite Image showing municipal boundary	11
Map 3	Cultural Heritage Sites and Traditional Hunting Routes	19
Map 4	Aerial Imagery of Kangiqsujuaq from 1958-2016	23
Map 5	2004 Master Plan Map	24
Map 6	2016 Draft Master Plan Map (not adopted)	25
Map 7	Community Assets in Kangiqsujuaq	28
Map 8	Infrastructure in Kangiqsujuaq	31
Map 9	Snow Disposal Sites in Kangiqsujuaq	33
Map 10	Topography in Kangiqsujuaq	36
Map 11	Surface Deposits in Kangiqsujuaq	37
Map 12	Natural Hazards Risk in Kangiqsujuaq	38
Map 13	Permafrost Conditions in Kangiqsujuaq	40
Map 14	Construction Potential in Kangiqsujuaq	41
Map 15	Community Master Plan - Kangiqsujuaq Land Use Plan	53
Map 16	Potential Development Sites and Total Surface Areas	59
Map 17	Concept Map of Potential Development Area E1	60
Map 18	Concept Map of Potential Development Area E2	61
Map 19	Concept Map of Potential Development Area S1	62
Map 20	Concept Map of Potential Development Area S2	63

List of Graphs

Graph 1	Elements of the Community Master Plan	7
Graph 2	Inuit Housing Governance Schematic Diagram	14
Graph 3	Population Pyramid, 2021 Census	22
Graph 4	Families in Private Households, 2021 Census	22
Graph 5	Population Growth, 1996 to 2021	22
Graph 6	Percentage of Total Occupied Dwellings, 2021 Census	26
Graph 7	Percentage of Total Occupied Private Dwellings by Period of Construction	26
Graph 8	Social Housing by Year of Construction	27
Graph 9	Labour Force Aged 15 Years and Over by industry (NAICS)	34
Graph 10	Percent Change in the Population in Kativik	46
Graph 11	Population Projections for Kangiqsujuaq, 2021-2041	46
Graph 12	Number of People Living in the Same Dwelling Based on Total Housing Survey Respondents, 2021	47
Graph 13	Criteria Used for Impact Zone Evaluation	50

List of Images

Image 1	Photograph of the Village of Kangiqsujuaq	6
Image 2	Photograph of Kangiqsujuaq in Winter	8
Image 3	Photograph of the Youth Centre in Kangiqsujuaq	29
Image 4	Photograph of the Kangiqsujuaq NV Office	29
Image 5	Photograph of the Kangiqsujuaq CLSC	29
Images 6-9	Photographs of Community Consultations in Kangiqsujuaq	45

List of Tables

Table 1	Historical Timeline of Kangiqsujuaq	12
Table 2	Overview of Key Organizations and Typical Construction Activities	25
Table 3	Kangiqsujuaq's Community Assets	27
Table 4	Description of Categories in the Surface Deposits Map	35
Table 5	Description of Categories in the Permafrost Conditions Map	39
Table 6	Description of Construction Potential Map	39
Table 7	Key Climate Indicators for Kangiqsujuaq	42
Table 8	Population Projections for Kangiqsujuaq, 2021-2041	46
Table 9	Kangiqsujuaq Housing Needs Analysis	47
Table 10	Number of Dwellings That Meet the Needs	47
Table 11	Long-Term (2041) Housing Needs Estimate for Kangiqsujuaq	48
Table 12	Lands Needs Assessment	48
Table 13	Impact Zones and Their Permitted Uses	52
Table 14	Main Construction Constraints	56
Table 15	List of Ongoing and Upcoming Community Projects	57
Table 16	Land Needs and Applicable Zones	57

Table of Contents

STATEMENT FROM THE COUNCIL	6	03 Existing Conditions	21	SECTION B - LAND USE	49
INTRODUCTION	7	3.1 Demographics	22	05 Land Use Plan	50
SECTION A - BACKGROUND INFORMATION	9	3.2 Urban Development	24	5.1 Impact-Based Zoning Concept	52
01 Community Context	10	3.3 Housing	26	5.2 Land Use Designations and Descriptions of Types of Uses	54
1.1 Location	11	3.4 Community Assets	27	5.3 Development Strategy	55
1.2 History	12	3.5 Infrastructure	30	06 Implementation	64
1.3 Governance	13	3.6 Economy	34	6.1 Implementing the Community Master Plan	65
02 Cultural Context	17	3.7 Geophysical Profile	35	6.2 Amending the Community Master Plan	65
2.1 Approach	18	3.8 Climate	42	REFERENCES	66
2.2 Understanding of Land and Land Use	18	04 Community Perspectives and Needs	44	APPENDIX	68
2.3 Understanding of Community and Well-Being	18	4.1 Community Consultations Summary	45		
		4.2 Population Growth	46		
		4.3 Land Needs Assessment	47		

List of Acronyms

CLSC	CENTRE LOCAL DE SERVICES COMMUNAUTAIRES	KRG	KATIVIK REGIONAL GOVERNMENT	NAICS	NATIONAL AMERICAN INDUSTRY CLASSIFICATION SYSTEM
CEN	CENTRE D'ÉTUDES NORDIQUES (CENTRE OF NORTHERN STUDIES)	LHC	LANDHOLDING CORPORATION	NHB	NUNAVIK HOUSING BUREAU (FORMERLY KMHB KATIVIK MUNICIPAL HOUSING BUREAU)
FCNQ	FÉDÉRATION DES COOPÉRATIVES DU NOUVEAU-QUÉBEC	LIDAR	LIGHT DETECTION AND RANGING	NRBHSS	NUNAVIK REGIONAL BOARD OF HEALTH AND SOCIAL SERVICES
ISQ	INSTITUT DE LA STATISTIQUE DU QUÉBEC	MELCCFP	MINISTÈRE DE L'ENVIRONNEMENT, DE LA LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES, DE LA FAUNE ET DES PARCS	NV	NORTHERN VILLAGE
JBNQA	JAMES BAY AND NORTHERN QUEBEC AGREEMENT	MRNF	MINISTÈRE DES RESSOURCES NATURELLES ET DES FORÊTS	SHQ	SOCIÉTÉ D'HABITATION DU QUÉBEC
KI	KATIVIK ILISARNILIRINIQ	MTMD	MINISTÈRE DES TRANSPORTS ET DE LA MOBILITÉ DURABLE		

Image 1 — Photograph of the Village of Kangiqsujuaq¹



Statement From the Council

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We are pleased to present our long-awaited 2025 Kangiqsujuaq Community Master Plan.

This document is an update to our previous Master Plan. As a holistic planning tool, the Community Master Plan will help us guide and manage development projects with a vision for the next 20 years.

The Land Use Plan and proposed new development areas reflect the community needs and wishes expressed during the community consultations. At the same time, we want future projects to respect Inuit values and cultural traditions. The Northern Village is responsible for making sure we, as a community, follow and put into action the new Community Master Plan. We are committed to work in the best interest of Kangiqsujuamiut.

We dedicate this Community Master Plan to:

all our ancestors and Elders for holding and sharing historical and cultural knowledge so we may continue to preserve and pass on Inuit ways of living; to our youth who embody the hopes and dreams for our collective future; and to all Nunavimmiut, near and afar.

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¹ Unless otherwise cited, photographs in the Plan were sourced from the KRG

Introduction

This document represents a new edition of the Master Plan of the northern village of Kangiqsujuaq, replacing the last master plan adopted by the northern village council in 2009.

As Kangiqsujuaq's population continues to increase and the village expands, it is important that land use planning tools support the development of an economically, environmentally, and socially resilient community that meets the needs of current and future generations. The Master Plan represents a contemporary planning approach for the village of Kangiqsujuaq. Rooted in consultation and a holistic understanding of the community's context, this Master Plan outlines the preferred direction for growth and development for Kangiqsujuaq.

The Master Plan incorporates elements from the 2016 Master Plan, providing updates where necessary and when data was available. This Master Plan is applicable only within the municipal boundaries of the northern village of Kangiqsujuaq. To facilitate the use of the document, the Master Plan is divided in two main sections. The first section provides a comprehensive overview of the Kangiqsujuaq community context and needs, while the second section defines policies, processes and how they will be implemented. This section also includes the land use map, which summarizes the constraints and potential for community development on a 20-year horizon.

PLANNING APPROACH

The planning approach used for this Master Plan is based on the comprehensive community planning (CCP) method, a holistic process that enables a community to build a roadmap to achieve its desired community vision. It is an important tool on the path to sustainability, self-determination, and improved governance capacity (Indigenous Services Canada, 2018). CCPs are community-driven documents which are adapted to their local contexts. Furthermore, CCPs are comprehensive in that they address a range of important aspects of community life, from governance to infrastructure development, health, education, social and economic development, environment and resources, and culture. The CCP is a planning tool used to integrate these elements into a cohesive planning approach and set objectives for concrete actions (Indigenous Services Canada, 2021). This Plan aims to develop the same comprehensive view of the local community but relies more heavily on existing data and secondary sources than is typical in a CCP.

This Master Plan was developed collaboratively with the Kativik Regional Government (KRG)'s Department of Renewable Resources, along with other KRG departments, and the Northern Village (NV) of Kangiqsujuaq to ensure that the community's needs are reflected, and that objectives set are feasible. The Plan represents not only a planning vision, but a working document that can be adapted to the community's evolving circumstances as new projects and initiatives continue to evolve.

Graph 1 — Elements of the Community Master Plan



Inspired by the Comprehensive Community Planning wheel from Indigenous Services Canada

PURPOSE

- > To build a community that is safe, accessible, and vibrant, and where community traditions and culture are respected.
- > To identify opportunities for improvement of services and amenities.
- > To determine objectives for policy and program interventions to support community well-being.
- > To adopt a land use planning approach that is adapted to the community's needs and context.
- > To give Council a tool for making the best use of the space available in the village.
- > To identify appropriate areas for different land uses to ensure that they improve community life and do not conflict with other land uses.
- > To protect significant (cultural or environmental) areas from development and to protect access to the land, the water, and the sea ice.
- > To allocate sufficient land for different land uses in the community and accommodate population growth.
- > To create new neighbourhoods for housing, businesses, and community uses.
- > To encourage construction on existing vacant or underutilized lots within the village core.
- > To identify natural hazards in the village (flood, avalanche zones, erosion, permafrost conditions and unstable grounds).

DOCUMENT STRUCTURE

SECTION A - BACKGROUND INFORMATION

1. Community Context

Provides a brief overview of the community.

2. Cultural Context

Discusses the cultural ties that exist between community members and the land, pointing to the importance of a land management approach that responds to cultural needs and perspectives.

3. Existing Conditions

Details the existing conditions of the community, from environmental to infrastructural.

4. Community Perspectives and Needs

Provides a brief overview of recent community consultations, as well as a needs assessment.

SECTION B - LAND USE

5. Land Use Plan

Presents an impact-based (flexible) zoning approach to planning for the village, and a Development Strategy.

6. Implementation

Provides an overview of the process to implement and amend the Community Master Plan.

Image 2 — Photograph of Kangiqsujuaq in Winter



Section A

Background Report

01 Community Context

02 Cultural Context

03 Existing Conditions

04 Community Perspectives and Needs



01

**Community
Context**

Map 1 — Location of Kangiqsujuaq Within the Context of the Nunavik Region



1.1 LOCATION

Kangiqsujuaq is located in the Nunavik region of the province of Quebec, which begins north of the 55th parallel. Kangiqsujuaq is one of 14 villages in the region. The village is situated on the Ungava Peninsula, on the southeastern shore of Wakeham Bay, approximately 10 kilometres from the Hudson Strait (coordinates 58°27'N and 78°06'W). At present, the built-up areas of the Kangiqsujuaq and its infrastructure are largely concentrated along the shore of the Bay, in a valley surrounded by mountains (Makivik Corporation, 2013).



Image sources: (Saladin d'Anglure, 1960b, 1960a, 1961)

1.2 HISTORY

The area surrounding Kangiqsujuaq hosts various archaeological sites, speaking to the region's Inuit settlement for thousands of years. Various sites in close proximity have been identified and explored in recent years. This includes a minimum of 10 sites which speak to the presence of Inuit people in the area since approximately 800 BC. Findings on site have included a vast collection of petroglyphs, as well as various items produced using stone including lamps, containers, and various other tools.

Table 1 represents a timeline of events in Kangiqsujuaq's recent history. It should be noted that this table exclusively contains accounts from early European contact to the present day.

Table 1 — Historical Timeline of Kangiqsujuaq

2000 BCE	Indigenous people, noted ancestors of the Inuit, occupied the area, based on archaeological studies.
1884	Members of the Canadian Hudson Bay expedition arrive to establish a commercial route to Europe through the Hudson Strait. An ice observation and meteorological station is built nearby at Stupart Bay (known as Aniuvarjuaq by the Inuit).
1897	An expedition was led by Cpt. William Wakeham – the namesake of the Bay on which Kangiqsujuaq resides – to determine if the Hudson Strait was safe for navigation.
1910	The Revillon Frères, a French fur and luxury goods company, established a trading post.
1914	The Hudson Bay Company established a post to compete with the Revillon Frères Company.
1928	The Hudson Bay Company established an experimental fox farm, which operated for 12 years.
1936	The Revillon Frères trading post closed and a Catholic mission was established. The Mission is the oldest building in the village.
1960	A first school is built in the community.
1960s	The Inuit settled and the village grew starting in the 1960s, when the Federal Government started providing social, health, education services, and housing.
1963	An Anglican mission was established.
1964	The Government of Quebec built its first administration building in the village.
1970	The Wakeham Bay Cooperative Association was incorporated. A cooperative store was opened.
1975	The <i>James Bay and Northern Quebec Agreement (JBNQA)</i> was signed.
1978	In accordance with the JBNQA, the Kativik Regional Government (KRG) was formed to provide public services and technical assistance to the NVs.
1979	Incorporation of the Nunaturlik Landholding Company (LHC) of Kangiqsujuaq.
1980	Incorporation of Kangiqsujuaq as a municipality.
1980 – 1982	The Société d'habitation du Québec (SHQ) took responsibility for housing in the Northern Villages and started implementing a major social housing program with an emphasis on larger and better quality units.
1982	The Arsaniq school was built.
1995	The Raglan Agreement was signed by Makivvik, Salluit, Kangiqsujuaq and Falconbridge. This is an impact benefit agreement regarding the Raglan Mine. The agreement provides for training and employment for Nunavik Inuit on a priority basis, contract preference to Inuit-owned businesses, and profit sharing through a trust (Raglan Trust) for the communities of Salluit and Kangiqsujuaq, as well as Makivvik (on behalf of all Nunavik Inuit).
2009	New roads were paved under KRG's road paving program and a cold storage garage was constructed.
2014	Construction of a new landfill begins and improvements are made to the municipal wastewater lagoon.
2018	The drinking water plants are upgraded and new municipal offices are constructed in Kangiqsujuaq.
2021	The Arsaniq school is expanded and renovated.
2024	Construction of the new Youth Center.
2025	Start of construction of the new Hydro-Quebec power plant.

Sources: (Fédération des Coopératives du Nouveau-Québec, 2024; Kativik Ilisarniliriniq, 2021; Kativik Regional Government, 1983; Kativik Regional Government, 2009; Kativik Regional Government, 2014; Kativik Regional Government, 2018; Makivvik et. al., 2014; Makivvik, 2025; Société d'habitation du Québec, 2014)

1.3 GOVERNANCE

1.3.1 Territorial Framework of the Kativik Region

The *James Bay and Northern Quebec Agreement* (1975, JBNQA) established the first modern land claims settlement for Inuit communities north of the 55th parallel within the province of Quebec (the Kativik region)¹. Section 7 of the JBNQA divides the territory into land categories and defines ownership and hunting, fishing, and trapping exclusivity for each category.

- **Category I lands** are under the ownership of the Landholding Corporation of each Inuit community, except for subsurface rights, which belong to the Quebec Government.
- **Category II lands** refers to lands in the public domain on which Inuit retain exclusive hunting, fishing, and trapping rights, and the right to establish and operate outfitting facilities.
- **Category III lands** are publicly owned lands, on which Inuit, Naskapi, Cree, and non-Indigenous people share uses.

Beyond the establishment of land categories, the JBNQA includes provisions for environmental and social impact assessments and review procedures applicable in the Kativik region for projects under the jurisdiction of Quebec and Canadian governments. Section 23 of the Agreement further outlines a series of guiding principles that must be taken into consideration during project planning and analysis. These are responsive to the need for protecting Indigenous societies and economies, mitigating impacts on Indigenous peoples, protecting hunting, fishing, and trapping rights, and ensuring the participation of Indigenous peoples and regional residents.

Furthermore, the JBNQA (Section 12) and the Act respecting Northern Villages and the Kativik Regional Government (Kativik Act, 1978) (Section 13) permitted the establishment of a municipal system in the Kativik Region. Today, the 14 villages (except for the village of Puvirnituq) are located within Category I lands. Map 2 illustrates the municipal boundaries of the village of Kangiqsujuaq in relation to Category lands.

1.3.2 Kativik Regional Government

The Kativik Regional Government (KRG) was created in 1978 pursuant to the James Bay and Northern Québec Agreement to deliver public services to Nunavimmiut. Many of the KRG's responsibilities are stipulated in the Act respecting Northern Villages and the Kativik Regional Government (Kativik Act), such as transportation, police, sustainable employment, renewable resources, municipal public works and civil security. Other mandates have been delegated to the KRG by the region's municipalities and the Québec government. The KRG is also mandated to provide technical assistance on land use planning matters for the region's 14 northern villages. This role includes support for the production of maps and the creation of planning decision-making tools for the villages (master plan, zoning by-law, basemaps, etc.).

1.3.3 Northern Villages

Nunavik's 14 northern villages operate as municipalities, each being governed by an elected Mayor and Municipal Council. The powers and responsibilities of the NVs are stipulated in the *Kativik Act*. Pursuant to Section 176 of the *Kativik Act*, the roles and responsibilities of the NV include the following:

- Creating and adopting of a Master Plan and zoning bylaw covering the municipal territory.
- Regulating land use within the municipal territory.
- Granting permits for development.
- Reviewing permit applications for development

1.3.4 Landholding Corporations

Landholding Corporations (LHCs) are governed by the Act respecting the Land Regime in the James Bay and New Québec Territories. LHCs are non-profit entities which, pursuant to this Act, receive and hold Category I lands. LHCs are composed of the Inuit beneficiaries affiliated to their respective community.

The purpose of LHCs is to administer lands on behalf of community members and promote the cultural, environmental, and social well-being of beneficiaries. In Kangiqsujuaq, Category I lands are held by the Nunaturlik LHC. It is governed by a Board of Directors

As landowners, LHC responsibilities include the following:

- Establish and administer policies and guidelines for the development of Category I lands.
- Identify and allocate Category I lands for use and occupancy purposes.
- Grant easements, usufruct rights, leases, as well as other use and occupancy rights, on Category I lands.

1.3.5 Nunavik Housing Bureau

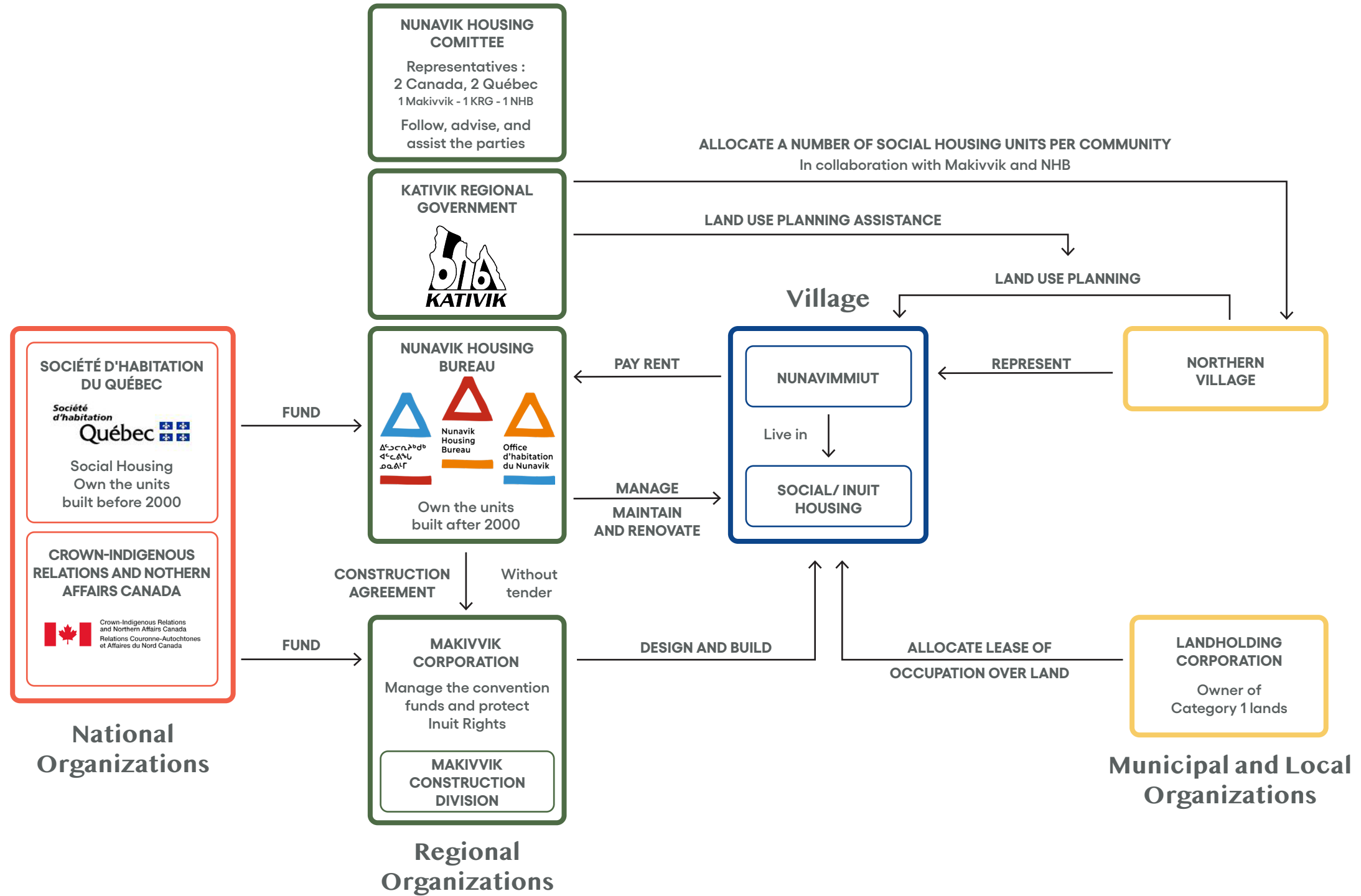
The Nunavik Housing Bureau (NHB), established under Article 57 of the SHQ Act (S-8 – Act respecting the Société d'habitation du Québec), was created in 1999 at the request of the Kativik Regional Government to manage and maintain the social housing in the Northern Villages of the Kativik region. It became operational in 2000. Today, the NHB acts as the designated representative of the Société d'habitation du Québec to ensure the management of the social housing stock and its maintenance. Housing stock consists of 3550 housing units spread over the 14 communities of Nunavik. NHB houses 98% of the population of Nunavik, a total of nearly 14,000 people.

The NHB is managed by a board of directors. It has seven members, three selected by the KRG, two by NHB tenants and two by the Ministère des Affaires municipales et de l'Habitation du Québec (Québec Ministry of Municipal Affairs and Housing).

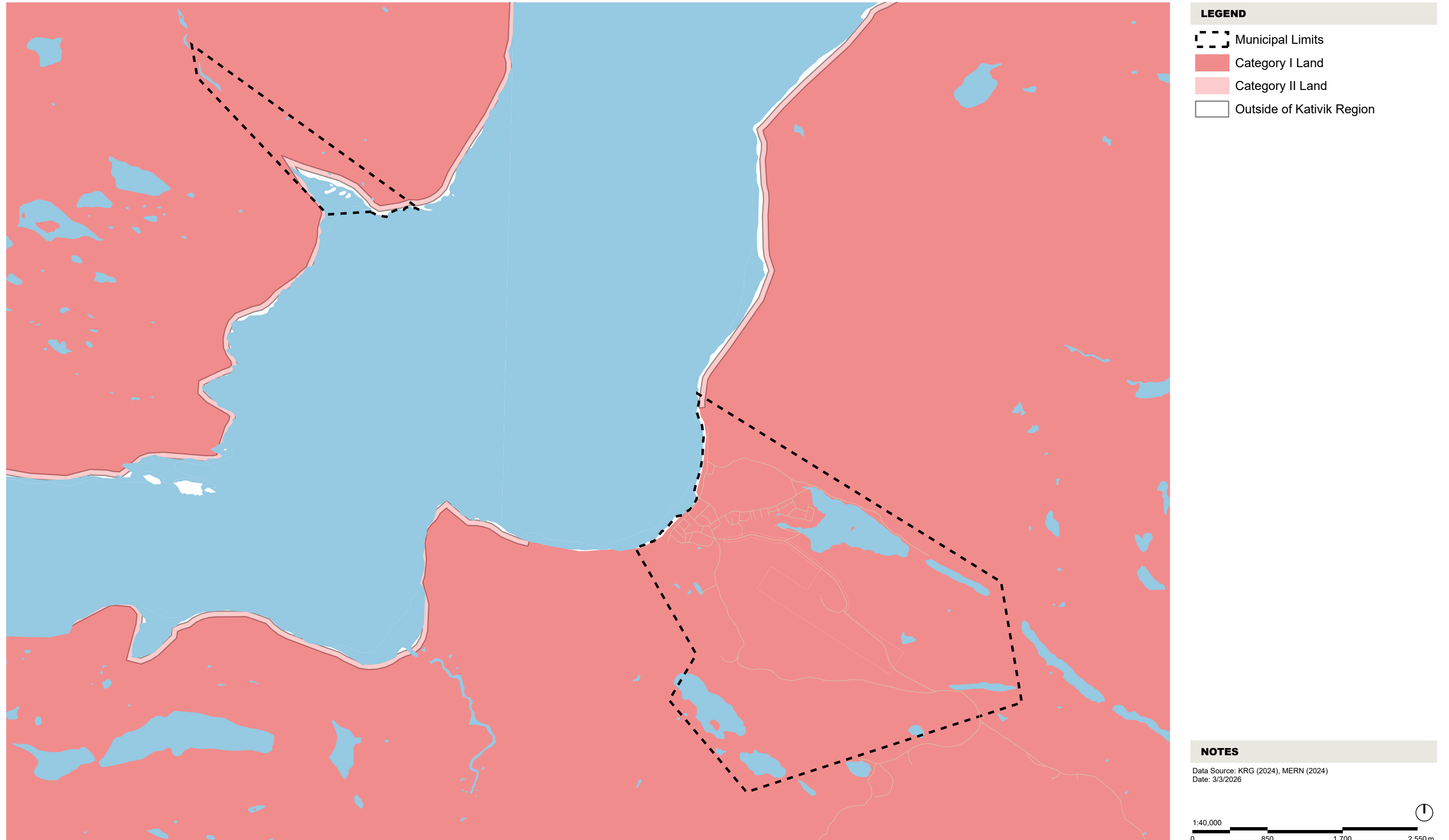
The organisation also manages a Program Promoting Home Ownership and Residential renovation in the Kativik region that allow Inuit families to benefit from a Québec government subsidy covering 75% of the cost of building a private home (non social-housing).

² The Kativik Region refers specifically to the Territory made of portions of the Nunavik region within the Province of Quebec, as defined in the *Kativik Act* (Section 2(v)). It excludes all offshore areas, islands, and the land areas under the jurisdiction of Nations, the Government of Canada, the Government of Nunavut or the Government of Newfoundland and Labrador.

Graph 2 — Inuit Housing Governance Schematic Diagram



Map 2 — Satellite Image of Kangiqsujuaq showing municipal boundary and land categories



The background features a light beige color with several organic, white, textured shapes that resemble torn paper or snow. On the left side, there are four large, solid-colored geometric shapes: a dark blue circle, a blue horizontal oval, an orange semi-circle, and a dark blue semi-circle. A small orange circle is positioned to the right of the blue oval. On the right side, there are two more solid-colored shapes: a dark blue semi-circle at the top and a blue semi-circle below it. The text '02 Cultural Context' is located in the center-right area.

02

Cultural Context

2.1 APPROACH

Cultural perspectives in Nunavik's villages are highly intertwined with the land, water, and local ecosystems. In this way, the land forms the cultural foundation of northern communities. To plan for the future land uses of these communities, it is essential to have a firm understanding of local perspectives of the land and how these intersect with community well-being.

In the development of the Master Plan, the KRG worked closely with the community of Kangiqsujuaq to better understand the cultural context. As part of this process, the NV was approached in order to determine which persons may be most appropriate to interview. Potential participants received information relating to the Master Plan project and examples of questions they would be asked. Participants were compensated for their time and knowledge. Interviews took place in person where a representative from the KRG confirmed the interview details with all participants before proceeding with the formal interview. Interviews were recorded and transcribed; the following summarizes the information shared by interview participants.



