INTER-NATION COLLABORATION

NORTHERN
INDIGENOUS
SOUTHERN

COMPREHENSIVE COMMUNITY PLAN

PROJECT DRAFT
IN PROGRESS

OCTOBER 7, 2020 | DRAFT PROJECT 8751905

CREE NATION OF CHISASIBI + **BC2**

Project Team

CREE NATION OF CHISASIBI
Thomas Washipabano, Director of General Operations
Daniel Pachano, Capital Project Manager
Pahren Tangye, Finance Coordinator
Claude Tollett, Infrastructure Project Manager

GROUPE BC2
Marie-Pierre McDonald, Project Director
Haya Hatab, Project Manager
Alain Richer, Architect
Vincent Racine, Urban Designer
Maxime Paquet, Geomatics Specialist
Julie Avé, Graphic Designer

With the collaboration of Étienne Letourneau,
Engineering Project Director at SNC-Lavalin Stavibel

Council, 2020 | Cree Nation of Chisasibi

From left to right, starting from the bottom row :
Natasha Bates, Mable Bearskin, Chief Daisy House, Deputy Chief Paula Napash,Christina kitty, Charlotte Kanatewat Moar, Thomas Shem, Kevin House, Tommy Sam, Gordon Neacappo, James Bobbish, Mark Wadden, Archie Moar

A Word From Chief and Council

Texte en attente

Document Division

The folliowing document is divided into 6 sections:

Section 1
Presents the contextual setting of Chisasibi.

Section 2
Details gorvernance, social, economic, health and cultural aspects of the community.

Section 3
Analyses the current land use of the built territory.

Section 4
Explains the future development concepts and actions concerning land use.

Section 5
Adopts a phasing strategy to carry out the implementation of the planned development.

Section 6
Offers an action plan to achieve the objectives of the Comprehensive Community Plan.

Table of Contents


ARENA
PARK
CAMPUS

Introduction

This document represents the first Comprehensive Community Plan (CCP) of the Cree Nation of Chisasibi. It provides the opportunity to plan the development of the community upstream, over a 20-year horizon.

Chisasibi is becoming the true central hub of Eeyou Istchee. Its population has been increasing steadily and the community is putting a major effort into optimizing its housing, services and infrastructure. Moreover, several structuring capital works projects are scheduled as of 2021. The CCP aims to harmonize project planning in the community by adopting a holistic and sustainable approach to development.

The existing planning structure in Chisasibi is driven mainly by funding. A 5-year capital plan is prepared every 5 years and outlines short-term projects. The annual budgeting stems from this capital plan, with some capacity to adjust for unplanned emergencies. With more thought for the long term, the CCP offers overall guidelines for the development of Chisasibi that will support the planning structure and efficient decision-making among stakeholders, while prioritizing the needs of the community. The plan will also serve as a foundation for other types of planning, such as capital planning, financial planning, economic development planning, and strategic planning.

Chisasibi, Going Forward

The Council of the Cree Nation of Chisasibi has defined vision and mission statements that direct the growth of the community going forward. These statements form the basis that guides the Community Comprehensive Plan.

“Building a strong and vibrant community for Chisasibi Eeyouch today and aayanishchaa. ”

- Cree Nation of Chisasibi, Vision statement

“The mission of the Cree Nation of Chisasibi is to serve its residents by providing a safe, secure and healthy environment while protecting and preserving our Eeyou rights, customs and traditions. It is also to facilitate and promote the growth and well-being of the community by maintaining the highest standards, values and principles. ”

- Cree Nation of Chisasibi, Mission statement

Planning Approach

Comprehensive Community Plan

A Comprehensive Community Plan (CCP) is a community-owned and community-driven document. It serves as a long-term roadmap for moving forward in terms of infrastructure development, education, economic development, capacity building, social development, culture and tradition. The CCP also underlines ways to implement these areas of consideration throughout the policy and programs that support the lives of the Community members. Considering its significant demographic and developmental growth, it is imperative for the Community of Chisasibi to have a document that clearly states all the goals and objectives that, for these subject areas, are most relevant to its Community members.

The CCP for the Cree Nation of Chisasibi aims to adapt planning approaches to northern contexts and independent governance structures. In addition to specific social, economic and environmental factors, logistics related to development in remote locations are challenging.

The conception of the CCP has been focused on collaboration. The project team worked regularly with the community, engineers and infrastructure planners to validate the feasibility of each proposed intervention. This method ensures that the objectives are reachable and that the implementation of the Comprehensive Plan goes smoothly. Moreover, given that the stakeholders who will have to implement the document were involved from the start, actions should be consistent with planning phases for each important step.

The document aims to be a clear and simple communication vector among stakeholders. A major concern for the CCP was to provide a tool for the community that is not only a planning vision, but a working document that can be used to apply concrete actions to move forward with the development of the community.

It should be emphasized that as short-term and ongoing projects in Chisasibi are numerous and need proper coordination, this approach is now even more important. These projects first need to be rooted in actual needs that can be addressed immediately and realistically.

Web Application

Another important objective of the CCP is to establish a working structure that can be maintained over time and with the multiple consultants working on the territory. Because of the remote context, which forces the hiring of different consultants working on a variety projects, communicating information and objectives among the departments in the community, the population and the consultants can be difficult and must be optimized.

Therefore, the project team transformed the CCP into a web application. The first part of the application presents a story map of the CCP document highlights, with a link provided to the entire document.

The second part of the application is an online interactive map that contains layers providing information on infrastructure and services, land use, parks, points of interest and so on. This tool is an important step forward for the community, one which will enable each stakeholder to access all relevant information, including the local context and any planned project that could affect the work being done. The tool thus provides a shared communication platform that facilitates coordination between consultants and the local administration for every project on the territory, while also maintaining a common vision for the community.

Community Consultations

The document is based on the community consultations held in 2019. During these consultations, residents were asked to reflect upon the future of the community and establish their needs in terms of residential, industrial, institutional and commercial development.

The need to complete the Comprehensive Plan in 2020 was crucial, since the community is planning major infrastructure construction projects in 2021 that for funding reasons cannot be postponed. An overall vision and a clear definition of needs and goals is needed in advance. The situation related to the COVID-19 pandemic has forced the northern regions to be closed to external consultants, and the difficulty associated with bringing technology capable of conducting consultations with community members in a remote location has made it impossible to provide more comprehensive community consultations in 2020.

However, virtual weekly meetings were held with the departments of the Cree Nation of Chisasibi and stakeholders. This enabled the project team to confirm each step of the development of the document with community representatives. Among others, the capital projects department, the land and environment department, the housing department, the financial department, the fire department, the recreational department, the economic development department and the chief operating officer were all regularly consulted. In addition, on a few occasions, members of regional organizations such as the Cree Nation Government and the Cree School Board were also consulted. Finally, presentations were made to the council for comments and approval throughout the process. This collaboration was crucial and further supported the approach taken by the project team to ensure the feasibility of the CCP.

CCP Wheel | fnbc.info

1.
» REGIONAL CONTEXT

Regional Context | Eeyou Istchee

Located between the 48th and 56th parallels, the Eeyou Istchee traditional territory (the Cree lands) covers 400,000 km^2 in northern Québec, comprised of both Boreal and Taiga ecozones. It includes the lands on the eastern shore of James Bay and the south-eastern shore of Hudson Bay, as well as the lakes and rivers that drain into them.

Ten Cree First Nations, 18,000 people and over 300 traditional family hunting and trapping grounds, form the territory. The communities are Mistissini, Oujé-Bougoumou, Waswanipi, Nemaska, Waskaganish, Eastmain, Wemindji, Chisasibi and Whapmagoostui. The Cree First Nation of Washaw Sibi is currently in the process of establishing its own community. All the communities are connected by road and served by an airport, except for Whapmagoostui, which can only be reached by plane or boat.

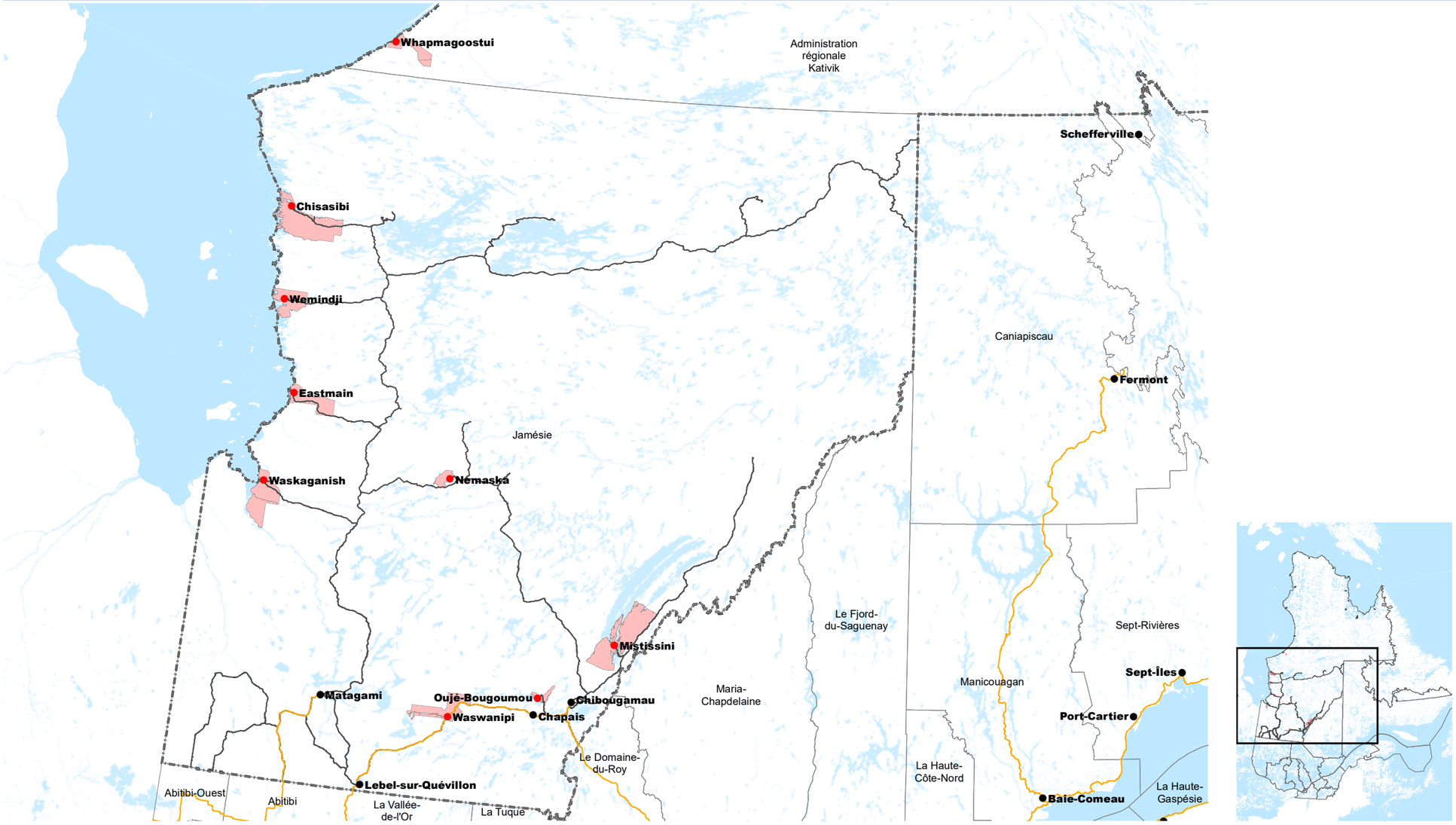
The Crees have occupied northern Québec for thousands of years and have experienced many upheavals through their history, especially when they began to trade fur with the Europeans in the 17th century. Unfortunately, the Cree lands have gone through several extractive cycles of fur, mining and timber over the last decades. Most of the communities are located in the boreal forest - the world's largest forest - which is central to Canada's economy. *Canada's boreal forest consists of around 270 million hectares of land with timber and non-timber products, mineral and energy resources, and hydroelectric potential of regional rivers.*[1] In the 20th century, the timber industry particularly affected the Cree territory, with over 70,000 km2 of forestry development and more than 2 million cubic meters of wood harvested every year.[2] Forestry and mining industries have thus capitalized on nature and landscapes, but also on Native cultural heritage. Today, hydroelectric exploitation, mining and hunting, fishing and trapping activities are the main regional land uses.

Landscape of Eeyou Istchee | BC2

1. Natural Resources Canada. Boreal forest. Online: https://www.nrcan.gc.ca/forests/boreal/13071

2. Cree Nation Government. 2014. Forestry and Protected areas in Eeyou Istchee. Online: http://cicada.world/files/C_Beck_Forestry_and_PA_presentation_for_INSTEAD_June_9_2014.pdf

Eeyou Itschee



Regional Context | Land Regime

James Bay and Northern Québec Agreement

In 1970, the Government of Québec proposed a major infrastructure project: the James Bay Hydroelectric Development Project. Its purpose was to exploit the hydroelectric potential of the James Bay territory by flooding and diverting rivers and creating massive reservoirs of almost 2,815 square kilometres (about the size of Luxembourg). However, the project capitalized on the Cree lands that were used for hunting and fishing.

Joining forces with the Inuit of northern Québec, the Cree communities protested the government's proposal because of the negative impacts that it would have on their lands and way of life. Following long negotiations and a court battle with the Government of Québec, both the provincial and federal governments finally recognized the ancestral character of the Cree and Inuit presence on the land. Thus, the James Bay and Northern Quebec Agreement (JBNQA) was signed in 1975.

The JBNQA allowed the Crees and the Inuit of northern Québec to hold political, legal, administrative and economic tools in order to make decisions on their territory, most notably by establishing a land regime, dividing it into land categories (I, II and III) and defining harvesting rights for each category. The agreement was the first modern indigenous treaty, and a powerful tool that changed the lives of the Crees of Eeyou Istchee.

Signing of the JBNQA, 1975 | CBC

Cree Land Categories

As per the JBNQA, each Cree community possesses Category I and Category II lands, while Category III lands are regional. The conditions particular to each category are as follows :

CATEGORY I LANDS (5,000 SQ. KM.)

Category IA lands: Québec retains the ownership of these lands, but their administration, management and control has been transferred to the Government of Canada, for the exclusive use and benefit of the Cree First Nations. However, subject to the provisions of the JBNQA, Québec has ownership of the mineral and sub-surface rights over such lands.[3]

Category IB lands: The collective ownership of these lands has been transferred by the Gouvernement du Québec to Cree landholding corporations that administer the lands and may grant rights on them. These lands may not, however, be sold or ceded except to Québec.

CATEGORY II LANDS (70,000 SQ. KM.)

Category II lands cover an area of approximately 70,000 km2. The Crees have exclusive hunting, fishing, and trapping rights there. These are public lands in the domain of the State that may be developed for other purposes, on the condition that the parcels of land affected are replaced or compensated for.

CATEGORY III LANDS (300,000 SQ. KM.)

Category III lands are public lands in the domain of the State. These lands covers a total area of approximately 277,000 square kilometres and are located between the 49th and 55th parallels. The Crees have exclusive trapping rights there (except in the southern zone), as well as certain non-exclusive hunting and fishing rights. The Crees also benefit from an environmental and social protection regime. Category III lands include all of the lands within the territory covered by the JBNQA that are located south of the 55th parallel and are not included in other land categories.[4]

3. Cree Nation Government. 2018. Public Inquiry Commission on relations between Indigenous Peoples and certain public services in Québec: listening, reconciliation and progress. Online: https://www.cerp.gouv.qc.ca/fileadmin/Fichiers_clients/Documents_deposes_a_la_Commission/P-663.pdf

4. Eeyou Istchee James Bay Regional Government. Territory. Online: https://greibj-eijbrg.com/en/regional-government/territoire

Cree-Naskapi (of Québec) Act

In 1984, The Cree-Naskapi (of Québec) Act established Cree and Naskapi self-government for Category I lands. Under the new Act, band governments are responsible for land and natural resource management, building and land use regulation, finances, community development, and the preservation and nurturing of culture and traditions.

The Cree-Naskapi Act is the first legislation in Canada to provide some recognition of Aboriginal self-government. It redefines the relationship between the Government of Canada and the Cree and Naskapi peoples. Among other things, it provides for:

- **The incorporation of the Cree bands and arrangements regarding Cree local governance powers on Category IA lands; and**
- **The administration, management and control of Category IA land by the Cree bands, including access and the granting of rights in lands and buildings.**

Under Section 9 of the JBNQA and section 7 of the 1978 Northeastern Quebec Agreement with the Naskapi, Parliament adopted the Cree-Naskapi (of Quebec) Act (CNQA). The CNQA provided for the exercise of local government powers and other rights of the James Bay Crees and the Naskapi, and set up a system of land management for their Category IA lands, that is, those areas under federal jurisdiction. (Under the Local Government heading, the CNQA incorporated the eight Cree bands recognized by the JBNQA (Part I, section 12), and set out their by-law-making powers over Category IA lands (section 45) in administrative matters; regulation of buildings for public safety; health and hygiene; public order and safety; environmental protection; pollution prevention; taxation for local purposes; a broad range of local services; roads and transportation; operation of businesses; and parks and recreation).[5]

Cree-Canada New Relationship Agreement (2008)

In 2010, through the Cree-Canada New Relationship Agreement (2008), the Cree-Naskapi (of Québec) Act was amended to provide for the Cree Nation Government to act as a regional government authority. It can also exercise certain regulatory powers on Category IA lands regarding specific matters such as essential sanitation services and housing.[6]

5. Hurley M. 2009. Legislative Summary of Bill C-28: An Act to amend the Cree-Naskapi.

6. Cree Nation Government. 2018. Public Inquiry Commission on relations between Indigenous Peoples and certain public services in Québec: listening, reconciliation and progress. Online: https://www.cerp.gouv.qc.ca/fileadmin/Fichiers_clients/Documents_deposes_a_la_Commission/P-663.pdf

Cree Nation Governance Agreement and Cree Constitution (2017)

In 2017, Cree local and regional governance powers on Category IA lands, as well as the land regime, were transferred from the Cree-Naskapi (of Quebec) Act into the Cree Nation Governance Agreement and the Cree Constitution.

They both provide the Cree First Nations and the Cree Nation Government with important tools to assume greater autonomy and responsibility in the governance of Category IA lands. It gives the Cree Nation Government more authority over the structure of their administration without needing the federal government's permission to make changes.

Even though the Cree First Nations and the Cree Nation Government keep the same powers and responsibilities on Category IA lands that they had under the Cree-Naskapi (of Quebec) Act, they now have the power to create their own laws in the nine Cree First Nations communities.

The Cree Constitution sets out arrangements for the exercise of the Cree right of self-government in relation to the administration and internal management of the Cree First Nations and the Cree Nation Government on Category IA lands in the context of section 9 of the JBNQA Treaty.

These internal arrangements concern subjects such as procedures for making laws and resolutions, elections, meetings and referenda, financial administration and amendment of the Constitution.[7]

Signing of the Constituion, 2017 | Cree Nation Government

7. Cree Nation Government. 2018. Public Inquiry Commission on relations between Indigenous Peoples and certain public services in Québec: listening, reconciliation and progress. Online: https://www.cerp.gouv.qc.ca/fileadmin/Fichiers_clients/Documents_deposes_a_la_Commission/P-663.pdf

2.
LOCAL CONTEXT

Local Context | Governance

While the Cree Nation Government has jurisdiction over the regional territory, each Cree First Nation has its own independent local government on their respective Category IA lands. They act through their Council, consisting of the elected Chief and Council members.

The elected Chief of each community also sits on the Board of Directors of the Grand Council of the Crees (Eeyou Istchee) and the Council of the Cree Nation Government.

Most of the enabling powers of these governments arise from the various Agreements with the Government of Québec and the Government of Canada, such as the James Bay and Northern Québec Agreement, the Cree-Naskapi (of Québec) Act, the Agreement on Governance in the Eeyou Istchee James Bay Territory Between the Crees of Eeyou Istchee and the Government of Canada, and the Constitution of the Cree Nation of Eeyou Istchee.

As such, the Cree Nation of Chisasibi acts as its own local government on its Category IA lands and has powers on a wide range of matters such as:

- Good government of Category IA lands and general welfare of its members;
- Administration of internal affairs and elections;
- Regulation of buildings; health and hygiene;
- Public order and safety;
- Environment, natural resources; land and resource use and planning;
- Taxation and local services.

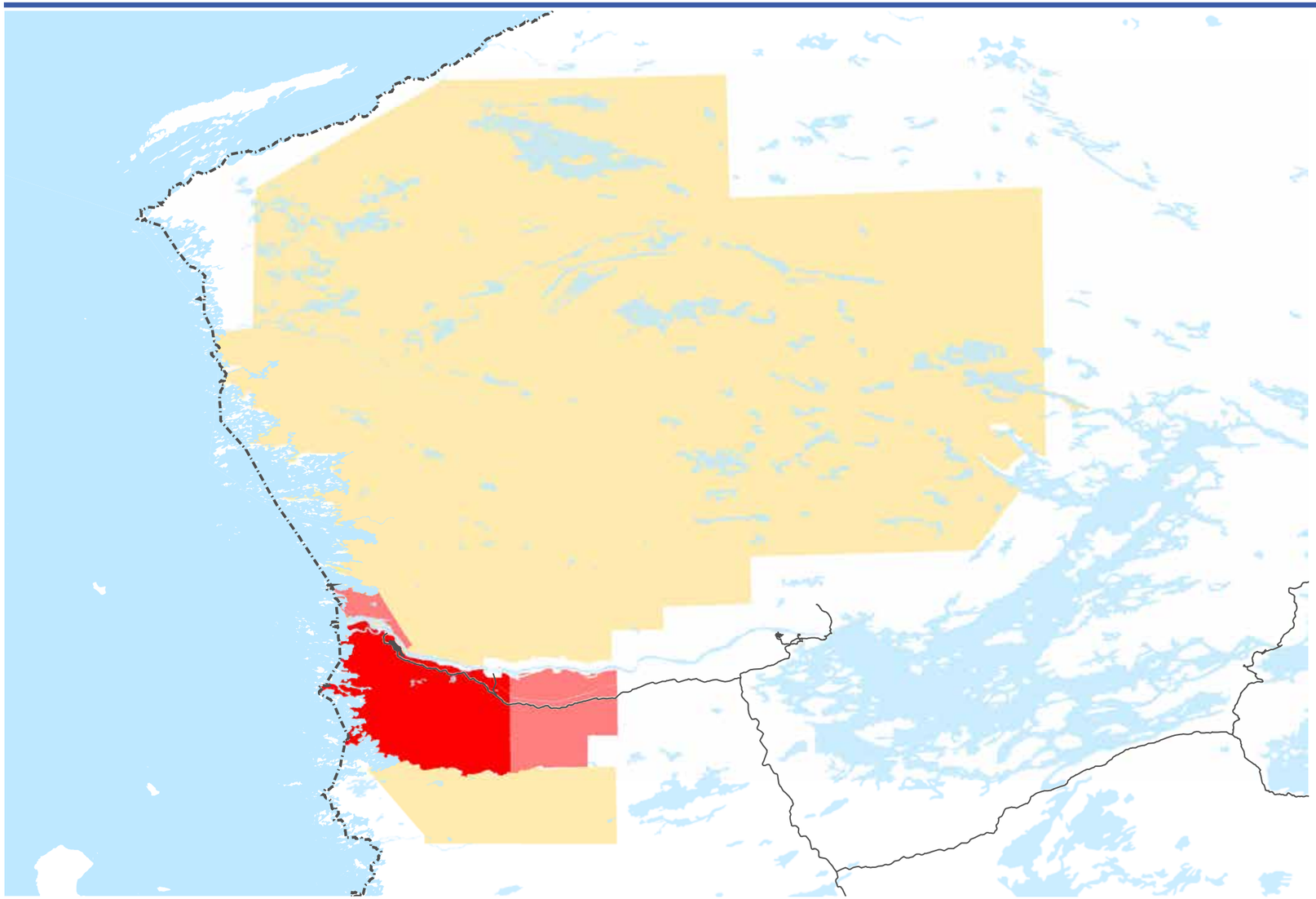
Nevertheless, the Cree Nation Government still has the power to make laws on Category IA lands regarding:

- Regulation of buildings used for housing or regional governance;
- Essential sanitation services;
- Fire departments; and
- Environment and natural resources.