2.2 UNDERSTANDING OF LAND AND LAND USE

Land surrounding Kangiqsujuaq is inherently tied to the community's way of life through traditional subsistence activities including hunting and harvesting. A deep understanding of these cultural practices at different times of the year has allowed community members to leverage the land to obtain food and resources for generations. Map 3 displays significant traditional hunting routes in Kangiqsujuaq.

Interview participants spoke of the various marine and terrestrial species that are hunted in and around Kangiqsujuaq. These include, for example, seal, beluga, and caribou. Participants reported that hunting practices often change depending on seasonal changes. Similarly, participants spoke of berry harvesting practices in the late summer, and of the year-round mussel harvest. According to interview participants, wildlife plays an important role in providing access to nutritious traditional foods. Respondents also spoke of the importance of seal skins and fox furs for clothing, as well as Labrador tea, lemming, and rabbit skins for medicinal properties.

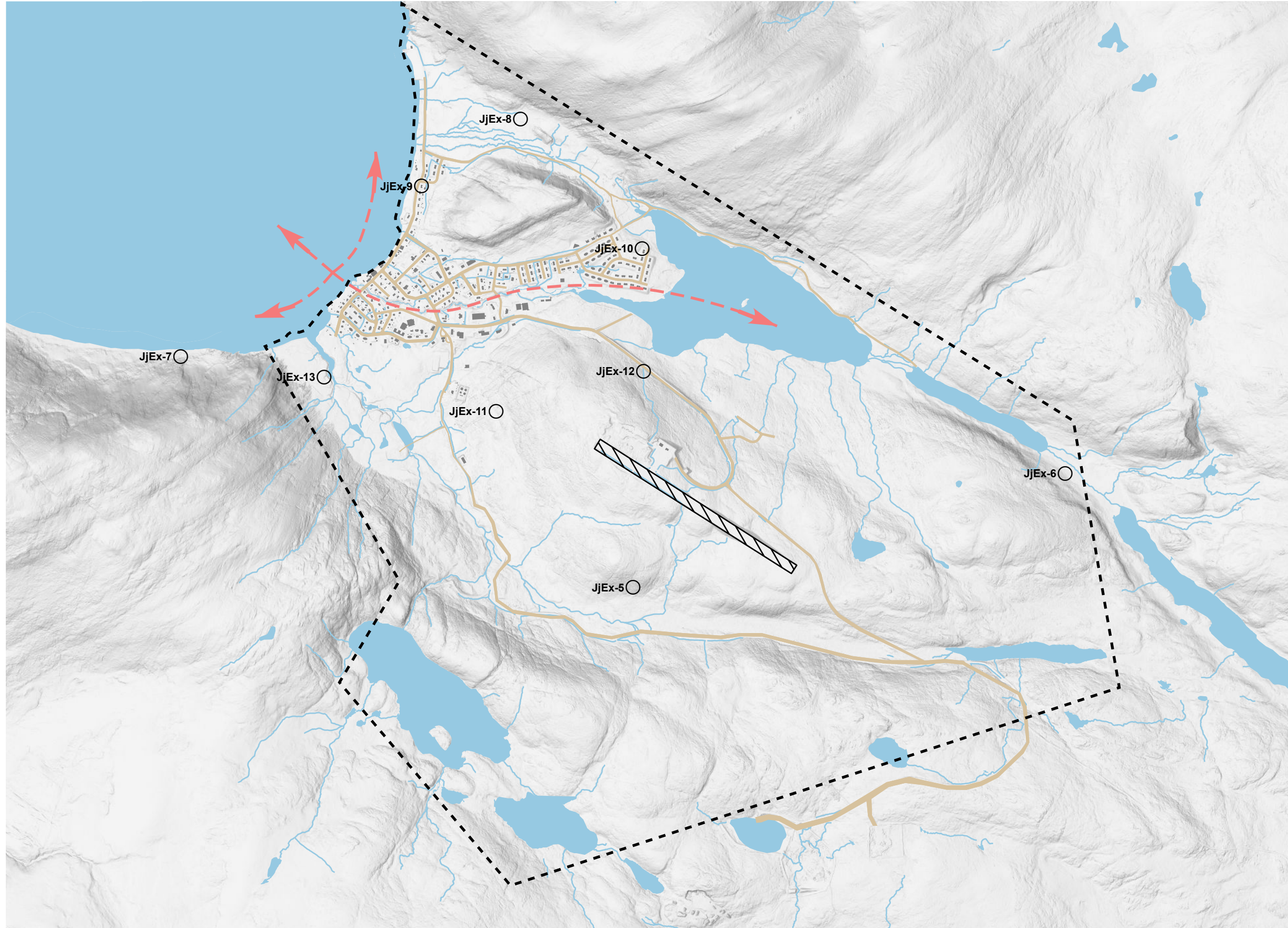
In recent years, there have been efforts to protect Northern environments of cultural, historical, and environmental significance in Nunavik. This includes the creation of the Pingualuit National Park, located in proximity to Kangiqsujuaq. Interview participants noted the importance of such a site, given its historical significance as a fishing area. This area remains significant due to its natural beauty and the resources it provides to the community.

2.3 UNDERSTANDING OF COMMUNITY AND WELL-BEING




Interviewees spoke of the importance of elders for the community, and the role that younger generations play in supporting elders as they participate in traditional activities. Recent investments in elder care and facilities have increased local programming for the Kangiqsujuaq's senior population, including activities, games, and social events. In relation to community well-being, interview participants mentioned that traditional food plays a role in strengthening the wellness of community members. Additionally, participants highlighted the need for opportunities for cultural exchange and social interaction as being key to the community's well-being. This was specifically mentioned in the case of elder gatherings, where individuals from multiple communities come together to eat and interact; the company of their peers bringing them a sense of togetherness and strength.



Map 3 — Cultural Heritage Sites and Traditional Hunting Routes



LEGEND

-  Municipal Limits
-  Traditional hunting routes
-  Archaeological Site

NOTES

Note: The archaeological sites in this map are presented for informational purposes only. Their location is therefore approximate. Anyone interested in building near an archaeological site should communicate with the Avataq Cultural Institute
 Data Source: Traditional hunting routes from Interviews with Community Members, MCC (2024), KRG (2024), CRGH AG(2024), MERN (2021)
 Date: 3/4/2026





03

**Existing
Conditions**



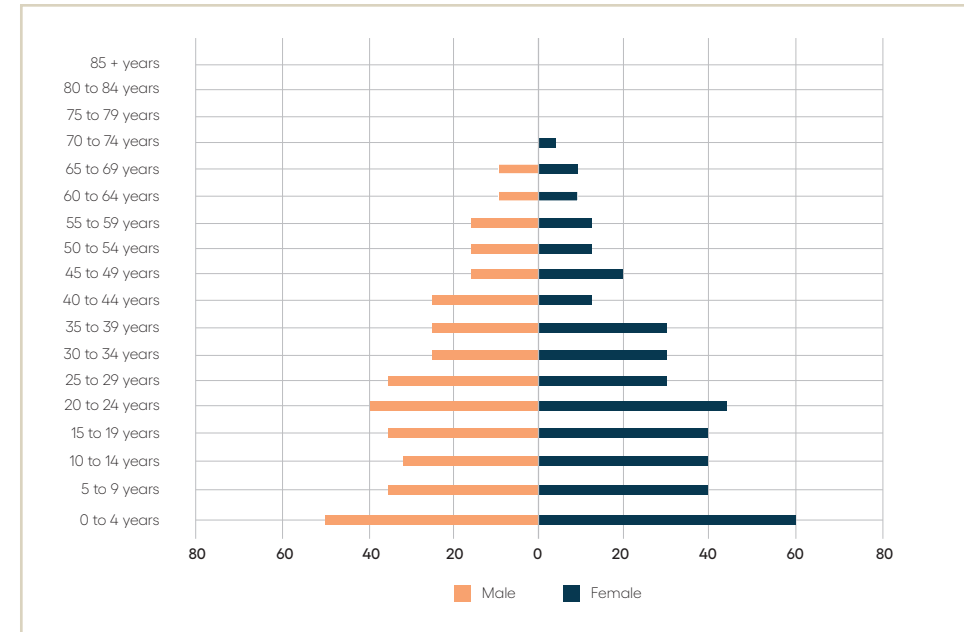
3.1 DEMOGRAPHICS

3.1.1 Population Overview

According to the latest Statistics Canada census data, the population of Kangiqsujuaq is comprised of 837 people. As shown in Graph 3, the population of Kangiqsujuaq is relatively young, with the majority of people being under the age of 25, and approximately a third of the population being under the age of 15. The median age of Kangiqsujuaq (23.9) is significantly lower than the median age of the Province of Quebec (43.2) (Statistics Canada, 2021). While these statistics illustrate the village's relatively young population, projections conducted at the regional level show a significant increase in the senior population of Kativik Region (Institut de la statistique du Québec, 2022). This is further discussed in Section 4.2. This presents important considerations for housing and age-appropriate facilities and services.

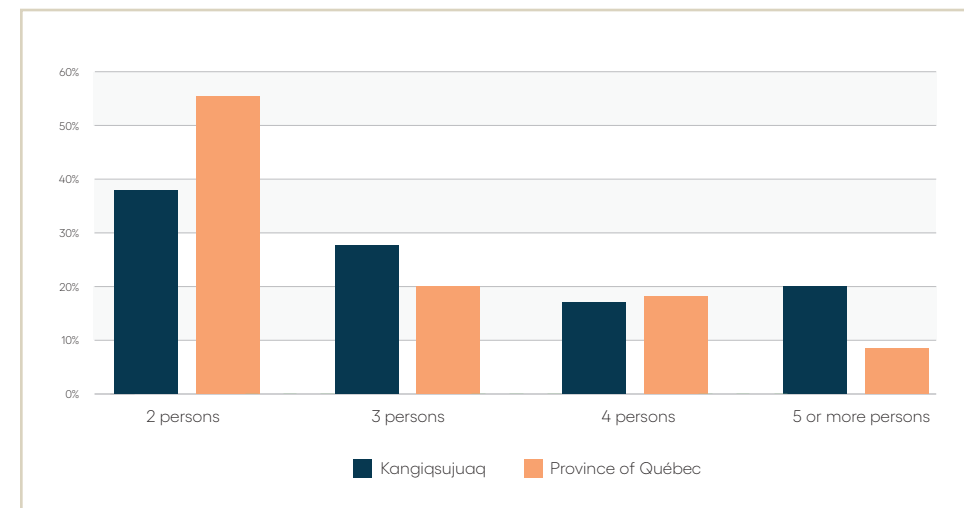
As illustrated in Graph 4, most families in private households in Kangiqsujuaq are comprised of two or three persons. However, Kangiqsujuaq has a larger proportion of four and five or more persons per household in comparison to the province of Quebec, which has a much higher distribution of one and two-person households. The average household size is 2.8 and the average size of census families in Kangiqsujuaq in 2021 was 3.4, which remains larger than the provincial average of 2.2. These relatively large household sizes have implications for the housing types required to accommodate the existing population as well as future growth.

Graph 3 — Population Pyramid, 2021 Census



Source: (Statistics Canada, 2022b)

Graph 4 — Families in Private Households, 2021 Census



Source: (Statistics Canada, 2022)

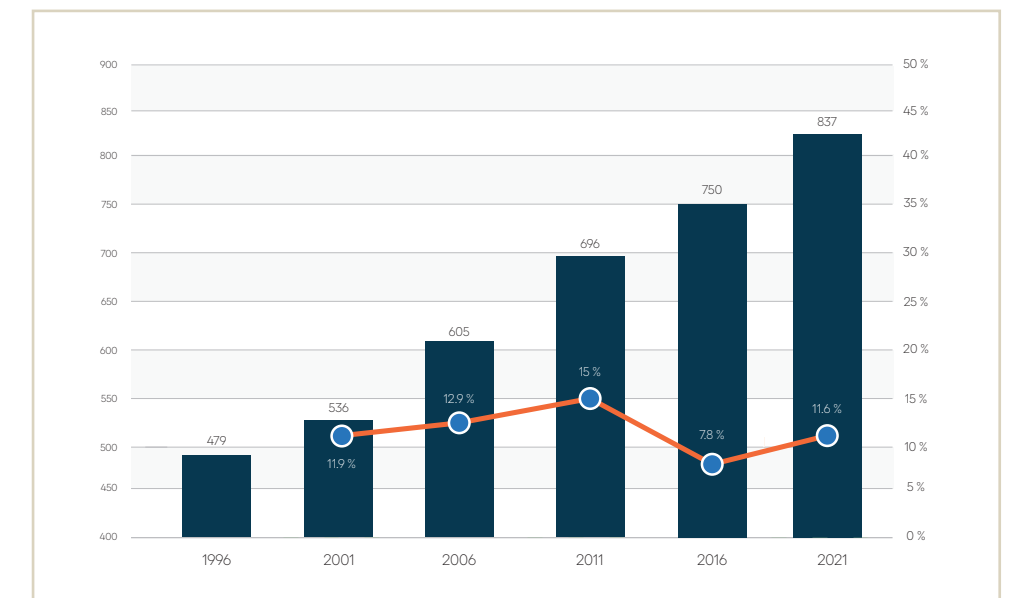
3.1.2 Population Growth

Between 1996 and 2021, the population of Kangiqsujuaq increased by 75%. This rate is significantly higher than the rate of growth for the province of Quebec for the same period (18.7%).

It is also relatively high compared to Nunavik as a whole (61.2% since 1996) and to other larger villages such as Puvirnituaq (56% since 1996) and Kuujuaq (53% since 1996).

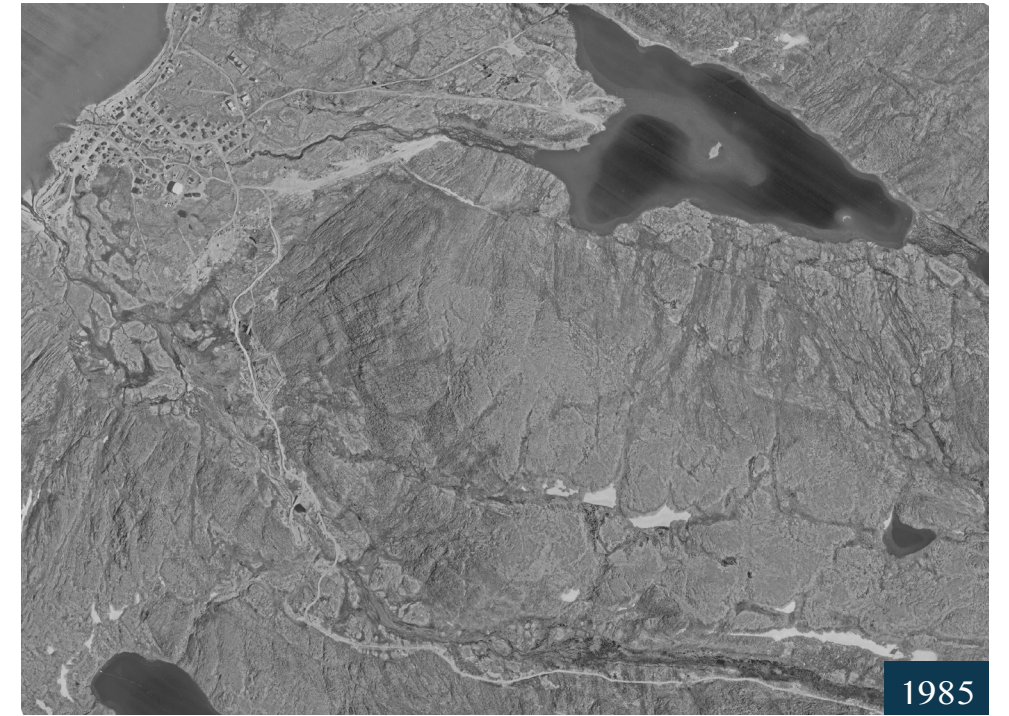
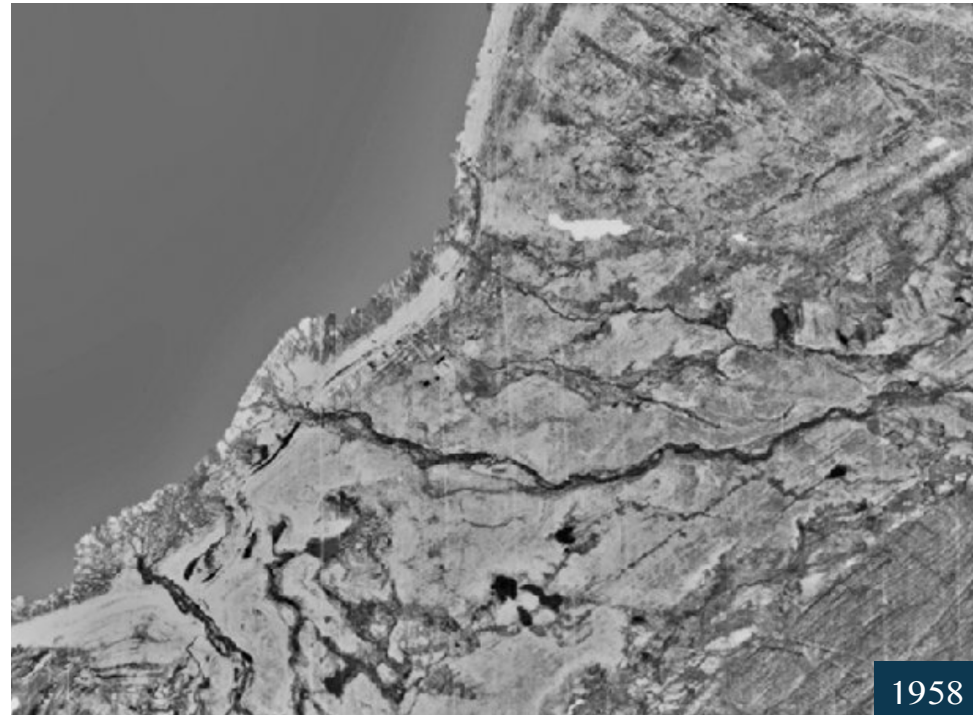
As such, Kangiqsujuaq is facing rapid growth compared to the region and province. As illustrated in Graph 5, growth in the community has varied, with higher rates of growth observed between 2001 and 2011.

Graph 5 — Population Growth, 1996 to 2021



Source: (Statistics Canada, 2001, 2007, 2012, 2017, 2022)

Map 4 — Aerial Imagery of Kangiqsujuaq from 1958-2016



Source: Gouvernement du Québec et Administration régionale Kativik

3.2 URBAN DEVELOPMENT

3.2.1 Evolution of the Local Urban Context

The evolution of built form in Kangiqsujuaq from 1958 to 2016 is illustrated in the aerial imagery presented in Map 4.

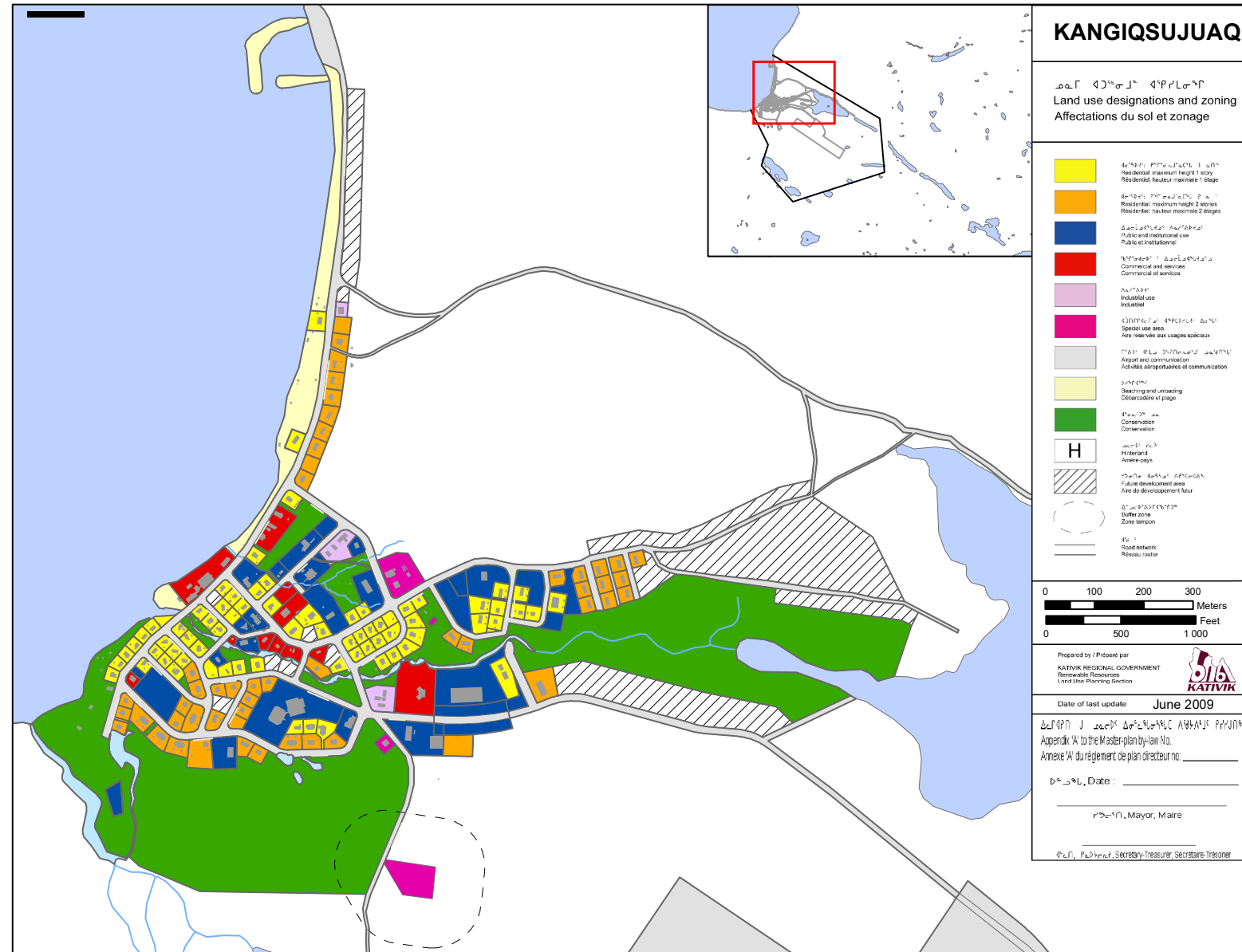
3.2.2 History of Master Planning in Kangiqsujuaq

Master planning exercises have been ongoing in Kangiqsujuaq since at least the 1980s. Land use planning has sought to formalize the development of the community, to plan for future needs and capacities that may arise. These documents reflect planning perspectives and approaches of their time. Map 5 shows the most recent Master Plan, from 2004, while Map 6 shows a draft Master Plan from 2016 (not adopted). These illustrate recent community expansions and changes in land use. The two Master Plan maps display a traditional land use planning approach, with permitted uses for each designation. The 2016 draft Master Plan (Map 6) introduces a certain degree of flexibility into the zoning structure through the Village Core land use designation, which allows a variety of uses. The land use planning framework introduced in Section 5 of this Plan builds on the flexibility introduced in the 2016 draft Master Plan by creating zones that allow for a greater number of permitted uses.

3.2.3 Key Stakeholders in Urban Development

Several stakeholder organizations play a role in development in Nunavik's northern villages. These organizations and their typical construction activities are summarized in Table 2. Note that this list is not exhaustive.

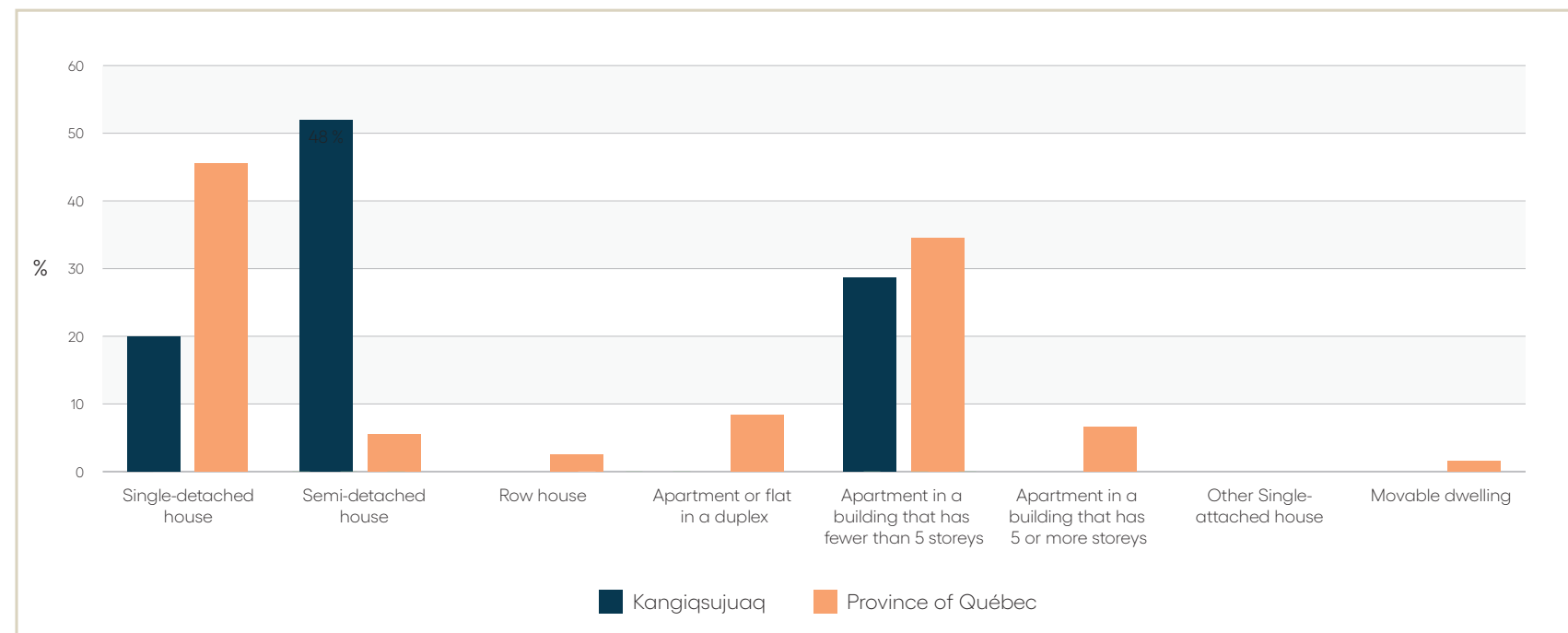
Map 5 — 2004 Master Plan Map



3.3 HOUSING

According to 2021 Census data, there are 297 occupied private dwellings in Kangiqsujuuaq and the average household size is 2.8 people. The majority (52%) of the dwellings in the village are semi-detached, while 20% of the dwelling stock is single-detached housing, and 28% of dwellings are apartments in a building with fewer than five storeys. There is a much higher distribution of lower-density housing types in Kangiqsujuuaq in comparison to the province of Quebec, as per Graph 6.

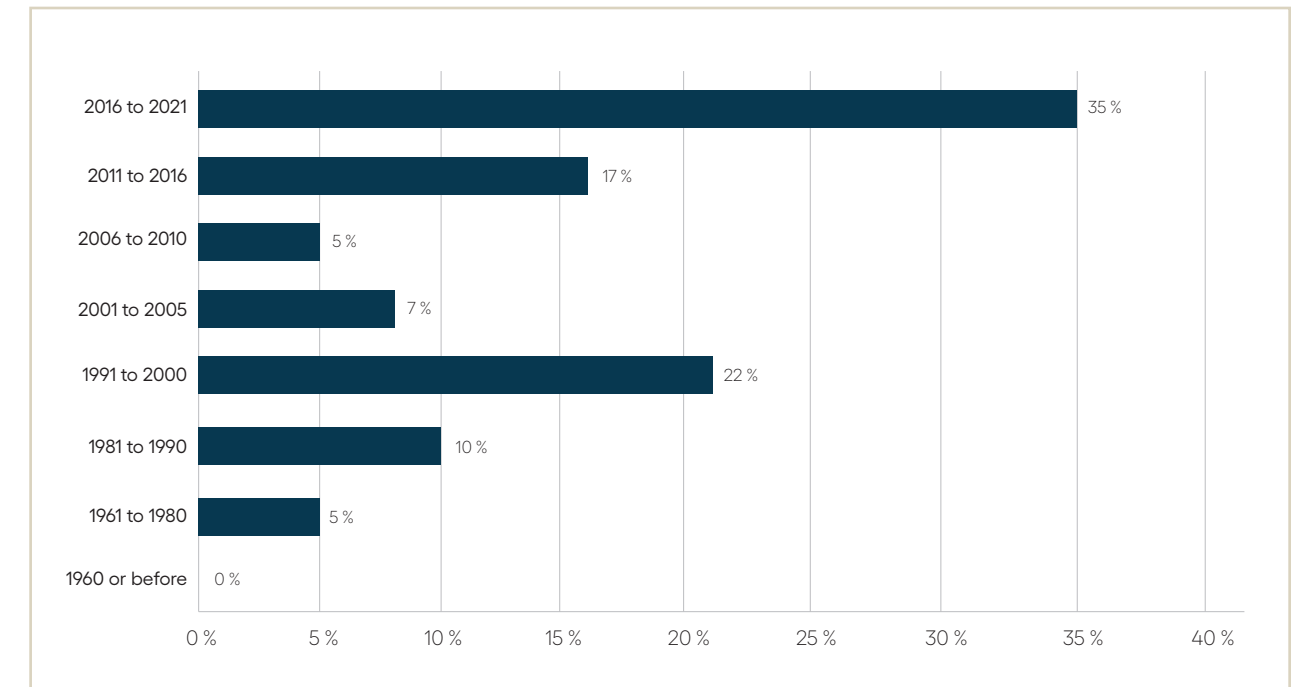
Graph 6 — Percentage of Total Occupied Dwellings by Structural Type



Sources: (Statistics Canada, 2021, 2022)

According to the 2021 Census, a significant portion of the housing stock in Kangiqsujuuaq was built between 1991 and 2000 (22%) and 2016 and 2021 (35%) (Graph 7). It was also recorded that 30% of total occupied private dwellings need major repairs, which is five times the rate for the Province of Quebec (6%). The lack of appropriate housing is one of the biggest challenges facing the Inuit population in Nunavik (Société d’habitation du Québec, 2014).