Like the other Cree communities, Chisasibi's territory is not limited to the Category IA lands. The community's hunting grounds cover more than 81,733 km^2. Regardless of the categories, the land is divided into 40 traplines, which are areas where harvesting activities are traditionally carried out under the supervision of a Cree tallyman who is given responsibility for land management and resource sustainability. Only 2 traplines are located on Category IA land: VC-1 and VC-2.[8]

8. Hydro-Québec and Société d'énergie de la Baie james. 2012. Eastmain-1-A and Sarcelle Powerhouses and Rupert diversion. Summary of Mitigation and Enhancement Measures. Part 6. Online: http://www.hydroquebec.com/data/hydlo/pdf/bi-lans-2012/chisasibi-en.pdf

Land Categories of Chisasibi



Local Context | Community of Chisasibi

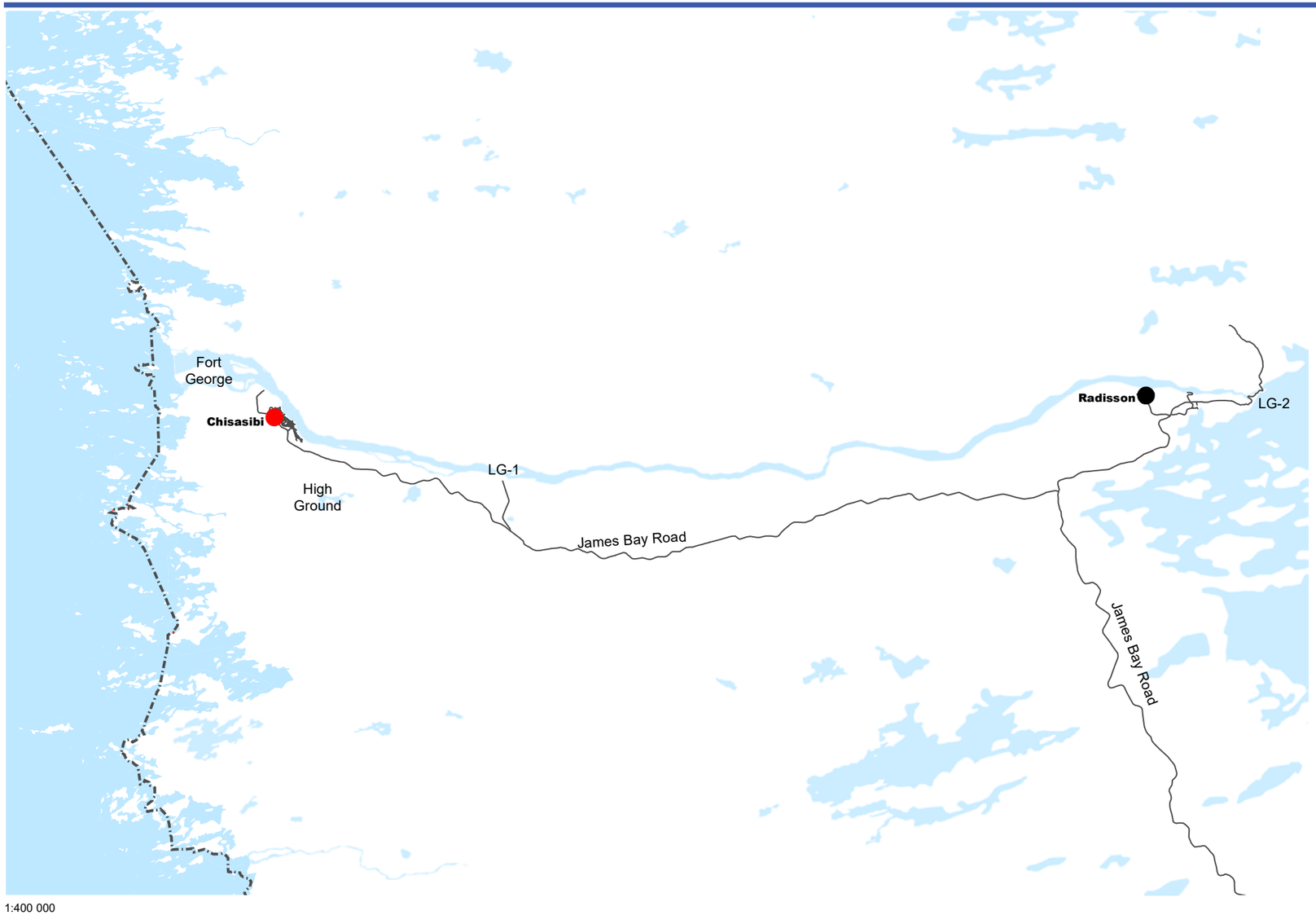
Chisasibi means Great or Big River in Cree. The community of Chisasibi, with approximately 5,000 inhabitants, is located on the east shore of James Bay, along the La Grande River, essentially at the river's mouth. It is the northernmost Cree community accessible by road.

Despite its remote geographic location, the community is accessible by air and by road. It is connected by a 90-kilometre paved road to the James Bay road that connects Matagami to Radisson. This road connection has a significant impact on the development and economic growth of the community.

Moreover, the airport is located just west of the village and Air Creebec operates scheduled service from this airport. Even though air travel is more expensive, it is the fastest way to connect to the other Cree Communities and important urban centres, such as Val d'Or, Chibougamau and Montreal.

The part of the Nation's territory that is used for land development is located on Category IA lands. The built community is bordered by the river to the North, Fort George Island and the airport to the West, James Bay Road to the South and the boundary of the Category IA lands to the East. It comprises the community's infrastructure, facilities, services and dwellings.

Location Setting



Local Context | History

The La Grande River is symbolic for the community in many çland and its resources. A transportation vector, it allows the Crees to access the territory and maintain their subsistence activities. Many Indigenous communities have therefore named themselves after the largest body of water that, for centuries, allowed them to live off their land.

The river forms an important ecosystem. The shoreline habitat and vegetation depend on its integrity, as the watercourse provides nutrients and allows for the natural management of seasonal precipitations. The saltwater-loving eelgrass meadows on the riverbed clean the water, feed geese and fish, and provide a habitat for bugs and snails. A migration route, the river is also vital for wildlife such as birds and caribou.

Among the islands at the confluence of the Chisasibi River and James Bay, the island of Fort George occupies a unique northern location. Originally, in the summertime, Crees held gatherings on the islands and hunted seasonal resources. They would usually spend the rest of the year in the forest, using the river to ascend inland to their familial hunting ground, trapping fur and hunting big game.

In 1668, Europeans arrived in the Territory, attracted by the potential of the fur trade. The Hudson's Bay Company's Fort George trading post was established by the river in 1803. Its location was strategic as it offered the opportunity for the development of trading links with Indigenous communities of the North. It was therefore a battle ground between the English and the French, and competed with the Northwest Company. Fort George was moved to the largest island in the mouth of the river in 1837, where the post continued its activities.

There was competition to attract Indigenous people to posts during those times. To ensure that trappers came back, the companies used a debt system, where they advanced food and equipment to trappers when fall came, and then deducted those costs from the value of the fur in the winter. Gradually, religious establishments and educational services were installed near the posts. These strategies succeeded in retaining the fidelity of the Indigenous people, who periodically returned to the same posts until they settled there.

The community lived at Fort George until the construction of the La Grande Complex hydroelectric project. In the 1970s, the high hydroelectric power potential of the river was sought out by Hydro-Québec and the Société d'énergie de la Baie James, and became one of the most important mega-projects carried out under then Premier Robert Bourassa. The James Bay Project, a worldwide engineering feat, was planned in two phases. Phase 1 of the project diverted water from the Eastmain, Opinaca and Caniapiscau rivers to dammed reservoirs on the La Grande River. The flow of the river was consequently doubled, and a spillway three times the height of Niagara Falls was built to control the flow from the dam. By 1986, the La Grande Complex included three generating stations: La Grande-2 (or Robert-Bourassa, North America's largest power-generating site), La Grande-3 and La Grande-4, as well as five reservoirs.

Group of Crees at Fort George, 1896 | Gov. Canada

James Bay Project, 1970 | Ordre des inginieurs du QC

However, the project has forever changed the integrity of the river and the way clean energy is perceived. The effects of hydroelectric exploitation on biodiversity and Cree communities have been significant: water and fish have been contaminated by methyl mercury; the natural seasonal flow of the rivers has been modified, and the La Grande River does not freeze in the winter anymore because of the rapid flow; the La Grande River was transformed from a saltwater to a freshwater environment, causing the disappearance of eelgrass; water temperatures have changed; wetland productivity has decreased; 11,500km2 of land were flooded, and the decomposition of vegetation causes greenhouse gasses; shoreline and habitats have been destroyed due to erosion and fluctuating water levels; animal migration routes have been compromised (10,000 caribou died at once trying to cross the river); and the traplines of 4 of the 9 Cree communities were affected, with Chisasibi's being the most affected. For the Crees, the project made food scarce and impacted their culture's long-standing relationship with the environment.

The changes in the river's flow system, which were expected to cause erosion on the island, ultimately threatened its existence. Negotiations between the Crees, the Government of Québec and the James Bay Power Project led to the Fort George Relocation Corporation. In 1981, the community voted to be relocated to its current location by the river, from which it took its new name, Chisasibi.

Houses were moved, new buildings were constructed and a new village was built in only a year. While the community has been experiencing significant growth since then, the threat of flooding due to the hydroelectric exploitation of the river is still very much present.

As a response, Hydro-Québec has built a road to High Ground, an area where the community is expected to gather in case of such a natural disaster. An alarm currently serves to alert the population of the water's level, and a practice evacuation takes place every year.

Today, the community of Chisasibi uses the island of Fort George as they did formerly. The land serves as a seasonal gathering place, where camps are installed and events are held. There, members of the community visit the old cemetery, organize weddings and have Walking Out ceremonies for young children touching the Earth for the first time. Every July, the Cree community hosts the annual Mamoweedow on the island, a week of celebration of the traditional Cree way of life.

Fort George, 1972 | Betty Keith

Fort George Relocation, 1981 | Anderson, Corsillo, Covo

Fort George Relocation, 1981 | Anderson, Corsillo, Covo

Local Context | Culture

Land and Cultural Tradition

The Cree way of life has always been connected to nature, a relationship based on a search for harmony and balance. Land and water are marked with cultural, historical and religious significations that have existed and evolved for generations. The forest has a significant economic importance but it is also a crucial element in life and identity. The natural environment shapes the Cree lifestyle, cultural legends and the personal skills of the population. Every element of the natural world – both living and inanimate – is gifted with a spirit. Crees live in relation to those spirits.

Given the extent of their territory, the Crees have developed a perception of time and space which is very different from that of the non-Aboriginal of Quebec. This perception has major impacts on the way they live and plan the development of their land.

Following the establishment of the Hudson's Bay Company trading post on Fort George in the 19th century, the Crees of Chisasibi abandoned their nomadic way of life. Their new lifestyle had little to do with the daily reality of a people who for thousands of years had been mainly nomadic hunters travelling a vast, uncharted and uninhabited territory. This transition to a sedentary lifestyle had a significant impact on their culture, health and well-being.

In the 1970's, another important event changed the life of the Crees of Chisasibi – the construction of the James Bay hydro-electric project. Apart from the community relocation, the Crees had to divide and mark their territory not only at the community level, but also at the regional level in categorizing lands, in order to exercise better control over it. Such an exercise was very difficult for them since their knowledge of the territory has always been more spiritual than practical.

Despite these major events, the Crees of Chisasibi have been able to preserve their culture by preserving some specific areas for heritage, such as Fort George Island, the elders' camp site, and Monkey Hill, where traditional cultural practices and activities in the community are maintained.

Moreover, some of the architecture of the community buildings has taken into account Cree cultural landmarks, such as the huge tepee that marks the entrance to the community centre and the Heritage and Cultural Centre.

Objectives

Create a living environment that could secure the traditional values of the community's lifestyle and activities in order to promote their long-term development;

- Base architecture style on culture (east entrance, long house style etc.);
- Develop an urban form with respect of Cree culture;
- Build new cultural camp;
- Preserve the elders camp;
- Create conservation areas.

Architecture and Urban Development

At the very end of the 1970s, faced with the imminent risk of the erosion of Fort George Island by the hydroelectric project due to the harnessing of the La Grande River, the government authorities and Hydro-Québec negotiated financial compensation with the Crees of Chisasibi in order to relocate them to the mainland. Hundreds of houses were also renovated and about 100 more were quickly built.

However, following the community relocation, the issue of the lack of housing is still the main challenge for authorities. A study done by McGill University's Minimum Cost Housing Group, focusing exclusively on the housing situation in Chisasibi, was carried out between 1998 and 2002, and shows that the community has adapted to the new spatial organization of housing, based on the nuclear family and intimacy, which is problematic in a clan-based society.

When planning new housing or urban development project, it is important to care about the real needs of community members and especially of indigenous people. Affirmation and preservation of the traditional culture should always come first, and adaptation and flexibility are mandatory throughout the design process. Traditional knowledge should always play a role in the articulation of development planning.

The shape of the village influences both the way of life and the use of the house, because the relationship between housing and the layout of the village is not simply physical. It depends on family structure, lifestyle, work, religion and landscape. [14]

Traditional Habitat

The physical context, cultural values and beliefs influenced the shape, plans, spatial arrangements and orientation of the houses. Due to the northern climatic factors, the lack of building material forced the Crees to adapt to the materials available that were suitable for a nomadic life. The type of house varied depending on the season. They lived in log houses during winter to protect themselves and in tents during summer.

Moreover, the orientation of the house was based on both cultural tradition and climatic considerations. For the Crees, the dwelling always faced the rising sun and was opposite a body of water.

The door facing the rising sun was a way to look to the outside world. Two reasons were given for this orientation, the first, anyone sitting in the tent could see the sunrise, the second, the hunter could step outside the doorway and face the sun rise. [9]

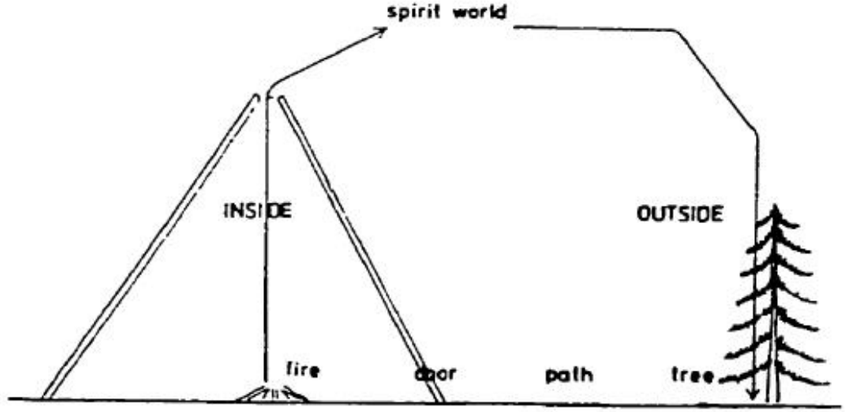


Fig.1.9
Elevation showing the inside, the outside, and the spirit world

14. *Ibid.*

9. V. Bhatt, M. Chagny. L'habitat autochtone et le genre: une approche sensible de la population Crie de Chisasibi. Online: https://www.mcgill.ca/mchg/files/mchg/chap1.pdf

10. *Ibid.*

Local Context | Culture

Cree Teepee

The most popular form of traditional shelter for many Indigenous nations including the Crees was the teepee. Every spring, each family would travel to their favourite spot where they would set up their teepee in family groups beside each other to form a circle.

The traditional teepee construction was generally performed by women and their daughters.

Today, the procedure hasn't changed: the poles are taken from the bush and cut into the right size, then cleaned so that they became white and reflected light. The canvas was bought and either sewn by the woman herself or given to an older woman. After sewing, women from the same family would put up the poles together and cover them with the canvas. The teepee was either set in the middle of a group of houses, or in the backyard of a house and shared by different families. The teepee was used for cooking in the summer or for storage in the winter. The teepees were sometimes taken apart in the winter and the poles kept aligned next to the shacks, but some were kept intact over the winter. [10]

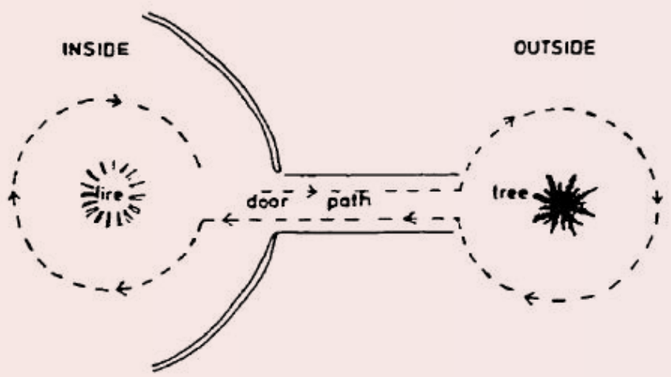


Fig.1.10.

Plan showing the inside and the outside

Traditional Cree Dwelling

There are several well-known traditional Cree dwellings including but not limited, the mihigwam, the muhtukan and the Shaapuhtuwaan.

The **mihigwam**, *or a tent-shaped log building, was easily constructed in a day and suited to transitory inter-group residence. Built with a wooden frame, the structure was protected by a canvas and/or plastic sheets, and the floor was covered by spruce boughs, freshlylaid several times per week. The size varied according to the family's needs.* [11]

The **shaapuhtuwaan** *is one of the more iconic types of the Cree dwelling. It was used in the past as a communal dwelling for several families, as well as for a feast tent. It is a long structure with door at each of its rounded ends, which are both constructed like half a miichwaapt (teepee), the two connected by a ridgepole against which sloping poles are placed along either side, the modern versions being covered with canvas.* [12]

The **muhtukan** *was a permanent sod house, it had a square or rectangular frame of split white logs, placed upright. Cracks between the logs were filled with compacted sphagnum moss. There was a second layer of sod on the outside of the structure. covering the entire house. Inside, the ground cover was cleared down to sand. Spruce boughs were used as disposable flooring. This style of building was common and differed from the log cabin (with the logs parallel to the ground).*[13]

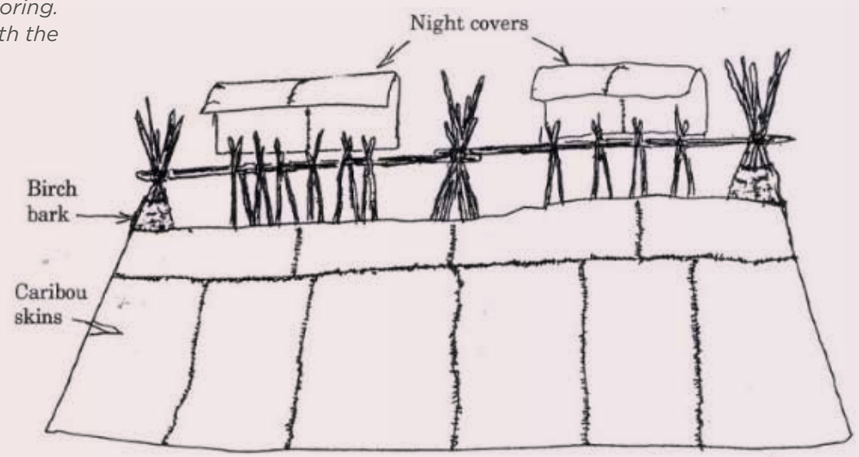


Figure 7: *Shaapuhtuwaan* with three hearths

11. *Ibid.*
12. *Ibid.*
13. *Ibid.*

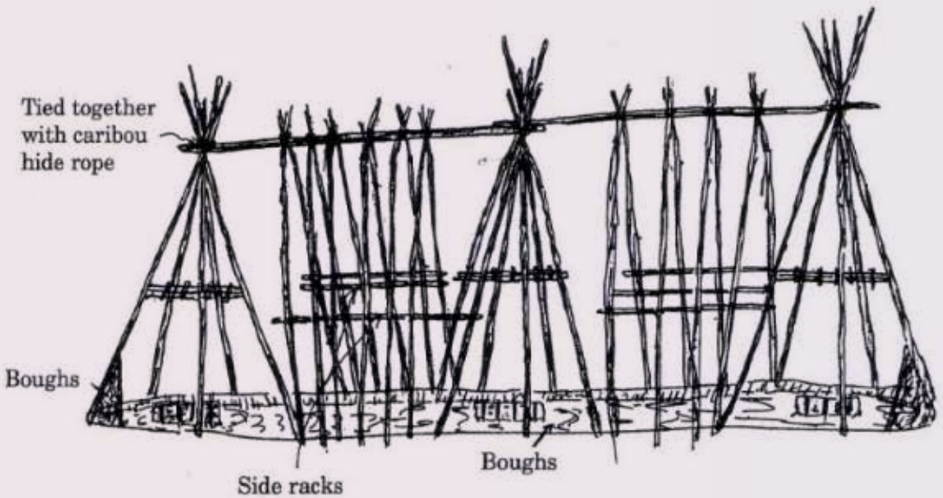


Figure 8: *Shaapuhtuwaan* with three hearths

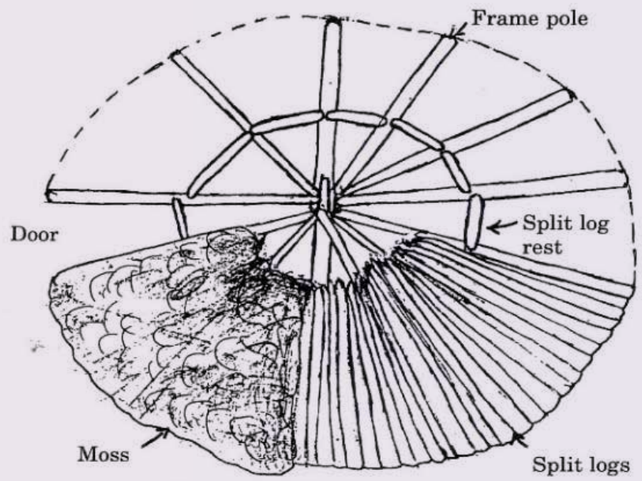


Figure 65: *Mihtukaan*: top view

Built Environment

High quality development that meets the needs of the community contributes to the physical and psychological well-being of its inhabitants.

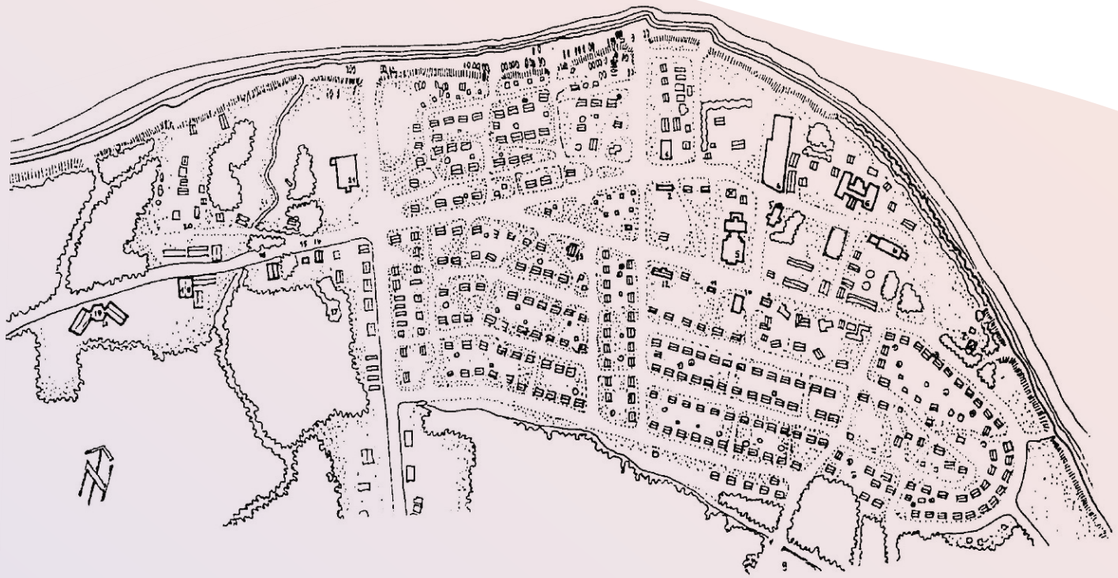
The built environment and the social structure must interact and complement each other; when this is not the case or only partially the case, the result is user dissatisfaction, a refusal to invest and participate in the process of evolution of this same environment .

In the case of Chisasibi, which was moved from Fort George Island to the current village site on the mainland, the community went through various types of layout in its development.

URBAN PLAN
FORT GEORGE

Regular Grid System and Unplanned Layout

In Fort George, the built community was a mix of a regular grid system and an unplanned layout. This type of development did not consider the family clan system, but the spaces in between houses were sufficient for green spaces, trees, bushes, open areas and also to accommodate shacks, teepees and tents. Moreover, the grid network is more convenient for people to walk from place to place



1- Hudson Bay Store
2- Handcrafts Coop
3- Anglican Church
4- Cemetery
5- Primary school
6- Secondary school
7- Nursing station
8- Air stop
9- Band Council Office
10- Webb's Lodge
11- Gas station
12- Sureté du Québec
13- Rosie's store
14- Coop store
15- Post Office
16- Catholic church
17- Cemetery
18- Ecole Ste Thérèse
19- Résidence Couture
20- Mission St Joseph
21- Hospital

Fig.3.3. Plan of Fort George drawn by the author after David Covo
(Source: Fort George, David Covo, Bruce Anderson; David Corsillo)

Cluster Layout

Following the relocation of the community, based on numerous consultations with the community, a new urban development layout was proposed in order to integrate the social parameters of the family clan system. Due to the high cost of infrastructure, the distances between houses were very limited.

The cluster arrangement promotes neighbourly interactions and provides pleasant enclosed spaces, easy supervision of the children playing in the central court, and the houses can be oriented in various directions.

However, vehicular movements in the court that hamper pedestrian use, and the number of houses in a cluster, are significant disadvantages.