Graph 7 — Percentage of Total Occupied Private Dwellings by Period of Construction



Source: (Statistics Canada, 2022)

3.3.1 Housing system

The Société d'habitation du Québec (SHQ) has been responsible for providing social housing services in Nunavik since 1981. Makivvik Corporation's construction division has built all social housing in Nunavik since 2000, funded by the Government of Quebec or Canada, at cost price. The property rights are then transferred to the Nunavik Housing Bureau (NHB) once the units are built. The NHB's mandate is to manage and maintain the social housing in all Nunavik communities. In terms of the allocation of new social housing per community, NHB and KRG have an annual process of selection that is based on a survey on social housing needs conducted every two or three years. The construction of social housing units in Kangiqsujuaq has occurred in irregular intervals, reflecting the funding distributed and enactment of agreements by federal, provincial, and regional governments. There are periods of extended gaps in construction such as from 1989-1991, 1995-2000, and 2011-2013, which may reflect a lack of funding availability.

The latest official information available from the SHQ (2014) suggests that there were 231 social housing units in Kangiqsujuaq at that time, which is approximately 77% of the total dwelling count in 2021. KRG files suggest that the following social housing construction has occurred in recent years:

- > 2017: 14 units;
- > 2018: 18 units;
- > 2020: 24 units;
- > 2022: 16 units.

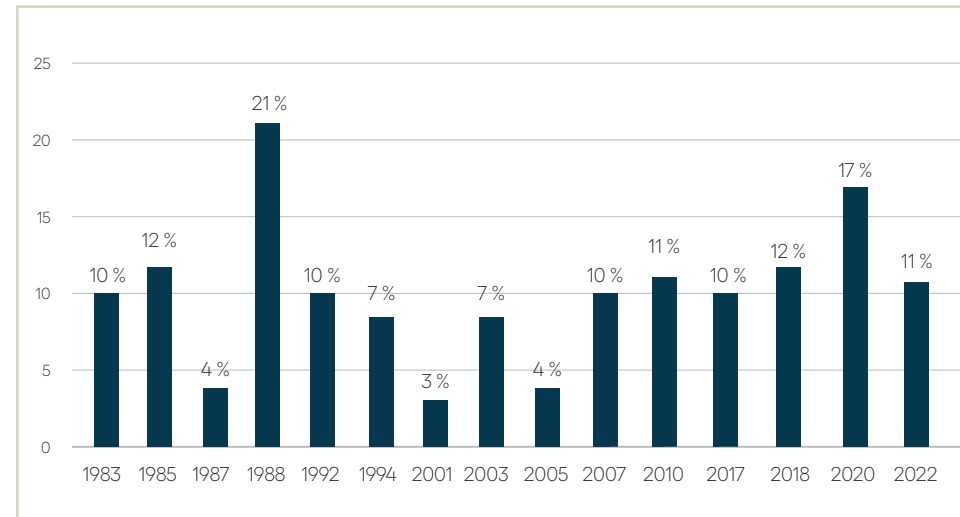
A significant portion of households in Kangiqsujuaq currently live in social housing. The remaining households occupy privately-owned housing or dwellings provided by an employer. This includes housing owned, for example, by the Kativik Ilisarniliriniq (KI) School Board and the Nunavik Regional Board of Health and Social Services (NRBHSS). The very low home ownership rate in Kangiqsujuaq – similarly to other communities – can be explained by a combination of several factors: high construction costs, a higher cost of living, fairly low rent payments for certain households, and the difficulty of maintaining one's home due to lack of material or specialized resources. The private rental housing market is therefore virtually non-existent in this region.

3.3.2 Planned Construction of New Staff Housing

KI School Board has released their construction targets for units in years to come. This includes:

- > 12 units in 2025;
- > 4 units in 2026; and,
- > 30 units in 2028.

Graph 8 — Social Housing by Year of Construction, Kangiqsujuaq, 1981 to 2022



Source: (Société d'habitation du Québec, 2014)

3.4 COMMUNITY ASSETS

The community assets and infrastructure in Kangiqsujuaq includes roads, community and institutional buildings, marine infrastructure, drinking water, wastewater, solid waste, etc. Table 3 provides a summary of community assets in Kangiqsujuaq. Key community assets are also shown in Map 7.

The Isurruutiit Program, a partnership between KRG and the Province of Québec, has contributed to building and upgrading infrastructure in Nunavik communities. Phase I of the program started in 1999, Phase II in 2006, Phase III in 2011, and Phase IV in 2016. Phase V of the Isurruutiit Program was renewed in 2023.

The three components of the Isurruutiit Program are the following:

- > Infrastructure upgrading work;
- > Buildings and other municipal facility construction; and renovations;
- > Vehicle and heavy equipment purchases and overhauls.

Phase 5 of the program will allow the KRG to continue to invest in municipal infrastructure and to conduct studies, including the evaluation and identification of sustainable solutions to water and wastewater management issues in the northern villages.

Table 3 — Kangiqsujuaq's Community Assets

COMMUNITY ASSETS	INFRASTRUCTURE
CULTURAL	STORAGE
Cemetery	Garages (2)
Church (2)	ENERGY
Community centre	Gas/pumping station
Community freezer	Power plant
Interpretation centre	Tank farm
Sewing centre	MARINE
RECREATIONAL AND LEISURE	Boat launch
Arena	Boat storage
Golf course / Gymnasium	Port and breakwater
Playgrounds (4)	AIR
Swimming pool	Airport
Youth centre/house	WASTE MANAGEMENT
EDUCATIONAL	Landfill
Schools (2) / Daycare	Wastewater treatment pond
SECURITY AND EMERGENCY RESPONSE	COMMUNICATIONS
Fire station	Satellite dishes/communications tower
Police station	FM radio
Rescue boat and shelter	WATER TREATMENT AND MANAGEMENT
HEALTH AND WELL-BEING	Reservoir
CLSC (health clinic)	Water treatment plant / aqueduct
Elder's centre	GRANULAR RESOURCES
Women's shelter	Pits and quarries (11)
Family house	
Social worker's office	
Women's shelter	
INSTITUTIONAL	
NV Office / LHC	
Post office	
ACCOMMODATION	
Hotels (2)	
WORK, COMMERCE, AND FOOD SERVICES	
Co-op store	
Northern Store	

Map 7 — Map of Community Assets in Kangiqsujuaq



LEGEND

- Cultural
- Recreational and Leisure
- Educational
- Institutional
- Health and Well-Being
- Work, Commerce, and Food Services
- Security and Emergency Response
- Accommodation
- Other Buildings
- †† Cemetery
- Golf Courses
- * Playgrounds

NOTES

Data Source: KRG (2024), CRGH AG(2024), MERN (2021)
Date: 3/3/2026



3.4.1 Community Facilities

Kangiqsujuaq has several community facilities, including an NV Office, a swimming pool, a community arena, youth house, and a childcare centre. In terms of outdoor recreation, the village has four playgrounds — three public playgrounds and one playground at Arsaniq School. Plans for two new playgrounds have recently been announced, the latter of which may include a pump track. The community also has a golf course, which is going to be relocated to the north of the community in order to make space for development.

3.4.2 Education Facilities

The KI School Board was created under the JBNQA (1975) and is responsible for educational services in Nunavik. The school board is responsible for providing education at the pre-kindergarten, primary, secondary, and adult education levels. KI is also in charge of designing programs and teaching material in Inuktitut, French, and English; training Inuit teachers; and organizing and supervising post-secondary education. KI is non-ethnic and manages at least one school in each of Nunavik's 14 communities. Given the size of most schools, the limited number of pupils, and the trilingual nature of programs and staff, most classes encompass more than one grade (two or three grades).

Kangiqsujuaq two educational facilities, Arsaniq School and the Nasivvik Adult Education and Vocational Training Centre. Arsaniq School was built in 1982, expanded in 1998, and again in 2021. The school accommodates primary and secondary students. According to analysis published by KI in 2021, school space in Kangiqsujuaq is insufficient to meet the current and future needs of the student population. This is corroborated by consultations with school-aged youth, who desire a new school. As a result, a new school is planned for the village, with construction anticipated between 2024 and 2029. The Nasivvik Adult Education and Vocational Training Centre offers higher education programs relating to vehicle maintenance, mechanics, and heavy vehicle operations, preparing students for careers in the region. The centre was expended in 2023.

3.4.3 Health and Well-Being Facilities

The NRBHSS is responsible for the delivery of health services in the Nunavik region. Services are organized locally and by sub-region (Hudson and Ungava).

Kangiqsujuaq has a local health clinic (CLSC), which houses a team of professionals from a range of healthcare disciplines. This centre provides various healthcare and social services for the community. The planning process to build a new CLSC facility is underway; the future site has yet to be confirmed.. Other health and well-being facilities in the village include a social worker's office, elder's centre, and women's shelter.

Given the limited access of secondary healthcare services in Kangiqsujuaq, it is common for residents to use resources outside of the local region. Of note are the two multi-use facilities in Puvirnituq and Kuujuaq, Inuulitsivik Health Centre and Ungava Tulattavik Health Centre, respectively. These centres provide specialized examinations and treatments, long-term hospital care, midwife services, as well as child and youth protective services. Many of these services are provided by visiting specialized healthcare professionals. In circumstances where ultra-specialized care is needed, community members will often need to be referred to healthcare resources in the South. In 2017, the NRBHSS conducted a Nunavik-wide health survey. Survey results for Kangiqsujuaq highlighted certain community needs regarding health and well-being facilities and services. Priorities identified by survey respondents included the need for culturally-adapted health services and improved resources.

Another significant community challenge regarding health and well-being is food security. The importance of country foods, especially in winter, was highly emphasized by health survey respondents (Lyonnais et. al, 2017). Furthermore, access to affordable and high-quality fruits and vegetables was identified as an issue by community members.

Image 3 — Photograph of the Kangiqsujuaq NV Office



Image 4 — Photograph of the Youth Centre in Kangiqsujuaq



Image 5 — Photograph of the Kangiqsujuaq CLSC



3.5 INFRASTRUCTURE

Map 8 illustrates the locations of various types of infrastructure.

3.5.1 Transportation Infrastructure

3.5.1.1 Ground

Kangiqsujuaq's road network consists principally of an organic street grid that was developed according to the village's topography, the constraints of the region and the community's development needs. This urban network has evolved based on the needs of the community and the distribution of soil types that could accommodate development.

Ground-based transportation networks have benefitted from the ongoing Road Paving Program established in 2002. This program, created through an agreement between the KRG and the Ministère des Transports et de la Mobilité durable (MTMD), aims to improve the quality of life of northern residents by lowering the proportion of dust generated by vehicles travelling along sand and gravel roads. The program has the added benefit of increasing the service life of vehicles, which reduces the burden of maintenance fees on residents and local organizations. This program has led to the paving of 8.3 kilometres of roads in Kangiqsujuaq. The Road Paving Program agreement was extended in 2012, which is expected to bring further benefits to the villages. Further investments in Kangiqsujuaq through the Road Pavement Program are expected beginning in 2025.

Public transit was introduced to Nunavik in 2005. KRG operates Usjijit public transit and paratransit services. Combined public and paratransit services exist in most villages throughout Nunavik. While KRG provides technical assistance for this service, villages are tasked with the operations and maintenance of the system.

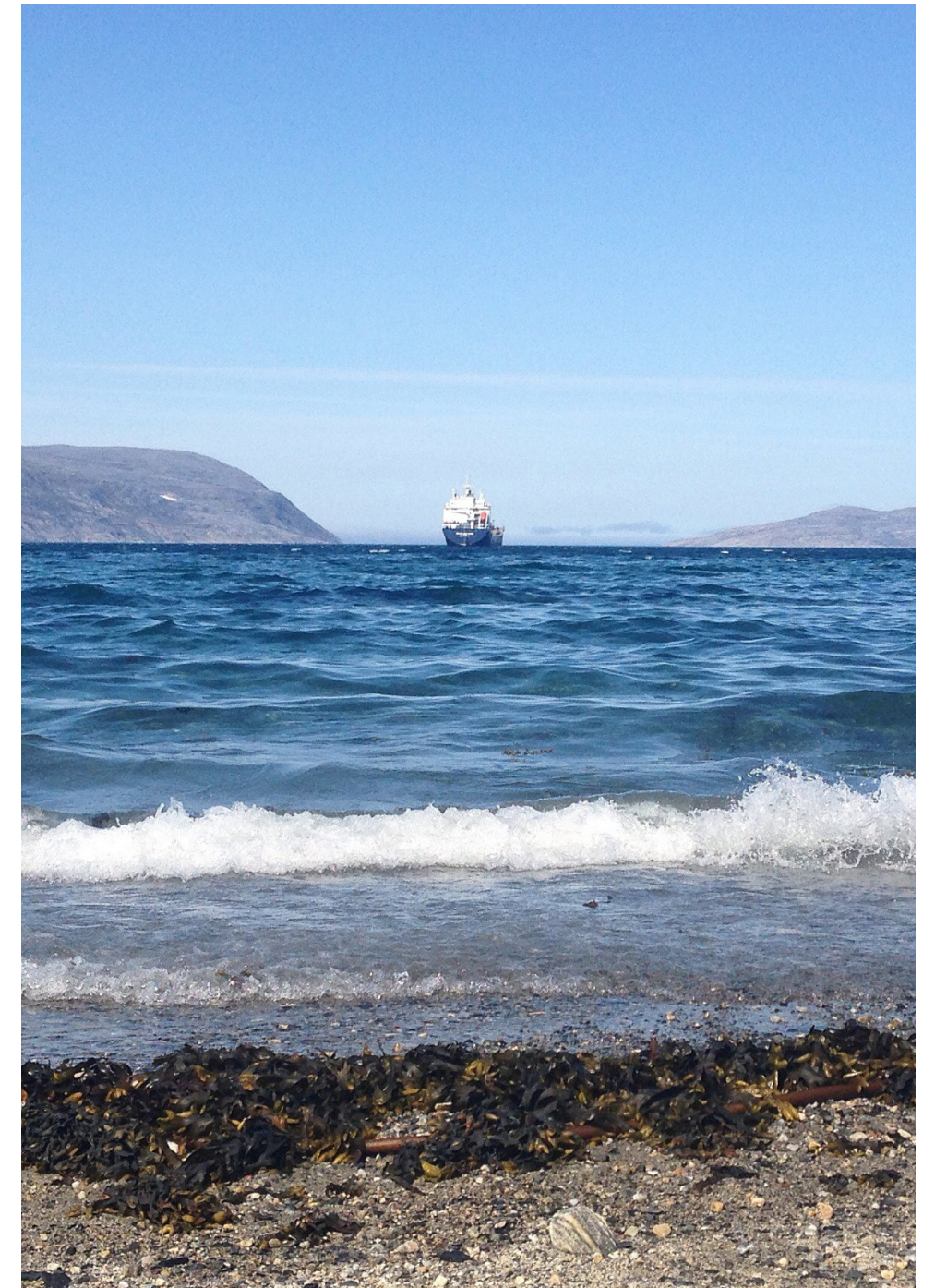
3.5.1.2 Marine

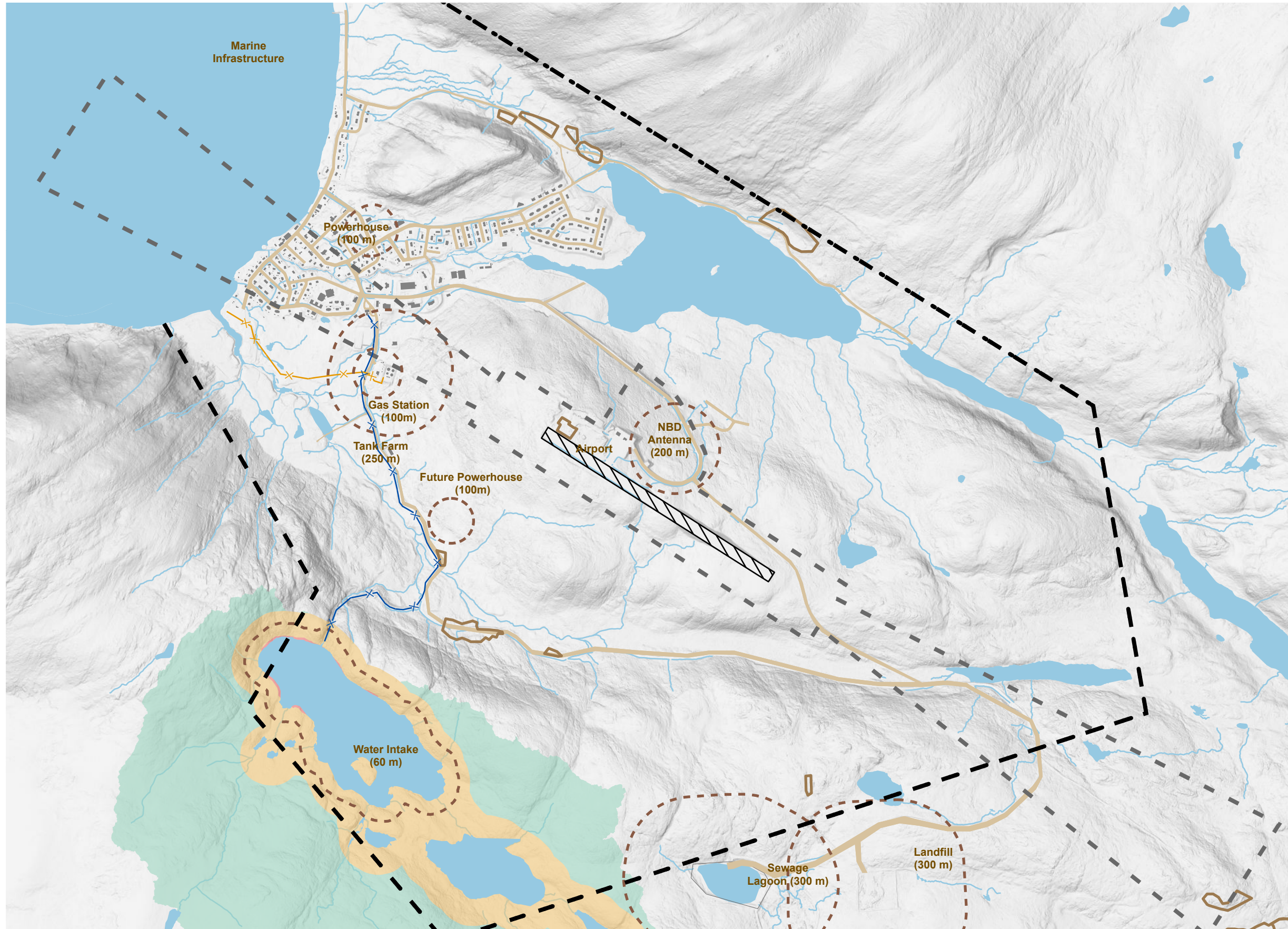
Since 1998, the Makivvik Corporation and the Quebec government have been funding improvements to marine infrastructure facilities through various agreements. The first phase of funding, comprised of \$91.5 million, was released from 1999 to 2011; Makivvik was tasked with coordinating projects in each village. These projects have had a net positive impact on communities by improving the safety of marine access and creating greater efficiencies for harvesters and sealift operations. The funding agreement is currently in its second phase, which includes allocations for improvements to docking facilities for community vessels as well as emergency response vehicles, such as sealifts and search and rescue boats (Kativik Regional Government, 2014).

In 2014, improvements were made to access ramps and service areas in a majority of villages. In 2021, provincial funding was made available for the maintenance of marine infrastructure for 2022 and 2023. Discussions are ongoing with provincial transportation officials to extend funding into future years. In Kangiqsujuaq, marine infrastructure is located on the northern edge of the village. These facilities consist of various elements including breakwaters, a mooring basin, an access ramp, and a small parking lot. This infrastructure was installed in 2001 and has vastly improved marine transportation in the village, particularly for small boats.

3.5.1.3 Air

The maintenance, operation, and management of airports across Nunavik is the responsibility of the KRG. Kangiqsujuaq's airport saw 1,756 aircraft movements in 2019, with 8,128 passengers travelling through the airport that same year (Kativik Regional Government, 2019). Investments in airports in northern communities are expected to continue from 2023 to 2025 in the form of updated automated weather observation systems. Resurfacing of the runway, taxi, apron, runway shoulders, and upgrades the wind direction indicator and runway lighting, among others, are expected to take place in 2023 (Ministère des Transports et de la Mobilité durable, 2023).





LEGEND

- Municipal Boundary
- Airport Takeoff & Landing Zone
- Constraints Buffers
- Quarry and Borrow Pit
- Water Pipeline
- Fuel Pipeline

Water Intake Protection Areas

- Nearby
- Intermediate
- Remote

NOTES

Data Source: KRG (2024), CRGH AG(2024), MERN (2021)
Date: 3/4/2026



3.5.2 Municipal Service Infrastructure

3.5.2.1 Water Supply, Storage & Treatment

In Kangiqsujuaq, water is obtained from a freshwater lake, located 1.5 kilometres south of the village. A water intake is located at the edge of the lake, with a pipeline connecting to the pumping station and further to the village. From there water is treated and stored before being distributed to each building by truck. In 2014, drinking water treatment systems in the village were improved to ensure they meet provincial standards (Kativik Regional Government, 2014). The community has expressed the need to address the freezing of the pipeline, a recurring issue. Solutions are currently being explored by the community to address the problem. Concerns have also been raised regarding decreasing water levels in the village's lakes. Municipal wastewater is collected from buildings via trucks which then transport all sewage to a disposal and treatment facility approximately three kilometres southeast of the village. This facility consists of a two-celled aerated wastewater lagoon, which discharges towards Hudson Bay. Improvements to the lagoon were last undertaken in 2014 (Kativik Regional Government, 2014).

Collaborative research projects are underway throughout Nunavik examining water quality, access, climate change impacts, as well as future opportunities for water management. This is a partnership between the KRG, provincial entities, and universities across Canada. Preliminary reports indicate that, while water quality from source to tank is mostly acceptable, some opportunities for contamination exist due to lower chlorine levels and higher storage temperatures. Additionally, many families throughout the region have indicated that they supplement water from their home tanks with other sources due to fears of contamination. Lastly, it has become apparent that certain households suffer from limited access due to weather or truck conditions. Future phases of this work will continue to monitor water quality while exploring opportunities for grey/brown water reuse.

3.5.2.2 Solid Waste

The village's solid waste is stored in a landfill located approximately three kilometres southeast of the community, adjacent to the wastewater lagoon. This facility was constructed in 2014.

In recent consultations with the Government of Quebec, several of Nunavik's Inuit communities expressed concerns with the environmental and health impacts of ground burning practices in proximity to villages (Duhamel, 2022). Several measures for reducing waste and improving waste management methods are listed in the Nunavik Residual Materials Management Plan (2021-2017), including exploring alternatives to the open-air burning of waste.

3.5.2.3 Snow Management

Map 9 shows snow disposal sites in Kangiqsujuaq, as identified in a 2012 study of the village (Barrett et. al, 2012). The study recommends new potential sites for snow disposal, and identifies sensitive areas where snow disposal should be prohibited. A new study of snow removal in the village could provide more up to date information on snow disposal sites and best practices.

3.5.2.4 Granular Resources

Several quarries and sandpits have been operated to date in and around Kangiqsujuaq; However, the official status of extraction pits has not been confirmed as no recent study has been conducted.

3.5.2.5 Energy

Energy is provided by means of a diesel-powered generating facility operated by Hydro-Québec. The facility is located within the village core. Tanks south of the village store and provide the fuel required for power generation.

The Fédération des Coopératives du Nouveau-Québec (FCNQ) is responsible for the operations of the tank farm as well as for the distribution of petroleum fuel products.

As a result of a recent agreement between Hydro-Québec and Tarquti Energy, it is expected that land will be required in or around the community for the installation of renewable energy generation. This agreement aims to provide sustainable energy sources that are owned and operated by local communities (Hydro-Québec, n.d.). As of 2025, Tarquti will begin planning feasibility studies for solar and wind energy projects in Kangiqsujuaq.

As of 2022, plans by the Nunaturlik LHC and Hydro-Québec to install a geothermal generating station in the community have been advancing. The thermal generating station is expected to yield 3,16 kW of energy for the community, it will additionally include solar panels and storage systems, and is being built to accommodate future investments in renewable energy. The project is to be located 0.9 kilometres to the south of the community. Environmental impact assessment and engineering phases are running concurrently throughout 2023 and 2024, with construction expected to begin in 2025, the project schedule details commissioning in winter 2028.

Map 9 — Snow Disposal Sites in Kangiqsujuaq (2012 Study)



LEGEND

- Snow Disposal Sites
- Potential Snow Disposal Sites
- Snow Disposal Prohibited

NOTES

Data Source: Journeaux Assoc. (2013), KRG (2024), CRGHAG (2024), MERN (2021)
Date: 2025-04-29



Source: (Barrett et al., 2012)

3.6 ECONOMY

In Kangiqsujuaq, similarly to other Nunavik communities, economic activities can be divided into two sectors: formal and informal. The informal economic sector is centred around subsistence and non-monetized activities such as fishing, hunting, and trapping. The informal cultural economy is supported by programming funded by KRG through the Inuit Hunting, Fishing and Trapping Support Program. Graph 9 identifies the main industries employing residents of Kangiqsujuaq, thus illustrating formal economic activities of the village, based on 2021 Census data. These are classified using the North American Industry Classification System (NAICS).

Some of the principal employers in the community of Kangiqsujuaq include:

- > Nunaturlik LHC;
- > The NV;
- > The childcare centre;
- > Educational facilities (Arsaniq School and the Nasivvik Adult Education and Vocational Training Centre);
- > Pingualuit National Park;
- > The Raglan Mine.

3.6.1 Key Economic Entities in the Village

3.6.1.3 Pingualuit National Park

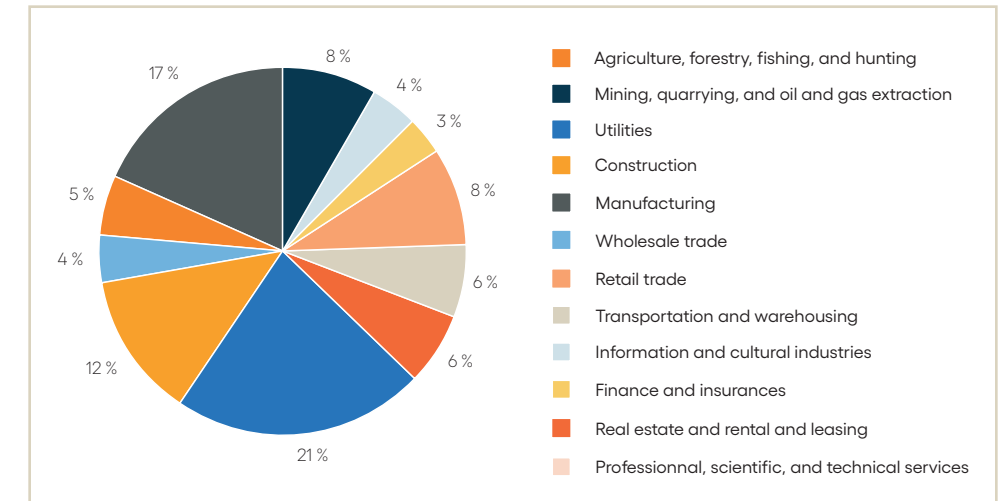
Kangiqsujuaq is home to the Pingualuit National Park Interpretation Centre. The Avataq Cultural Institute curates a permanent exhibition for the Interpretation Centre; various artifacts on loan from the Inuit Art Collection of Nunavik are displayed here. The Park was opened to the public in 2007. This new National Park is located in the centre of the Ungava plateau, approximately 88 kilometres southeast of the village. Pingualuit National Park protects a meteoric crater filled with clear blue water. The park provides various traditional Inuit activities and is expanding the availability of winter fishing permits and other winter activities.