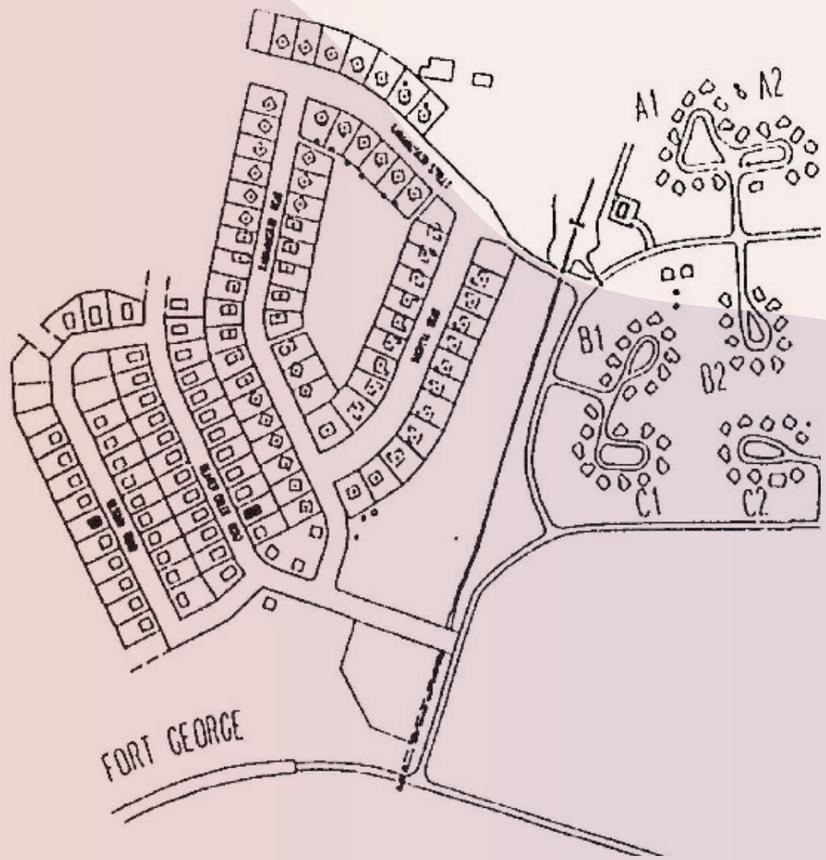
In the traditional Cree settlements. the number of houses in a hunting camp or clan was usually four or five, while in this arrangement, twelve to fifteen houses constitute a cluster .

URBAN PLAN
CHISASIBI, PRIOR TO 1998

(All houses blackened are case study houses)

1- Hospital
2- Community Center
(shopping center, Band administration, Hotel...)
3- Sport Center
4- Cree Health Board
5- Migwam
6- Cree School Board
7- Women's shelter
8- Anglican church
9- Catholic church
10- Day care

URBAN PLAN
CHISASIBI, 1998



Suburban Canadian Layout

Today, the community's urban development is based on suburban Canadian design concepts. They are developed according to the position of buildings and vehicular circulation. The suburban street networks favour wide roads with sweeping curves. This type of layout relies on car transportation, and curved streets allow cars to travel faster.

However, this type of development is monotonous, exposes houses to street noise and traffic hazards, and does not promote social interaction.

In the traditional Cree settlements. the number of houses in a hunting camp or clan was usually four or five, while in this arrangement, twelve to fifteen houses constitute a cluster. [15]

15. G. Afshari-Mirak. 1994. Cultural approaches to Native Canadian Housing : An evaluation of existing housing projects in Cree communities in Northern Quebec.

Objectives

Create a living environment that would maintain the traditional values of the community's lifestyle and activities in order to promote their long-term development:

- Align tradition and modernity, and needs and financial constraints
- Base architectural style on culture (east entrance, longhouse style etc.)
- Develop an urban form that respects cultural relationship with space
- Preserve the elders' camp
- Create heritage and conservation areas
- Develop an urban design programming checklist for any development project:
  function, activities, sociological requirements, flexibility, spatial relationships, etc,
- Encourage participatory design
- Develop urban layout that will meet the current needs of the population
- Adapt construction techniques and material to Chisasibi's northern condition
- Maximize the use of local participation, local skills, and locally available materials.

Current housing in Chisasibi | BC2

Local Context | Population

Population

According to the latest data provided by Statistics Canada in 2016, about 4,850 people make up the population of Chisasibi; this includes 250 Inuit and about 300 non-native people. In 2020, the population should surpass 5,000. The distribution between sexes is generally even, with slightly more men than women. The median age is significantly lower that the provincial median of 42.

Mobility rates in Chisasibi are low. Indeed, most of the population has lived in the community for at least 5 years. In the 5-year period before the 2016 census, about 20% of the population changed addresses, while only 85 people moved to the community from another province, territory or country. In a one-year period before the census, only 9% of the population changed addresses and 25 persons moved to Chisasibi from another province, territory or country. These trends are relatively the same in the 2006 census, which indicates steady mobility rates over a 10-year period. The statistics show that the population of Chisasibi stays in the community, which also contributes to population growth.

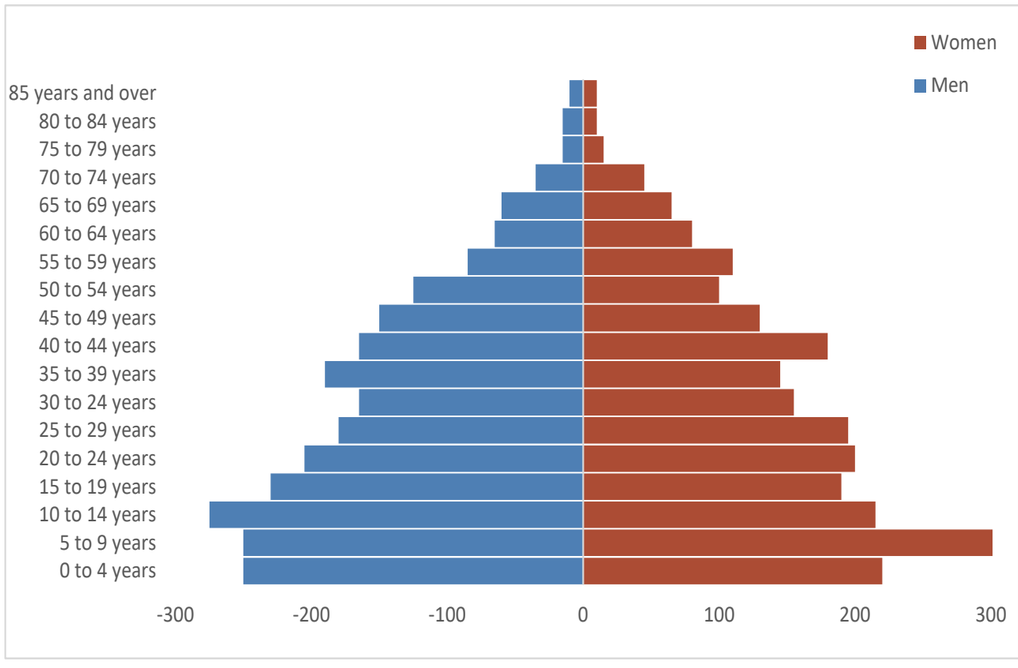
POPULATION, 2016

4,850

MEDIAN AGE, 2016

25.7

AGE PYRAMID, 2016



Source : Statistics Canada. Population Census 2016.
N.B. : Statistics Canada adds or reduces by 5 data with small numbers in order to protect the confidentiality of respondents.

Local Context | Housing

General Situation

Dwellings in Chisasibi are either occupied by community members or by workers coming from outside of the community for medium- to long-term contracts. The realities of these two groups differs significantly.

Based on the 2016 census of Statistics Canada, there are in total 1,000 dwellings accommodating the population. More than half of the housing is composed of band housing. 295 of the rest of the dwellings are rented and 135 are owned privately. Of the 1,000 dwellings, 690 were built more than 10 years ago and 310 within the past 10 years. However, about 33% of the dwellings require major repairs, with some of them needing to be completely rebuilt.

61% of the dwellings are occupied by single-family households. These single-family households are composed of families with two parents (75%), female single parents (19%) or male single parents (6%). Of the remaining dwellings, 26% are occupied by multi-family households and 14% by non-family households.

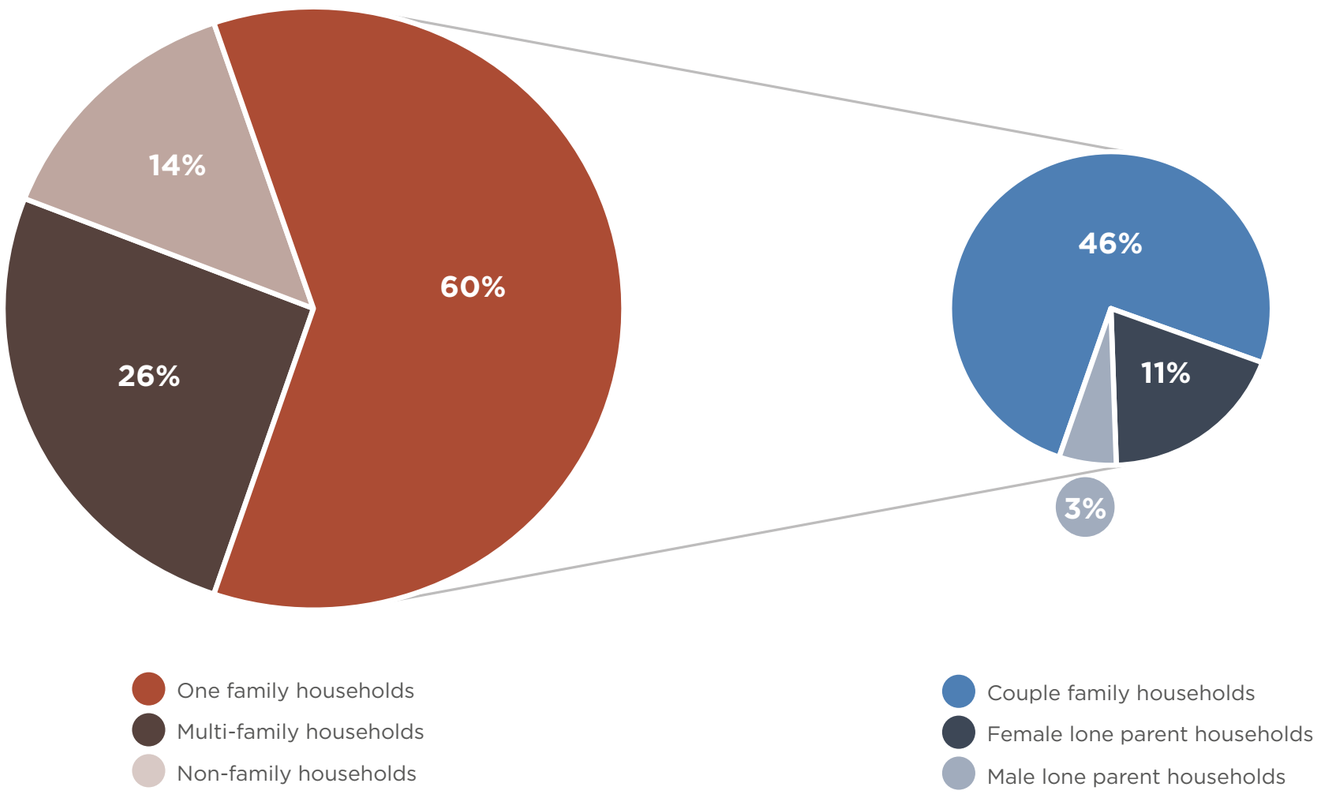
TOTAL DWELLINGS

1,000

PERCENTAGE OF HOUSING REQUIRING MAJOR REPAIRS

33 %

DWELLING OCCUPATION, 2016



Local Context | Housing

Cree Housing

The main problem with today's housing is the substantial proportion of houses that are considered unsuitable or in need of major repairs. Dwellings are considered to be unsuitable when they do not have enough bedrooms for the size and composition of the household. Cree houses are far more crowded than those of non-Aboriginals in Québec. The situation appears to be better than it was 30 years ago, although the numbers are still high.

Workers from outside the community are provided with a dwelling where they live alone. Therefore, this demographic is not part of the overcrowding issue, which is why housing and population statistics of community members must be analyzed separately. To this end, in 2019 the Cree Nation of Chisasibi completed a housing study regarding community members. It put forward an estimated total population growth projection of 2% per year.

In 2019, there were 924 dwellings accommodating community members, with on average 5.5 persons per unit. The housing study also revealed that, considering the number of bedrooms available per unit and the composition of households, the target should be 3 persons per unit. To reach a 3-person per unit target and solve the overcrowding issue in Chisasibi, there is a current shortfall of 769 dwellings.

It is also important to note that the population of Chisasibi is growing quickly; the study estimates the annual growth at 2%. Housing of the new population must be planned in advance, keeping the same 3-person per unit target. Therefore, if the number of units needed to accommodate the new population is added to the current shortfall every year, there will be a shortfall of 1,643 units by 2040.

Source : Cree Nation of Chisasibi. (2019). Cree Nation of Chisasibi Five Year Plan for Homeownership.

POPULATION PROJECTION

2020	2025	2030	2035	2040
5,182	5,721	6,316	6,977	7700

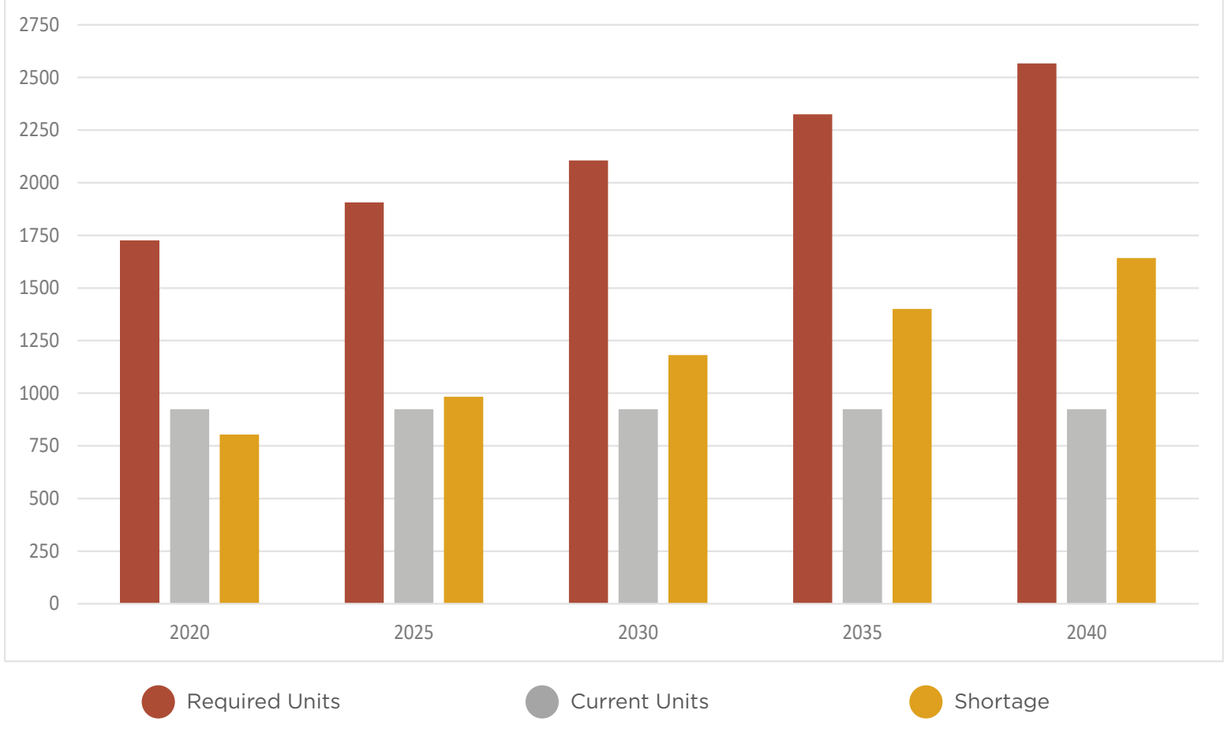
GROWTH 2020-2040

48.6%

CURRENT SHORTAGE OF UNITS

769

HOUSING NEEDS PROJECTION, 2020-2040



Objectives

- Provide sufficient lots to resolve housing needs
- Mix population groups in neighbourhoods
- Adapt development to accommodate age trends
- Develop a Housing Strategic Plan

Local Context | Health

Change to a Sedentary Lifestyle

The Crees of Eeyou Istchee have experienced major changes in their environment and their way of life in the last decades.
Given that mobility was ingrained in their lifestyle and that the land provided the basis for their social, economic and spiritual practices, the change to a sedentary lifestyle has had a dramatic effect on the health of the Crees.

The community relocation and sedentarization process – a consequence of hydroelectric construction on the La Grande River which began in the 1970s – has resulted in a transformation from independent and self-sufficient livelihoods to lives of wage labour, greater dependency on formal institutions, and increasing drug and alcohol abuse and violent and self-destructive behaviour.

This project was an important turning point for the Cree lifestyle. Since the construction of the roads for the Hydro development in the region, food and other goods from the south became more accessible. The Crees have seen a shift in their dietary behaviours from consumption of wild foods to processed foods. This transition in nutrition is likewise paralleled by a transition in physical activity, from regular exercise to a much less demanding set of activities in the village. The people started to be less physically active than before. (e.g., less walking, use of motorized vehicles, office jobs). These societal changes have caused a significant increase in diabetes and heart disease in the Cree communities .

“Everyone has the right to a standard of living adequate for the health and wellbeing of himself and of his family, including food, clothing, housing and medical care...”

- Article 25, Universal Declaration of Human Right

Food Security

In Eeyou Istchee, prevalence of chronic diseases is high, and a large proportion of families live in food insecurity .

Many northern communities are experiencing food security issues. Remoteness, together with the decline in traditional activities (hunting, fishing, berry-picking) and employment issues, make it difficult for the communities to access healthy and affordable food.

Apart from the Nunavik region, the cost of basic nutritious foods is higher in Eeyou Istchee than in any other region of Quebec. It found that nutritious food choices are quite limited in certain communities, and that access to a variety of low-cost nutritious foods is difficult, especially in smaller stores.

Transportation costs and the lack of competition, either among different suppliers or different transport companies, are the major factors of the high cost of basic nutritious foods.

Sadly, low-income families spend a large proportion of their income to purchase basic nutritious foods and to eat well.

The high price and the lack of availability of nutritious food have an impact on Cree health, with rising levels of chronic diseases (diabetes, hypertension, etc.). Access to affordable nutritious foods is essential to promote health, attain food security and prevent chronic diseases .

Community meal | CBHSSJB

Local Context | Health

Health Facilities

In remote northern communities, access to healthcare services is a big challenge. In general, the local health care facilities offer both emergency and primary care. They provide patients with timely access to quality health care until they are discharged or transferred to secondary treatment facilities. In the case of the Eeyou Istchee communities, they are most often transferred to Val d'Or, Chibougamau and Montreal. Usually, the medical staff is limited to nurses and primary care physicians, and these facilities are equipped with essential medical and supplies. Unfortunately, these limited services can contribute to poorer health outcomes and higher healthcare costs.

Founded in 1978 following the signing of the James Bay and Northern Quebec Agreement (JBNQA), the Cree Board of Health and Social Services of James Bay (CBHSSJB) is responsible for the administration of health and social services for all persons residing either permanently or temporarily in Eeyou Istchee; this includes both the delivery of provincial services and the management and delivery of a number of federal programs, including home care and most community health programs.

Chisasibi is the home of the Chisasibi Regional Hospital Centre, the head office of the Cree Board of Health and Social Services, the Weesapou Group Home and the Chisasibi CMC, which provides day-to-day health and wellness services to the local population .

Open since 1980, the mission of the Chisasibi Regional Hospital is to provide quality primary and secondary healthcare services to the population of Eeyou Istchee, since the nearest hospital centre is almost 1,000 km away, in Val d'Or.

The medical team includes 7 doctors and 27 registered nurses. The hospital has 29 beds, of which 17 are for acute care (5 paediatric), 9 for chronic care, and 3 for respite care. The Hemodialysis Unit has 9 dialysis stations. There is a partial pre-dialysis program 2 days a week .

Chisasibi Hospital | National News

Services available at Chisasibi Hospital

- Dental department (walk-in clinic)
- Out-patient clinic (in hospital)
- Medicine Department (admissions and observations)
- Pharmacy (prescriptions and over the counter medicine)
- Hemodialysis Unit (outpatient hemodialysis treatments)
- Specialist visits: paediatrician, ophthalmologist, optometrist, ENT
- Nutritionist (in hospital)
- Laboratory
- Dental clinic
- Physiotherapy (rehab therapy)
- Wiichihiituwin (formerly Cree Patient Services) – (coordinating patients' medical visits in Val d'Or, Montreal, Amos)

Housing

The Cree communities are facing urgent housing and development challenges. As mentioned before, there is a substantial proportion of houses in Eeyou Istchee that are overcrowded and are considered unsuitable or in need of major repairs due to the high costs of construction and repair and the lack of maintenance skills.

In the case of Chisasibi, 30% of the housing is overcrowded and about 33% of the dwellings require major repairs, with some of them needing to be completely rebuilt.
Poor and insufficient housing leads to problems with mould and poor air quality that affect respiratory health, and other problems – social and physiological – can arise from overcrowding.

In most Cree communities, the mould problem in homes is a major issue and has a huge impact on health.

The literature review showed that there are poor health outcomes in Chisasibi. Respiratory health is worse than the rest of Quebec and Canada: People are hospitalised twice as often, stay in hospital 3 times longer, the death rate is 2.6 times greater and 10 times as many potential years of life are lost due to respiratory problems. Young children appear to have a higher incidence of reactive airway disease similar to that described in other studies investigating moulds and health.

Moulds can usually be found in walls, roof and floor, but particularly in the basement where it usually begins due to high humidity levels, leaks and even floods. The water in the basement most often comes from rainfall and melting snow. The water accumulates around the foundation and it works its way inside through cracks, joints, and porous material. This is often the result of poor foundation and drainage work around the house.

It has been proven that there is a strong association between poor housing conditions and poor health. Unfortunately, the type of houses that are built in the North are not sustainable. They are planned according to models drawn from the South that are not suited for the northern climate and are not adapted to the needs, culture and resources of the Eeyou Istchee communities.

Housing in Chisasibi | BC2

Housing in Chisasibi | BC2

Local Context | Health

Cree Elders

The Cree elders have experienced a profound cultural transformation over the last decades.

Most of them speak Cree only, while administrative and financial activities are conducted mostly in English and partially in French. The language barrier is but one adaptation, often leading to exclusion. As in the south of Québec, the younger generation has adopted digital means of communication, while seniors rely on exemplifying cultural practices and oral transmission.
The Cree elders are recognized for their knowledge of the land, their place in their families, and their role in preserving and transferring knowledge about Cree language and culture. The responsibility of elders is therefore to transmit the practices and knowledge of Cree in a way that expresses the pride and resilience of the Cree people.

According to the 2016 census of the population (Statistics Canada), elders aged 65 and older comprise roughly 5% of Chisasibi's total population. Even though the ratio is lower than the other age groups, Cree elders are facing important social and environmental challenges caused by the remote location. They face significant barriers to remaining in their homes and staying active and engaged in their communities.

Moreover, they are frequently required to travel out of their communities for health services, which creates a range of challenges for themselves and their families.

Here are some of the barriers that the elderly are facing when remaining in their community;

- **Poor accessibility to and within public buildings**
- **Lack and/or poor quality of sidewalks, curbs and crosswalks**
- **Seasonal factors that reduce walkability (e.g., snow, ice)**
- **Over-reliance on family, friends and neighbours to provide transportation services**
- **Lack of options—no buses or taxis**
- **Lack of accessibility**
- **Poorly designed housing, including features that reduce mobility**
- **A lack or shortage of housing options for older people including those that support assisted living, independent living and long-term care**
- **Health or mobility issues that lead to isolation of older adults**
- **Requirement for seniors to move out of the community for care**
- **Costs and other difficulties related to the need to travel out of the community to medical appointments.**

Finally, those who needs daily special care and cannot remain in their homes must travel to larger centres in the South, such as Montreal, to live in long-term care facilities, which disconnects them from their families and community.

Community Elders | CBHSSJB

Objectives

- Encourage local production (greenhouses) of fruit and vegetable so that the community will have access to a diversity of fresh products year-round
- Plan appropriate drainage work one year prior to construction work
- Diversify housing typology to allow young and old to have access to housing (to avoid overcrowding)
- Develop a snow removal management plan
- Design pleasant walkable sidewalks, pathways and trails
- Assure good accessibility to and within public buildings (e.g., few stairs, wheelchair ramps that are not too steep, accessible washrooms)
- Provide services within walking distance of where many seniors live
- Provide public transportation services
- Provide a continuum of care in the community (home care facility)
- Develop an “intermediate” level of housing between independent living and fully assisted care
- Provide opportunities for intergenerational activities and events—don’t isolate older people
- Create suitable spaces for healthcare services, offering more infrastructures for staff and services to people
- Create spaces and amenities on institutional lots

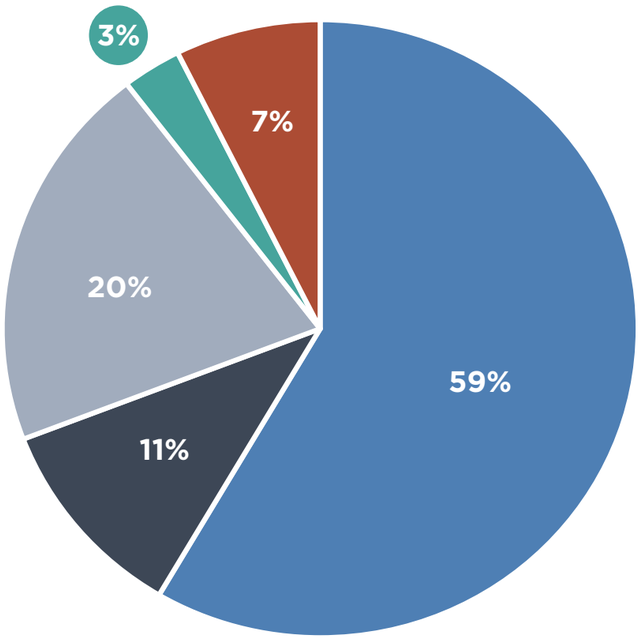
Local Context | Education

Data pertaining to education also provide insights into the economic trends in the community and in which direction it is headed.