3.6.1.4 Raglan Mine

The Raglan Mine is a significant economic fixture for the community of Kangiqsujuaq. Founded on the exploitation of sulphide nickel deposits, the mine has been in production since 1997. Raglan Mine treats the ore onsite before it is shipped to Deception Bay and to Ontario for smelting.

Inuit employment fluctuates from 12% to 16% of employees, short of the target of 20% (per the 1995 Raglan Agreement). The mine works with the high schools of the 14 villages to discuss career opportunities with Inuit youth. In addition, the Raglan Education Fund provides scholarships for post-secondary studies in mining-related programs. A profit-sharing program exists in which the Raglan Mine shares a portion of their profits with the KRG as well as the communities of Kangiqsujuaq and Salluit. Profit-sharing contributions totalled \$100 million between 1997 and 2011. In 2012, \$13 million was transferred to the community of Kangiqsujuaq. This influx of financial resources permits the subsidizing of gas as well as the funding of community-wide programming.

Graph 9 — Labour Force Aged 15 Years and Over by industry - Sectors - (NAICS)



Source: (Statistics Canada, 2022b).

3.7 GEOPHYSICAL PROFILE

3.7.1 Topography and Watershed

Kangiqsujuaq is located in the Ungava Bay Basin. The village lies along a portion of the 26-kilometre-long Wakeham Bay. Wakeham Bay is part of the Hudson Strait fjord coast, which extends from Cape Wolstenholme to Diana Bay. There are numerous rivers and streams in the region, including two small streams that run through the village itself (Allard et al., 2020).

Water run-off in the region occurs during the spring; the waters of the region only undergo one flood period, beginning in June. The rivers and streams in the region empty about half of their annual runoff during the flood period. The winter is a low-water period, during which the rivers and streams only produce ten percent of their annual output. The village of Kangiqsujuaq is located in a valley, surrounded by several mountains and high rock faces. The village itself is at around 60 metres of altitude, while the surrounding mountains reach 335 metres. The region surrounding Kangiqsujuaq is composed of a variety of hills and valleys.

3.7.2 Geology and Terrain

The Centre d'études nordiques (CEN) produced a series of maps for Kangiqsujuaq in 2018. The maps are based on the interpretation of 2010 aerial photos and historic satellite imagery, light detection and ranging (LiDAR) data used to create a digital elevation model, and field work to validate the data. The field work included a limited number of terrain observations, probing and drill holes in the permafrost, as well as borehole drilling and test pits in certain areas. Using this data and analysis, a surficial deposits map, a natural hazards risk map, and a permafrost conditions map were created. In addition, a construction potential map was also created to provide direction on suitable lands for development based on permafrost conditions, slope conditions, and foundation types in different areas of Kangiqsujuaq. In this Master Plan, maps 10 to 14 are adapted versions of the maps produced by the CEN. These maps focus on the village core and do not show the entirety of the CEN's original datasets, which represent a wider geographical scale. As a result, certain elements are not shown in the legends of Maps 10 to 14. More detailed maps are available in the annex.

3.7.2.1 Surface Geology

The surface deposits map indicates that most of the village is located on bedrock (R). The remaining part of the village is located on marine sediments (Mb, Mn, or Mr). The alluvial sediments (Ap) are the streambeds of the two major streams that are in the vicinity of the village. There are two significant areas of deep-water marine sediments (Mb), which contain poorly drained silty soils and clay. Furthermore, there is a significant amount of bedrock around the airport and in the general vicinity of the village. Table 4 provides descriptions of each surface deposit type present in the village core. This information is directly sourced from the CEN (Carbonneau et al., 2018c).

3.7.2.2 Natural Hazard Areas

The map in Map 12 identifies a variety of natural hazard risks in the village, including flood risk zones, areas of coastal erosion, and avalanche risk areas. The flood risk area is limited to the shoreline area, particularly at the western end of the village. Coastal erosion also affects the village's shoreline. The floodplains of the two major streams that go through the village and carry overflow from the surrounding lake system are also identified and are wide in some sections. The number of crossings of these waterways should be minimized to avoid issues associated with blocked culverts, particularly during the spring runoff. Furthermore, certain areas at the centre of the village are also subject to icing.

Finally, the avalanche risk zones are also identified. All the identified natural hazards on this map should be avoided when considering new building and infrastructure such as roads and power lines. If there are situations where these areas cannot be avoided for roads and other infrastructure, measures to reduce risks should be studied and implemented. Further information about natural hazard risks can be found in the construction constraints table in section B.



Table 4 — Description of Categories in the Surface Deposits Map

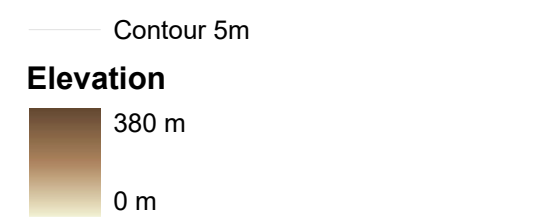
SOIL TYPE	DESCRIPTION
Ap: Alluvial sediments	Gravel, sand, boulders, minor silt and muck, little organic matter, 1-2 m thick, deposited in braided plains over marine sediments, till or bedrock, actual floodplains, poorly drained sediments.
Ca: Colluvial deposits	Sand, sandy silt, cobbles, and boulders, deposited below cliffs derived from rock falls.
Mb: Marine sediments	Silty sand, silt and clay, minor drop stones, variable thickness deposited in offshore environments of postglacial sea, poorly drained sediments, occasional frost blisters.
Mn: Marine sediments	Gravelly sand, presence of shell fragments, 1-4 m thick, deposited in shallow postglacial sea over offshore marine sediments or bedrock. Affected by periglacial processes such as frost blisters, hummocks and frost cracks.
Mr: Marine Sediments	Gravel and sand, commonly bouldery, actual and nearshore sediments deposited as beaches.
R: Bedrock	May include thin patches of sediment.
T: Glacial sediments (Undifferentiated till)	Non-sorted bouldery diamicton, variable thickness, lodgement or basal melt out till, deposited at the ice margin or beneath the glacier, occasionally thin (< 2 m) and discontinuous, reflecting underlying bedrock structure. Susceptible to creep. Ice wedges occasionally present in the near surface permafrost.

Source: (Carbonneau et al., 2018c).

Map 10 — Topography in Kangiqsujuaq



LEGEND

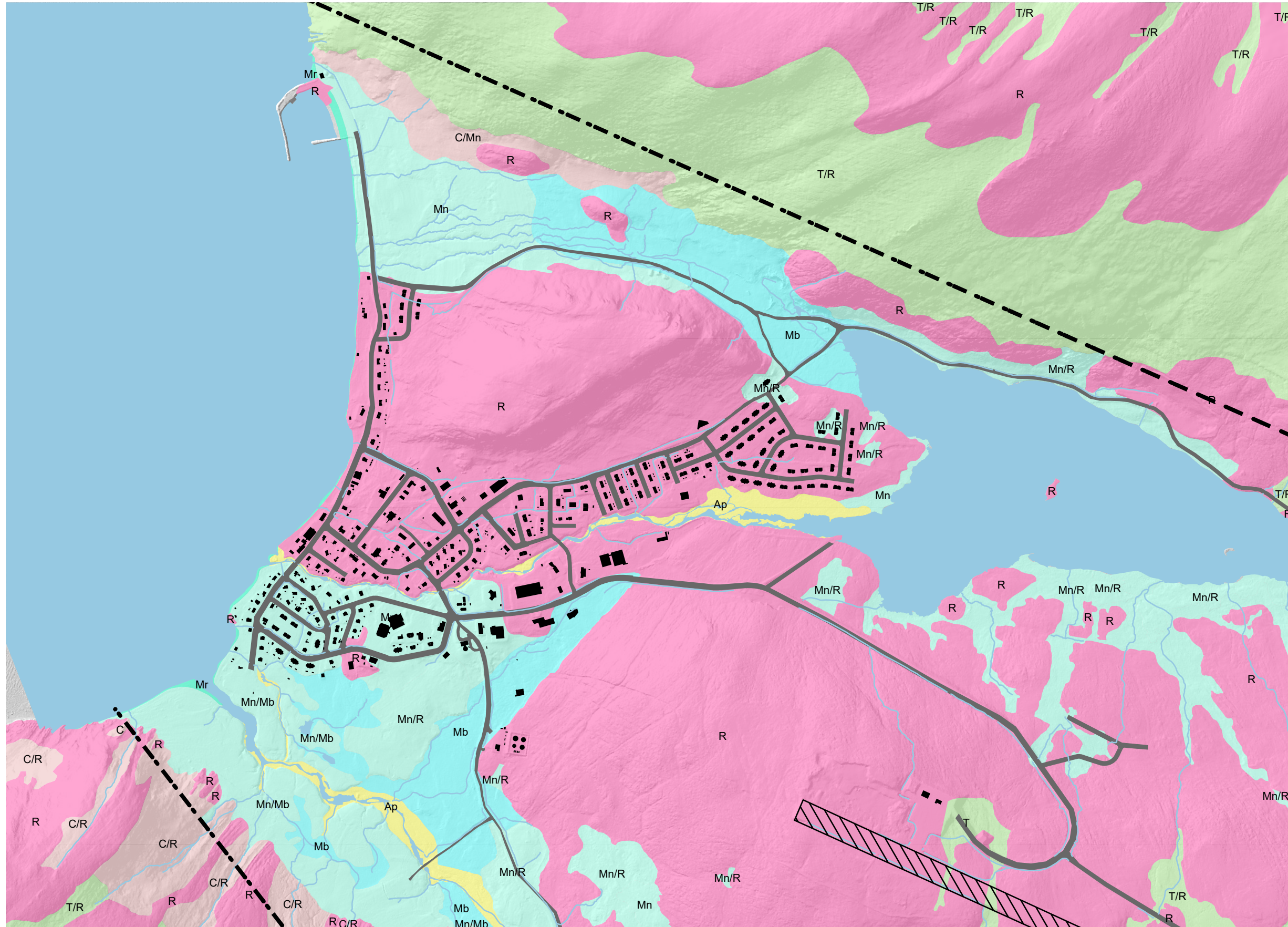


NOTES

Data Source: KRG (2024), CRGH AG(2024), MERN (2010)
Date: 2025-04-29



Data source: (Carbonneau et al., 2018e)



LEGEND

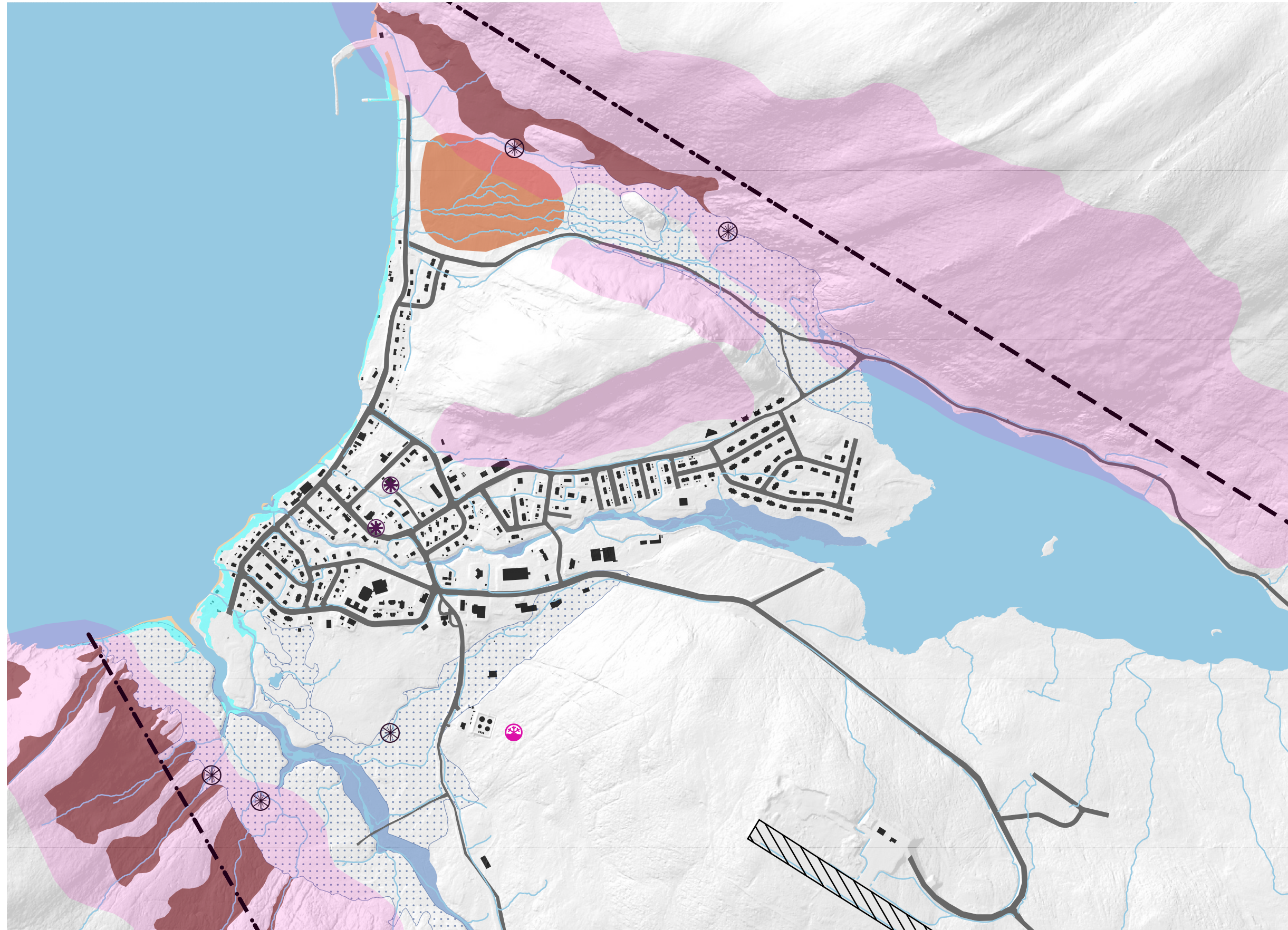
- Ap: Alluvial sediments - Floodplain sediments (All)
- C: Colluvial and mass-wasting deposits - Undifferentiated deposits (All)
- Mb: Marine sediments - Blanket (All)
- Mn: Marine sediments - Littoral and nearshore sediments (All)
- Mr: Marine sediments - Beach sediments (All)
- R: Bedrock - Undifferentiated (All)
- T: Glacial sediments - Undifferentiated sediments (All)

NOTES

Data Source: CEN (2017), KRG (2024), CRGH AG(2024), MERN (2021)
 Date: 2025-04-29



Data source: (Carbonneau et al., 2018c)

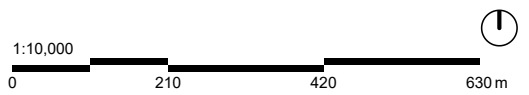


LEGEND

-  Dry snow avalanche
-  Frostblister
-  Icing
-  Flood
-  Rockfall
-  Coastal erosion
-  Storm Surge
-  Thermal erosion
-  Ice-rich permafrost
-  Avalanche zone

NOTES

Data Source: CEN (2017), NGI (1999), KRG (2024),
CRGHAG(2024), MERN (2021)
Date: 3/27/2026



Data source: (Carboneau et al., 2018a)

3.7.2.3 Permafrost Conditions

Three broad types of terrain are illustrated in the permafrost conditions map, which focuses on the village's core:

- > **Thaw-stable ground:** bedrock and superficial deposits with little or no ice content (1a, 1b, 1c);
- > **Thaw-unstable ground:** ice-rich permafrost in superficial deposits (2a and 2d);
- > **Severe limitations:** dynamic active periglacial and slope processes, littoral zone or flood risk areas (3).

Each category is further described in Table 5. These descriptions are directly sourced from the CEN. Almost all of the existing village of Kangiqsujuaq is built on thaw stable soils. The road to the tank farm, landfill, and sewage treatment area traverses thaw unstable lands. The ice content on these lands generally exceeds 30% and can be as high as 100%. These soils are particularly vulnerable to melting permafrost and can become unstable in thaw conditions. These areas should generally be avoided for new community development when other options are readily available. If new development is proposed in these areas, the design of building foundations, roads, and other infrastructure needs to be carefully considered.

3.7.2.4 Construction Potential

The Construction Potential Map compiles slope and permafrost conditions data to categorize all lands into three categories for development potential: good, fair, and poor. In this map, the areas in green represent lands suitable for development, the yellow colour represents lands manageable for development but where significant site work may be required prior to development, and the red colour represents lands generally unsuitable for development, unless adaptive foundation design is used. These categories are further described in Table 6. This information is directly sourced from the CEN. The typical foundation design for housing in Nunavik is a surface foundations on a gravel pad. However, this construction method poses issues given the particular context of the north. For one, the limited access to granular resources impedes the construction of new housing. Secondly, the gravel pads have been found to accelerate the thawing of permafrost, resulting in buildings shifting and cracking due to the unstable foundation. Therefore, it is recommended to transition toward pile foundations for all new construction.

Table 5 — Description of Categories in the Permafrost Conditions Map

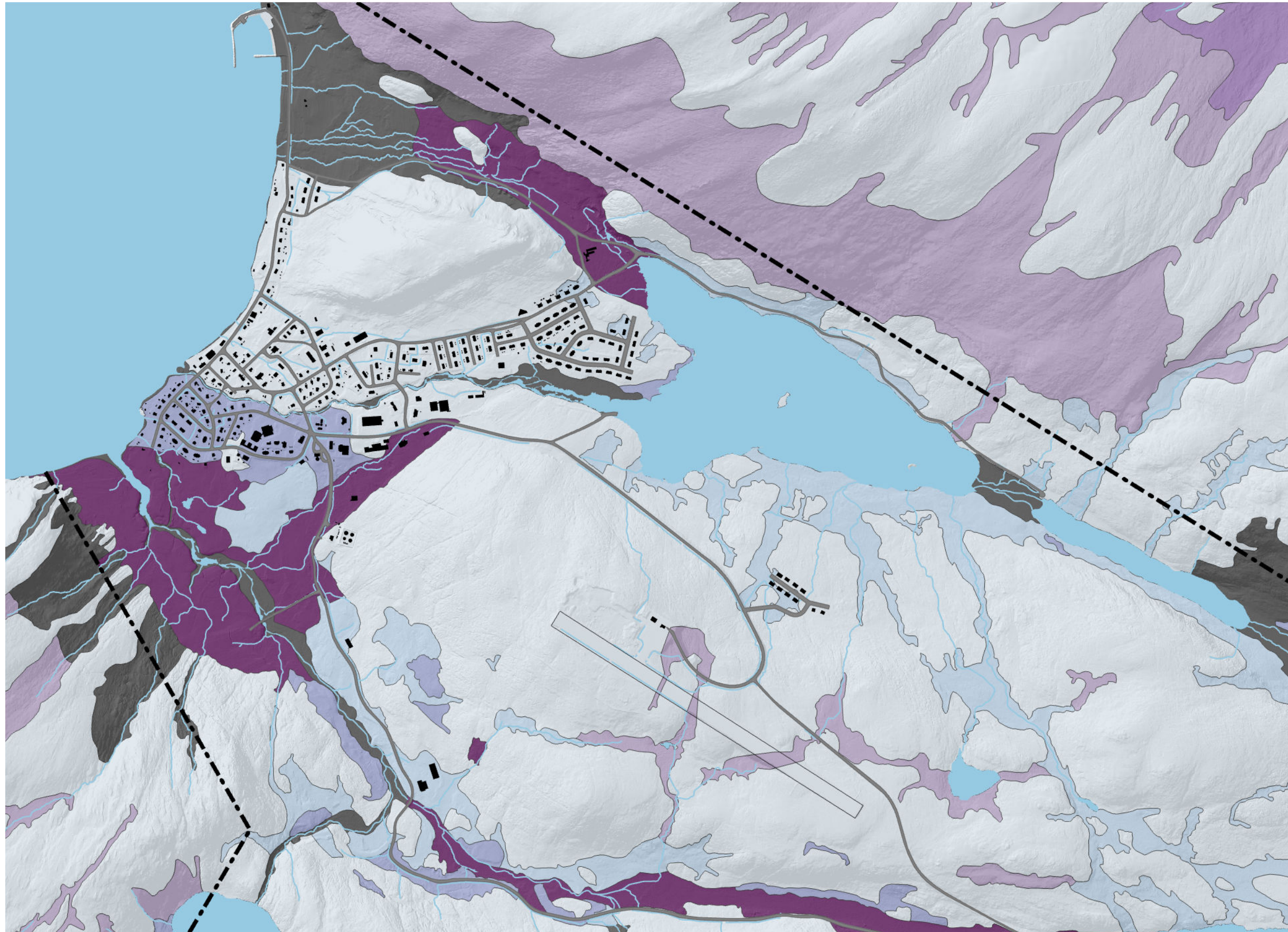
CATEGORY	PERMAFROST CONDITIONS	DESCRIPTION
THAW-STABLE GROUNDS	1a : Bedrock	Active layer thickness is generally ranging from 4.5 to 6 m. Rock joints may contain a small amount of ice.
	1b: Thin-cover sand and gravel over bedrock	The thickness of the deposit is generally less than 2 m and the topography is controlled by bedrock. Presence of scattered rock outcrops. The active layer thickness generally ranges from 1.5 to 2.5 m. Contains pore ice whose volume is generally less than 10%.
	1c: Thick layered sand and gravel deposit	The thickness of the deposit is generally greater than 2 m. The active layer thickness is generally ranging from 1.5 to 2.5 m. Contains pore ice and occasional ice lenses may be present in fine-grained material layers. Possibility of ice wedges occurrence.
THAW-UNSTABLE GROUNDS	2a: Thin cover of heterogeneous deposit (till) over bedrock	The thickness of the deposit is generally less than 2 m with occasional bedrock outcrop. The active layer thickness is generally ranging from 2.5 to 3 m. Contains pore ice and ice lenses in fine-grained material layers. The volumetric ice content is generally less than 30%. Occurrence of mudboils and gelifluction lobes on slopes. Creep and differential settlements may occur upon thawing.
	2d: Fine-grained deposit of marine origin sometimes covered with a thin layer of organic, alluvial, or coastal sediments	Poorly drained. The active layer thickness is ranging from 0.5 to 1.5 m. Contains ice lenses. The volumetric ice content regularly exceeds 30% and may reach almost 100%. Material subject to significant differential settlements and failure on slopes upon thawing.
SEVERE LIMITATIONS	3: Contemporary deposit affected by current and dynamic geomorphological processes	Contemporary deposit affected by current and dynamic geomorphological processes. Subject to erosion, flooding, and slope movements.

Source: (Carbonneau et al., 2018b).

Table 6 — Description of Construction Potential Map

CATEGORY	PERMAFROST CONDITIONS	CONSTRUCTION POTENTIAL	DESCRIPTION TYPE(S) OF FOUNDATION(S)
THAW-STABLE GROUNDS	1a : Bedrock	Good: Terrain manageable for construction (slope < 7.5°).	All types of northern foundations. Adaptations to rugged topography are often necessary.
		Fair: Terrain manageable for construction but may require significant earthwork (slope between 7.5 and 15°).	
		Poor: Terrain unsuitable for construction (slope > 15°).	
THAW-STABLE GROUNDS	1b : Thin-cover sand and gravel over bedrock	Good: Terrain manageable for construction (slope < 7.5°).	Deep northern foundations on the underlying bedrock applicable. Adjustable post and pad foundations also feasible. Buildings with slab on grade foundations need elaborated techniques of terrain preparation
		Fair: Terrain manageable for construction but may require significant earthwork (slope between 7.5 and 15°).	
		Poor: Terrain unsuitable for construction (slope > 15°).	
THAW-STABLE GROUNDS	1c : Thick layered sand and gravel deposit	Good: Terrain manageable for construction (slope < 5°).	Northern foundations on adjustable post and pad or on piles. Buildings with slab on grade foundations might need elaborated techniques to retain permafrost in its frozen state.
		Fair: Terrain manageable for construction but may require significant earthwork (slope between 5 and 10°).	
		Poor: Terrain unsuitable for construction (slope > 10°).	
THAW-UNSTABLE GROUNDS	2a : Thin cover of heterogeneous deposit (till) over bedrock	Good: Terrain manageable for construction (slope < 4°).	Deep northern foundations on the underlying bedrock applicable. Adjustable post and pad foundations also feasible. Buildings with slab on grade foundations need elaborated techniques of terrain preparation
		Fair: Terrain manageable for construction but may require significant earthwork (slope between 4 and 8°).	
THAW-UNSTABLE GROUNDS	2d : Fine-grained deposit of marine origin sometimes covered with a thin layer of organic, alluvial, or coastal sediments.	Poor: Terrain unsuitable for construction (slope > 8°).	Adjustable post and pad foundations. Buildings with slab-on-grade foundations need elaborated techniques to retain permafrost in its frozen state.
		Poor: Terrain unsuitable for construction.	
SEVERE LIMITATIONS	3 : Contemporary deposit affected by current and dynamic geomorphological processes.	Poor: Problematic terrain unsuitable for construction.	Problematic terrains to be avoided.

Source: (Carbonneau et al., 2018d).



LEGEND

Permafrost Conditions

- 1a - Bedrock
- 1b - Thin cover of sand and gravel
- 1c - Thick layered sand and gravel
- 2a - Thin cover (< 2 m) of heterogeneous deposit (till) over bedrock
- 2b - Thick cover (> 2 m) of heterogeneous deposit (till) over bedrock
- 2d - Fine-grained deposit of marine
- 3 - Contemporary deposit

NOTES

Data Source: CEN (2017), KRG (2024), CRGHAG(2024), MERN (2021)
 Date: 2026-03-09

1:13,000

0 280 560 840 m

Source: (Carbonneau et al., 2018b).



LEGEND

Construction Potential

- Good
- Fair
- Poor

NOTES

Data Source: CEN (2017), KRG (2024),
CRGH AG(2024), MERN (2021)
Date: 3/6/2026



Source: (Carbonneau et al., 2018d).

3.8 CLIMATE

Table 7 provides some key climate facts for Kangiqsujuaq. Note that Environment Canada reports climate data for Kangiqsujuaq only at hourly intervals and does not have any published climate normals.

3.8.1 Climate Change

The impacts of climate change are being felt around the globe in a variety of ways. Multiple studies have suggested that Northern regions will be highly impacted by climate change, with accelerated warming expected during the 21st century. In addition to increases to air temperature, climate change is expected to impact precipitation, snow cover, wind, lake and sea-ice cover throughout Nunavik. In the period between 1987 and 2016, the region has displayed winter temperature increases by approximately two degrees Celsius per decade and summer increases of five degree Celsius per decade. This aligns with further evidence of the poleward amplification of climate change impacts. Current models suggest that mean annual temperatures will increase by two to eight degrees Celsius by the end of this century, with most pronounced impacts occurring in the winter months. Precipitation in the region is expected to increase by 20-30%, which is expected to have significant impacts on coastal regions and related transportation infrastructure. Nunavik is expected to see a significant decline of winter sea ice concentration, with concentrations reaching 10% by 2040-2070, in contrast to the current 60-80% concentrations experienced from 1980 to 2010.

Community perspectives on climate change in Nunavik have been recorded on numerous occasions. This includes a series of workshops conducted during 2002-2003 in three Nunavik communities (Puvirnituq, Ivujivik, and Kangiqsujuaq), which allowed participants to collectively discuss the changes they are witnessing in their environments and how the impacts of these changes are being felt. A report produced after the consultations suggests that all communities are experiencing a greater degree of weather unpredictability and thinner lake and sea-ice format.

Additionally, in 2015, another study was undertaken in Nunavik to document community perspectives on climate change and its effects. Researchers interviewed 46 participants from Umiujaq, Kangiqsualujjuaq, and Kangiqsujuaq. The results share similarities with the 2005 report: Community members observed changes in berry and animal distribution, fish abundance, shifts in wind and seasonal weather patterns, changes in sea ice coverage, and lower abundance of snow. Environmental changes have direct implications for Nunavik's communities and their way of life. For instance, as weather patterns become more unpredictable and difficult to discern, local travel can become more challenging. Climate-related shifts are linked to increased risks for winter season travel in particular, as the ice thickness and snow amounts become less stable. This has repercussions on hunting, along with other subsistence activities.

Communities have noted the impacts of climatic change on their food security. Certain important food sources are particularly vulnerable. Artic char, for instance, prefer cold water conditions, and could change their migration patterns due to warming temperatures. Changes in weather have also been reported to have negative effects on berry growth and distribution patterns. Furthermore, shifts in certain mammal population levels and migration patterns is also an issue of particular concern. For example, a decline in the population of caribou has been observed since the 1990s. This could have negative social and economic effects in the long term, as many communities rely on caribou as a food source. All of these changes have increased communities' reliance on store-bought foods, which are often costly and less nutrient dense. Another key issue is the availability of fresh drinking water, which has changed both in quantity and quality due to shifts in precipitation patterns and water levels.

According to the results from interviews and workshops, community members have noted numerous adaptive behaviours arising as a response to environmental changes, such as shifts in meat drying practices due to weather changes; a greater emphasis on local food exchanges due to the decreasing availability of country foods; increasing sun protection methods; and changes in hunting and travel routes.

In coming years, it will be essential for the village of Kangiqsujuaq to identify and understand the potential impacts of climate change and prepare to respond quickly and effectively. Information on impacts specific to Kangiqsujuaq will be essential to inform decisions and build adaptive capacity. Furthermore, the village must assess how it can adapt to climate change. Adaptive capacity is the ability of a community to cope with or adjust to the impacts and risks of climate change. By building adaptive capacity, communities develop practical ways to cope with climate uncertainty and reduce their vulnerability. In 2012, the KRG published a study which issued recommendations for climate change adaptation across Nunavik. This includes best practices for snow removal, road construction and maintenance, drainage and water management, and other infrastructure design and maintenance. These recommendations should be integrated into planning and development in Kangiqsujuaq.

Table 7 — Key Climate Indicators for Kangiqsujuaq

Daily mean temperature	- 8.0 °C
Warmest month	July (7.1 °C)
Coldest month	February (- 24.5 °C)
Average annual precipitation	368 mm
Driest month on average	February (16 mm)
Rainiest month on average	August (57 mm)

Source for temperature and precipitation: (Climate Kangiqsujuaq (Canada), n.d.)



04

Community Perspectives and Needs

4.1 COMMUNITY CONSULTATIONS SUMMARY

A series of community consultation sessions took place in 2016, 2022 and 2026 to document community needs based on the perspectives of residents.

In 2016, participants collectively defined various goals and priorities, such as the relocation of Hydro-Québec’s power station and the development of a new NV office and garage. Discussions highlighted the complexity of relocating certain community amenities in order to densify central areas of the village. The relocation of the golf course further from the village core was an important issue at hand. This issue has since been resolved, with the relocation having been approved and an area identified. These sessions also highlighted the diversity of perspectives across community members. Part of the consultations included the delivery of youth engagement sessions for school-aged children. These sessions created an opportunity for youth to suggest locations for future development based on their lived experiences. The results of the consultations showed that a large majority of youth believed that the golf course grounds could accommodate new development. The youth also identified amenities that they would like to see in their community such as a new school, arena, swimming pool, youth center and restaurant/ coffee shop.

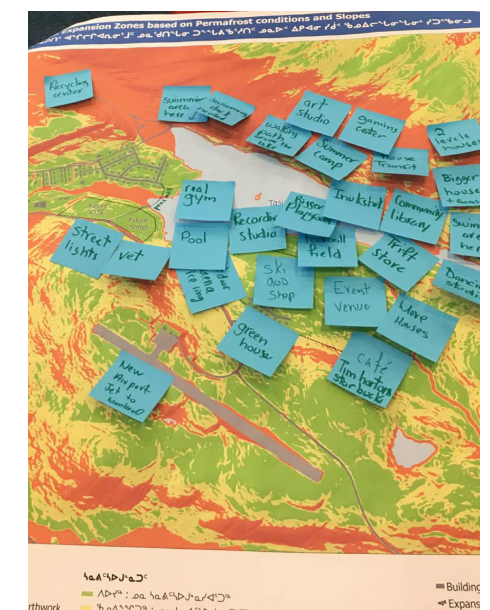
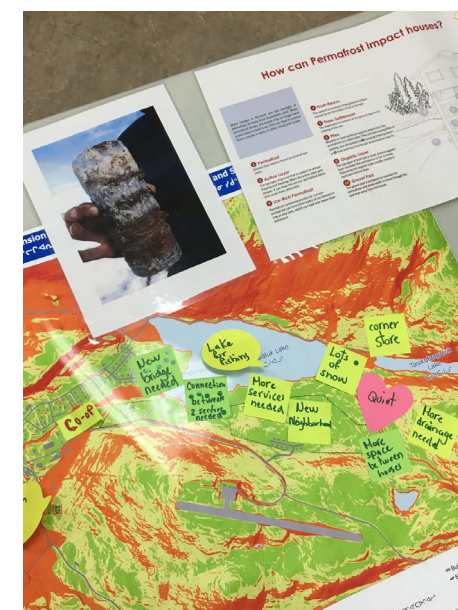
In 2022, representatives from the KRG further consulted with NV staff. These conversations highlighted the need for a policy that conserves natural resources and protects the environment as much as possible. Further, such a policy should mitigate natural and anthropogenic risks of development. The need to consider drainage and soil quality during development was made evident. The community has identified various sites that could be densified in the future, but also noted the challenges of developing smaller vacant lots, especially when there is a risk of contamination from previous uses.

In 2026, the KRG Land Use Planning (LUP) Team, in collaboration with the Northern Village (NV), organized an information session aimed at presenting the new expansion areas and their relationship with the construction potential map developed by the Centre for Northern Studies. The activities also provided an opportunity to gather the community’s most up-to-date needs and aspiration regarding the development of their community. Through three information sessions at the grocery store, a youth focused consultation activity at the school, an information session on the local radio, and a public kitchen talk, the KRG LUP team was able to get the most up to date needs and aspiration of the community.

These consultation activities also made it possible to gather specific feedback and key elements to consider for the development of the planned expansion areas, specifically the E2 area, which had not yet been developed during previous consultations and now includes several residences.

The main results highlighted a concern among residents of the E2 area regarding significant snow accumulation during storms. The orientation of future buildings, the configuration of lots, and other mitigation measures will need to be incorporated into the planning for this zone. The population also expressed a desire for a secondary access road to this sector, which is already underway. In addition, more services are desired in this area, such as convenience stores, a café, and other similar amenities. The consultations also helped identify various activities currently practiced near this sector and around Tasialuk Lake that the community wishes to maintain, including berry picking, fishing, and swimming, among others. The lake view is also an appreciated feature for residents. The youth consultation revealed aspirations similar to those expressed in 2016: more spaces for recreational activities are desired, such as outdoor sports fields, parks, and cultural and creative spaces.

Images 6 to 9 — Photographs of Community Consultations in Kangiqsujuaq



4.2 POPULATION GROWTH

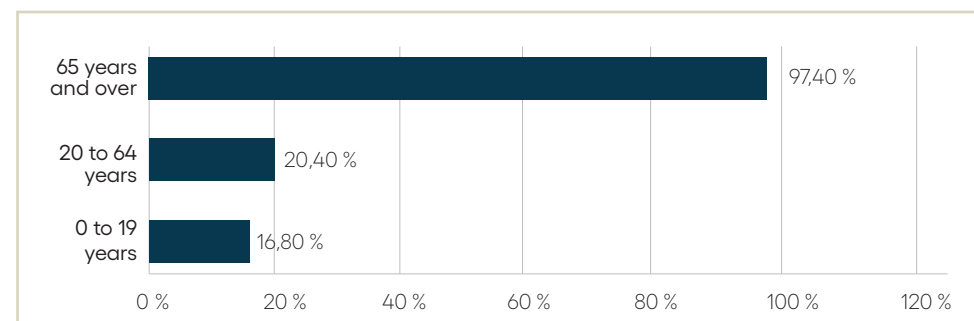
4.2.1 Population Projections

The following analysis utilizes a population projection to estimate how much and what type of development may be required to meet future needs.

4.2.1.1 Kativik Region

The total population for the Kativik region is anticipated to increase by 22.7%. Graph 11 shows the projected population growth by age category, including seniors. Given this information, it is essential to plan for community assets that respond not only to the potential needs of youths, but also elders. Although this group is projected to undergo the largest percent change, the proportion of the population at this age will remain relatively small in 2041. The proportion of population aged 65 years and over in Kativik is expected to reach 7.8% in 2041, compared to 4.8% in 2021. It is also important to remember that these projections are for the entire Kativik region, and the reality could differ depending on the village.

Graph 10 — Percent Change in the Population in Kativik - Between 2021 and 2041



Source : (Ministère de l'Économie, de l'Innovation et de l'Énergie, 2022)

4.2.1.2 Kangiqsujuaq

Three population projection scenarios were developed to present a range of low, medium, and high population growth scenarios for Kangiqsujuaq in the long-term.

- > The low projection is based on the ISQ rate for the Kativik region between 2021 and 2041 (22.7%), divided by four to arrive at a five-year incremental rate.
- > The medium projection is based on the historical five-year rate of population growth for Kangiqsujuaq between 2016 and 2021, from the Statistics Canada population data.
- > The high projection is based on the historical rate of population growth for Kangiqsujuaq between 1996 and 2021 from the Statistics Canada population data, divided by five to arrive at a five-year incremental rate.

Note that these projections are for general estimate purposes and provide a range given the various data available. Basing estimates off historical rates assumes that similar rates will occur in the future. However, this may not be the case.

Graph 11 — Population Projections for Kangiqsujuaq, 2021-2041

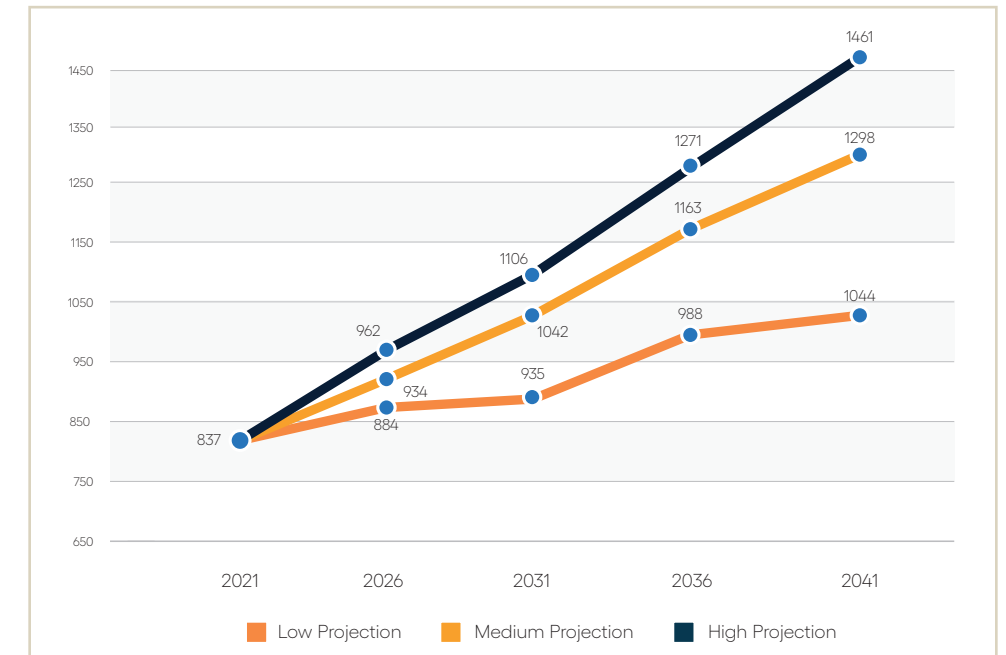


Table 8 — Population Projections for Kangiqsujuaq, 2021-2041

	YEAR	LOW	MEDIUM	HIGH
5-YEAR RATES	2016-2021	11.60%		
	ISQ 2021-2041	5.68%		
	1996 - 2021	14.95%		
POPULATION PROJECTION	2021	837	837	837
	2026	884	934	962
	2031	935	1042	1106
	2036	988	1163	1271
	2041	1044	1298	1461

Data source: (Institut de la statistique du Québec, 2022; Statistics Canada, 2012, 2022)

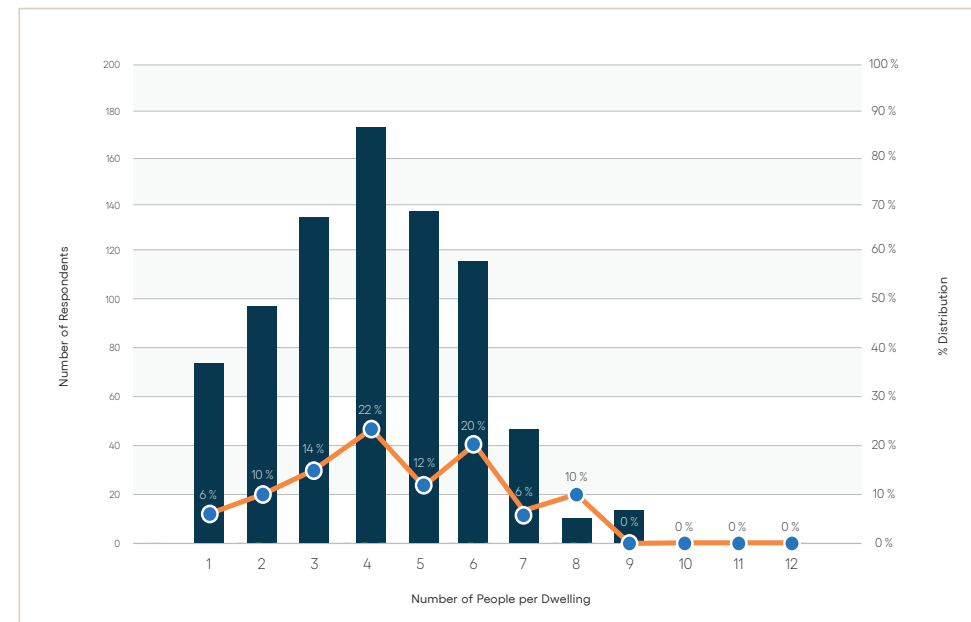
4.3 LAND NEEDS ASSESSMENT

Using the population projections from Section 4.2, Section 4.3 presents estimates for various land needs. It is important to note that this assessment cannot account for all future projects in the community, which may increase the need for housing or other types of development.

4.3.1 Housing Needs Assessment

In 2021, the NHB published a housing needs survey for the 14 villages of Nunavik. Graph 12 illustrates the distribution of the number of people per dwelling in Kangiqsujuaq. The majority of households are comprised of one to six persons. 54% of dwellings in Kangiqsujuaq contain two bedrooms. This suggests that there is potentially a mismatch in the number of bedrooms within occupied dwellings versus the number of bedrooms needed, suggesting overcrowding issues. More data is needed to better understand the mismatch of housing sizes and family sizes that may exist.

Graph 12 — Number of People Living in the Same Dwelling Based on Total Housing Survey Respondents, 2021



Source: (Nunavik Housing Bureau, 2021)

The study also found that the average number of people per dwelling is statistically higher in Kangiqsualujjuaq (3.84), Akulivik (3.87), Inukjuak (3.83), Salluit (4.80), and Puvirnituq (3.68), while the average number of people per dwelling is lower in Kangiqsujuaq (3.03) and Kuujjuaraapik (2.95). The housing study calculated an estimate of housing and bedroom needs across Nunavik.

The study further estimated the following per community: number of dwellings that are meeting the current housing needs (balance); number of dwellings that are in surplus; and number of dwellings that are in deficit. Table 10 illustrates the results for Kangiqsujuaq, where there is a deficit of 82 dwellings, with 114 dwellings being in a deficit in the number of rooms needed.

Table 9 — Kangiqsujuaq Housing Needs Analysis

Number of housing units	270
Number of families	358
Ratios (%)	0.75
Housing needs	88

Source: (Nunavik Housing Bureau, 2021)

When incorporating future population growth anticipated (Section 4.2.1), Table 11 estimates the number of housing units needed in the long-term (by 2041). These calculations are based on two average household sizes: the average number of people per dwelling reported in the 2021 housing survey (3.03) by the NHB, and the average number of persons per dwelling based on the 2021 Census data on family characteristics (2.80). Two data sets for the number of occupied dwellings were also used; the 2021 housing survey figure of 270 and the 2021 Census value of 297. Given the generalizations within the available data (e.g., the family characteristics do not take into account multi-generational housing given that lack of data available), a range of estimates were applied. This analysis has yielded a broad range of values for the projected need of residential units, from 47 to 252, depending on the model used.

Table 10 — Number of Dwellings That Meet the Needs

EXISTING		NUMBER OF DWELLINGS		NUMBER OF ROOMS	
Total number of dwellings	Deficit	Balance	Surplus	Deficit	Surplus
270	82	107	81	114	112

Source: (Nunavik Housing Bureau, 2021)

4.3.1.1 Units in Need of Replacement

35% of dwellings in Kangiqsujuaq were built before 1990. Housing greater than 30 years old could indicate a need of major repairs or replacement. Therefore, the total housing units needed in the long-term is likely greater than the estimates calculated, given the probable need of replacing the significant portion of the housing stock that was built before 1990. Further research could be undertaken to quantify the dwelling units in need of repairs or replacement as well as to better understand how this issue impacts housing in the community.

4.3.2 Projected Land Needs

Building on Section 4.3.1, an analysis of other land uses was conducted. This is a general estimate based on anticipated population growth rates and assumes that increasing land needs are in proportion to population growth. For the purpose of the land needs analysis, the medium scenario for population growth was used. For the number of additional dwelling units needed by 2041, an average of the four medium estimates was used, which amounted to 163 new dwelling units. The amount of land needed for each permitted use was taken into consideration in Section 5 when determining the proposed zoning of Kangiqsujuaq's land use plan. In this way, the Master Plan includes sufficient land to meet the needs of the community into 2041.

Table 11 — Long-Term (2041) Housing Needs Estimate for Kangiqsujuaq

	Projected population 2041	Average number of people per dwelling 2021 NHB survey	Projected housing need 2041	Total inhabited housing unit count 2021 NHB survey	Additional units needed by 2041
Low	1,044	3.03	344	270	74
Medium	1,298	3.03	428	270	158
High	1,461	3.03	482	270	212
	Projected population 2041	Household size (2021 Census data)	Projected housing need 2041	Total inhabited housing unit count 2021 NHB survey	Additional units needed by 2041
Low	1,044	2.8	373	270	103
Medium	1,298	2.8	464	270	194
High	1,461	2.8	522	270	252
	Projected population 2041	Average number of people per dwelling 2021 NHB survey	Projected housing need 2041	Total - Occupied private dwellings (2021 Census data)	Additional units needed by 2041
Low	1,044	3.03	344	297	47
Medium	1,298	3.03	428	297	131
High	1,461	3.03	482	297	185
	Projected population 2041	Household size (2021 Census data)	Projected housing need 2041	Total - Occupied private dwellings (2021 Census data)	Additional units needed by 2041
Low	1,044	2.8	373	297	76
Medium	1,298	2.8	464	297	167
High	1,461	2.8	522	297	225

Table 12 — Lands Needs Assessment

Existing population (2021)	837
Projected population (2041) - Medium Scenario	1298
% projected increase in population 2021-2041	55.1%
Existing dwelling units (2021) - estimate	297
Existing density of development (units/ha) - 2021	15.2
Additional dwelling units needed by 2041	173
Assumed density of development (units/ha) - 2041	20
Existing residential land (ha) - 2021	19.6
Additional dwelling units needed by 2041	163
Assumed density of development (units/ha) - 2041	20
Additional residential land needed (ha) - 2021-2041	8.2
Existing commercial land (ha) - 2021	1.7
% projected increase in population 2021-2041	55.1%
Projected commercial land needed (ha) - 2041	2.6
Additional commercial land needed (ha) - 2021-2041	0.9
Existing industrial land (ha) - 2021	4.1
% projected increase in population 2021-2041	55.1%
Projected industrial land needed (ha) - 2041	6.4
Additional industrial land needed (ha) - 2021-2041	2.3
Existing community services/institutional land (ha) - 2021	8.2
% projected increase in population 2021-2041	55.1%
Projected public/institutional land needed (ha) - 2041	12.7
Additional community services/institutional land needed (ha) - 2021-2041	7.0
Additional residential land needed (ha) - 2021-2041	8.2
Additional commercial land needed (ha) - 2021-2041	0.9
Additional industrial land needed (ha) - 2021-2041	2.3
Additional community services/institutional land needed (ha) - 2021-2041	7.0
TOTAL LAND REQUIREMENT	18.4

Section B

Land Use Policies

05 Land Use Plan

06 Implementation



05

**Land Use
Plan**

This section presents the core elements of the Land Use Plan, outlining how the community envisions the management and development of land within the village. It provides land use designations, policies, construction potential and constraints mapping, development processes, and implementation strategies. This framework is designed to ensure that the land use plan and map aligns with the community's goals by respecting its context and promoting sustainable growth.

LAND USE PLANNING OBJECTIVES

Based on the five (5) aspects of community planning presented in the introduction and below, objectives have been identified to ensure the sustainable development of the village of Kangiqsujuaq for the next 20 years. These objectives have guided the design of this present section of the Master Plan, but they are also objectives to keep in mind when making land-use planning decisions.



Inspired by the Comprehensive Community Planning wheel from Indigenous Services Canada

INFRASTRUCTURE DEVELOPMENT

Ensure that best practices, standards, and local knowledge are applied for all new infrastructure, renovations, demolitions etc. (Standard CAN/BNQ 9701-500, Housing Construction in Nunavik Guide to Good Practices, CSA S503, etc)

Adapt construction techniques to the specific location, surface deposits, permafrost conditions, topography, wetlands, and snow accumulation

Provide civil infrastructure guidelines to take into consideration the existing natural and built environment

Promote and share community knowledge on land-use planning practices

Require environmental and geological assessments to be completed and verified before the approval of any new development project

Optimize all-year round comfort by using adequate building orientation and configuration

GOVERNANCE

Ensure the adoption and application of planning tools to help guide and manage the realization of the Community Master Plan

Identify in advance a sufficient number of buildable lots to accommodate the projected needs for all the different uses

Reserve specific areas for snow dumps, paths, parks, and playgrounds in new development areas

Maximize the use of already developed areas to increase housing in the village centre (near services)

Encourage the use of repurposed contaminated lots or soils for new uses or buildings

Plan development to reduce nuisances for residents and provide a quiet, safe environment

Maximize slopes as opportunities to offer views on valued elements of the landscape

LAND AND RESOURCES

Ensure a sustainable use of natural resources, like granular resources and water

Minimize the impact of development on local vegetation and wildlife

Adapt civil infrastructure to take into consideration the existing natural and built environment (slopes and drainage)

Encourage scientific research on climate change and keep decision-makers up to date

Promote energy conservation awareness and develop energy-saving strategies and encourage renewable energy (solar panels on buildings)

Protect hunting grounds, fishing spots and berry picking areas around the village

CULTURAL

Ensure the identification and protection of cemeteries and archeological sites

Plan spaces for equipment storage in new development areas

Include gathering spaces designed specifically to respond to needs and interests of the youth in the planning process

Protect access to and views of the waterfront

Integrate cultural heritage knowledge into the process of identifying potential conservation areas of value to Inuit

Protect existing hunting routes and improve access points to the land and water from the village centre

SOCIAL

Encourage creation and conservation of recreational trails

Ensure sufficient space around buildings for hunting equipment and vehicles for hunters' families

Encourage adaptation of buildings to the local community context (typology, spaces around buildings)

Maintain communication with the community regarding upcoming/proposed projects in the village

Ensure the design and construction of quality, multi-use outdoor spaces, especially to serve children and youth

Encourage self-building initiatives and renovation

Graph 13 — Criteria for impact level evaluation

	Low Impact	High Impact
Traffic	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Dust	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Pollution (smoke)	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Permafrost deterioration	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Noise	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Potential soil contamination	○ ○ ○ ○ ○	○ ○ ○ ○ ○
View	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Safety risks	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Wildlife	○ ○ ○ ○ ○	○ ○ ○ ○ ○

5.1 IMPACT-BASED ZONING CONCEPT

The Land Use Plan is inspired by the impact zoning concept. Impact zoning designates areas to include specific types of land uses (example: residential, commercial, industrial, etc.) based on their anticipated impact on the local environment. For applicability in Nunavik’s northern villages, the anticipated impact considers certain environmental conditions and risks unique to the North, such as permafrost, icing/flooding, avalanches, unstable soils, and storm surges.

The main objective of the impact zoning approach is to allow for more flexibility in the planning and development of the village, while ensuring the safety and well-being of residents. The zones presented consist of three main categories structured by anticipated impact level (low, medium, and high), plus two additional zoning categories: Conservation, and Nuna.

Although each zoning category (low, medium, high) corresponds with recommended uses, impact zoning allows for more flexibility in terms of allowing a greater variety of types of uses in each zone, assuming the proposed use meets certain compatibility criteria. Impact zoning, therefore, gives the NV more discretion to act in the interest of the community.

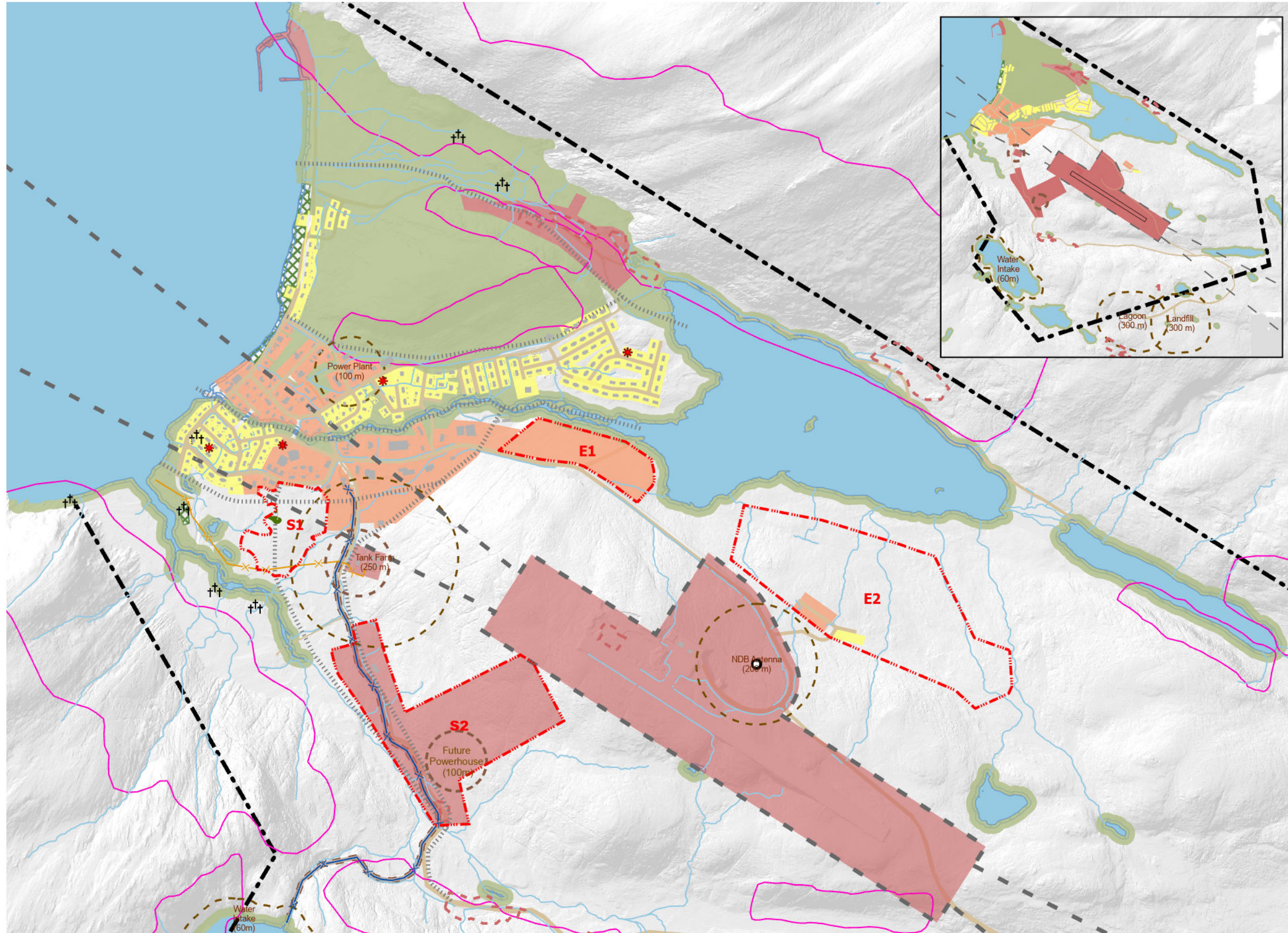
However, it is understood that residential neighbourhoods must be protected from nuisances generated by certain land uses, specifically those situated near high-impact zones. The Land Use Plan reflects the need to protect residents from potential nuisances and environmental risks. It is therefore recommended that residential areas remain separated from high-impact, industrial use zones. Conservation areas consist of areas identified by the community as holding significant cultural heritage value as well as areas which pose significant environmental risk or fragility. These areas within the municipal boundary of the village are not intended for development in the next 20 years.

NV council members may select which approved land use designation is most appropriate for a certain site, based on community needs and criteria to evaluate the impact level of each use (Graph 13). This approach directly responds to the unique contexts of Nunavik’s northern villages where topography, climate, and community needs are not adequately addressed by the rigid land use designations used in conventional land use planning.