Of the 3,310 persons 15 years of age and older, 58% have no degree certificate or diploma, 11% have a high school diploma, 20% have a trade, apprenticeship or another non-university degree, 3% have a university certificate below bachelor level and 7% have a university degree.

In total, 31% of the population of working age have a post-secondary certificate, diploma or degree. The detailed list of the fields of study of this demographic group potentially reveals the fields that interest the population and that ought to be exploited in the community.

EDUCATION LEVEL OF POPULATION OVER 15 YEARS OLD, 2016



- No degree, certificate or diploma
- High school diploma or equivalent only
- Trades, apprentieship or other non-university certificate
- University degree (below bachelor level)
- University degree (bachelor or higher)

Objectives

- Plan enjoyable spaces for schools and safe environments.
- Set aside spaces for childcare facilities to follow the growth of the population.

Childcare Facilities

Managed under the Anjaboway Childcare Centre, there are 3 daycare facilities in the community: the Jenna Centre with 80 spaces for children, the Preston Centre with 49 spaces for children and the Nuudiwaashou Centre has 80 spaces for children. Each space is offered to parents at $7.55 per day of services on a 5-day-week basis .

Schools

There are currently 2 schools in Chisasibi operated by the Cree School Board: Waapinichikush Elementary School and James Bay Eeyou School. Since the proportion of youth is very high, especially the 5-14-year-old age group, and the current elementary school is already at full capacity, a third school will be built in 2020 for Pre-kindergarten to Grade 2.

In 2017, the 2 schools were temporary closed after tests revealed the presence of mould and asbestos. Major repairs have been carried out in both schools, and, following this event and considering the high proportion of youth, discussions were raised about building a new high school. The project has been approved and this future high school will be built in 2021.

The Cree School Board (CSB) also provides education services for Post-Secondary students in order to encourage and accompany them to acquire CEGEP, college, university and professional qualifications.

The CSB developed a vocational school that is adapted to the lifestyle and culture of the Crees of Eeyou Istchee. The Sabtuan Adult Education Services (SAES) provides vocational training and adult education, with a total of thirty-seven vocational programs being offered across all the communities. Programs offered In Chisasibi are English upgrading, Math and Science upgrading, Socio-Vocational Integration, Accounting, Trucking, Carpentry, Hotel Reception/Customer Service and Entrepreuneurship/ Starting a business.

Higher Education

Unfortunately for higher education, even if the students are accompanied by the CSB, many Crees have to travel far from home to pursue their studies. There have been many discussions about ways to improve higher education options in the community, including the development of a regional college.

BrainReach North.2019 | A trip to Chisasibi

Chorong, Kim.2018 | Celebrating CALR Graduates

Local Context | Economy

Employment and Income

The labour force is calculated from the working-age population, thus 15 years of age or older. The indicators refer to whether a person was employed, unemployed or not in the labour force at the time of the census.

3,310 people make up Chisasibi's potential labour force. The actual labour force consists of 2,100 people, while 1,215 are not in the labour force. The participation rate is therefore 63% and generally even between men and women. The employment rate for the working-age population is 53%, while 16% of the labour force is unemployed.

The number of people 15 years of age and older that have an income is 3,100. The median income among recipients in 2015 was $34,000. About 1/3 of this population makes less than $20,000 per year, and 23% make more than $60,000 per year. 69% of the incomes come from employment earnings, 27% from government transfers and 4% is other money.

To some extent, the types of industries that employ people represent the economy of Chisasibi. Health, education and government sectors are the most important in the community. The service sector comes in second. Construction, manufacturing, wholesale and retail are also significant. Other sectors are more lightly represented.

In these industries, 28% of the labour force hold sales and service roles, 22% have management and business elated roles, another 22% have roles in education, social services and government, 17% have trades, transport and related roles, 7% have natural sciences and health-related roles and 5% have roles in primary industries.

Most of the population speaks Cree and English at work, and some also use French.

PARTICIPATION RATE
63.3%

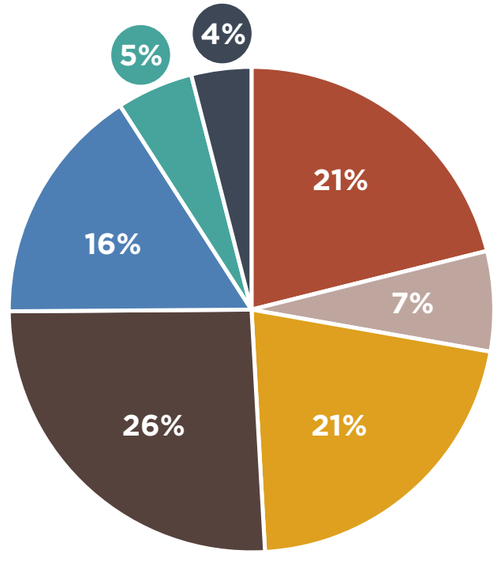
EMPLOYMENT RATE
53.3%

UNEMPLOYMENT RATE
15.8%

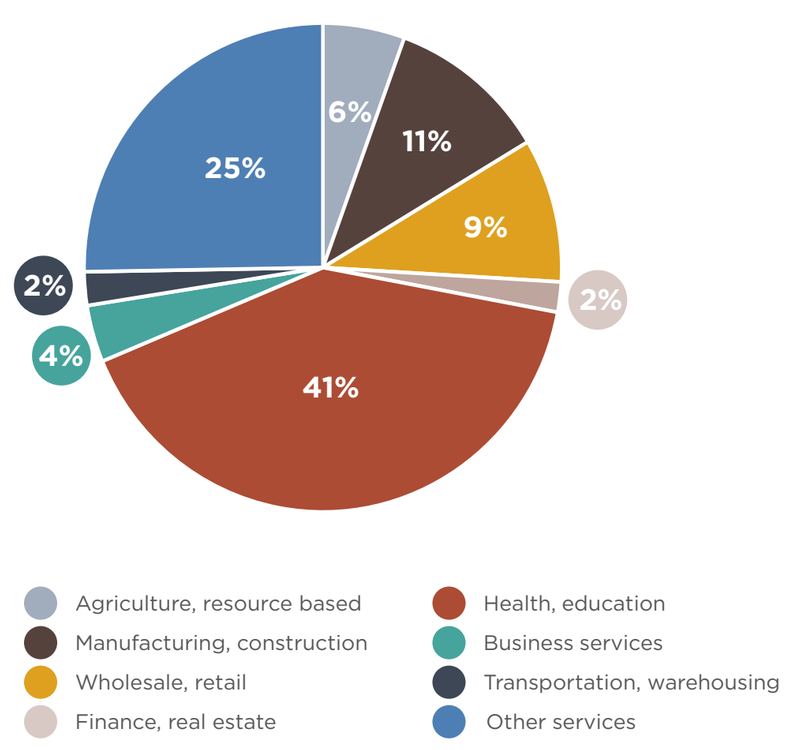
Objectives

- Provide appropriate spaces to accommodate new businesses and entrepreneurial endeavours.
- Encourage the development of tourism by planning appealing activities and spaces.

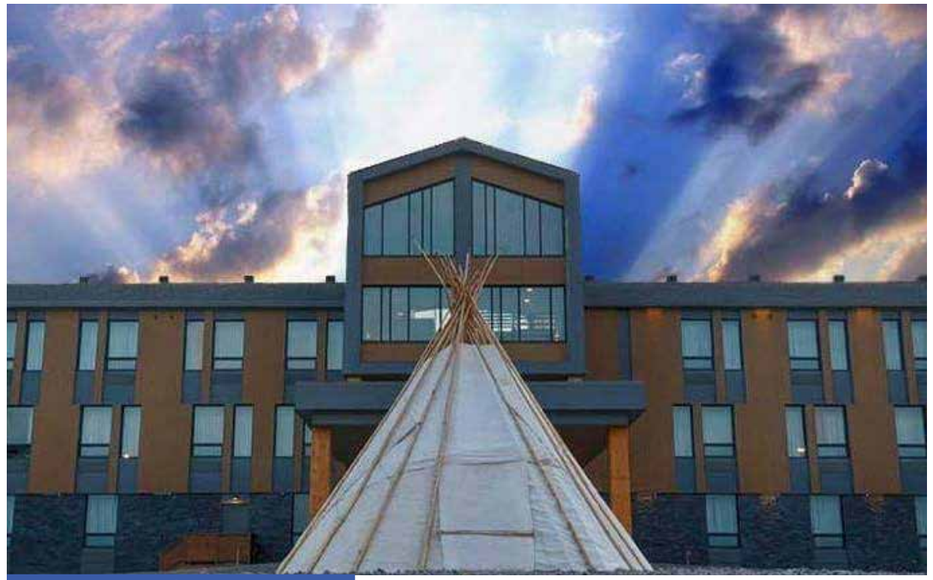
OCCUPATIONS OF THE LABOR FORCE, 2016



INDUSTRIES WHERE LABOR FORCE IS EMPLOYED, 2016



Current Businesses



Waastooskuun Inn | Waastooskuun.com

- Waastooskuun Inn lodging
- First Nations Bank of Canada
- Chisasibimi gas station
- Chisasibi Center Inc. Commercial Center
- Kinwapt Cable Co Store
- Northern Store
- Grand River Sports Store
- Petronor Gas Station
- Kathleen's Take-Out Restaurant
- Miichiwaap Restaurant
- Chisasibi's Retro Daze Café
- Ouwah Store
- Cree Mart Store
- Chistaptin - True Value Hardware Store
- Pash-Moar Restaurant
- Cody's Convenience Store
- Auberge Maanitaaukikw Lodging

Main Employers

Cree Nation of Chisasibi Buiding | BC2

- Waapinichikush Elementary School
- Justice Building
- Regional Police Headquarters
- Cree Human Resources Development Building
- Cree Nation Government Office
- James Bay Eeyou High School
- Cree Health Board and Social Services Hospital
- Cree Health Board Building
- Cree Nation of Chisasibi
- Jenna Centre Day Care
- Nuudiwaashou Day Care
- Preston Centre Day Care
- Eeyou Eenou Police Force Station

Objectives

- Provide appropriate spaces to accommodate new businesses and entrepreneurial endeavours.
- Encourage the development of tourism by planning appealing activities and spaces.

3.
LAND ANALYSIS

Land Analysis | Environment

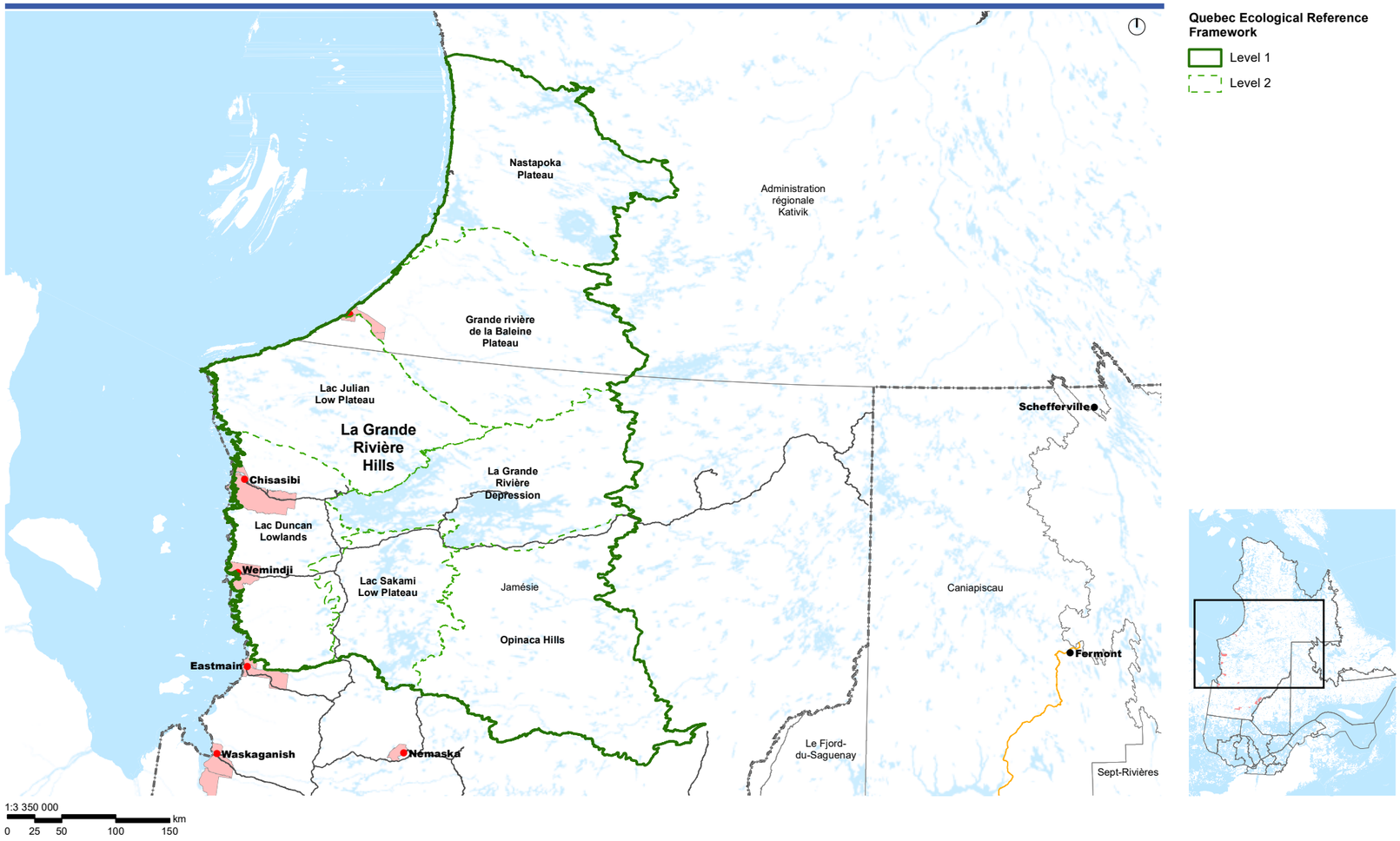
Climate, Vegetation and Wildlife

Located at 53°49'N, Chisasibi is in the subarctic north, in the Canadian Taiga Shield Ecozone, more precisely in the La Grande Hills Ecoregion. The region is in a low subarctic ecoclimate.

Summers are short and cool, with a mean temperature of 8.5 degrees Celsius, while winters are long and cold, with a mean temperature of -16.5 degrees Celsius. Prevailing winds in winter are strong and come from the West and Northwest. The mean annual temperature is -4 degrees Celsius. The mean annual precipitation is moderate and ranges from 600 mm to 800 mm. The average hours of sunlight during the year are: 8 hours from November to January, 10 hours in February, between 12 and 14 hours in April and March, between 15 hours and 17 hours from May to August, and between 10 hours and 12 hours in September and October.

Vegetation is characterized by open coniferous forests representative of the northern limit of the Boreal Forest. White spruce, Black spruce and lichen are the predominant flora of the region.

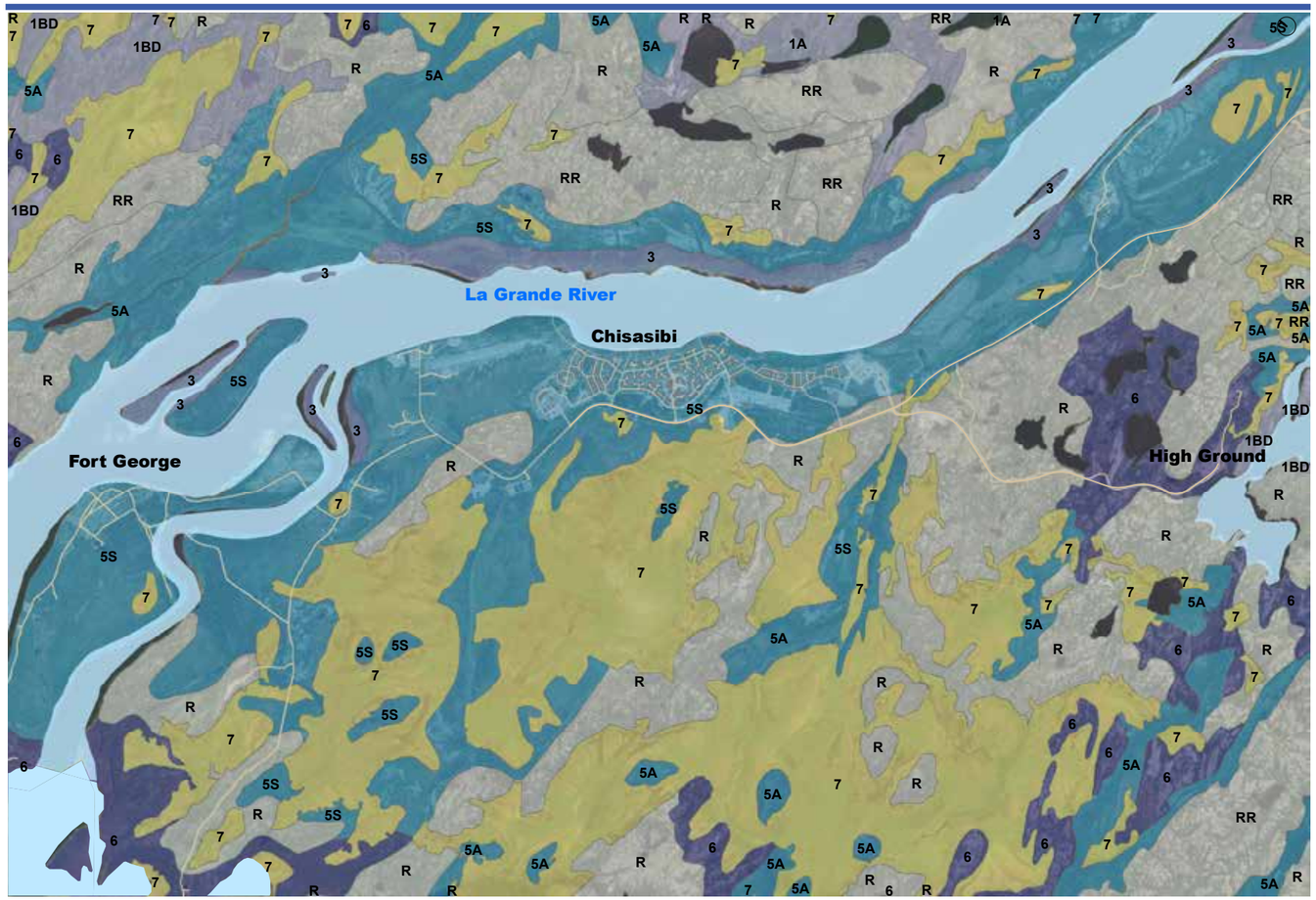
Wildlife is primarily composed of birds, mammals and fish that depend on the region's ecosystems and waterbodies. The region is a spring migration route for birds such as geese. Caribou are found extensively in the ecozone; they also use it for their migration route. Other mammals that are found are moose, black bear, wolf, red and arctic foxes, snowshoe hare, grouse, osprey, raven, and waterfowl. The rivers and lakes are home to Lake Trout, Lake Whitefish, Arctic Grayling, Burbot and Northern Pike.



Soil

Ancient bedrock, composed of Archean granites and gneiss, is found throughout the land. On the coast, acidic igneous rocks and sedimentary rocks can be identified. The soil is typically shallow and coarse. It is mainly composed of Dystric Brunisol, Humo-Ferric Podzols and Organic soils. Patches of permafrost can be located, but have little to no ice content.

Millions of lakes and wetlands were formed by waves of glacial erosion and natural depressions in the bedrock. The glacial retreat also left surface deposits such as boulders, moraine, gravel and sand.



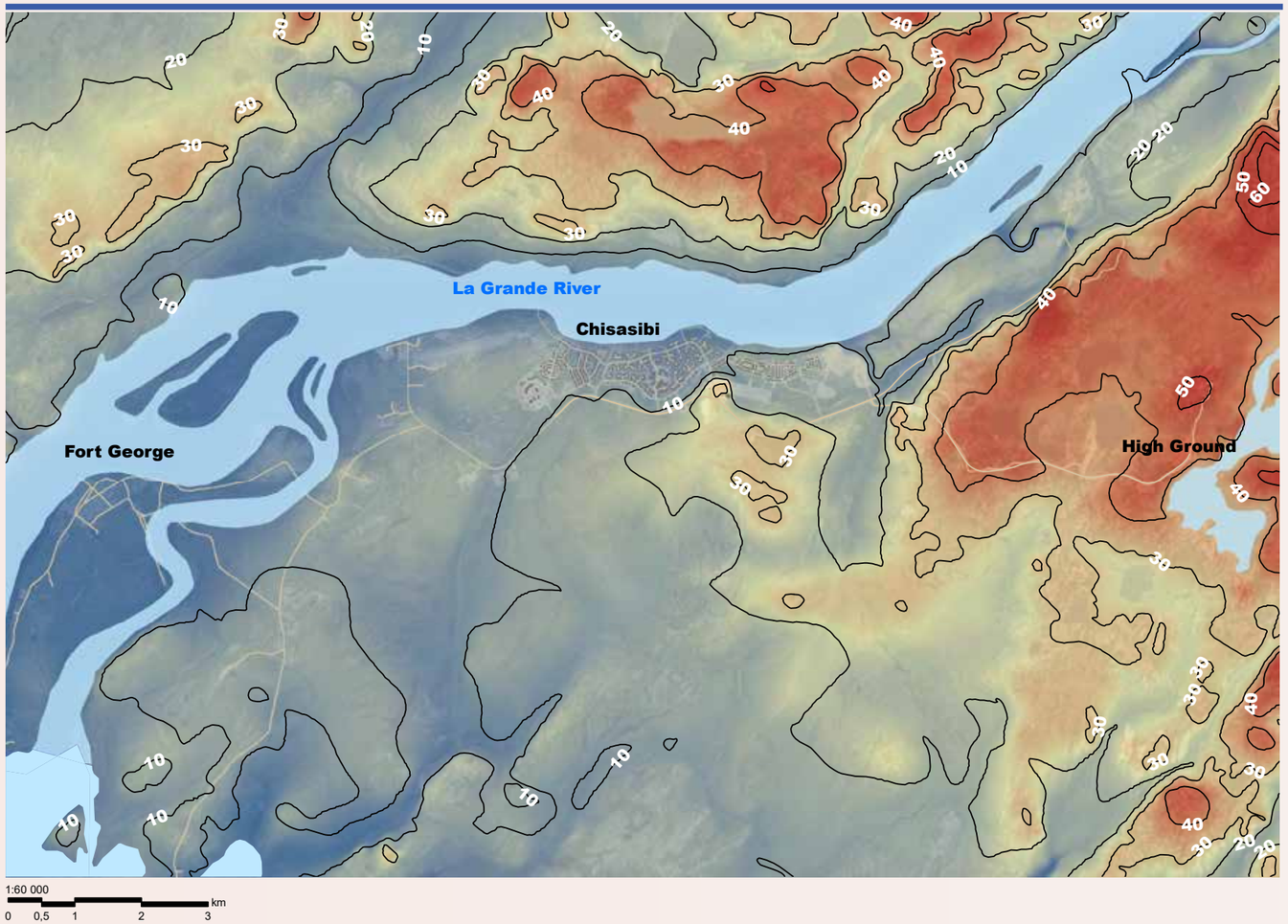
Land Analysis | Environment

Topography

The general topography of Chisasibi is characterized by a relatively flat relief made up of a coastal plain and a plateau with some hills.

A gradual elevation can be observed towards the High Ground area and across the La Grande River. Thus the natural drainage pattern extends toward the mouth of the river. Particularly in the northwest portion of the urbanized area, the slope is very low or gradual, almost flat, creating soil saturated with water, requiring extensive drainage work to allow construction.

In the southeast portion of the territory, the highway is built on a higher ridge, allowing for a gentle slope toward the river. As a result, this portion of the territory is more favourable for construction.

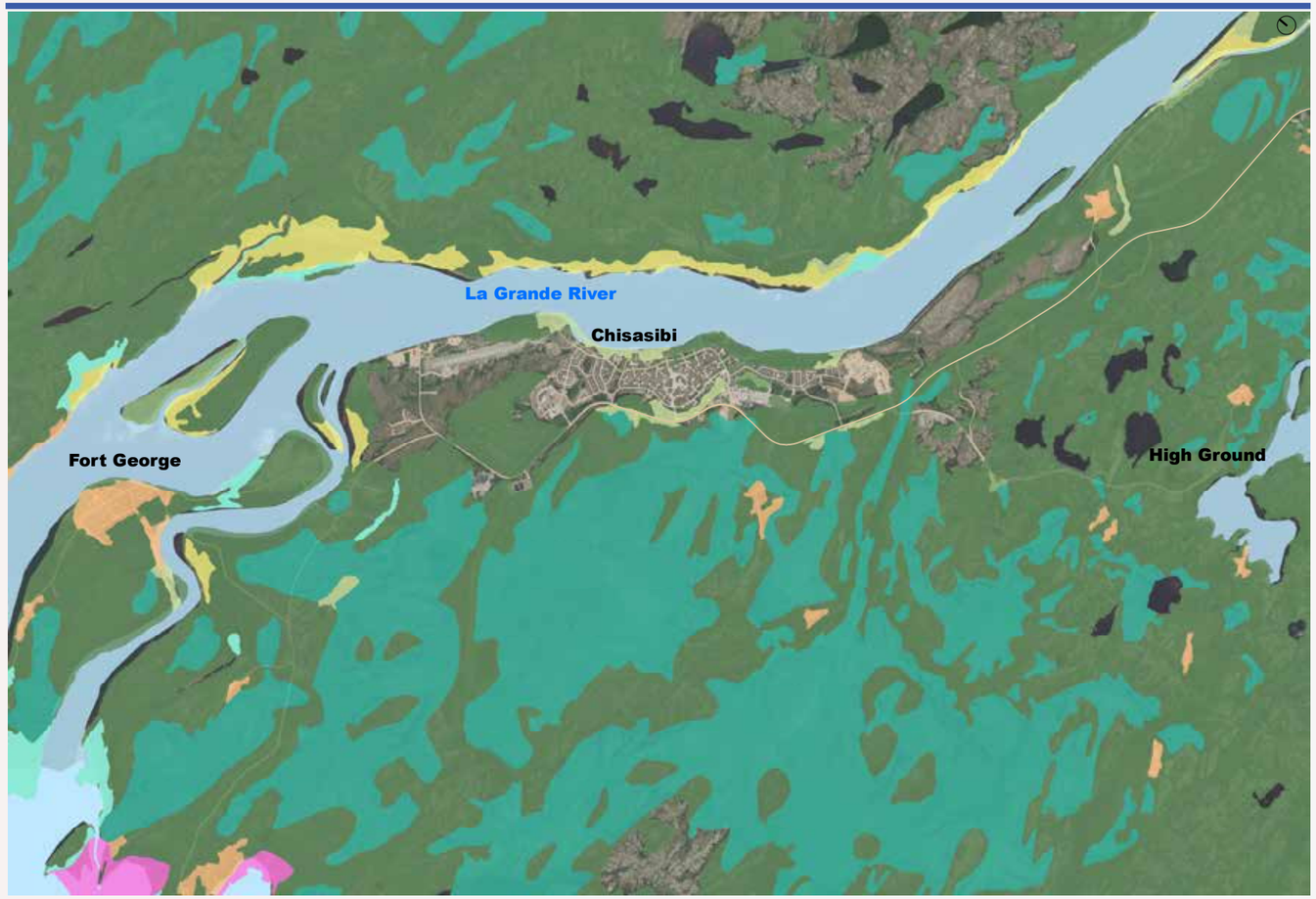


Wetlands and Drainage

The landscape is predominantly shaped by wetlands and waterbodies. Wetlands are the natural habitats with the most ecological value. They are vital ecosystems for fauna and flora, they regulate water levels during low-water periods and during periods of precipitation and floods, and they filter sediments, which contributes to increasing the water quality. (Ouranos)

Although the large quantity of wetlands present in the territory sometimes forces drainage work to be carried out, it should always be a last resort.

The natural drainage pattern extends toward the mouth of the river. Especially in the northwest portion of the urbanized area, the slope is very low or gradual, almost flat, creating soil saturated with water, requiring extensive drainage work to allow for construction. In the southeast portion of the territory, the highway is built on a higher ridge, allowing for a gentle slope toward the river. This part of the built community is more favourable for construction.



Land Analysis | Environment

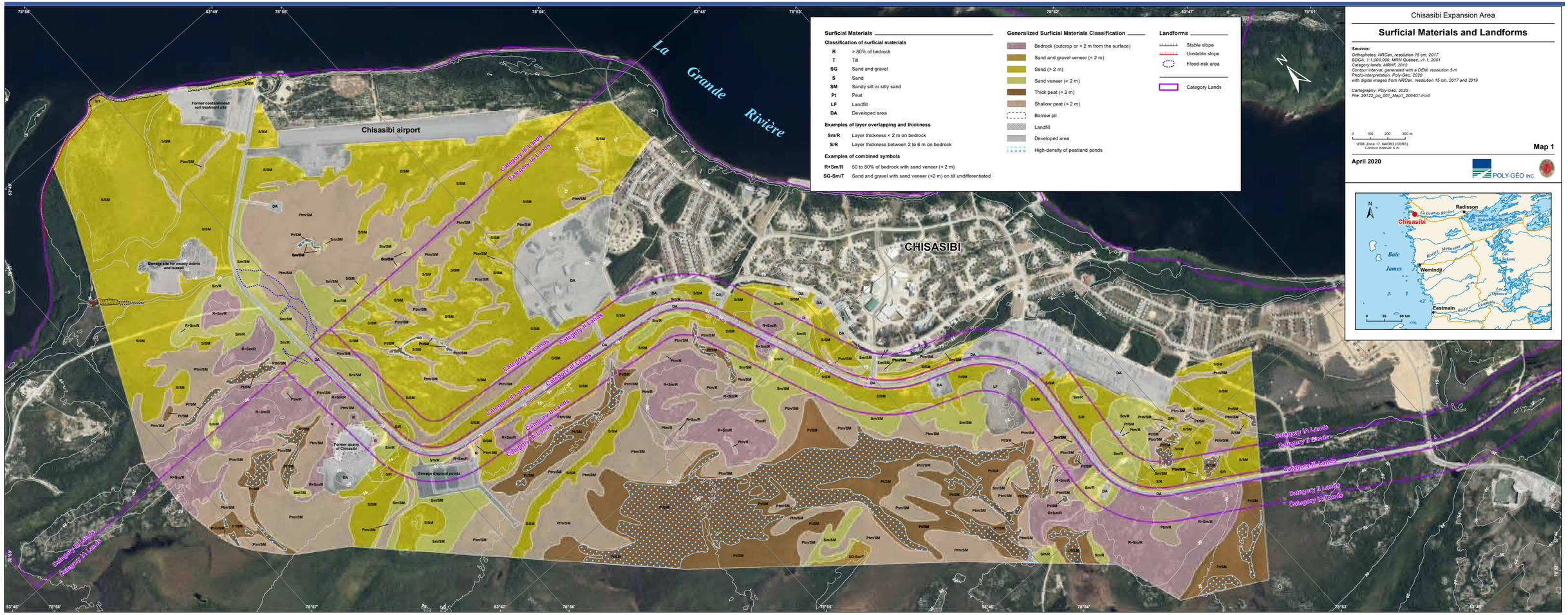
Soil Conditions

The map of soil conditions shows the portions of undeveloped land that offer soil suitable for construction.

It is important to note that the area located south of the current airport in the vicinity of the Justice Building and the latest elementary school has poor soil conditions. It is poorly drained and swampy with bedrock locally at shallow depth. It is not suitable for development, which is why the sector can hardly be consolidated.

Areas in grey contain bedrock soil, which is the best soil for construction. In yellow are soils with sand, which can hold buildings up to a certain height.

Soil Conditions of Undeveloped Land



Land Analysis | Environment

Natural Constraints and Hazards

As mentioned previously, wetlands are the main natural constraint for development in the community of Chisasibi due to the large number of waterbodies. The main challenge is balancing their conservation and the need for drainage work. The low availability of soil suitable for construction on Category 1 lands also contributes to construction issues.

The climate is not a constraint per se, but buildings and construction techniques must be adapted to the context.

Forest fires are frequent in the ecoregion. Even though they may have a renewal effect on the vegetation, safety risks for the community are high. Buffers and mitigation measures must be put in place to control the impacts of forest fires.

Other natural hazards are primarily a consequence of the hydroelectric exploitation of the river. Changes in the river's seasonal flow, the fluctuation of water levels and erosion pose threats to the lands close to shore. The water, which no longer freezes, emits harmful cold vapour when the weather is cold. Decomposing flooded vegetation also creates greenhouse gases.

In fact, the risk of flooding related to the exploitation of the river is so significant that the community has had to develop an evacuation strategy to the High Ground in case of a catastrophe. An evacuation practice drill is carried out every year. As the population is growing, the capacity of James Bay Road to handle such an evacuation will reach its limits.

Biodiversity is also a concern. Erosion and development activities tend to scare away birds and mammals, which are essential for subsistence. Furthermore, the changes in the ecosystems have had consequences on some species, as the water may be contaminated, migration routes have been compromised and the change from saltwater to freshwater environments is potentially causing the disappearance of eelgrass.

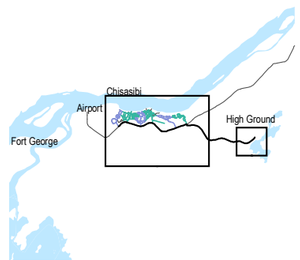
Objectives

- Develop a Zoning By-Law that will ensure:
  - Conservation zones along the river;
  - Construction norms adapted to a northern environment;
  - Buffer zones between development and sensitive zones for biodiversity and forest fires.
- Identify in advance soil suitable for construction.
- Ensure evacuation capacity to match population growth. by planning efficient connexions to James Bay Road.
- Build a new main road that will reduce the load on the James Bay Road.

Evacuation Plan

1:22 690,09

0 250 500 1 000 1 500 m



Land Analysis | Infrastructure

Roads

The community's major transportation infrastructures are the airport, which is operated by Air Creebec, and the James Bay Road highway, which connects the community to the airport, to the High Ground (the shelter area reserved for evacuation purposes) and to Radisson. The remaining roads are local streets.

In the oldest part of Chisasibi, the community's centre, the streets are dead end nodes. This street typology was not used in newer developments. The rest of the streets have a sinusoidal form, and essentially follow soil conditions suitable for construction. Because of funding requirements, lots must be maximized along streets. Since each development is funded separately, some roads, where connections would seem obvious, are not connected. Linking them later is rather difficult as this would require removing buildings. However, linking the different neighbourhoods is critical as this provides access to the community facilities.

The main road is James Bay Road, and arterial roads represent the important streets at the scale of the community, they hold activtities and destination points. Collector streets connect residential areas to either main or collector streets, and local streets serve residential uses.

Mobility

The 2016 census by Statistics Canada provides insight into the commuting habits of workers in the community. Almost all workers commute within Chisasibi to their usual place of work. 56% of respondents drive a car, truck or van to work, and 26% are passengers. Drivers park their car in parking spaces. Generally, parking spaces in the community are built in front of buildings. However, this layout creates unappealing urban design, especially on the pedestrian scale. Indeed, it reduces the beauty of the streets and may discourage walking and other forms of sustainable mobility. These parking spaces also create security issues, as in the winter, snow cover means parking and streets are at the same level, and cars can enter the parking from anywhere, causing accidents.

Taxis are the only public transit available in the community, and less than 1% of workers use them.

14% of the workers walk to their usual place of work. No one uses bicycles, and only 3% use another method of transport such as skidoos. Since the census, the community has invested in a pedestrian trail that accommodates walking through the community and is very popular.

Although these statistics only represent the habits of a portion of the population, they highlight some actions that should be taken to improve mobility in the community.

Objectives

- Identify intersections that offer opportunities for expanding or linking roads.
- Plan a second high-capacity road if James Bay Road reaches evacuation capacity limits.
- Limit the construction of parking spaces in front of buildings and facing the street by prioritizing parking spaces at the rear of buildings.
- Provide privileged parking spaces for people with reduced mobility and for carpooling and car sharing.
- Introduce other forms of public transportation like shuttle buses according to mobility habits (hours and destinations).
- Continue investing in pedestrian trails.
- Consolidate skidoo trails that are used for local transport.
- Develop a safe street sharing strategy for places where different modes must share the same road.

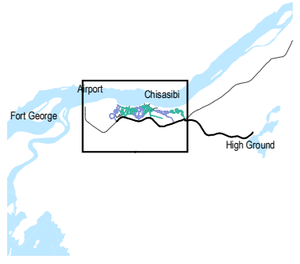
Street Hierarchy

1:23 000

0 250 500 1 000 1 500 m

Road

- Main
- Arterial
- Collector
- Local



Land Analysis | Infrastructure

Service Infrastructure

The construction of service infrastructure is also difficult in the north. In fact, many communities struggle with ensuring water quality, and the monitoring and training of the operators.

Today, Chisasibi is serviced by a water supply system and a sewer system. There is one water pumping station and water treatment plant. The entire community is also serviced by electricity. Large Hydro-Quebec poles are located along the James Bay Road. These poles must be placed at a minimum distance of 15 metres from any development for safety reasons. Chisasibi is also entirely serviced with cable lines and a telephone network, which is quite rare in northern communities.

As for roads, service infrastructures are built according to funding limitations. Most of the time they are developed according to each individual development project. This poses a problem, as most service infrastructures were not designed to carry additional loads, but the community is growing and a lot of projects are underway. With the development of the community, the capacity of the service infrastructure must be optimized.

To support the available infrastructure, storm water ponds are a sustainable solution that should be integrated into new developments. These ponds would compensate for any shortcomings and relieve pressure on the infrastructure. In order to accommodate the growth, the community also needs new water pumping stations and water treatment plants to ensure water quality.

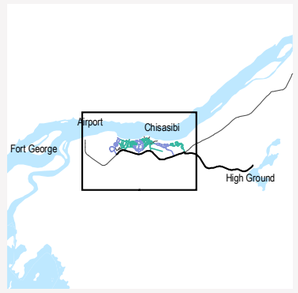
In a northern context, snow removal is an essential service, and represents extensive operations. Currently in Chisasibi, there are two sites where snow is deposited. The new deposit site is near the water intake. This poses a problem, as snow can be contaminated by various elements that then contaminate the water once the snow melts.

Objectives

- Develop an infrastructure Master Plan that plans for 20-year land development.
- Locate and increase the capacity of current infrastructure that will service projects planned for the short-term.
- Review drainage work.
- Establish a strategy to manage surface water runoff.
- Review the efficiency of the water pumping station and water treatment plant and plan for new ones according to the needs of future development.
- Plan for storm water ponds in the community to support the capacity of sewers.
- Review snow deposal site to insure no contamination of land and water.

Service Infrastructure

- Substation
- Main transmission line
- Aerial Power, Telephone and Cable Line
- Aquaduc
- Storm Sewers
- Sanitary Sewers
- Water Intake



1:25 000

0 250 500 1 000 1 500 m

Land Analysis | Infrastructure

Waste Management

Communities in northern and remote regions face unique challenges in managing their municipal solid waste due to climate, geology, population size and distribution, socio-economic factors, and access to services and facilities. As a result of these challenges, some existing waste management practices are not sufficiently protective of human health and the environment.[1]

Northern communities require waste management solutions that are very different from those in southern regions. Their location complicates the search for alternatives to landfill. They have greater difficulty implementing a recycling program due to their remoteness from urban centres, the lack of adequate infrastructure for sustainable waste management, and the absence of eco-centres. Moreover, given the capital and operating costs involved, these specific waste management solutions present significant financial challenges. Indeed, transportation of recyclable materials represents a cost higher than the value of the materials themselves.

Eeyou Istchee Region

The changing lifestyles of the Cree populations, the geography of the region, the remoteness, the arrival of packaged products and the development of communities are some of the factors that cause major challenges in the management of residual materials.

The majority of landfills in the Eeyou Istchee region are located a few kilometres from the communities, and their site dimensions vary greatly, depending on the size of the village. The landfills receive waste from all sectors: residential, industrial, commercial, institutional, and construction-renovation-demolition (CRD).

That last type is an important factor in and of itself, since there are relatively large quantities of CRD debris that have to be eliminated each year in every community. Burial of this debris is a challenge and occupies large areas in the trench landfills. Opening more such landfills is a complex process given the nature of the soil in Northern Quebec. It is also very expensive, ranging from $500,000 to $800,000. [2]

Several communities have practiced burning in the trench landfills for many years to reduce buried volumes, but this practice is now prohibited. This has caused an increase in waste; therefore, it has become crucial for communities to look at alternatives.

Chisasibi Waste Management

Chisasibi's waste management site is located about 30 km from the built community. That location is far enough from the community so that, over time, urban development could get closer to the site while still maintaining sufficient distances. The existing waste management site is a fenced-in landfill with no facilities, consisting of an open area for the pits and debris such as tires, metals, construction waste and oil barrels.

Three garbage trucks serve the community and are owned by the Cree Nation Government. Garbage is collected three times a week for residential uses, and every day (or every other day) for other types of buildings.

In 2018, a waste characterization study of the Northwest Territories analyzed waste production in small and medium-sized communities. Medium-sized communities (from 1,000 to 4,000 residents) had an average production of 633 to 1,028 kg/person/year, including construction and demolition waste.

Based on this analysis, the total current average production of waste in Chisasibi can be estimated at 5,327,096 kg/year. Knowing that the actual landfill capacity is running out of space and that the population of Chisasibi will increase of 48.6% by 2040, other solutions for a waste management system should quickly be put in place.

Even though waste management processes and priorities have to be reassessed, recycling remains a priority and should be extended to all uses in the near future. From that perspective, the community is planning to build its own Ecocentre in 2021 to manage waste locally by focusing on recycling, composting and, eventually, concrete recycling.

On that topic, it should be noted that the community has launched various recycling efforts, most notably with a pilot project providing recycling services for 200 households. Items such as electronics, used paint, aerosol cans, batteries and plastics are collected by a truck and trailer twice a week. Collected materials are then sent to Amos, Val d'Or or Victoriaville by truck every two or three months. This initiative has demonstrated that recycling works, and that such pilot programs should now be deployed on a larger scale.

Objectives

- Reduce waste at source
- Build an Ecocentre that will allow for more sustainable management of waste.
- Implement the Ecocentre in a location that is accessible, but removed from the community to eliminate associated constraints for the population.
- Develop a recycling and composting progam.
- Conduct a feasibility study for the establishment of an incinerator
- Possibly extract recyclable materials in the open landfill.
- Plan for better management of oil barrels.

1. Environment and Climate Change Canada, 2017. Solid Waste Management for Northern and Remote communities. Online: https://mvlwb.com/sites/default/files/en14-263-2016-eng.pdf
2. Vachon,L. 2007. Le portrait de la gestion des matières résiduelles à la baie james. Online : file:///C:/Users/mpmcdonald/Downloads/Portrait%20des%20MR%20-%20Baie%20James%20-%20Dec%202007%20-%20Internet%20(1).pdf
3. Golder (2018). Waste Management in the Northwest Territories. 2018 SWANA Northern Lights Conference, Edmonton, Alberta. 29 p. Online: https://swananorthernlights.org/wp-content/uploads/2017/05/Paul-Dewaele-NWT-Presentation-SWANA-Edmonton-2018-Draft-LPH-002-1.pdf, accessed June 4 2019.

Waste Management Sites

1:100 000

0 1 2 4 6 Kilometers

Land Analysis | Anthropogenic Constraints

Anthropogenic constraints arise from human land use and create nuisances. In order to protect the population from certain consequences of land uses, buffer distances must be maintained between some infrastructure and commercial, institutional and residential uses. The following map indicates safe buffer distances that should be respected.

Flights coming and going from the airport create noise that is disturbing for residents. Also, because flight routes cross over the community, certain building heights must be respected.

Power poles are distributed in the community, namely along the James Bay Road. Building too close to power poles is harmful for people when they are continuously exposed to the magnetic fields.

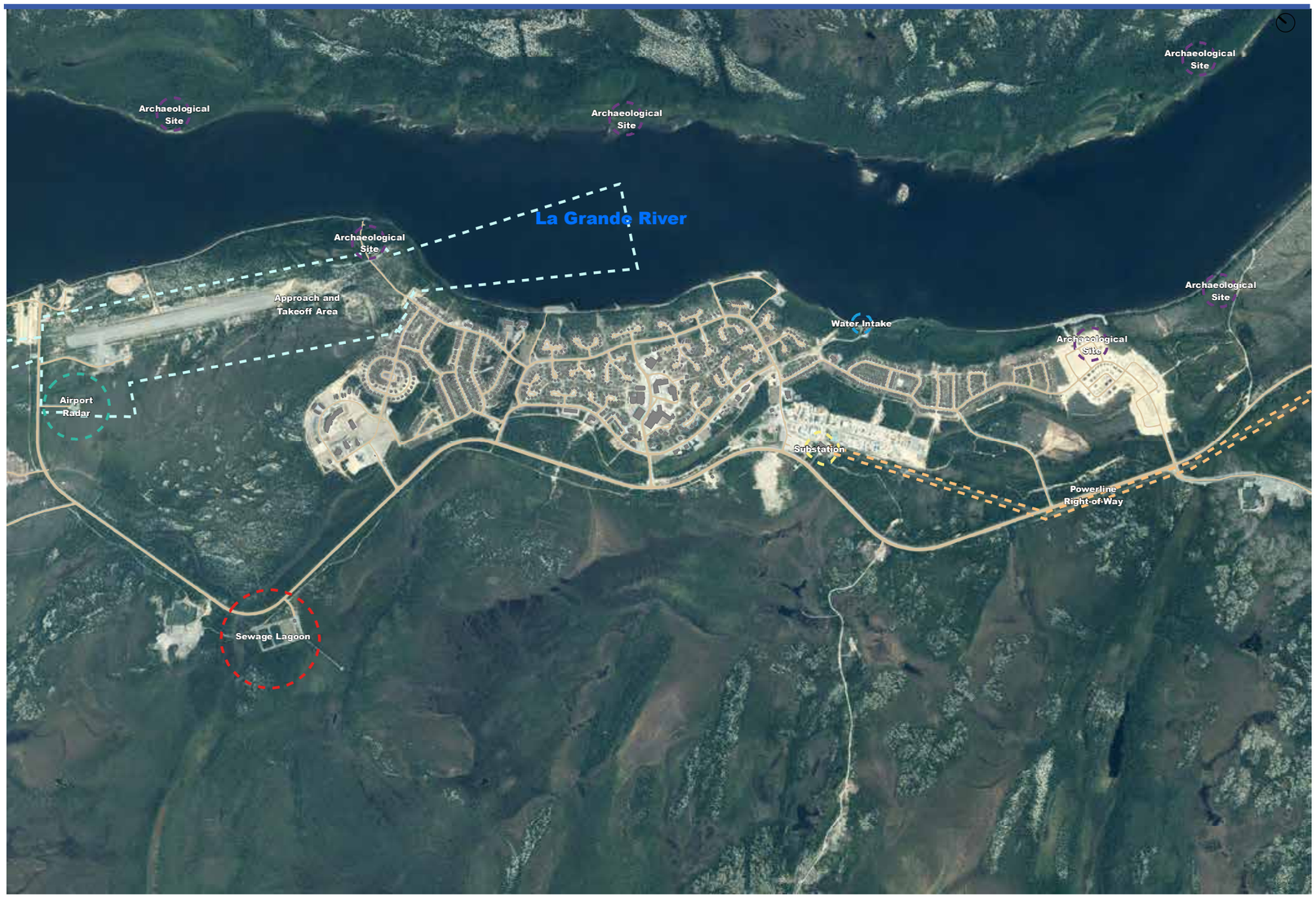
Highways and major roads may also become too noisy for people who live close to it. Since car use is concentrated along these axes, air quality around them is also poorer.

The current industrial zone located within the community poses multiple nuisances, namely to do with noise, soil contamination, traffic and air quality.

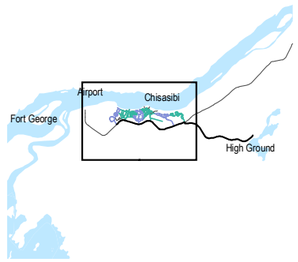
Objectives

- Maintain sufficient distances between the airport and residential, commercial and institutional uses.
- Create a Zoning By-law that enforces building heights and buffer zones around constraints.
- Move the industrial zone next to the airport to optimize transportation, separate associated anthropogenic constraints from other uses, and consolidate the development of the land to the east of the town centre.
- Maximize the use of vegetation, specifically along roads, to provide better air quality.

Anthropogenic Constraints



- Airport Radar (200 m)
- Approach and Takeoff Area
- Archaeological Site (100 m)
- Powerline Right-of-Way (20 m)
- Sewage Lagoon (300 m)
- Substation (60 m)
- Water Intake (60 m)



1:25 000

0 250 500 1 000 1 500 m

Land Analysis | Land Use

Uses

The dominant land use in Chisasibi is residential. Most of the current institutional uses are still located in the centre of the community, while some are scattered around the community. Commercial uses are mainly focused around Fort George Road and Chisasibi Road. Industrial developments are established along Industrial Park Road. The westernmost development houses several institutional buildings and a lodging facility. The development on the eastern portion of the community only contains residential uses.

With the growth of the community, new institutional and commercial nodes should be established in a green space setting, creating neighbourhoods with different identities. In order to maximize sustainable mobility and suitable access to services, mixed-use neighbourhoods should be prioritized, complementarily to creating more links between sectors.