Table 13 — Impact Zones and Their Permitted Uses

ZONING DESIGNATION	RESIDENTIAL LOW IMPACT	VILLAGE CORE & MEDIUM IMPACT ACTIVITIES	INDUSTRIAL & HIGH IMPACT ACTIVITIES	NUNA	CONSERVATION	
Permitted Uses	<ul style="list-style-type: none"> › Residential/Housing <ul style="list-style-type: none"> › Single-family, duplex, multiplex › Light Commercial/Retail <ul style="list-style-type: none"> › Convenience stores, small shop, restaurant, laundromat, hairdresser › Small Community Amenities <ul style="list-style-type: none"> › Small workshop, community freezer › Library, daycare, FM radio › Youth house, Elder house, sewing centre › Museum 	<ul style="list-style-type: none"> › Residential/Housing <ul style="list-style-type: none"> › Single-Family, Duplex, multiplex › Small Community Amenities <ul style="list-style-type: none"> › Small workshop, community freezer › Library, daycare, FM radio › Youth house, Elder house, sewing centre › Museum › Medium Commercial/Retail <ul style="list-style-type: none"> › Co-op, Northern store › Hotel › Office › Large Community Amenities <ul style="list-style-type: none"> › Schools › Health centre; hospital › Arena; recreation centre › Church › Building Office 	<ul style="list-style-type: none"> › Light Industrial <ul style="list-style-type: none"> › Boat Storage › Water treatment plant storage › Construction camp, transit house › Warehouse › Community freezer, Green house › Workshop, Garage › Firehall › Gas Station › Telecommunications <ul style="list-style-type: none"> › Satellite, equipment buildings › Light Commercial/Retail <ul style="list-style-type: none"> › Convenience stores, small shop, restaurant, laundromat, hairdresser 	<ul style="list-style-type: none"> › Medium Commercial/Retail <ul style="list-style-type: none"> › Co-op, Northern store › Hotel › Office › Light Industrial <ul style="list-style-type: none"> › Boat Storage › Water treatment plant storage › Construction camp, transit house › Warehouse › Community freezer, Green house › Workshop, Garage › Firehall › Gas Station › Heavy Industrial <ul style="list-style-type: none"> › Quarry, sandpit › Land fill › Wastewater treatment › Tank farm › Power plant › Windmill › Transportation › Airport, Marina › Telecommunications <ul style="list-style-type: none"> › Satellite, equipment buildings 	<ul style="list-style-type: none"> › Community Activities <ul style="list-style-type: none"> › Dog team › Cabins and camps › Harvesting › Berry picking › Shooting range 	<ul style="list-style-type: none"> › Protected Natural Areas <ul style="list-style-type: none"> › Cultural heritage sites identified by community › Ecologically sensitive areas › Zones for natural hazard risk mitigation and management
USE PERMITTED IN ALL ZONES						
OPEN SPACE (PARK, HOCKEY RINK, BEACH, PLAYGROUND, GOLF COURSE, PICNIC AREA, CEMETERY, MONUMENT, SPORTS FIELD, GATHERING AREAS)						

IMPORTANT TO NOTE: To ensure the safety and security of village residents and to protect the environment, certain land uses, such as playgrounds, industrial uses, and dog teams, must adhere to additional, specific constraints that will limit the uses to particular sites. See the zoning bylaw for specifications.



LEGEND

LAND USE DESIGNATIONS (impact-based)

- High Impact (industrial)
- Medium Impact (commercial)
- Low Impact (residential)
- Conservation
- Nuna
- Municipal boundary

TRANSPORTATION

- Snowmobile Trail
- Airport Takeoff & Landing Zone

RESTRICTED DEVELOPMENT AREAS

- Shore Protection Strip
- Quarry & Borrow Pit (lease perimeter)
- Constraint Buffer
- Avalanche zone
- Fuel Pipeline
- Water Pipeline

OTHER

- Open Space
- Expansion zones
- †† Cemetery
- Golf Courses
- NDB Antenna Site
- * Playgrounds

NOTES

Data Source: KRG (2024), CRGHAG(2024), MERN (2021)
Date: 4/14/2026



5.2 LAND USE DESIGNATIONS AND DESCRIPTIONS OF TYPES OF USES

5.2.1 Land Use Designations

5.2.2 Low

The Low Impact land use designation, comparable to a Residential land use designation in conventional master plans, refers to areas that pose relatively minor impacts on the environment and generate minimal nuisances or potential hazards for residents. The Low Impact zones indicate residential neighbourhoods which may be comprised of a variety of housing types (single-family, duplexes, or multi-family). Some small retail and community amenities intended to support daily activities of residents, such as corner stores and daycares, are also permitted. Areas dedicated to Open Space are also allowed in the Low Impact zones as they facilitate outdoor recreation, communal gathering, and contribute to the quality of life of residents.

5.2.3 Medium

The Medium Impact land use designation, comparable to a Village Core land use designation in conventional master plans, refers to areas that pose moderate impacts on the environment and generate some nuisances or potential hazards for residents. Medium Impact zones are characterized by the co-occupation of residential and commercial spaces, plus the significant activity stemming from the density and diversity of buildings and their associated uses. These zones favour increased density of housing development (multiplexes of 8 units or more), greater intensity and variety of commercial activities, and the installation of large community facilities, such as an arena or community centre, that tend to generate a lot of activity. Medium Impact zones can also accommodate some light industrial uses, such as warehouses, as well as telecommunication installations. The zoning bylaw will outline regulations to ensure the harmonious co-habitation of various uses in these areas.

5.2.4 High

The High Impact land use designation, comparable to an Industrial land use designation in conventional master plans, refers to areas that pose significant impacts on the environment and generate elevated nuisances or potentially dangerous hazards for residents. High Impact zones are characterized by large sites, excessive noise and dust pollution, and the frequent circulation of heavy trucks. The associated activities could also pose a more elevated risk for residents and the environment, including potential chemical or fuel spills and the risk of fire or explosion. Therefore, High Impact zones are not compatible with residential, commercial, or community uses. It is recommended that future developments maintain a significant buffer between High Impact zones and other uses. However, some Medium Impact uses, such as Light Industrial occupation, could be situated within a High Impact zone, thereby creating a buffer from residential neighbourhoods and community facilities.

5.2.5 Nuna

The Nuna land use designation applies to all unsurveyed land within the municipal boundary that does not already hold another land use designation. The intention of the Nuna land use designation is to protect the natural beauty, integrity, and cultural resources of the land – ‘Nuna’ – while enabling access for traditional, recreational, and community activities. The Nuna designation generally permits community and passive recreational uses. Permitted uses also include the presence of dog teams as well as local community activities, such as berry picking, harvesting, and camping and cabins. Over time, the community may decide to extend development projects into the areas currently zoned Nuna. This could be for granular resource extraction (quarries); installation of telecommunication equipment; or future expansion zones. At that moment, the community can amend the Community Master Plan to change the allocated land use designation to reflect their needs and desires. It is the responsibility of the NV council to ensure that future development minimizes the negative impact on wildlife, habitat, and harvesting.

5.2.6 Conservation

The Conservation land use designation identifies specific areas to protect from development. The allocation of this land use designation for a certain area may be due to a notable environmental risk present, such as flooding, erosion, or an avalanche, in which protection from development serves as a mitigation measure. A Conservation zone may also include areas that hold ecological importance and/or cultural heritage value, which necessitates its preservation for future generations. Complementary low-impact installations may be allowed if they align with the community’s interests. These include formalized walking trails, snowmobile trails, interpretive signage, and picnic amenities. In general, all development is prohibited in areas zoned Conservation. However, some small developments, such as snow fences or public utilities may be required to ensure an essential service. If this is the case, the NV may consider it as an exception and allow the construction of such installations if certain protective measures are respected.

5.2.7 Types of Land Uses

HOUSING

Housing is a fundamental element of the Land Use Plan. Types of housing allowed in the Low Impact zone include single-family homes; duplexes; and multi-family homes. The social housing allotments include space for parking and a storage unit for each housing unit. Staff housing is also permitted in this zone. Details regarding the size of buildings, number of units, and spatial organization for housing lots will be addressed in the zoning bylaw.

LIGHT COMMERCIAL & RETAIL

Light Commercial refers to small-scale businesses, such as local retail and restaurants, which have a minimal impact on the environment and generate minimal nuisance for residents in the area. Small businesses, such as corner stores and cafes, are allowed in both Low and Medium Impact zones. It is favourable to situate a variety of small businesses near one another to create social and economic activity nodes within the village that serve the community and are easily accessible year-round for residents.

SMALL COMMUNITY AMENITIES

Community Amenities in the Low Impact zone encompass all small-scale community buildings that generate minimal nuisances and improve the quality of community life for residents. Examples of acceptable occupation include a workshop, sewing centre, community freezer, library, daycare, Youth houses, and Elder houses. This occupation is also permitted in Medium Impact zones

MIXED USE

The Mixed-Use component refers to a variety of complementary uses (residential, commercial, and community) concentrated in a particular area to create a neighbourhood that favours social and economic exchanges. Mixed-Use developments may constitute several individual lots, each with a distinct use, situated near each other. A village centre is an example of mixed-use area, where the co-op, hotel, and housing are all located in the same area, ideally within walking distance. Alternatively, a mixed-use development may also refer to a single building on one lot which accommodates more than one type of occupation. An example would be an apartment building with commercial spaces on the ground floor and housing on the upper floors or a hotel with a cultural centre or museum integrated into the built form. It is favourable to promote mix-use development in the village core where infill developments could improve the accessibility of many services while increasing the amount of available housing for residents.

MEDIUM COMMERCIAL

Medium Commercial constitutes business that require more space and generate significant activity, such as offices, hotels, retail spaces, and restaurants. Given the size and activity around these establishments, they have a greater impact on their surrounding environment, which could pose a nuisance to residents. It is favourable to prioritize future Medium Commercial occupation within the village core where a variety of uses is already in place. The zoning bylaw will specify regulations to ensure a compatibility of uses to mitigate potential nuisances for residents.

LARGE COMMUNITY AMENITIES

Large Community Amenities refers to buildings that contribute to essential community services and require substantial space and utilities to function. Examples include a fire hall, community centre, arena, health centre, hospital, school, etc. These amenities also tend to generate significant activity, whether as a destination for many people at once, like an arena during a scheduled event, or as a site that results in the circulation of heavy trucks, as is the case with the fire hall and water storage.

These community amenities can generate conflicts in the area where they are located. The zoning bylaw will specify the space required around such amenities to mitigate associated nuisances for neighbourhood residents and ensure a compatibility of use.

LIGHT INDUSTRIAL

Light Industrial occupation includes buildings and/or sites that generate minor industrial activities. Such activities, though they tend to require significant space, have a relatively minor environmental impact, and pose a low safety risk in terms of fire, explosion, vibrations, noise, dust, smoke, or odour. They do tend to generate heavy truck traffic and could create some nuisances related to noise, dust, or odor, which may impact the quality of life of residents. Potential occupations include repair garages, warehouses, construction camps, workshops, and research and development centres. The zoning bylaw will specify regulations to ensure potential risks and nuisances are mitigated in the location and operations of such facilities.

TELECOMMUNICATIONS

The Telecommunications category encompasses all infrastructure and equipment to accommodate the distribution of phone and internet services. To ensure the provision of digital telecommunication services, certain interventions may be required within the village. These include the installation of cellular towers, satellites, and linear infrastructure.

HEAVY INDUSTRIAL

Heavy Industrial occupation poses a significant risk and impact on the environment and quality of life of residents. Due to the level of noise, heavy truck traffic and dust generated by heavy industrial facilities, it conflicts with other land uses and activities in the village. However, Light Industrial occupation is compatible with this type of use and therefore can be situated within the Heavy Impact zone. Examples of Heavy Industrial uses include heavy equipment maintenance and storage; waste management and recycling facilities; wastewater treatment and sewage lagoons; quarries or pits; storage of potentially dangerous substances; tank farms; and power plants.

TRANSPORTATION

Transportation infrastructure provides essential services for the village. Examples of Transportation occupation within the village include the airport and marine facilities, such as the breakwater, boat ramp, and sealift staging area on the waterfront. Categorizing Transportation within the Heavy Impact designation ensures the safe operation of the airport and marine facilities. Some of the key uses needed for operating the airport include a terminal building, communications facilities (such as towers and the small building used to shelter equipment), weather-monitoring equipment, garages, storage warehouses and structures for fuel delivery. A quarry or pit for the purpose of airport or marine facility maintenance or improvements is also permitted within the Heavy Impact zone.

OPEN SPACE

The Open Space use refers to outdoor space dedicated to communal use. Areas with the Open Space occupation may be completely natural and free of installations, or they may contain equipment to support that use, such as playground equipment, picnic tables, a basketball court, or washroom facilities. Examples of Open Space occupations include parks, playgrounds, ball fields, beaches, and cemeteries. Open Space areas may also include waterfront areas where small docks, boat storage, temporary material storage, and sheds may be located. Open Space areas tend to be located within the built-up areas of the village, contributing to the quality of life of residents, with a special emphasis on recreation for children and youth.

Table 14 — Main Construction Constraints

PERMAFROST & TERRAIN CONDITIONS	The construction potential map, created by the CEN, classifies lands according to whether they are favourable or unfavourable for development (Carbonneau et al., 2018d) depending on the selected building foundation. Thaw stable lands are generally good for pad or pile foundation types whereas thaw unstable lands should only be constructed on when pile foundation pinned to bedrock is feasible.
FLOOD RISK & COASTAL EROSION	Several streams which traverse the village have a flood risk. Road crossings of the streams should be minimized to avoid potential blockage problems. The village shoreline is subject to coastal erosion and development should be setback accordingly. An area in the centre of the village, along one of the streams, is also subject to erosion (shown in Map 12)
ICING AREAS	As shown in Map 12, areas of the village are prone to icing, resulting in drainage issues.
AVALANCHE ZONES	A portion of the village is affected by avalanche risk areas. A portion of the village is affected by avalanche risk areas, as illustrated on map 12. All construction is forbidden in these areas. .
WATERSHED PROTECTION	The watershed of the potable water source and intake should be protected from incompatible land uses (such as industrial and commercial) in order to minimize the chances of contamination. A minimum distance of 60 metres must be respected around a potable water source. This distance must be calculated from the perimeter (high watermark) of the lake or waterbody source.
WASTEWATER LAGOON & LANDFILL	The wastewater lagoon and landfill facilities are located at a distance from the village. However, appropriate buffers should be applied to ensure no incompatible development occurs within proximity to these facilities. No land use other than industrial is allowed inside the 300-metre buffer zone of an existing solid waste disposal site and a sewage lagoon. Solid waste disposal sites and sewage lagoons must be located at least one 150 metres from all streams and lakes and at least 500 metres from any drinking-water intake point. Solid waste disposal sites must respect the Regulation respecting the landfilling and incineration of residual materials (CQLR Q-2, r.19) and the Environment Quality Act.
AIRPORT	Land use in the vicinity of airports is governed by Transport Canada Aerodrome Standards and Recommended Practices and Transport Canada publication TP1247 (Land Use in the Vicinity of Airports). Both documents describe the approach surfaces and other obstacle limitations that must be respected to ensure the continued functioning of any airport (landfill, building height, etc.). Mitigation measures should also be put into place to limit negative impacts on surrounding uses due to the noise, dust and pollution produced by the airport.
PROTECTION OF NATURAL FEATURES	The village council can identify natural elements to be protected and maintained for ongoing community use. Easy access, view and preservation of the waterfront should be kept in mind when expansion options are being considered.
ARCHAEOLOGICAL SITES	Several archaeological sites have been identified within Kangiqsujuaq's municipal boundaries in recent decades. Most of these sites are listed in the Inventaire des sites archéologiques du Québec (ISAQ) at the Ministère de la Culture et des Communications. When a listed or/and known archaeological site is located in a new development or expansion zone, a study must be carried out by Avataq Cultural Institute to propose a conservation status and recommend preservation measures, when necessary. This study will then be presented to the village council and the Landholding corporation board members for a decision on applicable preservation measures. Founded in 1980, the Avataq Cultural Institute is a non-profit organization
QUARRY AND SAND PITS	Any quarry must be located a minimum 600 metre distance from any Residential, Commercial or Community amenities uses. Any new pit (ie. gravel or sand) must be located a minimum 150 metre distance from any Residential, Commercial or Community amenities uses. Quarries and borrow pits must respect the Regulation respecting pits and quarries (CQLR Q-2, r.7.1) and must have a certificate of authorization from the Ministère du Développement durable, de l'Environnement, de la Lutte contre les changements climatiques (MDDELCC).
TANK FARMS	In order to reduce potential nuisances (odours, traffic, fumes, spills, etc.) associated with oil deposit activities (tank farms), a minimum distance of 250 metres must be maintained around the installations. This distance must be calculated from the outer perimeter of all tanks. Tank farms must be located at least 100 metres away from streams, lakes and any drinking water intake point.
SHORE PROTECTION STRIPS	In accordance with provincial regulations and in order to ensure an adequate protection of the shoreline, a minimum of 15-metre buffer is required between the shoreline (high water mark) and any construction, works (including pad foundation and roads), excavations, land cutting and filling.
NDB COMMUNICATION (ANTENNA)	Based on the TP1247E (Transport Canada), Section 2.4.2, all proposed structures or buildings within 200 m of an NDB antenna should be assessed prior to construction to determine the potential impact on navigation signals from an NDB. NDB antenna are usually use for airport activities and communications. All construction projects within this perimeter must therefore be analyzed by Transport Canada.
POWER PLANT	No residential, community and commercial uses are allowed within 100 metres of a power plant to reduce nuisances (noise, odour, smoke or incidents) or a greater distance where maximum noise levels as established by the «Note d'instructions 98-01 (2006) sur le bruit» based on the LRQ (c. Q-2), articles 20 and 22, are exceeded for the proposed use. Every effort should be made to design and upgrade power plants in a way that minimizes impacts on surrounding uses and reduces the need to set back sensitive land uses (eg. residential uses) more than 100 metres. This distance must be calculated from the power station's building perimeter. This distance must be increased when the power plant is enlarged, or its power is increased (eg. additional generator).
WATER AND GAS PIPES	Drinking water and gas distribution pipes must be kept clear to allow repairs and reduce the risk of accidents. A distance of 8 metres on each side must be respected for all constructions. These pipes are identified in Map 9 and in the land use plan.
GAS STATION	To reduce traffic and odour nuisances, a distance of 100 metres must be maintained between a gas station and any building used for residential or small and large community amenities purposes (daycare, elders' home, school, etc.).

5.3 DEVELOPMENT STRATEGY

5.3.1 Development Guidelines

Proponents should consult the KRG's Guide for Construction in Nunavik, the SHQ's Housing Construction in Nunavik (Guide to Good Practices), and other reports published by the KRG regarding climate change adaptation. New development projects should also take local construction constraints into consideration. While this table provides an overview of construction constraints, it is important to bear in mind that other constraints can exist, even if they are not in the table. Additionally, the constraints, regulations, and laws detailed in table 14 are subject to change. As such, it is important to verify existing constraints before undertaking any construction projects.

5.3.2 Ongoing or Upcoming Community Projects

Table 15 outlines ongoing and upcoming projects within the community. Whenever possible, these projects have been considered and integrated into the updated community zoning concept as described in Section 5.2.

5.3.3 Applicable Zones for Land Use Needs

Section 4.3.2 presents a general estimate for the hectares needed by 2041 for permitted land uses to accommodate the growth of Kangiqsujuaq. Table 16 outlines key development constraints in Kangiqsujuaq. Table 16 summarizes which zones apply to each of the permitted land uses.

Table 15 — List of Ongoing and Upcoming Community Projects

PROJECT	COMPLETION	IMPACTS
New power plant	Winter 2028	New energy facilities. Potential environmental impacts, environmental impact assessment to be released.
New playground and pump track	To be confirmed	Increased community amenities in the village core.
New playground	To be confirmed	Increased community amenities in a residential area.
New school	2028	Increase in capacity for educational facilities.
New youth house	To be confirmed	Greater amenities for youth in the community.
New KI office and transit	To be confirmed	New office space and transit housing for KI employees.
Ecocentre	To be confirmed	Improve waste management facilities.
New CLSC	2031	Greater healthcare capacity for the community.
New bridge	To be confirmed	Increased connectivity between new development areas and existing community spaces.
Golf court relocation	To be confirmed	Creation of new development area.
NRHBSS Birthing Centre	2031	Safe space to support expectant mothers.
Tuberculosis Clinic	2028	Provide a dedicated space to treat people with tuberculosis.
New NRBHSS office	2028	New office space for NRBHSS workers.
New road	To be confirmed	Increase east-west connectivity.

Table 16 — Land Needs and Applicable Zones

Land use	Hectares*	APPLICABLE ZONES		
		Low Impact Zone	Medium Impact Zone	High Impact Zone
Residential	8.2	X	X (mixed-use)	
Commercial	0.9	X (small scale)	X (medium scale)	
Industrial	2.3		X (light)	X (heavy)
Institutional	7.0	X (small scale)	X (medium scale)	
Total land requirement	18.4	N/A	N/A	N/A

*The hectare count includes the total number of hectares. For example, for a residential site, this number includes the lots, as well as the space needed for streets, pipes, and other necessary infrastructure.

5.3.4 Development in Existing Areas of the Village

Some land remains available in the village core for development or redevelopment. These areas fall within the medium impact zone in the core of the village. A mix of uses is encouraged in these areas to contribute to convenient access to variety of housing options, services, and amenities within the village core. This includes community services, commercial, open space, and medium-scale residential uses (all permitted within the medium impact zone). Light industrial and telecommunications may also be appropriate for certain areas.

5.3.5 Potential Development Areas

The following sites have been identified for development within a 20-year horizon. Note that the sites have been named based on their geographical locations, east and south (E1, E2, S1, and S2). These areas have been identified as having 'good' or 'fair' development potential in the analysis presented by the CEN, meaning their terrain is manageable for construction.

5.3.5.1 Potential Development Area E1

This site is located in the eastern portion of the village core. The site measures approximately 3.8 hectares. The area is adjacent to a lake and a stream (both conservation areas) to the north and east. To the west are the co-op store and the elders' home. The site is also located approximately 0.5 km north of the airstrip. The potential development area is serviced by the existing road network, though road extensions within the site will be required. A bridge is planned in this area, which will increase connectivity between the site and existing built-up areas on the north side of the stream.

Potential development area E1 could be considered for medium impact uses and has been identified as a possible location for the future CLSC. Map 17 presents a concept map for E1.

5.3.5.2 Potential Development Area E2

This potential development area is located southeast of the village core, north of the airport terminal and NDB antenna, and south of Tasialuk Lake. The entirety of the site measures approximately 30.2 hectares. A layout has been approved for this area and is illustrated in the map in Map 18, including impact zones and potential road extensions. It is proposed to zone the southern edge of the site (1.8 hectares) as medium impact, thereby creating a transition from the high impact zone south of the development area. The remainder of the development area could be zoned low impact. Given the site's proximity to the airport, community services and commercial uses are favourable within the southern portion of the development area. The northern edge of the potential development area should be targeted for residential development, as well as other compatible low impact uses. Portions of the sector should be reserved for open space uses such as parks and playgrounds to support the creation of a complete neighbourhood with access to community amenities.

5.3.5.3 Potential Development Area S1

This area is located in the southern portion of the village core, just south of Ullaruarusiq Street and the existing community freezer. A new KI garage is currently under construction to the east of the potential development area. To the west of the site is a cemetery, and a stream running southward. While the area is near existing roads, extensions will be required to develop this area. Map 19 presents a concept map for S1.

The area measures approximately 6.8 hectares. The site currently houses the golf course, which will be relocated to another area of the community. It is suggested to zone the majority of this development area (4.8 hectares) as low impact, and to zone a smaller portion as medium impact (2.0 hectares). The proposed zones of this potential development area function as extensions of existing uses in the village core.

Residential development should be prioritized in this the low impact portion of the site, given the projected needs of the community. Opportunities for open space should be identified to complement residential uses and provide community amenities in this new neighbourhood. Community services and commercial uses should be directed to the north of the development area (closer to the community core). Given the proximity of this area to Arsaniq School and the new KI garage, this site may be appropriate for the location of the new KI office and transit.



5.3.5.4 Potential Development Area S2

This potential development area is located south of the existing community core, approximately 200 metres south of the tank farm, along Paurngatarvik Road. The site measures approximately 21.3 hectares total. This area currently houses an FCNQ-owned residential eightplex. The site has will also house a new power station, which will be completed by 2028.

This potential development area has been zoned high impact, given its location away from the village core, its proximity to the tank farm, and the future power station's targeted location. Other heavy industrial uses should be directed to this area. Mitigation measures should be put in place to limit potential impacts on the residential building currently in this area. Map 22 presents a concept map for S2.



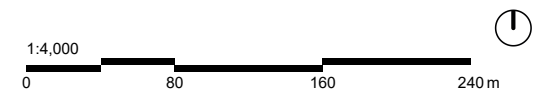
LEGEND

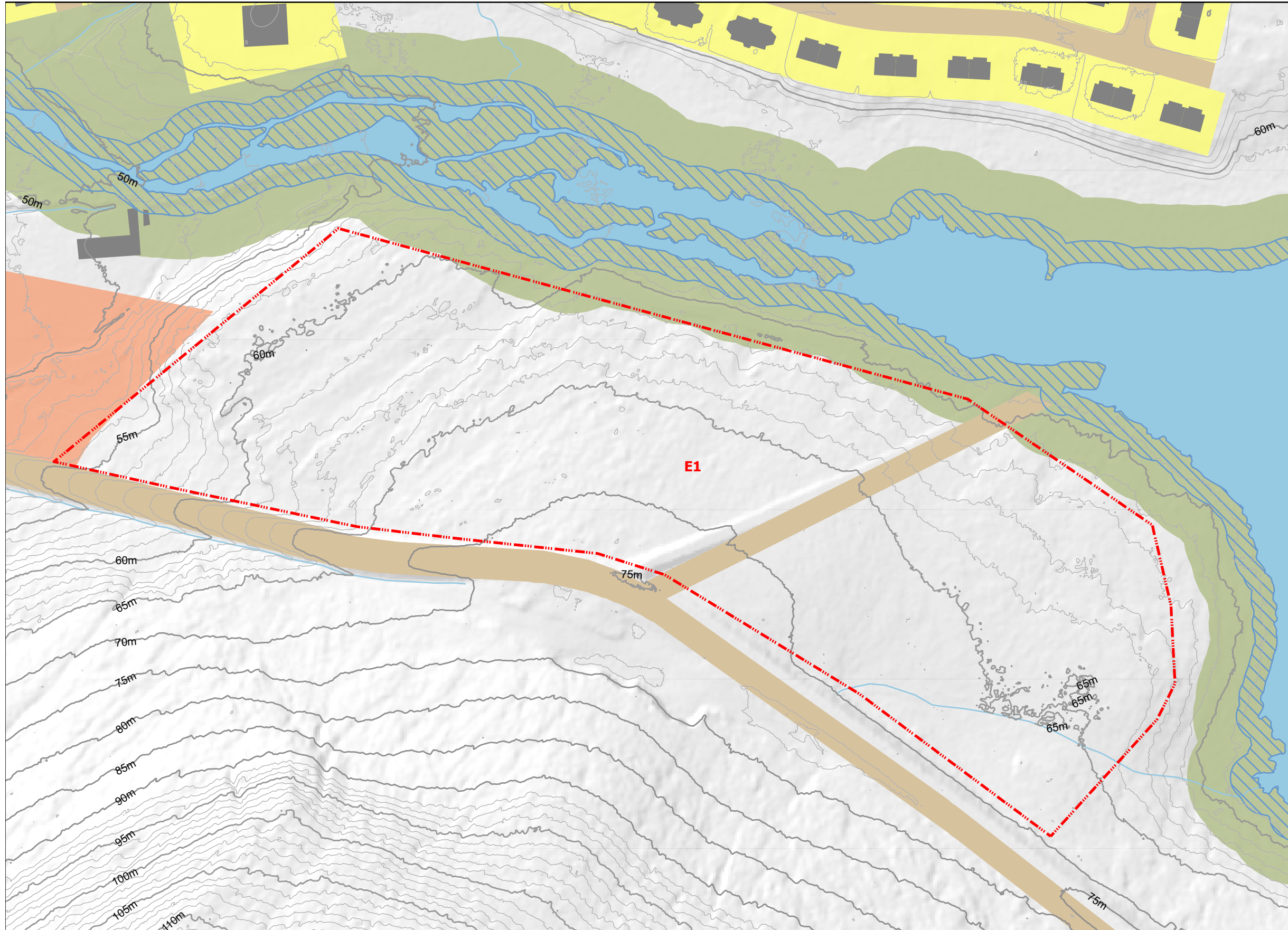
-  Municipal Limits
-  Expansion zones

NOTES

Data Source: KRG (2024), CRGH AG(2024), MERN (2021)
Date: 3/9/2026

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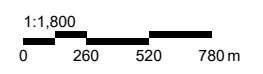
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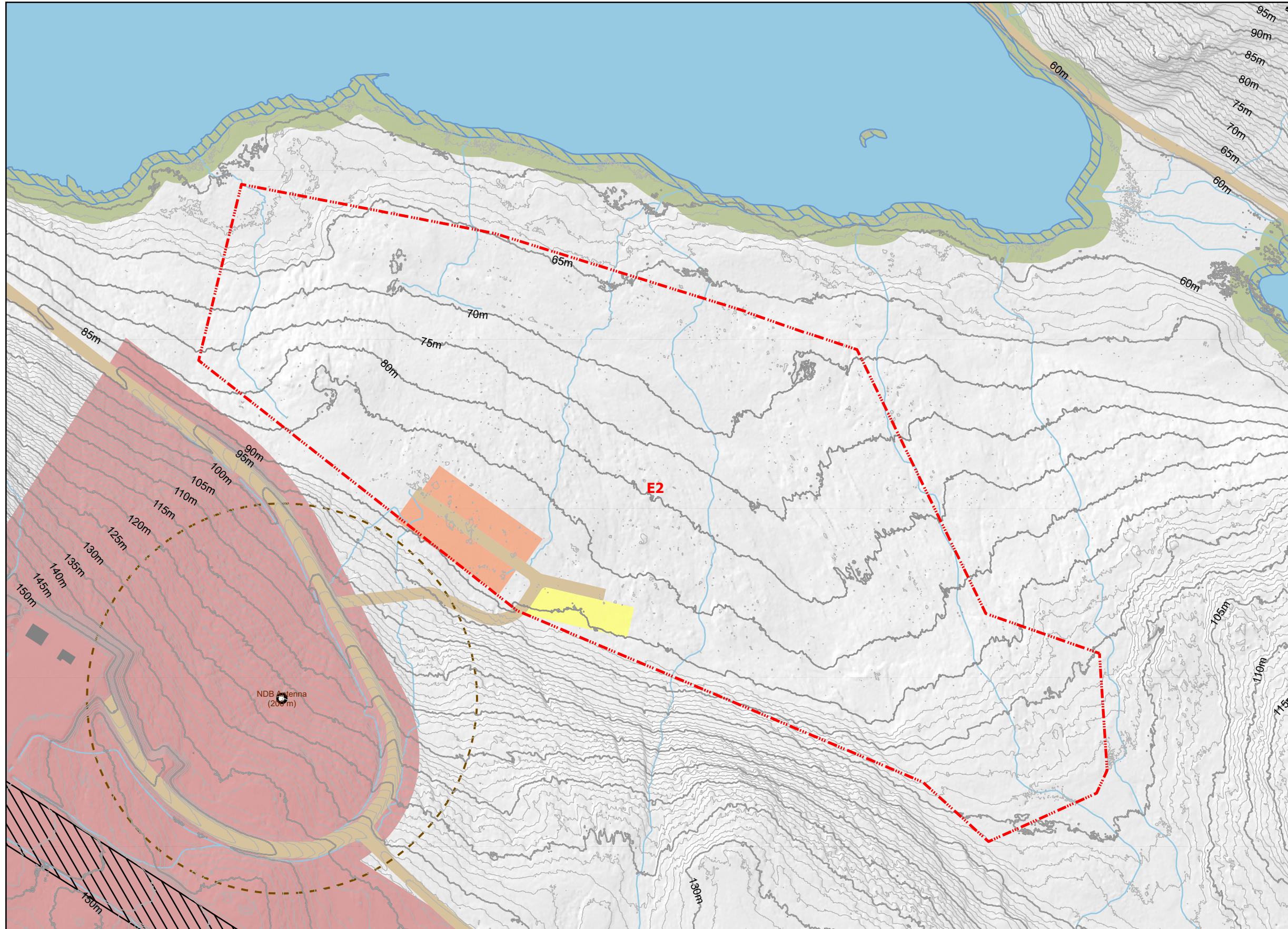
LAND USE DESIGNATIONS / ZONES