In 2020, the buildings of the community are as follows :

Institutional

- Waapinichikush Elementary School
- Justice Building
- Regional Police Headquarters
- Cree Human Resources Development Building
- Swimming Pool Center
- Cree Nation of Chisasibi's Government Office
- James Bay Eeyou High School
- Creen Health Board and Social Services Hospital
- Cree Health Board Building
- Chisasibi Government Building
- Société de l'assurance automobile du Québec's Building
- Eeyou Eenou Police Force Station

Commercial

- Waastookun Inn lodging
- First Nations Bank of Canada
- Chisasibimi gas station
- Chisasibi Center Inc. Commercial Center
- Kinwapt Cable Co Store
- Nothern Store
- Grand River Sports Store
- Petronor Gas Station
- Kathleen's Take-Out Restaurant
- Miichiwaap Restaurant
- Chisasibi's Retro Daze Café
- Ouwah Store
- Cree Mart Store
- Chistaptin - True Value Hardware Store
- Pash-Moar Restaurant
- Cody's Covenience Store
- Auberge Maanitaaukikw Lodging

Recreational

- Playground
- Chisasibii Baseball Field

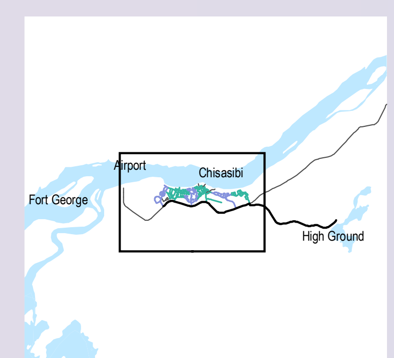
Cultural

- Catholic Church
- Elder's Camp
- Chisasibi Heritage and Cultural Center

Objectives

- Plan for secondary institutional and commercial nodes in the community.
- Maintain mitigation measures along the shore.
- Create mixed-use neighbourhoods that are interesting at the pedestrian scale.
- Explore housing alternatives such as tiny homes for elders and people living alone.
- Consolidate commercial streets, potentially by creating visual identities.
- Maximize the use of vegetation and the integration of green spaces.
- Introduce conservation, recreational and cultural zones.

Existing Land Use



Land Analysis | Land Use

Land Development

The built environment of Chisasibi started with a cluster pattern in the centre of the community, and is still established. However, this morphology was not maintained after 1998. Development later spread east and west of the centre. Since appropriate soil conditions for construction are not evenly spread across the territory, the morphology follows soil conditions creating an irregular, sinusoidal form. The community is spread along the riverfront for approximately six kilometres, although there is no contact between the various neighbourhoods and the riverfront.

Rectangular residential lots are distributed along the roads. The residential typology is generally the same across the community, and consists of one-storey, single-family dwellings, some with basements. However, because of the low availability of appropriate soil for construction and the major investments needed to build roads, service infrastructure and dwellings, this typology is not ideal for Chisasibi. In addition, these financial and technical constraints have resulted in a housing shortage. Therefore, two- and three-unit dwellings are becoming more common in the community. They are mostly semi-detached or two-storey buildings. The dominant architecture of residential buildings is postmodern.

Industrial, commercial and institutional buildings are built on lots of various sizes. They are generally two- to three-storey modern buildings.

Building Density

There are some patches of undeveloped lands in the built community because of soil conditions. In fact, most of these empty spaces either do not have the proper soil for construction or are too swampy and require extensive drainage work.

Building density is therefore categorized by neighbourhood. The following map shows the ratio between land occupied by a building and vacant land, per sector.

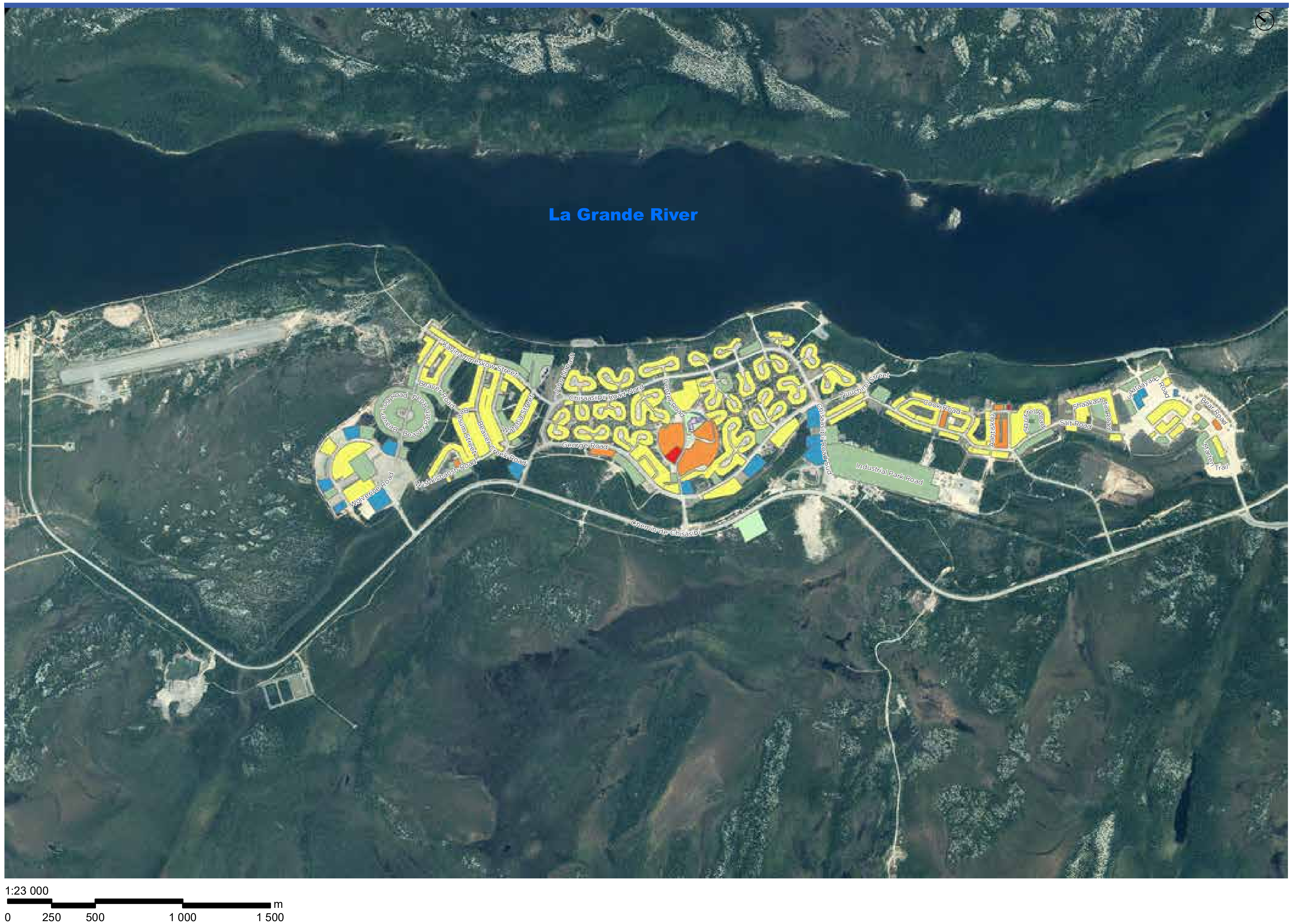
Density in Chisasibi is generally low. Most of the residential buildings occupy 15% or less of their lot. Clusters are not divided into lots; single-family dwellings are closer together, with significant empty space around them. It is important to mention that access to private spaces is important for community members, which is why they moved away from the original cluster morphology. In newer developments towards the east and the west, density is slightly higher, ranging from 15% to 20 %.

The town centre, with its larger institutional and commercial buildings, has the highest density ratio.

Objectives

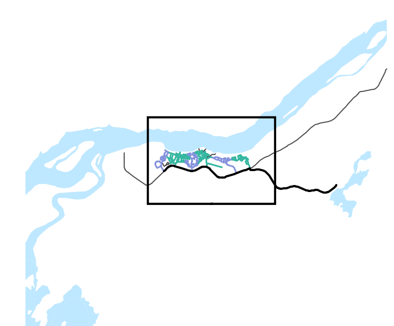
- Harmonize the built form of the community.
- Balance single-family dwelling typology with contemporary multi-unit dwellings so as to respect the morphology of the community but still move towards more sustainable development practices.
- Design higher density areas that provide a sense of privacy.
- Explore housing alternatives such as tiny homes for elders and people living alone.

Building Density



Soil Occupancy Coefficient

- Lower than 8,0%
- 8,1% - 15,0%
- 15,1% - 25,0%
- 25,1% - 40,0%
- More than 40%



Land Analysis | Land Use

Parks

A significant portion of the population is represented by young children ranging in age from 0 to 15 years. There is also a vast proportion of 25-44 year-olds. In the long term, Chisasibi should also see an increase in the 65-years-and-older age group, as the two other groups advance in age in the coming decades.

This growth has put pressure on the demand for different services in the community, and also for the recreational, cultural and sporting activities and infrastructures offered by the Community.

The community expects their recreational needs to continue to increase in the coming years. Moreover, the emerging recreation industry trend is expected to put even more pressure on the current infrastructure.

Parks and Green Spaces

Access to nature and the development of natural environments are very important issues for the Crees, allowing them to overcome the considerable degradation of their territory caused by industrial development and human activity in recent decades. Two of their main objectives are to increase the number of parks and green spaces and improve accessibility to them, and to protect natural environments of cultural and ecological interest.

By enhancing parks and green spaces and making them accessible, people have access to nature without having to leave the community. Reclaiming this daily link with nature is culturally essential. Several community events are organized in the parks and inside the various recreational infrastructures, including hockey tournaments, a bicycle race and “Run Chisasibi”, a marathon that encourages overall physical activity.

Parks and green spaces contribute to the health of the community. On the one hand, access to nature and social ties promote mental health. On the other hand, safe and friendly spaces encourage people to be more active. Exercise is important for maintaining people’s physical and psychological well-being.

Economic Benefits

Moreover, in recent years, tourism development has been in full emergence in the Eeyou Istchee region and it will be more visited in the coming years. Several factors support this situation. According to Statistics Canada’s Travel Survey of Residents of Canada, the number of visitors to James Bay was 76,000 in 2014 and 123,000 in 2015, an increase of 62%. [16]

Investing in the development of parks, green spaces and recreational infrastructures will make the community more attractive and will help to increase tourism in the community, which in return will generate revenue.

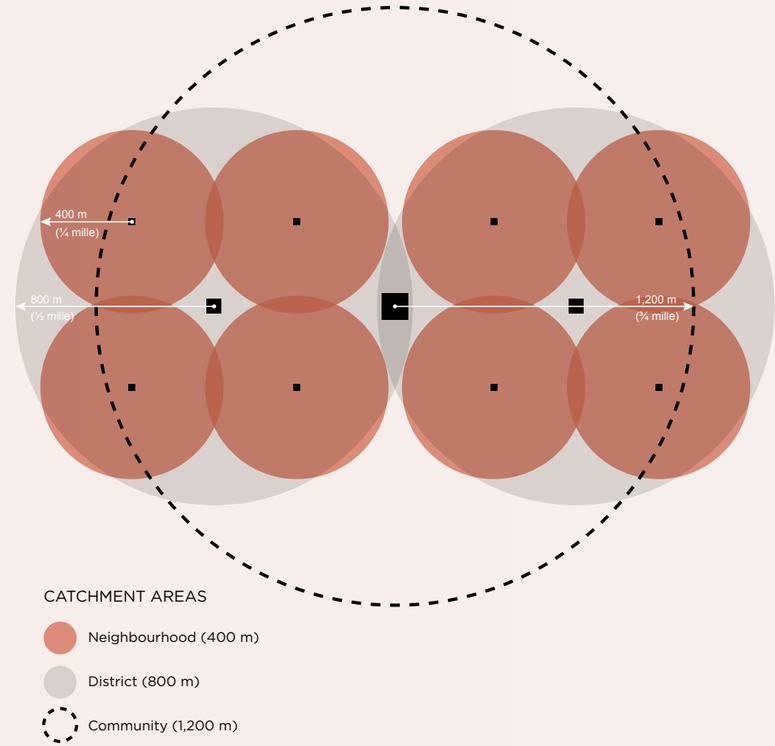
Current Parks, Green Spaces and Recreational Infrastructure Offer

The current recreation and parks offer in the community includes three children’s neighbourhood playgrounds, two baseball fields, two outdoor ice rinks, a 25-km pedestrian trail network, a fitness centre and a swimming pool. The community also owns an arena, but its current state of disrepair prevents its current usage; the construction of a new one is planned for the summer of 2021.

Distribution of Parks Across the Community

When planning the distribution of parks within a community, catchment areas are a great tool to quickly determine the number of parks needed in a city or a community. These catchment areas are based on reasonable distances that users need to cover on foot to access those parks. For example, a neighbourhood park should be accessible to users within a radius of 400 m. A theoretical model below illustrates the distances of catchment areas for municipal, district and neighbourhood parks.

THEORETICAL MODEL FOR AN IDEAL DISTRIBUTION OF PARKS



16. Tourisme Baie James, Mémoire déposé à la Société de l'assurance automobile du Québec dans le cadre des consultations publiques sur la sécurité routière, February 2017.

Sport and Recreation Trends by Age Group

Sports and recreational activities are very popular in Quebec. According to the Institut national de santé publique du Québec, in 2009-2010, more than 93% of people aged 6 to 74 participated in at least one sport or recreational activity during the previous year. Of course, this percentage varies greatly among the different age groups surveyed, as shown in the following table. As people age, they become less likely to participate in new activities.

Children

The increasingly sedentary lifestyle of children is a public health concern. The use of electronic devices is starting younger and younger as a result of the availability of intuitive devices such as tablets and smart phones. It is thus important to encourage children to develop an active lifestyle early on in order to avoid health problems such as obesity, high blood pressure, and diabetes.

It is recommended that children engage in at least one hour of structured physical activity and one hour of free play every day. The accessibility of stimulating play equipment, adapted to their needs and located close to where they live, is an important part of making sure that children get more physical activity on a daily basis.

Youth

Over the last few years there has been an observable increase in the practice of soccer as well as a variety of other recreational activities such as bicycling and swimming. These activities are practiced across all younger age groups, i.e. from 6 to 24 years old. For the youngest, the most popular recreational activity available in parks continues to be free play in playgrounds. Water play and swimming also continue to be popular activities among youth.

With regard to the popular activities practiced in parks by teenagers aged 12 to 19, walking, cycling, swimming, baseball, running, rollerblading, volleyball, baseball and hockey are the most common. Basketball is also popular not only among teenagers but also among younger age groups. Baseball is currently experiencing an upswing in popularity over the past few years and this will likely continue. Likewise, skateboarding and rollerblading continue to gain popularity among teenagers. In terms of the most popular winter activities, ice-skating remains very popular. However, the practice of this activity is sometimes made difficult by weather conditions.

Adults

Walking, cycling, and swimming are the most widely practiced activities among adults. Gardening, exercising at home, and social dance are also common activities. In terms of activities practiced in parks, adults enjoy rollerblading, running, ice-skating, baseball, volleyball, tennis, hockey and basketball, albeit in more modest numbers. Physical training and fitness are also popular activities, including stretching and using exercise equipment in parks.

Seniors

Seniors are a rapidly growing group and they generally have more time to dedicate to one or more recreational and sports activities. However, contrary to other age groups, seniors are less likely to try new activities. The activities preferred by active people in this age group tend to be non-competitive, such as walking, cycling and swimming.

Classification of Parks

The Community Park

The community park is a large green space where one finds large-scale, specialized, leisure equipment. It generally involves access by car or bicycle.

- **Range of activities: arena, sports fields, pool, play equipment;**
- **Required surface area: 20 to 300 ha;**
- **Service radius: 1200 meters;**
- **Users: families, adults, teenagers.**

The District Park

The district park is generally a fairly large park. Consequently, it serves a large clientele and is situated within a radius of 800 meters (1/2 mile) of the homes it serves. It addresses itself to all age groups and could include a park chalet, parking, swimming pool, water games, sports fields (baseball, softball, football, soccer), tennis courts, basketball courts, ice hockey rink and seating areas. It can also include areas with play equipment for the 2-5- and 6-12-year age groups since it serves the local clientele as well.

The principal vocation of the district park is to offer important services and equipment requiring large areas that would not be found in smaller parks, such as a chalet, parking, pool/water games, sports field.

A district park can give importance either to its sports fields or to its natural leisure areas. Sports activities: a sports field area is generally well equipped and illuminated, and can service groups coming from the whole district; the park chalet acts as a nucleus for the animation and activities of the district. Leisure area: area with natural characteristics favouring social activities, family outings and group meetings; it can also offer light activities such as fitness trails and nature study areas.

- **Range of activities: sports fields, sports activities, children's area with play equipment;**
- **Required surface area: 4 to 20 ha;**
- **Service radius: 800 meters-users: adults, teenagers, children.**

Neighbourhood park

The neighbourhood park is generally a small park. Its equipment is complementary to that found in the district parks, and does not include any heavy sports equipment or activities. It is situated at walking distance of the houses it serves. Its service radius is 400 meters (1/4 mile). It is a park for daily use and may include: children's play area, teenage play area, adult seating area, multipurpose hard surface area, free play area. It may also include a shelter, tennis courts, adult games, and water games or a wading pool.

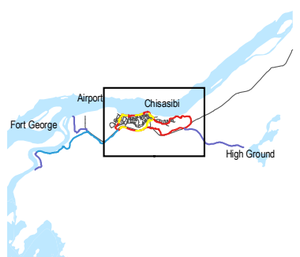
- **Range of activities: children's play areas (2-5/6- 12), light-use sports fields and equipment, rest areas;**
- **Required surface area: 0.4 to 4 ha-service radius: 400 m;**
- **Users: adults, teenagers, children.**

Parks and Recreation

1:22 000

0 250 500 1 000 1 500 m

- Neighborhood Park Area (400 m area)
- District Park (800 m area)
- Blue Trail
- Proposed trail
- Red Trail
- Yellow Trail
- Red and Yellow Trail
- Playground
- Fitness Centre
- Swimming Pool
- Boat Launching Ramp
- Arena
- Exterior Hockey Rink
- Baseball Field



Land Analysis | Land Use

Parks, Green Spaces and Recreational Needs

Based on the population, the dominant age groups and the distribution of parks in the community, the current offer in parks and recreational infrastructures does not meet community demands. Moreover, the number of parks available for community members is insufficient, resulting in a lack of walkable access to local green spaces.

Objectives

- Analyse the needs and trends regarding parks and recreational activities.
- Consulte the community members to adapt the offer.

Actions

- Create a Parks and Recreation Master Plan.
- Conduct an online survey with the population.

Land Analysis | Land Need Assessment

Land Needed for Housing

As outlined previously, Chisasibi's housing study has provided an estimate of housing needs for the next 20 years. To solve overcrowding issues, the occupancy target is 3 persons per unit. As of 2019, there are 924 dwellings currently available to the population and a shortage of 769 units.

Year	Total Population	Units Required	Shortage
2020	5182	1727	803
2025	5721	1907	983
2030	6316	2105	1181
2035	6974	2325	1401
2040	7700	2567	1643

The CCP development plans consider the land needed for the construction of new units. Since the housing units that require major repairs already have serviced lots, their reconstruction or renovation are not included in the shortage, although the need for funding remains.

Currently, about 76 units are provided to workers coming from outside of the community, which represents about 8% of the housing available in Chisasibi. Considering the Cree Health Board's regional projects planned in the community, the land need assessment assumes the hypothesis that 10% of the units required should be added for workers to meet the demand.

Year	Units Required	Units for Workers	Additionnal units required for workers
2020	1727	173	97
2025	1907	191	115
2030	2105	211	135
2035	2325	233	157
2040	2567	257	181

Land need for other uses

The calculations of the land superficy needed for other uses over a 20-year period are based on the 2% assumed population growth per year. Services required to answer the needs of the population should grow proportionnally to the population. The calculation are based on the following growth formula:

actual land use x (1 + 0.02) ^ number of years

Projected land need by land use by hectare, based on 2% population variation

Use	2025	2030	2035	2040
Commercial	9.1	10	11	12.2
Institutional	28.8	31.8	35.1	38.8
Industrial	12.7	14	15.5	17.1

Additionnal hectares to be developed by land use by hectare

Use	2025	2030	2035	2040
Commercial	0.9	0.9	1	1.2
Institutional	2.7	3	3.3	3.7
Industrial	1.2	1.3	1.5	1.6
Total	4.8	5.2	5.8	6.5

Total land used by use in hectares, 2020	
Residential	93
Commercial	8.2
Institutional	26.1
Industrial	11.5

Land used for housing, 2020	93 hectares
Number of dwellings, 2020	1 000
Dwelling density, 2020	11 dwellings per hectare

Minimum housing needs on a 20-year period	1 824 new dwellings
Land needed with 2020 density in 2040	166 hectares

Empty lots available, 2020	7.9 hectares
Land available in future eastern development sector, 2020	46.9 hectares
Land available in future southern developement sector, 2020	145.3 hectares
Total available land	200.1 hectares

Source : Cree Nation of Chisasibi. (2019). Cree Nation of Chisasibi Five Year Plan for Homeownership.

Existing Land use Surfaces

Existing landuse

- Commercial (8,2 ha)
- Industrial (11,5 ha)
- Institutional (26,1 ha)
- Residential (93,0 ha)

1:17 000

0 250 500 1 000 1 500 m

4.
» DEVELOPMENT PLANS

Development Plans | Community Projects

Today, in 2020, the community is planning an impressive number of structural projects for Chisasibi. The opportunity must be seized to plan the implementation of these projects in a coherent manner, and to use the development boom to integrate community needs. The following section provides the strategies and land use design plans that will guide construction over a 20-year period.

In regards to development objectives, the following projects have already been confirmed:

Health Board projects

- Regional hospital
- Birthing home
- Rehabilitation centre
- Long-term care units for elders
- 80 dwellings

School Board projects

- Relocating and replacing James Bay Eeyou High School

Recreational projects

- Arena

Industrial projects

- Relocating industrial zone near the airport
- Developing new industrial lots

Residential projects

- New eastern development

Other projects under discussion in the short term

- New college for higher education
- New fire hall
- Covered outdoor ice rink
- Little league baseball court
- Track field
- Youth centre
- Greenhouse
- Cemetery extension
- Grocery store

Development Plans | Planning Strategy

With the community, 10 main planning strategies were identified.

1. **Consolidating the existing built community.**
2. **Developing and consolidating the sector east of the existing built community.**
3. **Relocating the industrial zone.**
4. **Developing the sector south of James Bay Road.**
5. **Creating a health hub.**
6. **Creating a recreational hub.**
7. **Optimizing the housing potential throughout developments.**
8. **Protecting and preserving culture and traditional values.**
9. **Setting forth the beautification of the community.**
10. **Protecting biodiversity.**

Chisasibi | 2040

FORT GEORGE ISLAND

HIGH GROUND

Development Plans | General Interventions

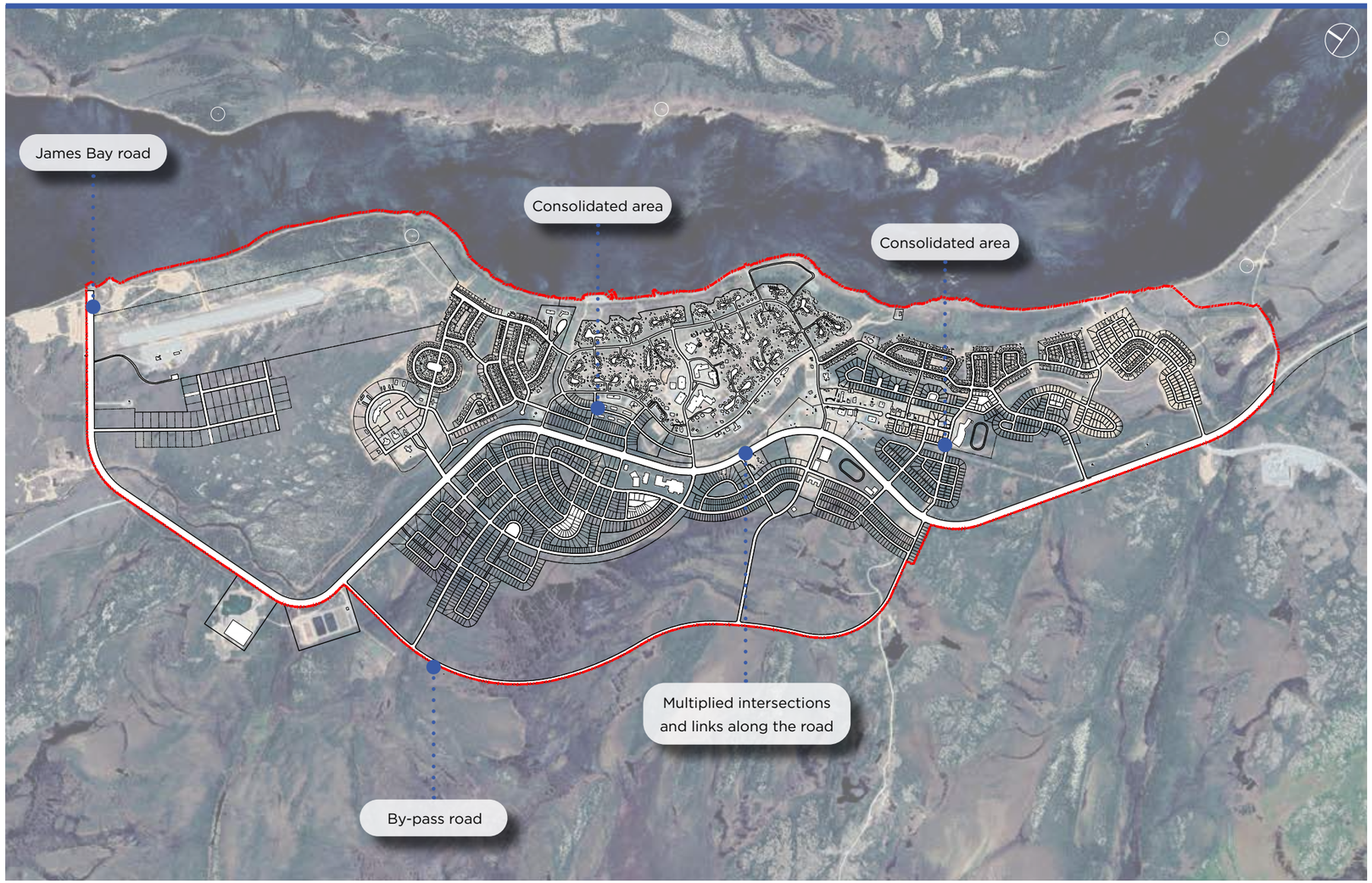
Roads and Form

The 20-year development plan respects the original settlement of Chisasibi along the river and the James Bay road, but attempts to slow down the linear spread of the community in order to optimize infrastructure and land use. When soil conditions permit, the existing built environment is consolidated. Development will then continue south of the James Bay road, creating central axes.