- Medium Impact (Commercial)
- Low Impact (Residential)
- Conservation
- Expansion Zone
- Existing Building
- Existing Road
- Shore Protection Strip

NOTES

Data Source: KRG (2024), CRGH AG(2024), MERN (2021)
Date: 3/9/2026





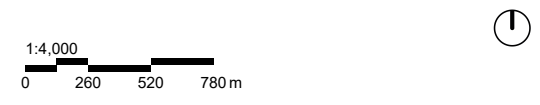
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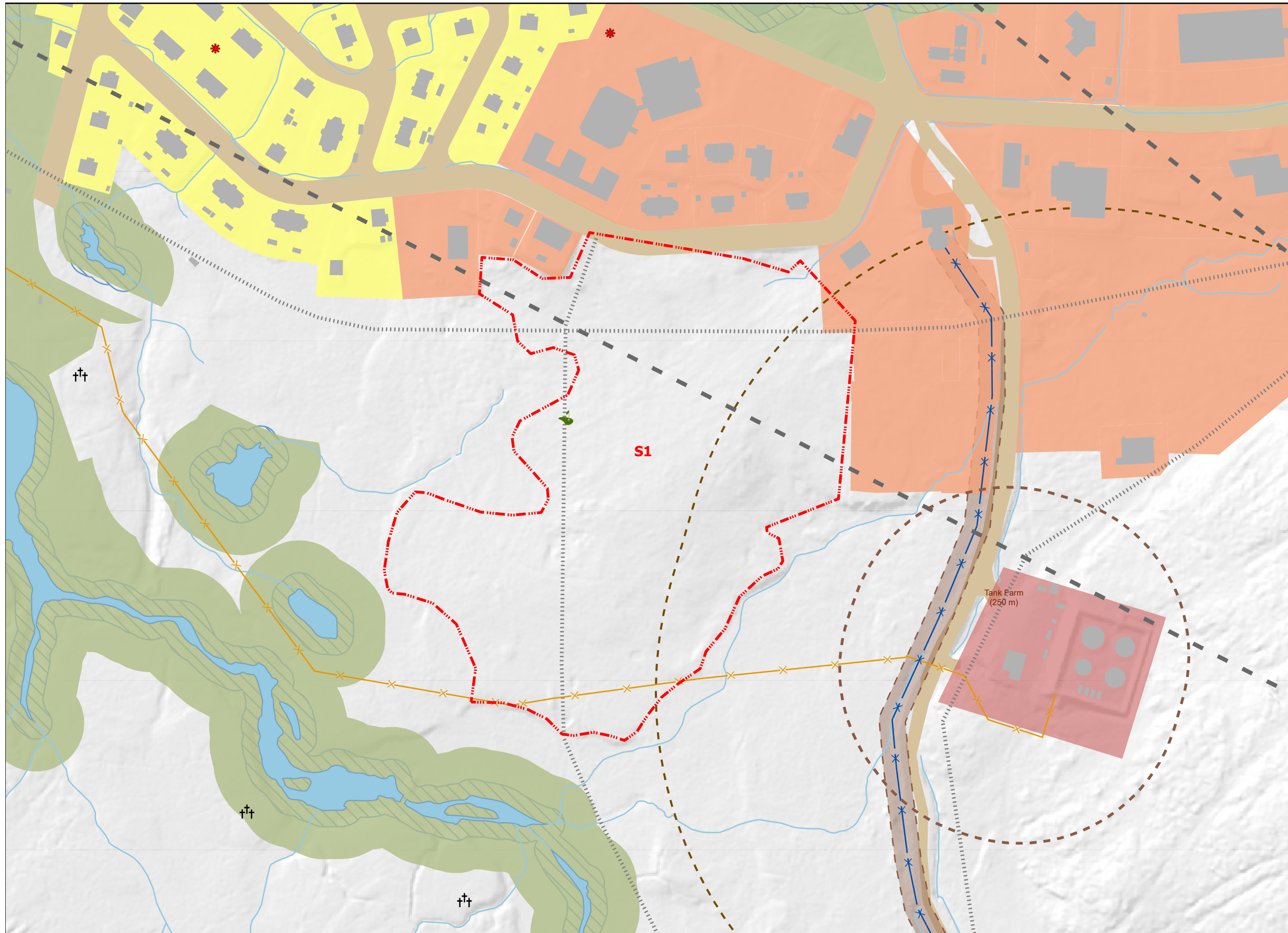
LAND USE DESIGNATIONS / ZONES

- High Impact (Industrial)
- Medium Impact (Commercial)
- Low Impact (Residential)
- Conservation
- Nuna
- Expansion Zone
- Existing Building
- Existing Road
- Fuel Pipeline
- Water Pipeline
- Constraint Buffer
- Shore Protection Strip
- NDB Antenna Site

NOTES

Data Source: KRG (2024), CRGH AG(2024), MERN (2021)
Date: 3/9/2026





LEGEND

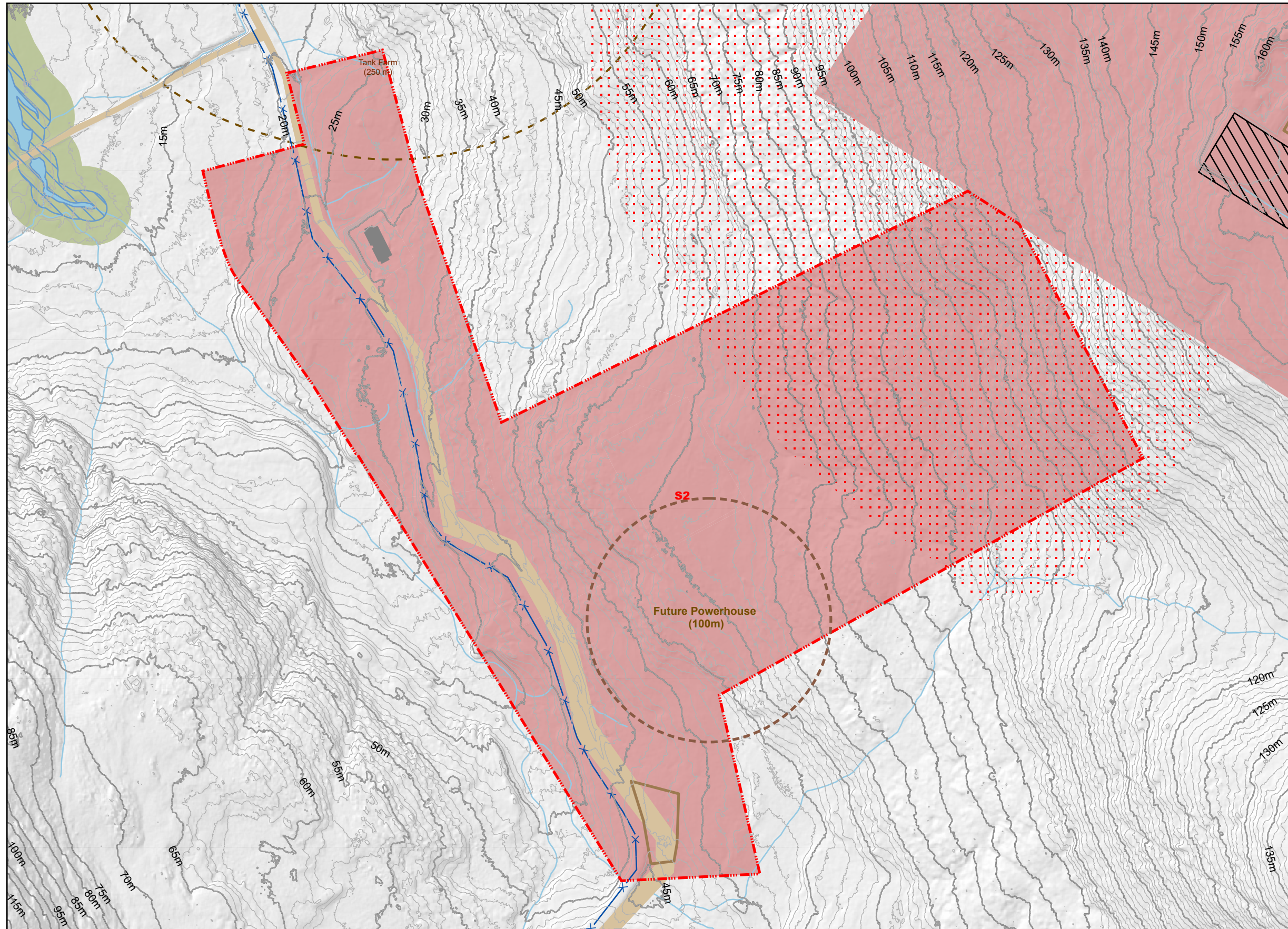
LAND USE DESIGNATIONS / ZONES

- High Impact (industrial)
- Medium Impact (commercial)
- Low Impact (residential)
- Conservation
- Nuna
- Municipal boundary
- Existing Building
- Existing Road
- Fuel Pipeline
- Water Pipeline
- Constraint Buffer
- Shore Protection Strip
- Cemetery
- Golf Courses
- NDB Antenna Site
- Playgrounds

NOTES

Data Source: KRG (2024), CRGH AG(2024), MERN (2021)
Date: 3/9/2026





LEGEND

LAND USE DESIGNATIONS / ZONES

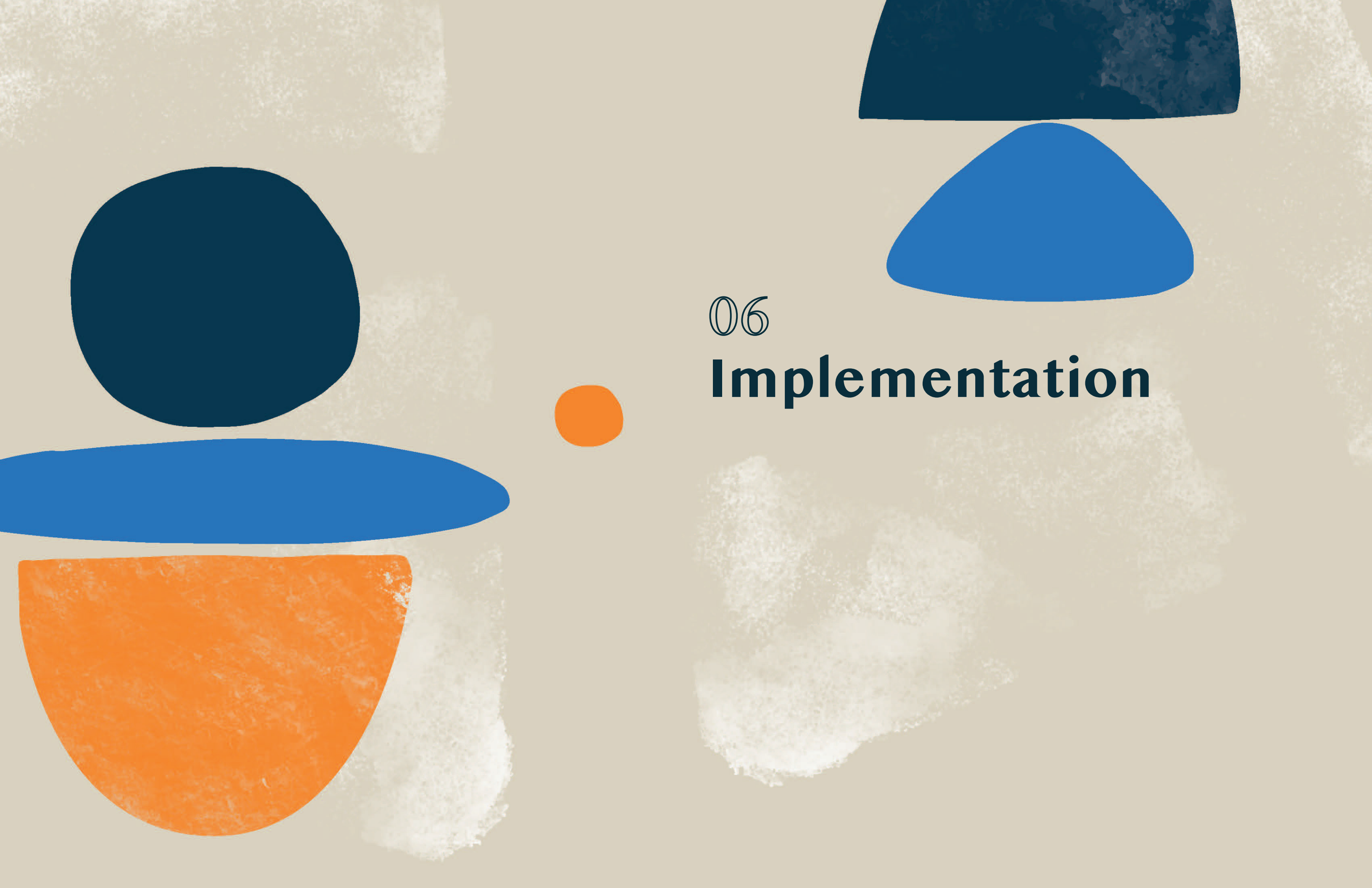
- High Impact (Industrial)
- Conservation
- Expansion Zone
- Existing Building
- Existing Road
- Water Pipeline
- Constraint Buffer
- Shore Protection Strip
- Future Hydro-Québec Powerplant (100m)
- Berry Picking Area

NOTES

Data Source: KRG (2024), CRGH AG(2024), MERN (2021)
 Date: 3/9/2026

1:3,200

0 260 520 780m



06

Implementation

The following chapter outlines the next steps that are necessary to implement and enforce the Community Master Plan and, if needed, amend the Community Master Plan. It also explains the difference between the Community Master Plan and the zoning bylaw, as well as the role that each document plays in the community's development. The specific roles of each document are stipulated in the Act Respecting Northern villages and the Kativik Regional Government from 1976.

6.1 IMPLEMENTING THE COMMUNITY MASTER PLAN

6.1.1 Who is responsible for implementing and enforcing the Community Master Plan?

The municipal Council (NV) is responsible for implementing and enforcing the Community Master Plan. For the Community Master Plan to be effective, it must be followed by all parties: municipal council and staff, the LHC, organisations, companies, and residents. However, the council is ultimately responsible for enforcing the Community Master Plan. The NV will do this by granting permissions, through permits or authorizations, only for projects that respect the Community Master Plan and the zoning bylaw.

6.1.2 How does the enforcement process work?

Although the municipal council makes the decisions and grants the permissions, they need the assistance of their employees to review projects and draft recommendations to Council. When the council adopts a zoning bylaw, council members must appoint one or more staff members to help enforce the rules and review projects. The staff member appointed to enforce the Community Master Plan and the zoning bylaw is the Development officer. The Development officer receives permit requests from applicants seeking Council's permission to construct on a lot, renovate, move a building or change the use of a building. They will review the applications and submit recommendation to the Council that indicate whether the proposed projects meet the guidelines and regulations of the Community Master Plan and the Zoning bylaw or not.

The role of the Development officer and the process for issuing development permits is clearly outlined in the zoning bylaw. However, for informational purposes, a diagram of the development permit issuing process is also appended to this document. In the absence of a Development officer, the secretary-treasurer assumes the role.

In order for a project to obtain approval from the municipality, it must satisfy the policies and directions established by both Community Master Plan and Zoning bylaw documents.

6.1.3 What is the difference between the Community Master Plan and the Zoning Bylaw?

When a northern village council decides to adopt a Community Master Plan it must also adopt a zoning bylaw. Based on community consultations, the Community Master Plan provides a general direction for the development and growth of the community as it continues to evolve for the next 20 years. However, it is not intended to enforce specific regulations. A zoning bylaw, on the other hand, lays out parameters for restrictive provisions such as permitted land uses, road dimensions, building height, density, setbacks, buffer zones, etc. A zoning bylaw outlines specific norms that community members and/or project promoters must respect throughout the development process. Inspections can be carried out by identified municipal employees to ensure compliance with the regulations, and in the case of non-compliance with the rules, the Council can issue fines.

Thus, the Community Master Plan defines the vision for the community, while the zoning bylaw serves as a complementary regulatory mechanism that makes the vision defined in the Community Master Plan a reality. These two documents work together toward the same vision, and must therefore be conform with each other. The Community Master Plan and zoning bylaw are both adopted by Council bylaw. However, only the adoption of the zoning bylaw requires the vote of the electors in order to come into force.

6.2 AMENDING THE COMMUNITY MASTER PLAN

6.2.1 Why amend the Community Master Plan?

The Community Master Plan shows how the village of Kangiqsujuaq will continue to evolve over the next 20 years, based on its present situation and expected population growth. The views of the Council and residents may change over time as new information becomes available. Council should carry out regular updates and amendments to the Community Master Plan as new data becomes available, so that it continues to meet the needs of a changing community. It may also happen that a proposed project does not meet one or more criteria of the Community Master Plan, yet the Council and the community believe that it is a good project. In such cases, the Community Master Plan must be amended by bylaw before the project can be approved.

6.2.2 How to amend the Community Master Plan?

In general, it is recommended that the Community Master Plan be reviewed, and if necessary, amended, every five years.

Amendments to the Community Master Plan shall follow the amendment process as described in the appendix. An Amendment to the Community Master Plan does not require a Vote of the Electors. If the Community Master Plan is amended, for compliance purposes, the zoning bylaw must also be amended in order to incorporate the modifications

It is recommended that the northern village council create an action plan to outline priority projects over the short-, medium-, and long-term. Although this is not mandatory, it is recommended as a way to enable the northern village council to track and enforce the Community Master Plan.



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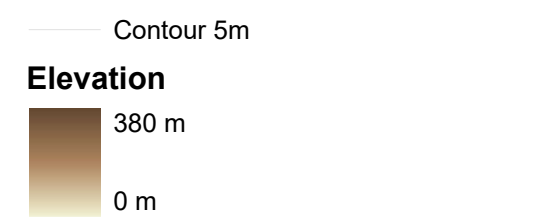
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Appendix



LEGEND



NOTES

Data Source: KRG (2024), CRGH AG(2024), MERN (2010)
Date: 2025-04-29



Data source: (Carbonneau et al., 2018e)

REFERENCE

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Résumé

Cette carte présente les dépôts de surface de la région de Kangiqsujaq. Ce village se situe au Nunavik, sur la rive sud-est de la baie Wakeham (71.94° N ; 61.59° O).

Abstract

This map shows the surficial geology of the Kangiqsujaq region. This Nunavik village is located on the south-east shore of the Wakeham Bay (71.94° N ; 61.59° W).

Note

Cette carte a été compilée principalement par photo-interprétation et validée avec un nombre limité d'observations de terrain, de sondages et de forages dans le permafrost. Toute information pouvant améliorer la précision et éventuellement conduire à la production d'une mise à jour sera appréciée.

Note

This map was compiled mainly by air photo interpretation and validated by a limited number of terrain observations, probing and drill holes in the permafrost. Any information leading to an improvement of precision and, eventually, an update of the map will be received with thanks.

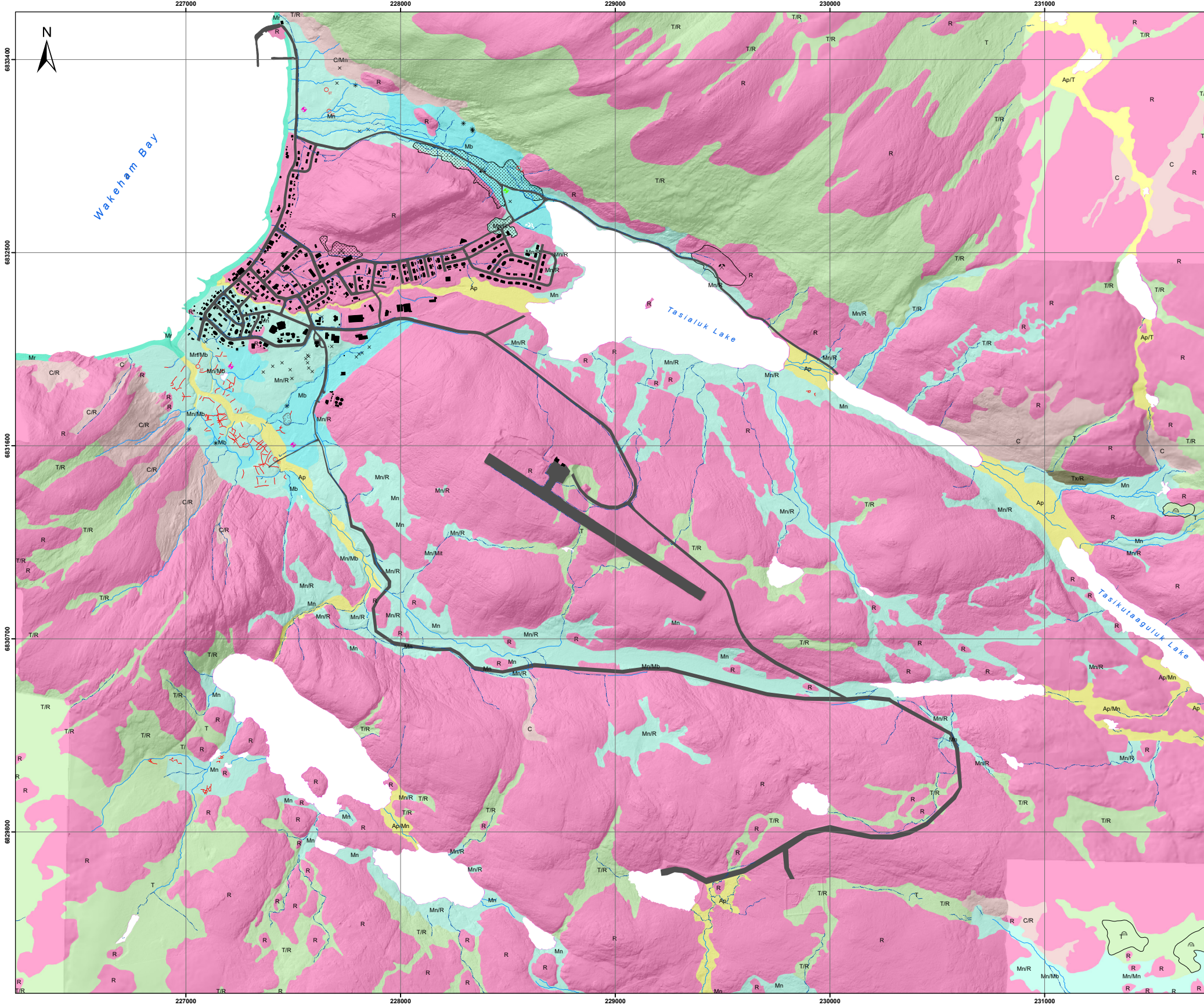


The National Topographic System of Canada
 World Reference of the National Topographic System of Canada
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Cover illustration:
 Kangiqsujaq, Nunavik, Québec.
 Photocredits: Jean-François Bernier

Centre d'études nordiques, Québec, 2018

SURFICIAL GEOLOGY
KANGIQSUJUAQ
 Québec, Nunavik
 1 : 10 000



SURFICIAL GEOLOGY

COLLUVIAL DEPOSITS

C UNDIFFERENTIATED COLLUVIAL DEPOSITS: Sand, sandy silt, cobbles and boulders, deposited below cliffs derived from rock falls.

ALLUVIAL DEPOSITS

Ap ALLUVIAL FLOODPLAIN SEDIMENTS: gravel, sand, boulders, minor silt and muck, little organic matter, 1-2 m thick, deposited in braided plains over marine sediments, till or bedrock, actual floodplains, poorly-drained sediments.

ACTUAL MARINE DEPOSITS

Mr BEACH SEDIMENTS: gravel, gravelly sand, sand, sandy silt, commonly bouldery; actual littoral and nearshore sediments deposited as beaches.

Mn LITTORAL AND NEARSHORE SEDIMENTS: gravelly sand, presence of shell fragments, 1-4 m thick, deposited in shallow postglacial sea over offshore marine sediments or bedrock. Affected by periglacial processes such as frost blisters, hummocks and frost cracks.

Mb NEARSHORE TO OFFSHORE BLANKET: silty sand, silt and clay, minor dropstones, variable thickness, deposited in offshore environments of postglacial sea, poorly drained sediments, occasional frost blisters.

TILL (GLACIAL SEDIMENT)

Tx REWORKED TILL: diamicton below the marine limit, variable thickness, reworked by postglacial sea leaving local concentrations of boulders, gravel, sand or silt, and subdued or erased glacial landforms.

T UNDIFFERENTIATED TILL: nonsorted bouldery diamicton, variable thickness, lodgement or basal meltout till, deposited at the ice margin or beneath the glacier, occasionally thin (< 2 m) and discontinuous, reflecting underlying bedrock structure. Susceptible to creep. Ice wedges occasionally present in the near surface permafrost.

PRE-QUATERNARY

R BEDROCK: may include thin patches of sediments.

GELIFLUCCION LOBES

HUMMOCKS

FROST BOILS

QUARRY (active and inactive)

PIT (active and inactive)

BUILDING

TRANSPORT INFRASTRUCTURE

GEOLOGICAL BOUNDARY

FROST CRACKS: probable presence of ice wedges - only the most evident ones are mapped

WATERCOURSE - creek or stream running throughout all arctic summer

WATERCOURSE - creek or stream running occasionally during spring melt

SMALL OUTCROPS

FROST BLISTERS

STRATIGRAPHIC SECTIONS

PERMAFROST CORING SITE (CEN, 2017)

PERMAFROST CORING SITE (CEN, 2014)

PERMAFROST CORING SITE (Terratech 1984)

TEST PIT (Terratech 1984)

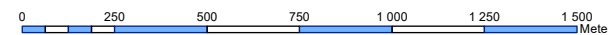
Notes: Composed units, for example A1/Mt, are indicated when the thickness of the superior unit is low compared to that of the underlying unit (generally less than 2 m) or when the presence of the underlying unit is important from the geotechnical point of view as well as based on permafrost conditions.

Colour codes and symbols come from the Geological Survey of Canada and the Centre for Northern Studies (CEN).