James Bay road remains the community's main road, connecting it to the rest of the region and serving as the evacuation road to High Ground. Every sector has an intersection that allows efficient connection to the James Bay road. Intersections are multiplied where important services - such as the hospital - are located, where evacuation logistics might be laborious.

To prevent possible traffic issues and reduce nuisances along the James Bay road, a by-pass road is proposed. It will divert unnecessary circulation out of the built environment, which will make street and pedestrian connections between the existing and future developments safer.

The arterial and collector streets are designed to allow a built form that respects the identity of the community. It recalls the former built form of Fort George and reclaims the curvilinear layout of the clusters. Streets are however designed to accommodate extensive snow removal operations. Some features of the Canadian suburban layout are thus necessary, such as a wide turning radius at street corners, and four-way intersections. The street pattern also allows construction to be distributed so that facades are protected from dominant winds.



Constraints and Green Spaces

Development plans include conservation areas that are defined depending on environmental constraints. They contribute to preserving and valuing ecosystem goods and services. Within the built environment, they represent areas unsuitable for construction, either because of wetlands or soil conditions. Along the river, conservation areas provide protection from erosion and natural water drainage.

Trails, street furniture and other low impact landscaping can be added to conservation areas for residents to enjoy. From this perspective, a riverfront park and central park can be developed over time.

All new neighbourhoods have access to parks and playgrounds, meeting the needs of the growing population. They offer outdoor public destinations and gathering places within the community. These green spaces also allow for beautification of the built environment.

FORT GEORGE ISLAND

Park Conservation

Development Plans | General Interventions

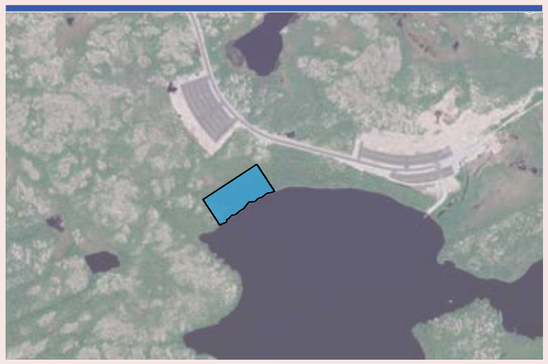
Land Use

Land uses are distributed to create a main central node, and complementary secondary nodes, where mixed uses are found. The central node developed naturally over time within the existing community. It is made up of two axes, Mammuu road (north-south) and Chisasibi road (est-west), where institutional and commercial uses were already established. However, a linear spread of the community would have gradually reduced this central factor. The 20-year development plan reinforces the central node as new commercial and institutional uses are planned along both roads.

Mamuu road is extended south of the James Bay road and the regional hospital will occupy the intersecting lot, creating a Health Hub in the middle of the community. Diversified uses along the extension of Mamuu road solidify its central nature. This axis will create continuity between the western institutional sector and the rest of the development.

Another existing concentration of commercial and industrial uses was established along Chisasibi road. In the 20-year development plan, Chisasibi Road is also extended. Recreational, commercial and institutional uses are distributed along the intersection, creating a Recreational Hub. The future college is planned within the Recreational Hub, allowing students to have a campus-like environment and easy access to amenities.

The central and secondary nodes create destinations in the community where urban activities take place. This contributes to animating the areas, as people will gather in those places. Moreover, their locations allow for as many people as possible to live close to dynamic spots and services, which decreases car use and optimizes residents' time.



HIGH GROUND

Development Plans | Priority Sectors

SECTOR 1
The new indutrial sector

SECTOR 2
The community center

SECTOR 3
The eastern residential development

SECTOR 4
The southern development

Development Plans | Industrial Sector

As Chisasibi is growing, it's current industrial park is increasingly taking a central position in the community. and multiple associated nuisances (nois, dust, heavy traffic, etc.) are experienced by adjacent uses. Thus, the community has expressed the desire to relocate the industrial park.

The new industrial sector is proposed next to the airport, which is also near the marine terminal. The relocation represents an economic developement opportunity to build a transportation hub for air, land and maritime cargo in Chisasibi, to serve the cargo needs of the northern communities of Quebec and Canada, around James Bay and Hudson Bay.

The transportation hub will require the extension of the airport strip, hence the plan leaves enough space between the airport and lots to accomodate a new strip.

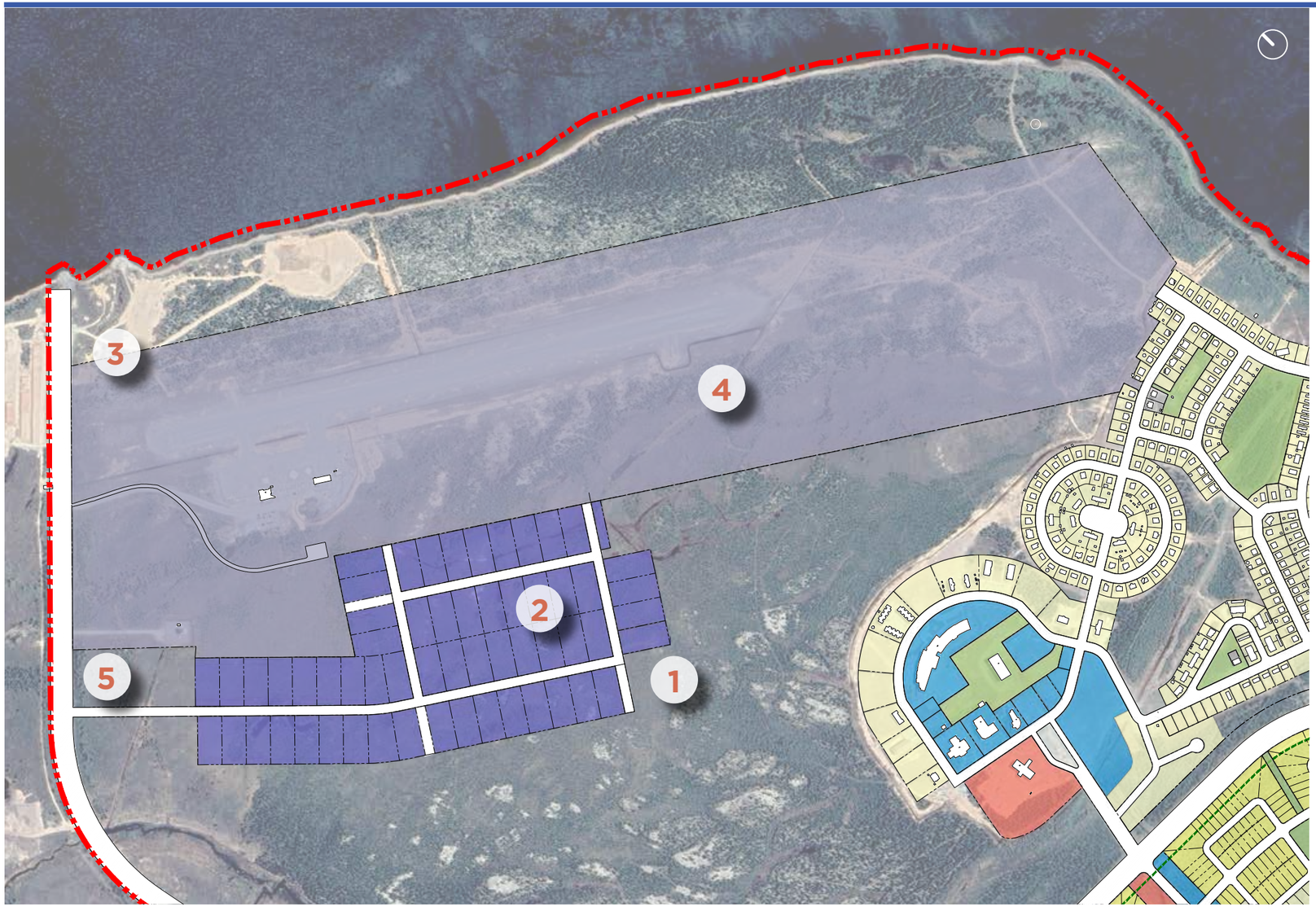
Urban service infrastructures will be extended and adapted to the industrial sector. Also, as the route connecting the airport to the James Bay road will be increansingly in demand - namely for the regional hospital and emergencies - a secondary road and accesses to the airport are planned to separate industrial transportation needs and reduce pressure on James Bay road.

Integrated Community Projects

1. **Relocating industrial park near the airport**
2. **Developing new industrial lots**

Opportunities Provided

3. **Creating a transportation hub**
4. **Extending the airport**
5. **Seperating industrial traffic from circulation**



Legend

- Residential
- Institutional
- Commercial
- Industrial
- Park
- Conservation

Development Plans | Central Sector

Currently, between James Bay road and the cluster area, a significant portion of land is undeveloped. The sector is already serviced by some infrastructure, and can be developped rapidly at reduced costs. Optimizing the unused space allows to efficiently use available resources before developing new areas. Moreover, the community needs lots quickly to answer for the urgent housing demand.

The consolidation of the central area favours the distribution of commercial and institutional uses along Mamuu road (north-south) and Chisasibi road (est-west) to reinforce the central and attractive functions of these axes. They also create a mixed-use environment.

To the west, the development offers a realistic balance between single-family and multi-family buildings. Single-family detached homes are concentrated more towards the west, to preserve the interface with the typology of the adjacent existing developments. Multi-family buidlings create a denser area, and maximize the number of persons having access to services by walking. The existing cemetery - which needs to stay in place because of traditional and logistic concerns - will be extended and landscaped so the interface for the adjacent lots acts as a green space.

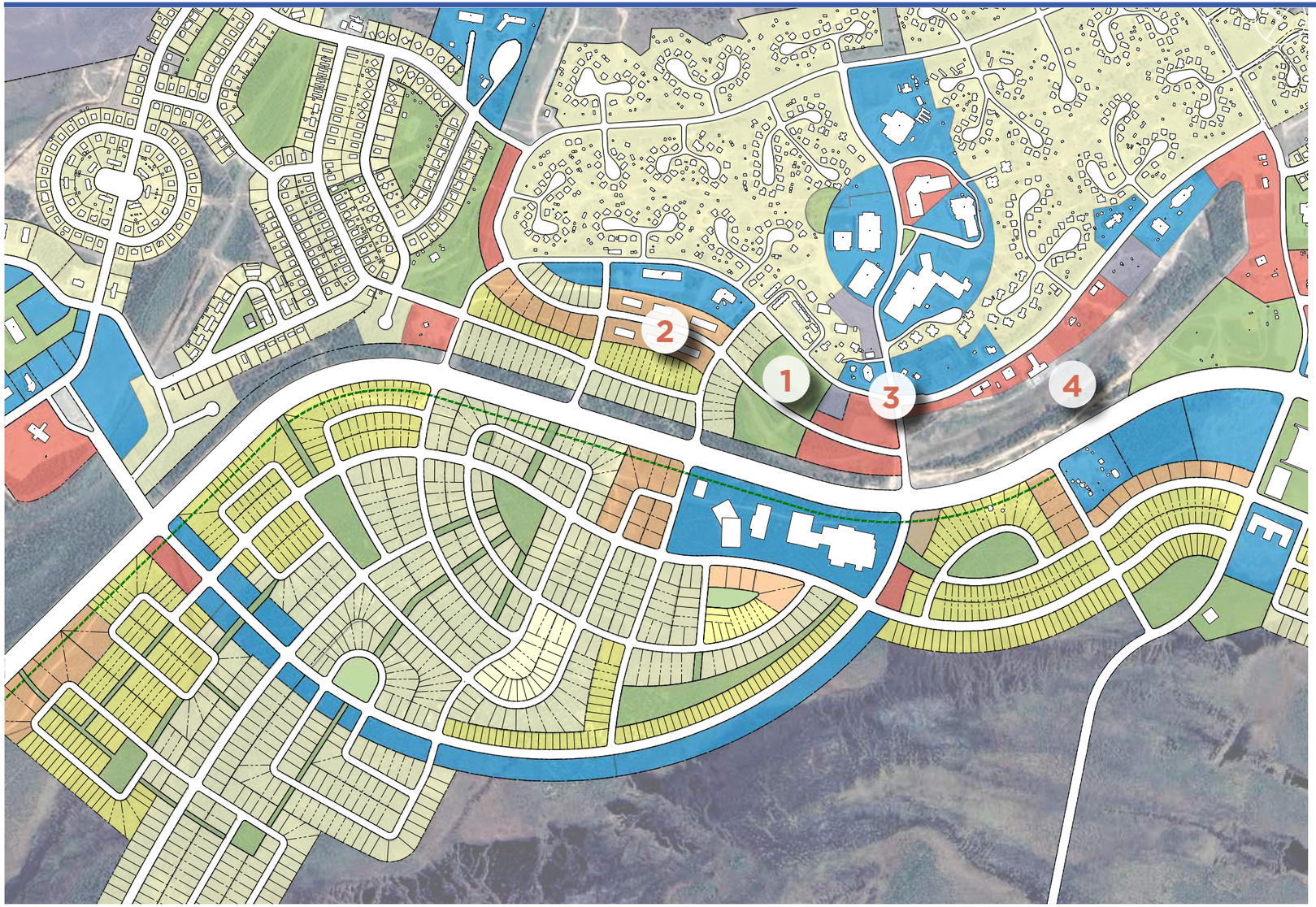
To the east, buildings can be erected along the street, but the remaining soil is unsuitable for developement. Designed as a conservation area, it could be landscaped carefully, to create a central park in the community and provide more connections between sectors. The existing baseball fields in that area should be integrated in the park concept.

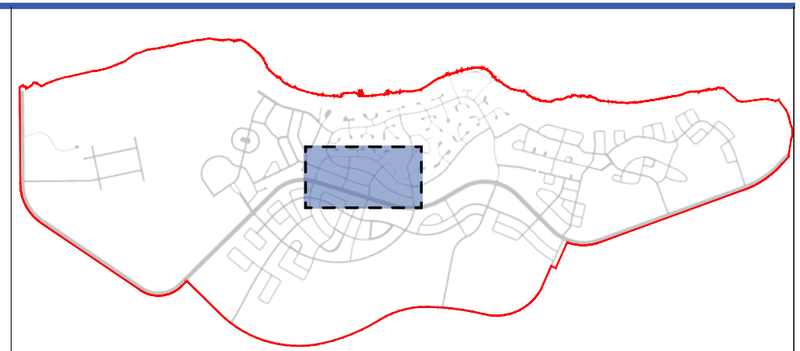
Integrated Community Projects

1. **Extending the existing cemetery.**
2. **Providing lots for the 80 units project of Health Board.**

Opportunities Provided

3. **Consolidating the central sector**
4. **Designing a central park**





Legend

- Residential
- Institutional
- Commercial
- Industrial
- Parks
- Conservation

Development Plans | Eastern Residential Sector

The relocation of the industrial park provides the opportunity to consolidate the community's eastern sector and better integrate new residential units into the built fabric of Chisasibi. It must be noted that the relocation of the industrial park is an iimportant investment that is planned in phases. Therefore, industrial buildings will gradually be replaced with time.

The proposed street grid follows, as much as possible, the existing infrastructure to reduce the conversion costs. This imposes the requirement to keep the straightline design of the existing industrial road. The new subdivision connects to James Bay road and is linked to the existing neighborhoods of Chisasibi.

Because a section of the industrial park will stay in place in the first phase of the relocation project, it is proposed to limit the use of the streets in the new residential area by industrial traffic. Therefore, until the relocation project is complete, the industrial road should be interrupted after the Community Garage while allowing u-turn manoeuvres of heavy vehicles. This will avoid the use of the residential streets by large trucks and machinery, while maintaining the current access itinerary for the remaining businesses.

At the time the Master Plan was prepared, the location and building plans for the new high school were already approved. The school will give the neighbourhood a dynamic, but is accompanied by some constraints regarding circulation since school buses run in the morning, at lunch and the afternoon. The school is therefore implemented along a north-south road designed to accomodate the circulation and drop-off of buses, while keeping them away from local residential streets.

The proposed design avoids most of the wetlands present just east of the current industrial park. Preserving the wetlands also reduces the costs of draining the new subdivision. In order to keep sections of the existing forest, the subdivision design integrates a series of green spaces and buffer zones between the remaining industrial sector and other residential subdivisions. By doing so, a large number of the new lots have a direct access to a preserved green space. Those buffer zones can also be use to create a path network within the subdivision, enabling its residents to walk within the subdivision, or to access other parts of Chisasibi. Some of the proposed green spaces can be turned into community park areas for the benefit of the community members, especially the youths. Some mixed-used lots are reserved that could host services convenient for surrounding uses.

Integrated Community Projects

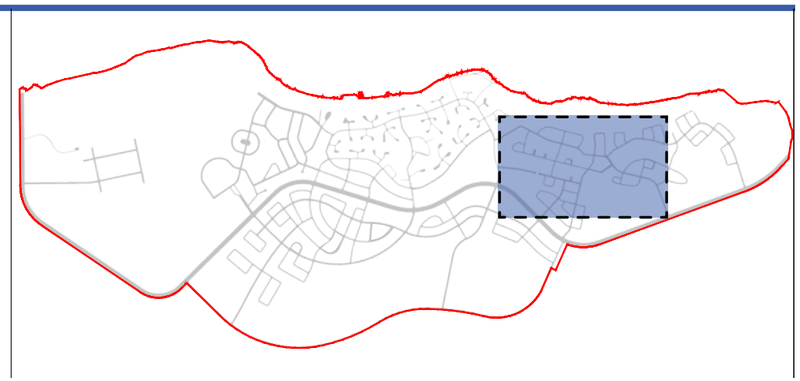
1 **New high school**

2 **New estearn sector**

Opportunities Provided

3 **Creating a mixed-use corridor**

4 **Creating a new connection with the central node**



Legend

- Residential
- Institutional
- Commercial
- Industrial
- Parks
- Conservation

Development Plans | Southern Sector

The community's health and recreation projects require large lots, which are difficult to integrate into the existing community. The built community is already almost entirely developed, except for the centre, which would not be able to house all these projects. At the same time, it is important to place them in a manner that is optimal for sharing resources, which is why scattering the projects across the community is not an ideal scenario. Moreover, medium- and long-term community projects will also eventually require new lots, especially for housing.

The community of Chisasibi wants to take this opportunity to develop the sector south of the James Bay road that is currently empty. The soil conditions are suitable for construction of larger buildings. This solution will also allow development to be concentrated towards the centre of the community before continuing to spread in a linear fashion.

Urban Form

The existing concentration of vegetation and wetlands will be preserved in the sector. This protects biodiversity and reduces costs of development. As such, the design layout follows the vegetation and wetlands. The street grid and urban design recall some cultural aspects related to the devleopment of the community.

Mobility

The new development integrates a street hierarchy by providing collector and local streets. This will help control traffic in residential areas and provide easier circulation throughout the development. Connectivity with the existing community is also maintained, by extending the existing intersections with the James Bay road. These roas are adapted for snow removal, and could eventually host different mobility solutions such as shuttles.

Multiple pedestrian links are created with the current community trail and between blocks and parks, to prioritize walking.

Green Spaces

Green spaces and parks are distributed in the design to offer an appropriate proportion of green spaces to population. Along the wetland that will be preserved, a conservation area with a promenade will be reserved and act as a buffer to development. Higher density buildings are prioritized around green spaces to compensate for having less of a backyard than single-family dwellings.

Housing

The community of Chisasibi has gone through many intense changes in their way of life in the past, from being entirely relocated, to trying a cluster layout that didn't quite work, then to housing that isn't quite appropriate or overcrowded. The population is also used to being in nature, having acces to a lot of land, and that is part of how they live. Therefore, even though density allows to save on the limited resources available, bringing the community towards denser residential developments has to be a gradual process. In the southern sector, the single-family typology is maintained even though they are in denser sectors, to continue to offer the possibility to the community.

Multi-family buildings are still proposed in order to develop the typology in a way that works for the community. In the short-term, these typologies will be appealing to the younger population or single persons, to elders and workers. The denser buildings are therefore proposed near the center and services to accomodate this population.

Mixed-Use Sector

Commercial lots will be reserved along with the integration of institutional and recreational projects within the development. Ultimately, this will create mixed-use neighbourhoods, where sustainable mobility is privileged.

Development Plans | Southern Sector

Recreational Hub

To start the southern extension of the community, Chisasibi road already has infrastructure that has been adapted to support more pressure. Its extension will be carried out first, as the arena project is planed in that sector and that construction will start as of 2021. The location is convenient, as it is close to the centre of the community and to the eastern developments.

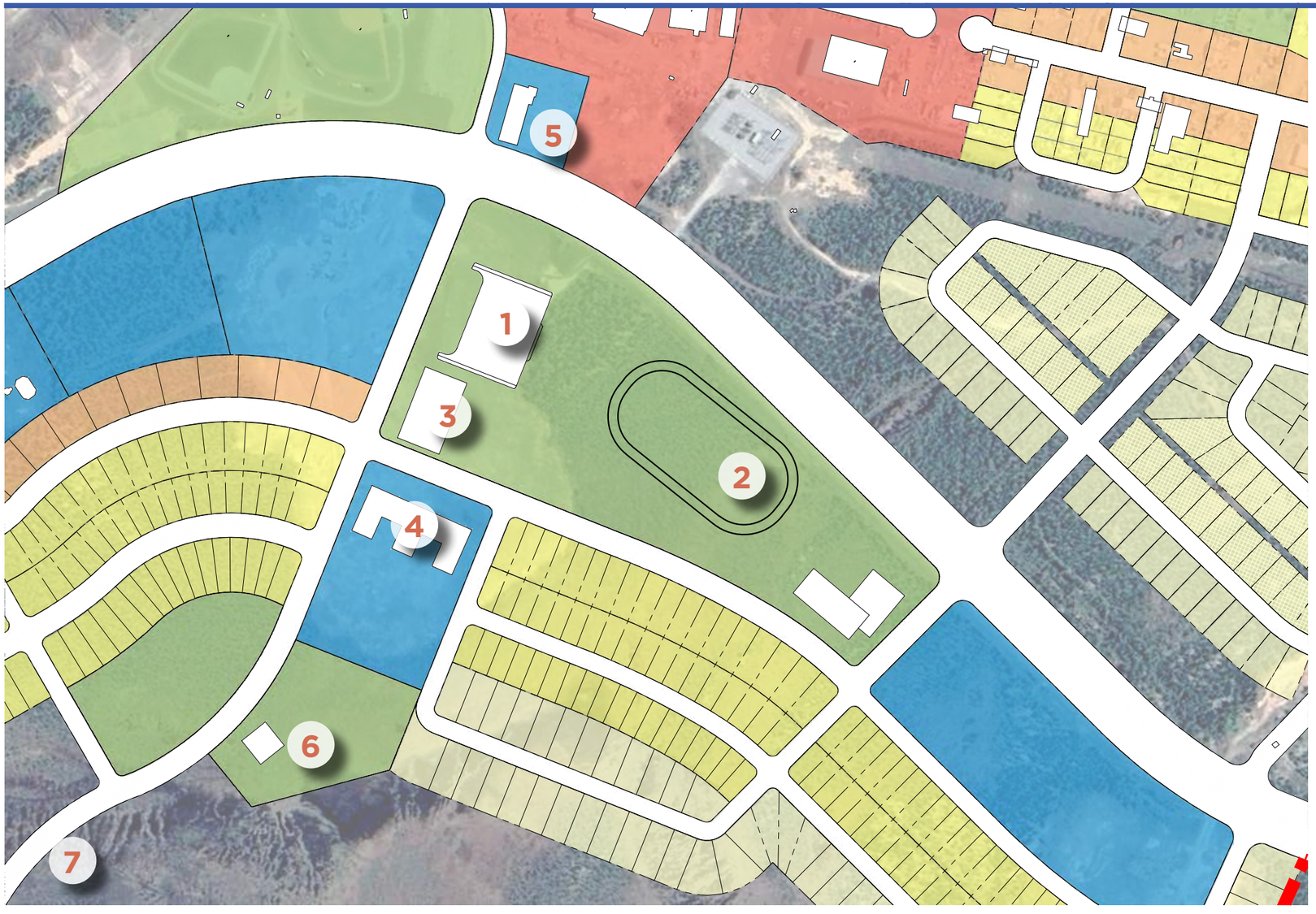
This part of the sector is therefore envisioned as a recreational hub, offering green and recreational spaces close to a maximum number of residents, to the new high school and to the current baseball fields. The arena project will be the first building to be constructed in the sector in the short term. It will be followed by an outdoor 4-season rink, a little-league baseball court, a youth centre and a track field. Parking will be optimized among uses, and pedestrian trails will be integrated between buildings. Eventually, a college can be implemented in the sector, creating an enjoyable campus for the students. Mixed-use lots will be reserved for eventual commercial needs that would complement the area. The recreational hub will form the first secondary node in the community.