SURFICIAL GEOLOGY
KANGIQSUJUAQ

Québec, Nunavik

1 : 10 000



Hillshade created by L'Héroult, E. from LIDAR data (MRNF 2010, gouvernement du Québec).
 Illumination: azimuth 315°, altitude 45°, vertical exaggeration 1x

Projection: MTM zone 7, NAD83

Authors: S. Aubé-Michaud, M. Allard, E. L'Héroult and A.-S. Carboneau
 Centre d'études nordiques, Université Laval, December 2018

Recommended citation:
 Aubé-Michaud, S., Allard, M., L'Héroult, E. and Carboneau, A.-S., 2018. Surficial geology, Kangiqsujaq, Québec, Nunavik; Centre d'études nordiques, scale 1:10 000.

Résumé

Cette carte présente les risques naturels actuels et appréhendés de la région de Kangiqsujaq. Ce village se situe au Nunavik, sur la rive sud-est de la baie Wakeham (71.94° N ; 81.59° O).

Note

Cette carte a été compilée principalement par photo-interprétation et validée avec un nombre limité d'observations de terrain, de sondages et de forages dans la permafrost. Toute information pouvant en améliorer la précision et, éventuellement conduire à la production d'une mise à jour sera appréciée.

Les risques naturels sont représentés par un symbole ponctuel, linéaire ou zonale, en fonction de leur échelle et de leur géométrie.

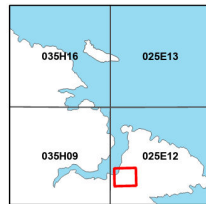
Abstract

This map shows the actual and potential natural hazards of the Kangiqsujaq region. This Nunavik village is located on the south-east shore of the Wakeham Bay (71.94° N ; 81.59° W).

Note

This map was compiled mainly by air photo interpretation and validated by a limited number of terrain observations, probing and drill holes in the permafrost. Any information leading to an improvement of precision and, eventually, an update of the map will be received with thanks.

Natural hazards are presented according to their scale and geometry: polygon, lines or points.



Système national de référence cartographique
RSN, gouvernement du Canada, centre d'information géographique (2020). Tous les droits du système national de référence cartographique du Canada.

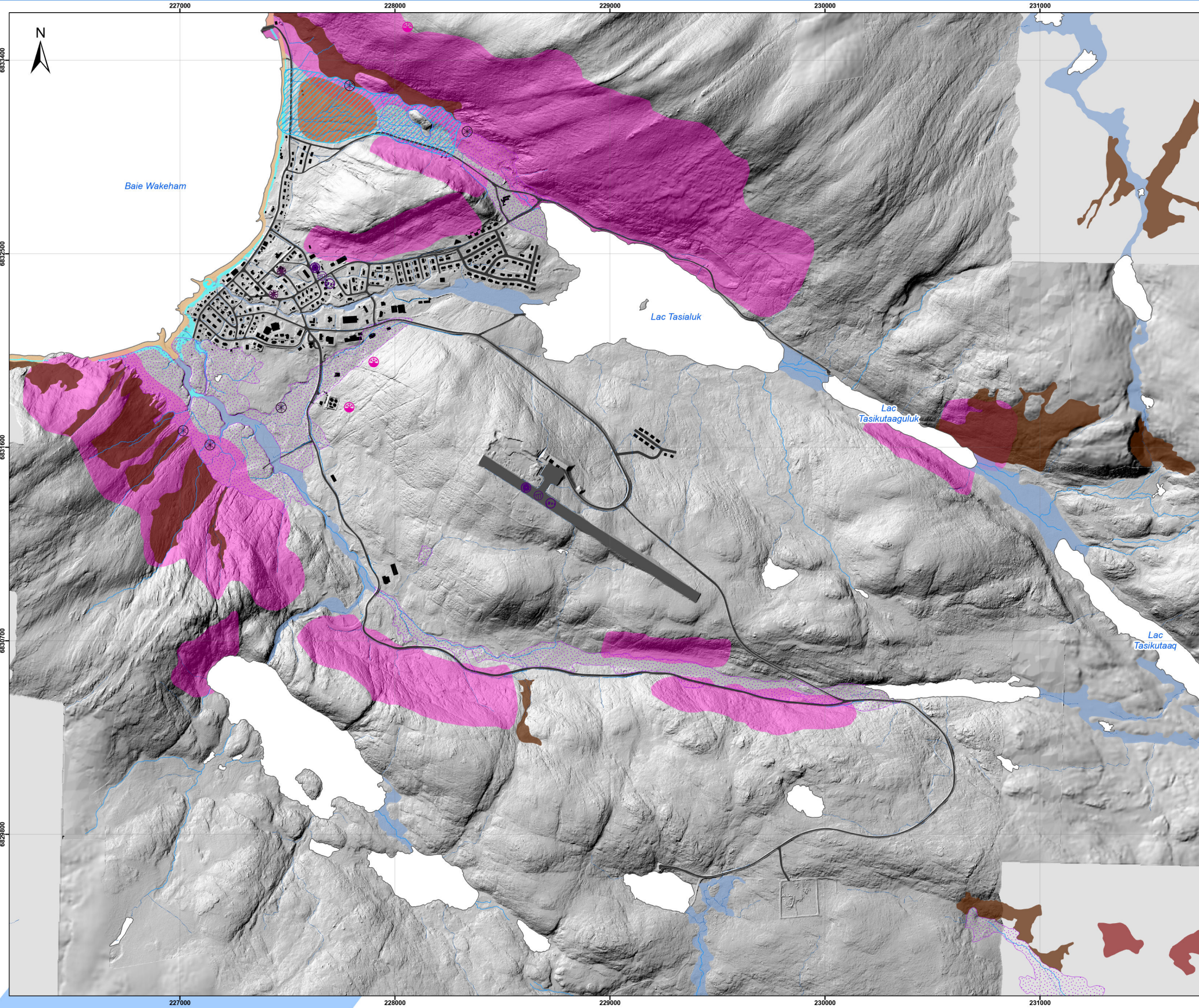
Illustration de couverture :
Kangiqsujaq, Nunavik, Québec.
Photographie par Jean-François Bernier

Centre d'études nordiques, Québec, 2018

ALÉAS NATURELS ACTUELS ET APPRÉHENDÉS
ACTUAL AND POTENTIAL NATURAL HAZARDS

KANGIQSUJUAQ

Québec, Nunavik
1 : 10 000



MOUVEMENT DE MASSE / MASS WASTING

AVALANCHE DE NEIGE / SNOW AVALANCHE



GLISSEMENT DE TERRAIN / LANDSLIDE



GÉLIFLUXION / GELIFLUCTION



COULÉE / FLOW



ÉBOULIS / FALLS



ÉROSION / EROSION

ÉROSION CÔTIÈRE ET FLUVIALE / COASTAL AND FLUVIAL EROSION



ÉROSION PAR LE VENT / WIND EROSION



CLIMATIQUE / CLIMATIC

FEU / WILDFIRE



TEMPÊTE DE VENT / WIND STORM



BLIZZARD / BLIZZARD



VERGLAS / ICE STORM



PROCESSUS PÉRIGLACIAIRES / PERIGLACIAL PROCESSES

PERGÉLISOL RICHE EN GLACE / ICE-RICH PERMAFROST



GLAÇAGE / ICING



BUTTE SAISONNIÈRE À NOYAU DE GLACE / FROST BLISTER



PROCESSUS LIÉS AU DÉGEL / THAW-RELATED PROCESSES

AFFAISSEMENT THERMOKARSTIQUE / THERMOKARST SUDSIDENCE



ÉROSION THERMIQUE / THERMAL EROSION



PROCESSUS HYDROLOGIQUES / HYDROLOGICAL PROCESSES

DRAINAGE D'UN LAC / LAKE DRAINAGE



SURCOTE / STORM SURGE



CRUE EXCEPTIONNELLE / EXCEPTIONAL FLOOD



CRUE SOUDAINE ET INONDATION / FLASH FLOOD AND FLOOD



EMBÂCLE ET DÉBÂCLE GLACIELS / ICE-JAM AND BREAK-UP



POUSSÉE GLACIELLE / ICE-PUSH



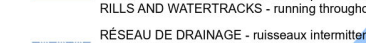
TREMBLEMENT DE TERRE / EARTHQUAKE

TREMBLEMENT DE TERRE / EARTHQUAKE

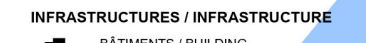


HYDROLOGIE / HYDROLOGY

RÉSEAU DE DRAINAGE - ruisseaux permanents
RILLS AND WATERTRACKS - running throughout all arctic summer

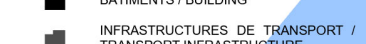


RÉSEAU DE DRAINAGE - ruisseaux intermittents
RILLS AND WATERTRACKS - running occasionally during spring melt



INFRASTRUCTURES / INFRASTRUCTURE

BÂTIMENTS / BUILDING



INFRASTRUCTURES DE TRANSPORT /
TRANSPORT INFRASTRUCTURE



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KANGIQSUJUAQ

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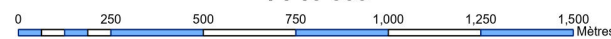


Image en relief ombragé dérivée des données LIDAR 2010 (MRNF 2010, gouvernement du Québec) préparée par L'Hérault, E.
Illumination : azimuth 315°, altitude 45°, exagération verticale 1x.
Routes, bâtiments et limite municipale : Administration régionale Kativik, 2025.
Zone d'avalanche: CEN 2026

Hillshade created by L'Hérault, E. from LIDAR data (MRNF 2010, gouvernement du Québec).

Illumination: azimuth 315°, altitude 45°, vertical exaggeration 1x.
Roads, buildings and municipal limits: Administration régionale Kativik, 2025.
Avalanche area: CEN 2026

Projection : MTM zone 7, NAD83

Auteurs : S. Aubé-Michaud, M. Allard et E. L'Hérault, Centre d'études nordiques, Université Laval, décembre 2016.

Authors: S. Aubé-Michaud, M. Allard and E. L'Hérault, Centre d'études nordiques, Université Laval, December 2016.

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Résumé
 Cette carte présente les conditions de pergélisol de la région de Kangiqsujaq. Ce village se situe au Nunavik, sur la rive sud-est de la baie Wakeham (71.94° N ; 61.59° O).

Abstract
 This map shows the permafrost conditions of the Kangiqsujaq region. This Nunavik village is located on the south-east shore of the Wakeham Bay (71.94° N ; 61.59° W).

Note
 Cette carte a été compilée principalement par photo-interprétation et validée avec un nombre limité d'observations de terrain, de sondages et de forages dans le pergélisol. Toute information pouvant améliorer la précision et éventuellement conduire à la production d'une mise à jour sera appréciée.

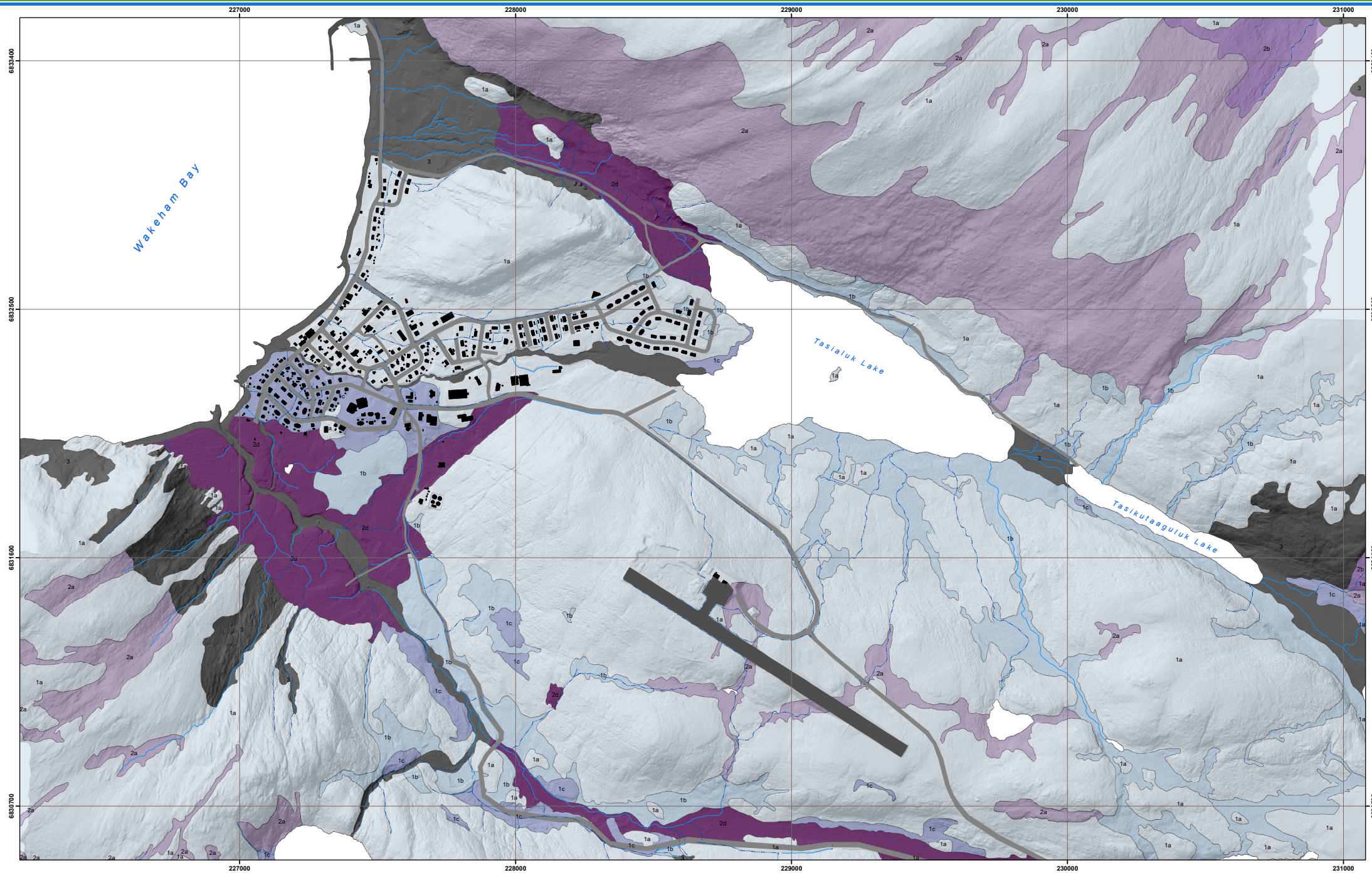
Note
 This map was compiled mainly by air photo interpretation and validated by a limited number of terrain observations, probing and drill holes in the permafrost. Any information leading to an improvement of precision and, eventually, an update of the map will be received with thanks.



The National Topographic System of Canada
 Vector Institute of the National Topographic System of Canada
 Government of Canada, Natural Resources Canada, Earth Sciences Sector, Mapping Information Branch, Centre for Topographic Information (2018)

Cover illustration:
 Kangiqsujaq, Nunavik, Québec.
 Photographs: Jean-François Bernier
 Centre d'études nordiques, Québec, 2018

PERMAFROST CONDITIONS
KANGIQSUJUAQ
 Québec, Nunavik
 1 : 10 000



Thaw-stable ground: Bedrock and superficial deposits with no or little ice content

- 1a** Bedrock. Active layer thickness is generally ranging from 4.5 to 6 m. Rock joints may contain a small amount of ice.
- 1b** Thin cover of sand and gravel over bedrock. The thickness of the deposit is generally less than 2 m and the topography is controlled by bedrock. Presence of scattered rock outcrops. The active layer thickness is generally ranging from 1.5 to 2.5 m. Contains pore ice whose volume is generally less than 10%.
- 1c** Thick layered sand and gravel deposit. The thickness of the deposit is generally greater than 2 m. The active layer thickness is generally ranging from 1.5 to 2.5 m. Contains pore ice and occasional ice lenses may be present in fine-grained material layers. Possibility of ice wedges occurrence.

Thaw-unstable ground: Ice-rich permafrost in superficial deposits

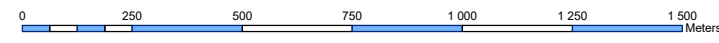
- 2a** Thin cover of heterogeneous deposit (fill) over bedrock. The thickness of the deposit is generally less than 2 m and the topography is controlled by bedrock. The active layer thickness is generally ranging from 2.5 to 3 m. Contains pore ice and ice lenses in fine-grained material layers. The volumetric ice content is generally less than 30%. Occurrence of mudboils and gelifluction lobes on slopes. Creep and differential settlements may occur upon thawing, but are limited due to the shallow thickness of the deposit.
- 2b** Thick cover of heterogeneous deposit (fill) over bedrock. The thickness of the deposit is generally more than 2 m with occasional bedrock outcrop. The active layer thickness is generally ranging from 2.5 to 3 m. Contains pore ice and ice lenses in fine-grained material layers. The volumetric ice content is generally less than 30%. Occurrence of mudboils and gelifluction lobes on slopes. Creep and differential settlements may occur upon thawing.
- 2c** Thin cover of fine-grained deposit of marine or lacustrine origin over bedrock or a thick layered sand and gravel deposit. The thickness of the deposit is generally less than 2 m. The active layer thickness is ranging from 0.5 to 1.5 m. Contains ice lenses. The volumetric ice content regularly exceeds 30% and may reach almost 100%. Surface often marked by mudboils. Material subject to minimal differential settlements because of its shallow depth. Material subject to failure on slopes upon thawing.
- 2d** Fine-grained deposit of marine origin sometimes covered with a thin layer of organic, alluvial or coastal sediments. Poorly drained. The active layer thickness is ranging from 0.5 to 1.5 m. Contains ice lenses. The volumetric ice content regularly exceeds 30% and may reach almost 100%. Material subject to significant differential settlements and failure on slopes upon thawing.

Severe limitations: Dynamic active periglacial and slope processes, littoral zone or floodplains

- 3** Contemporary deposit affected by current and dynamic geomorphological processes. Subjects to erosion, flooding and slope movements.
- BUILDING**
- TRANSPORT INFRASTRUCTURE**
- WATERCOURSE** - creek or stream running throughout all arctic summer
- WATERCOURSE** - creek or stream running occasionally during spring melt

PERMAFROST CONDITIONS
KANGIQSUJUAQ

Québec, Nunavik
 1 : 10 000



Hillshade created by L'Héroult, E. from LIDAR data (MRNF 2010, gouvernement du Québec).
 Illumination: azimuth 315°, altitude 45°, vertical exaggeration 1x

Projection: MTM zone 7, NAD83

Authors: S. Aubé-Michaud, M. Allard, E. L'Héroult and A.-S. Carboneau
 Centre d'études nordiques, Université Laval, December 2018

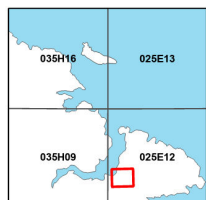
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Résumé
 Cette carte présente le potentiel de construction et les types de fondations selon les conditions de pergélisol et les pentes de la région de Kangiqsujaq. Ce village se situe au Nunavik, sur la rive sud-est de la baie Wakeham (71.94° N, 61.59° O).

Abstract
 This map shows the construction potential and foundation design options based on permafrost conditions and slopes of the Kangiqsujaq region. This Nunavik village is located on the south-east shore of the Wakeham Bay (71.94° N, 61.59° W).

Note
 Cette carte a été compilée principalement par photo-interprétation et validée avec un nombre limité d'observations de terrain, de sondages et de forages dans le pergélisol. Toute information pouvant améliorer la précision et éventuellement conduire à la production d'une mise à jour sera appréciée.

Note
 This map was compiled mainly by air photo interpretation and validated by a limited number of terrain observations, probing and drill holes in the permafrost. Any information leading to an improvement of precision and, eventually, an update of the map will be received with thanks.



Cover illustration:
 Kangiqsujaq, Nunavik, Québec.
 Photocredits: Jean-François Bernier
 Centre d'études nordiques, Québec, 2018

Construction potential and foundation design options based on permafrost conditions and slopes
KANGIQSUJUAQ
 Québec, Nunavik
 1 : 10 000

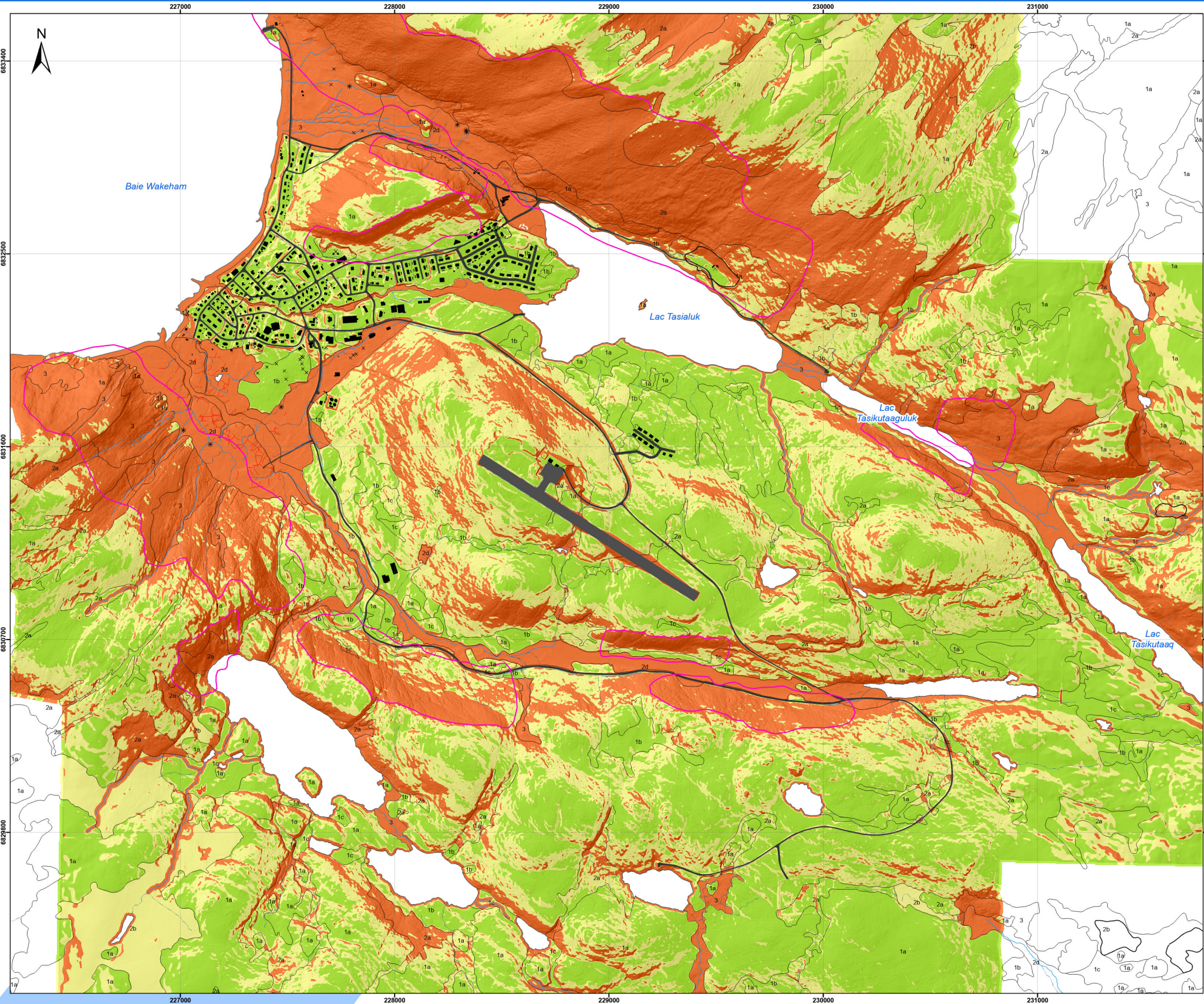
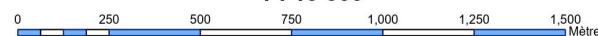


Construction potential and foundation design options based on permafrost conditions and slopes

KANGIQSUJUAQ

Québec, Nunavik

1 : 10 000



- THAW-STABLE GROUND: BEDROCK AND SUPERFICIAL DEPOSITS WITH NO OR LITTLE ICE CONTENT**
- 1a - Quartz-feldspar gneiss bedrock sometimes covered with a thin layer of sand, gravel or boulders. Active layer thickness is generally between 4.5 and 6 m. Rock joints may contain a small amount of ice.
 - All types of northern foundations. Adaptations to rugged topography are often necessary.
 - 1b - Thin cover of sand and gravel over bedrock. The thickness of the deposit is generally less than 2 m and the topography is controlled by bedrock. Presence of scattered rock outcrops. The active layer thickness is generally ranging from 1.5 to 2.5 m. Contains pore ice whose volume is generally less than 10%.
 - Deep northern foundations on the underlying bedrock applicable (ex.: pile foundations). Adjustable post and pad foundations also feasible. Buildings with slab-on-grade foundations need elaborated techniques of terrain preparation (ex.: removal or pre-thaw of frozen sediments and consolidation).
 - 1c - Deep northern foundations on the underlying bedrock applicable (ex.: pile foundations). Adjustable post and pad foundations also feasible. Buildings with slab-on-grade foundations need elaborated techniques of terrain preparation (ex.: removal or pre-thaw of frozen sediments and consolidation).
- THAW-UNSTABLE GROUND: ICE-RICH PERMAFROST IN SUPERFICIAL DEPOSITS**
- 2a - Thin cover of heterogeneous deposit (fill) over bedrock. Composed mainly of sand and silt with some gravel and boulders. The thickness of the deposit is generally less than 2 m and the topography is controlled by bedrock. Presence of scattered rock outcrops. The active layer thickness is generally ranging from 2.5 to 3 m. Contains pore ice and ice lenses in fine-grained material layers. The volumetric ice content is generally less than 30%. Occurrence of mudboils and gelifluction lobes on slopes. Creep and differential settlements may occur upon thawing, but are limited due to the shallow thickness of the deposit.
 - Deep northern foundations on the underlying bedrock applicable (ex.: pile foundations). Adjustable post and pad foundations also feasible. Buildings with slab-on-grade foundations need elaborated techniques of terrain preparation (ex.: removal or pre-thaw of frozen sediments and consolidation).
 - 2b - Thick cover of heterogeneous deposit (fill) over bedrock. Composed mainly of sand and silt with some gravel and boulders. The thickness of the deposit is generally more than 2 m with occasional bedrock outcrop. The active layer thickness is generally ranging from 2.5 to 3 m. Contains pore ice and ice lenses in fine-grained material layers. The volumetric ice content is generally less than 30%. Occurrence of mudboils and gelifluction lobes on slopes. Creep and differential settlements may occur upon thawing.
 - Pile foundations feasible but require deeper drill-holes for pile driving. Adjustable post and pad foundations also feasible. Buildings with slab-on-grade foundations need elaborated techniques to retain permafrost in its frozen state (ex.: thermosyphons). Steeper slope sections may be affected by gelifluction and may require specific foundation design. Excavation shall be avoided.
 - 2c - Thin cover of fine-grained (fine sand, silt and clay) deposit of marine or lacustrine origin over bedrock or a thick layered sand and gravel deposit. The thickness of the deposit is generally less than 2 m and the topography is controlled by bedrock. Presence of scattered rock outcrops. The active layer thickness is ranging from 0.5 to 1.5 m. Contains ice lenses. The volumetric ice content regularly exceeds 30% and may reach almost 100%. Surface often marked by mudboils. Material subject to failure on slopes upon thawing.
 - Deep northern foundations on the underlying bedrock applicable (ex.: Pile foundations). Adjustable post and pad foundations also feasible. Buildings with slab-on-grade foundations need elaborated techniques of terrain preparation (ex.: removal or pre-thaw of frozen sediments and consolidation).
 - 2d - Fine-grained deposit of marine origin (sand, silt and clay) sometimes covered with a thin layer of organic, alluvial or littoral sediments. Poorly drained. The active layer thickness is ranging from 0.5 to 1.5 m. Contains ice lenses. The volumetric ice content regularly exceeds 30% and may reach almost 100%. Possibility of ice wedges occurrence. Material subject to significant differential settlements and failure on slopes upon thawing.
 - Adjustable post and pad foundations. Buildings with slab-on-grade foundations need elaborated techniques to retain permafrost in its frozen state (ex.: thermosyphons). Excavation shall be avoided.
- SEVERE LIMITATIONS: DYNAMIC ACTIVE PERIGLACIAL AND SLOPE PROCESSES, LITTORAL ZONE OR FLOODPLAINS**
- 3 - Contemporary deposit affected by current and dynamic geomorphological processes. Subjects to erosion, flooding and slope movements.
 - Problematic terrains to be avoided.
- LEGEND**
- SAND OR GRAVEL PIT (active or inactive)
 - QUARRY (active or inactive)
 - BUILDING
 - TRANSPORT INFRASTRUCTURE
 - GEOLOGICAL UNIT BOUNDARY
 - FROST CRACK (possibility of ice wedge occurrence)
 - AVAILANCHE RISK ZONE
 - WATERCOURSE - creek or stream running occasionally during spring melt
 - WATERCOURSE - creek or stream running throughout all arctic summer
 - ISOLATED ROCK OUTCROP
 - FROST BLISTERS