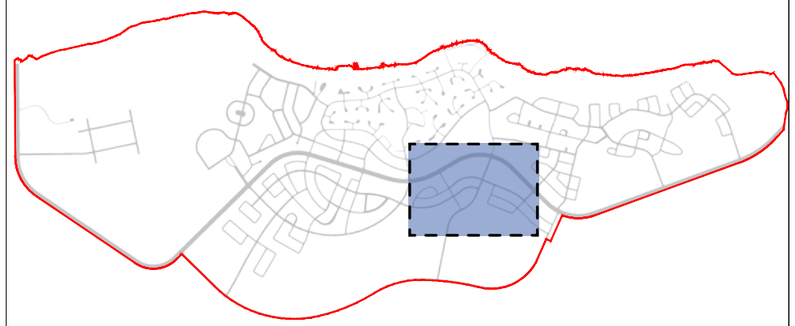
Integrated Community Projects

1. **Arena**
2. **Baseball court**
3. **Préau outdoor rink**
4. **College**
5. **Fire hall**

Opportunities Provided

6. **Minimizing the impacts of the relocation of the Elder's Camp by design a space near the wetland and park.**
7. **Eventually extending Chisasibi Road to continue development and maintain it as a collector road.**





Legend

- Residential
- Institutional
- Commercial
- Industrial
- Park
- Conservation

Development Plans | Southern Sector

Health Hub

This part of the development concerns all the health projects. The objective is to logically follow the community's capacity to build infrastructure, while strategically placing uses. Spreading west from the recreational hub, residential lots will be reserved. Lots will then be prepared to house the regional hospital and related projects.

The sector will have a direct connection to the James Bay road, which connects to the airport. Emergency cases arriving from the airport will have quick access to the hospital.

The location is appropriate for the hospital because the hospital will be relatively equidistant from the different parts of the community. it links to the centre of the community, where services are available and government and board offices are installed. Hospital patients and employees - who will be in town for shorter periods of time - will be able to live without a car.

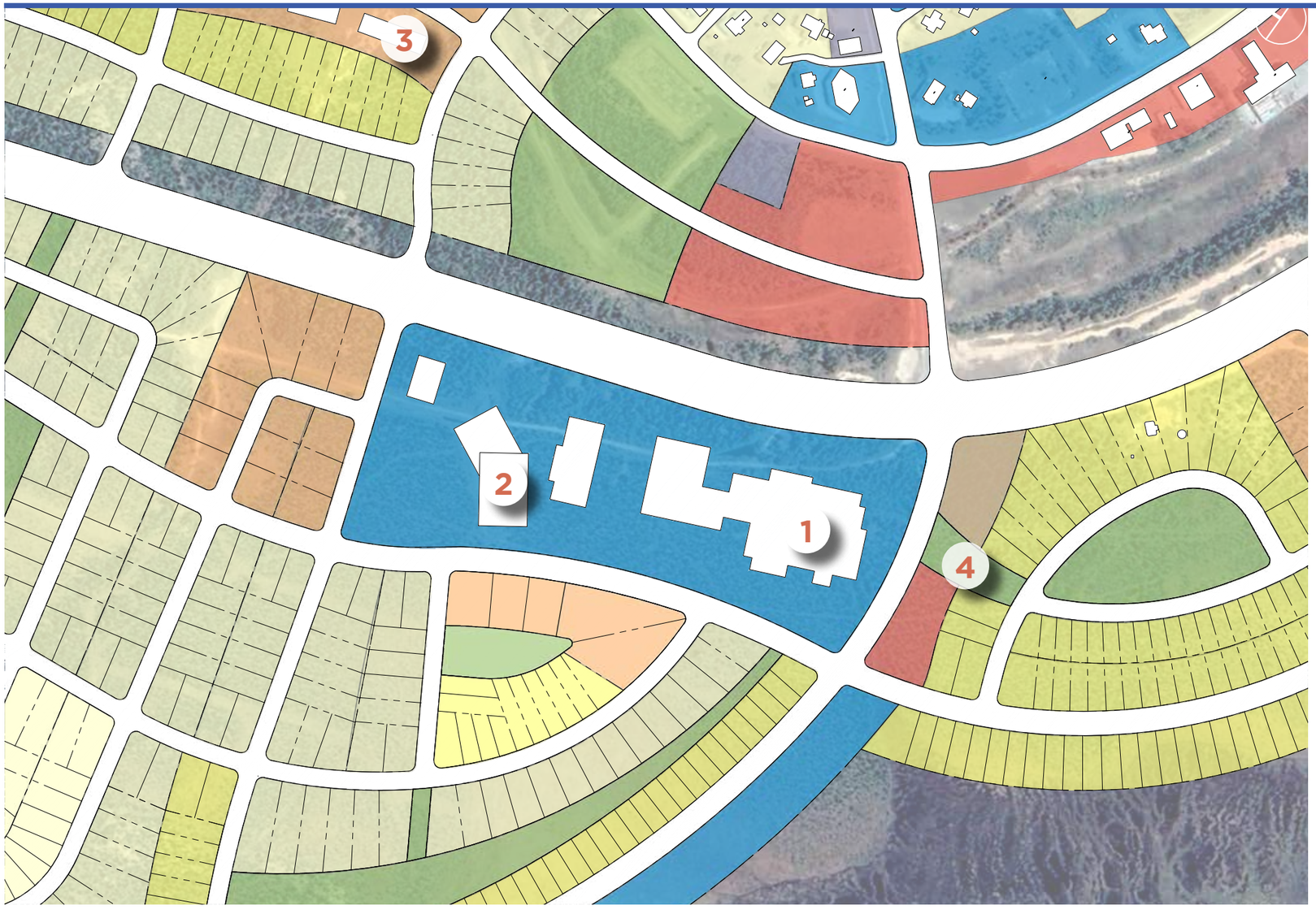
A new healing park will be developed to link all the health facilities together and to favour healing and relaxation within the community. It will also be connected to the green space network.

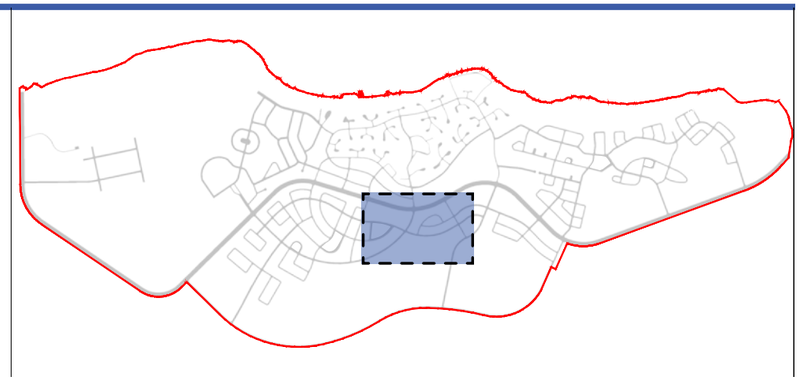
Integrated Community Projects

1. Hospital
2. Health Buildings
3. Lodging for workers and patients

Opportunities Provided

4. Creating a healing garden and paths.





Legend

- Residential
- Institutional
- Commercial
- Industrial
- Park
- Conservation

5.
PHASING STRATEGY

Phasing Strategy

This phasing strategy was established to ensure the sound development of the Cree Community of Chisasibi over the next 20 years. It was based on the land need assessment and the existing housing conditions, presented earlier in the document.

Specifically, this strategy has the following objectives :

1. Develop Chisasibi over 5 incremental phases;
2. Plan for a reasonable provision of residential units balanced over the next 20 years;
3. Ensure the issue with existing shortage of units is resolved;
4. Plan for an increase in commercial, institutional and industrial uses, proportional to the increase in population and housing;
5. Prioritize areas that are already planned to be built over the short term; and
6. Phase the construction of roads in order to distribute the cost of infrastructure over the next 20 years, while ensuring that each new sector has a complete road network that is well-connected to existing roads.

In order to achieve the above-mentionned objectives, development of the Cree Community of Chisasibi was phased as follow:

PHASE 0 (2020)

Development currently under construction

This phase comprises all developments that are currently under construction or planned to be built by the end of 2020. Also, this phase incorporates vacant lots that are part of already-built sectors.

PHASE 1 (2020-2025)

South-Central Sector

This phase is the first one of this plan and incorporates the south-central section of the proposed plan. This phase is also centred on the upcoming regional hospital, which will require the provision of 80 units for medical staff.

PHASE 2 (2025-2030)

Arena Sector

The second phase of this plan incorporates a wide range of uses, including parks and institutional (mixed-use) uses, as well as various residential lots, located east of the South-Central Sector. This phase is also centred on the upcoming arena, which will have a courtyard, parking and other recreational facilities.

PHASE 3 (2030-2035)

Eastern Sector

The third phase incorporates lots located in an eastern portion of the community, where a new high school is planned. Also, the existing industrial uses in this sector are planned to incrementally shift to more commercial uses.

PHASE 4 (2035-2040)

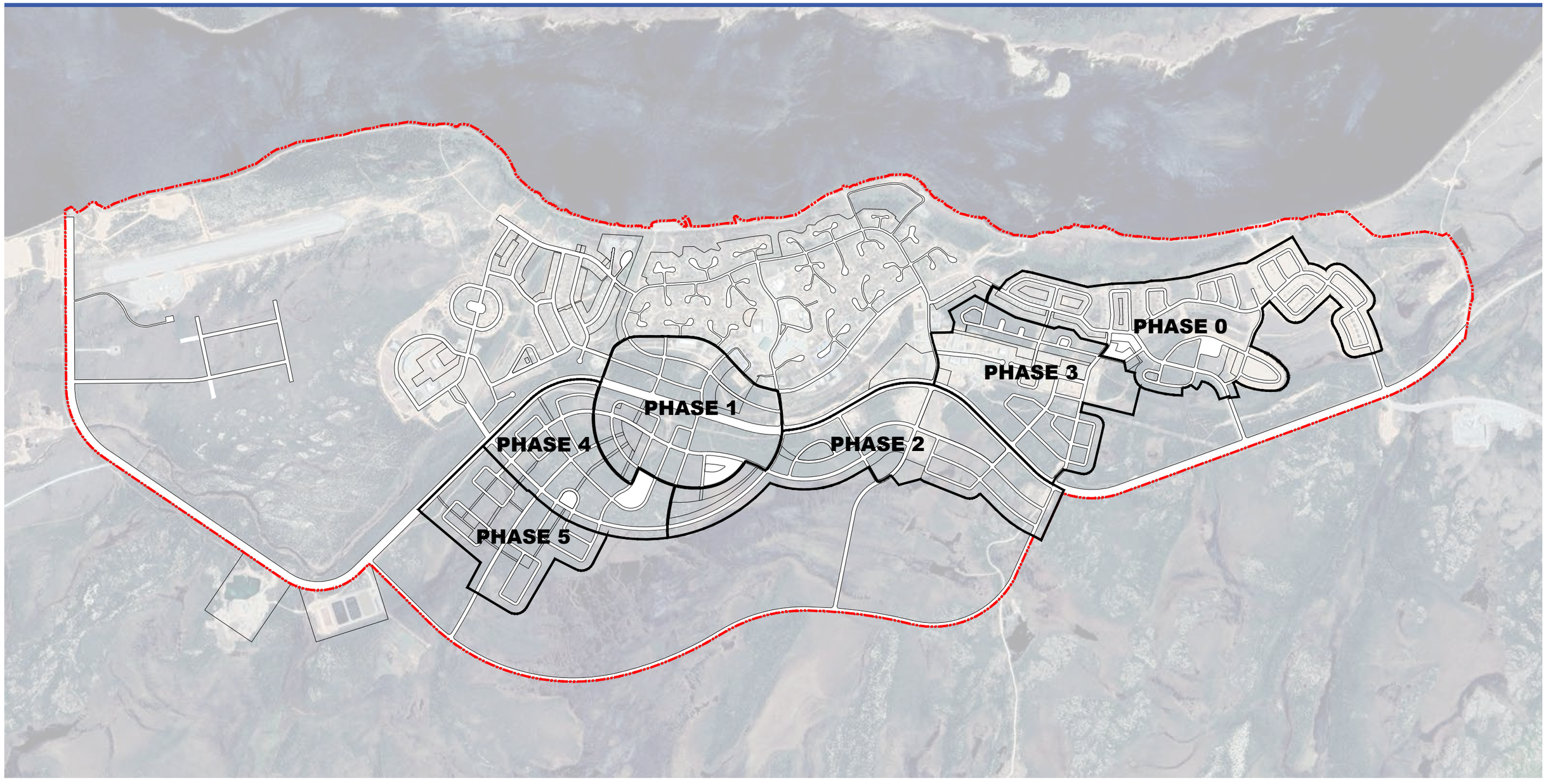
Western Sector

The fourth phase incorporates the lots located in the western portion of the community and just south of the South-Central Sector.

PHASE 5 (2040 & beyond)

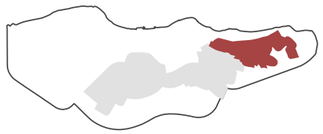
The final phase of this plan goes beyond the scope of this plan and was prepared for any growth that might occur beyond 2040. However, it was also prepared in the event that Chisasibi experiences a greater increase in population than foreseen in this plan. This will ensure that if any growth does happen beyond what was planned, the community as a whole will still retain the vision established in this document.

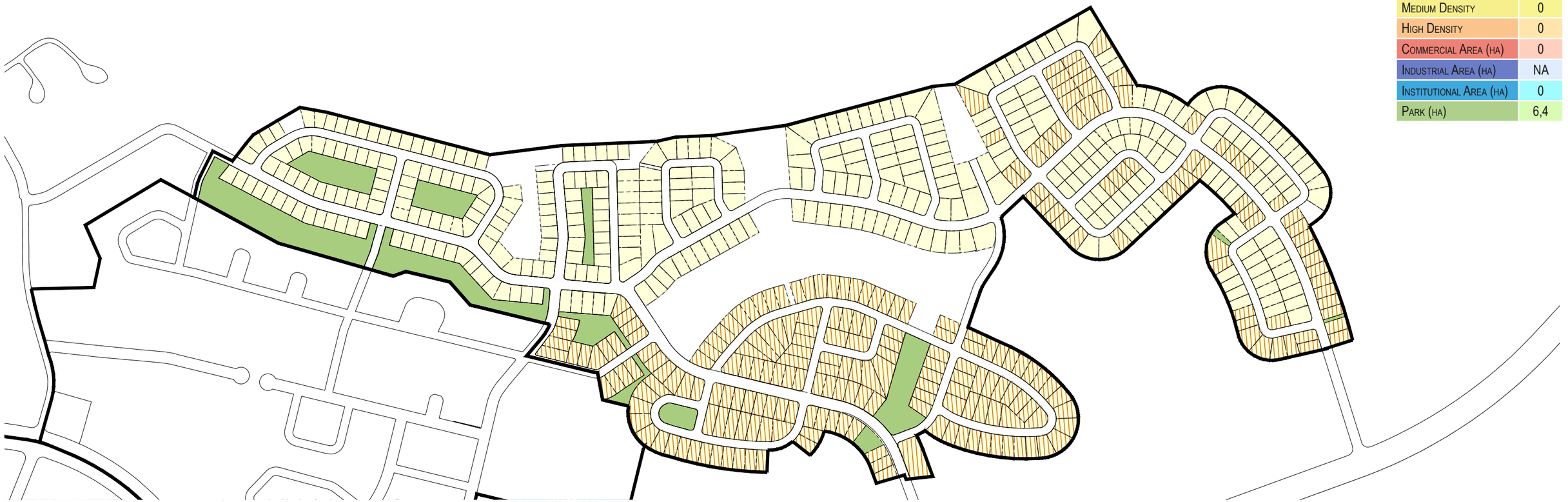
Phase	Population		Proposed Units			Required Units		commercial area		institutional area		industrial area		park	
	Number	Increase	Number	Total	Increase	Number	Shortage	(ha)	Increase	(ha)	Increase	(ha)	Increase	(ha)	Increase
0	5 182		239	1 239	24%	1 824	585	0,8		2,6		1,2		22,0	9%
1	5 721	10%	438	1 677	35%	2 022	345	3,1	281%	12,1	365%			27,1	23%
2	6 316	10%	455	2 132	27%	2 240	108	3,5	13%	26,4	118%			41,0	51%
3	6 974	10%	351	2 483	16%	2 482	-1	11,7	231%	33,5	27%	41,4	3499%	46,7	14%
4	7 700	10%	276	2 759	11%	2 748	-11	12,2	5%	38,7	15%			49,3	6%
5	8 470	10%	322	3 081	12%	NA	NA	12,2	0%	38,7	0%			51,4	4%


PHASE 0
PHASE 3
PHASE 1
PHASE 4
PHASE 2
PHASE 5

Phase 0 (2020)

Development currently under construction

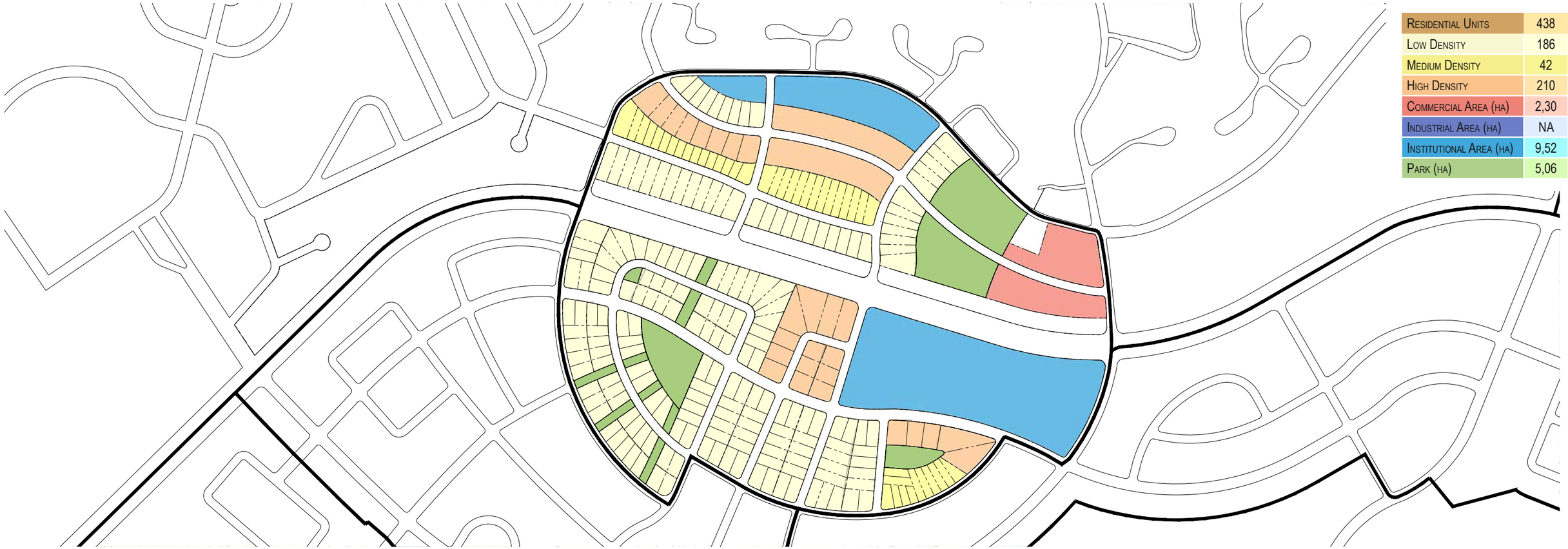




Residential Units	239
Low Density (available)	239
Medium Density	0
High Density	0
Commercial Area (ha)	0
Industrial Area (ha)	NA
Institutional Area (ha)	0
Park (ha)	6,4

Phase	Population		Proposed Units			Required Units		commercial area		institutional area		industrial area		park	
	Number	Increase	Number	Total	Increase	Number	Shortage	(ha)	Increase	(ha)	Increase	(ha)	Increase	(ha)	Increase
0	5 182		239	1 239	24%	1 824	585	0,8		2,6		1,2		22,0	9%
1	5 721	10%	438	1 677	35%	2 022	345	3,1	281%	12,1	365%			27,1	23%
2	6 316	10%	455	2 132	27%	2 240	108	3,5	13%	26,4	118%			41,0	51%
3	6 974	10%	351	2 483	16%	2 482	-1	11,7	231%	33,5	27%	41,4	3499%	46,7	14%
4	7 700	10%	276	2 759	11%	2 748	-11	12,2	5%	38,7	15%			49,3	6%
5	8 470	10%	322	3 081	12%	NA	NA	12,2	0%	38,7	0%			51,4	4%

Phase 1 (2020-2025)
South-Central Sector



Residential Units	438
Low Density	186
Medium Density	42
High Density	210
Commercial Area (ha)	2,30
Industrial Area (ha)	NA
Institutional Area (ha)	9,52
Park (ha)	5,06

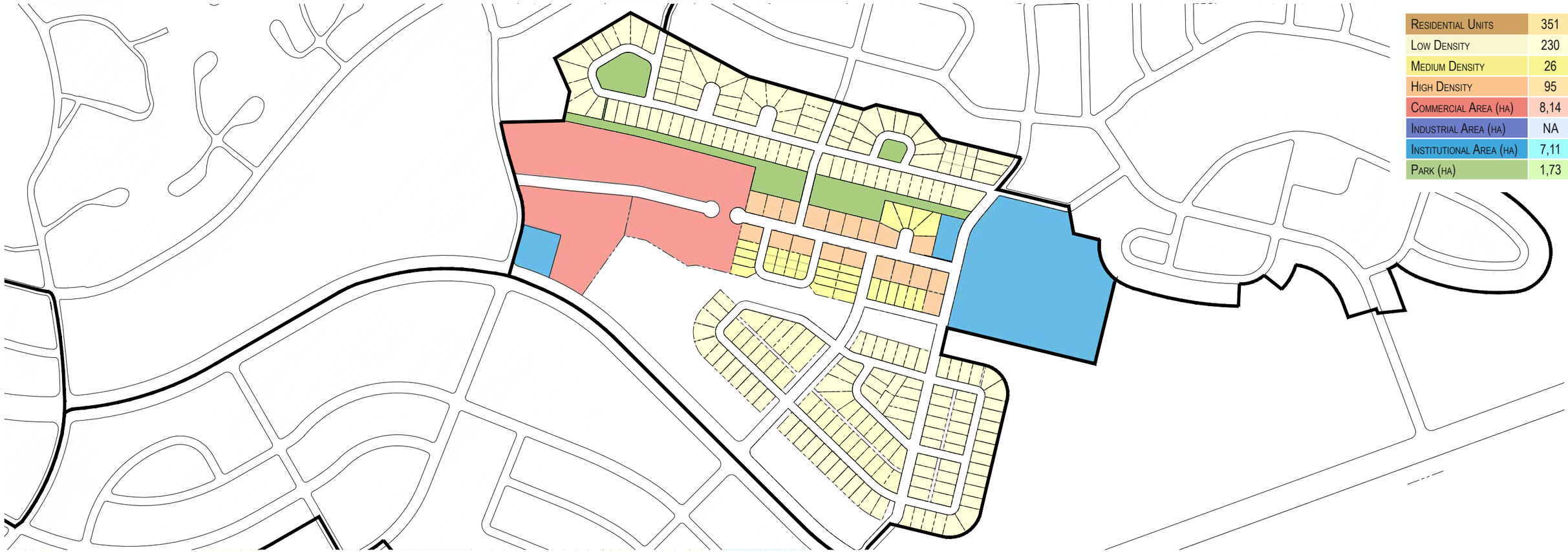
Phase	Population		Proposed Units			Required Units		commercial area		institutional area		industrial area		park	
	Number	Increase	Number	Total	Increase	Number	Shortage	(ha)	Increase	(ha)	Increase	(ha)	Increase	(ha)	Increase
0	5 182		239	1 239	24%	1 824	585	0,8		2,6		1,2		22,0	9%
1	5 721	10%	438	1 677	35%	2 022	345	3,1	281%	12,1	365%			27,1	23%
2	6 316	10%	455	2 132	27%	2 240	108	3,5	13%	26,4	118%			41,0	51%
3	6 974	10%	351	2 483	16%	2 482	-1	11,7	231%	33,5	27%	41,4	3499%	46,7	14%
4	7 700	10%	276	2 759	11%	2 748	-11	12,2	5%	38,7	15%			49,3	6%
5	8 470	10%	322	3 081	12%	NA	NA	12,2	0%	38,7	0%			51,4	4%

Phase 2 (2025-2030)
Arena Sector

Residential Units	455
Low Density	78
Medium Density	292
High Density	85
Commercial Area (ha)	0,39
Industrial Area (ha)	NA
Institutional Area (ha)	14,27
Park (ha)	13,89

Phase	Population		Proposed Units			Required Units		commercial area		institutional area		industrial area		park	
	Number	Increase	Number	Total	Increase	Number	Shortage	(ha)	Increase	(ha)	Increase	(ha)	Increase	(ha)	Increase
0	5 182		239	1 239	24%	1 824	585	0,8		2,6		1,2		22,0	9%
1	5 721	10%	438	1 677	35%	2 022	345	3,1	281%	12,1	365%			27,1	23%
2	6 316	10%	455	2 132	27%	2 240	108	3,5	13%	26,4	118%			41,0	51%
3	6 974	10%	351	2 483	16%	2 482	-1	11,7	231%	33,5	27%	41,4	3499%	46,7	14%
4	7 700	10%	276	2 759	11%	2 748	-11	12,2	5%	38,7	15%			49,3	6%
5	8 470	10%	322	3 081	12%	NA	NA	12,2	0%	38,7	0%			51,4	4%

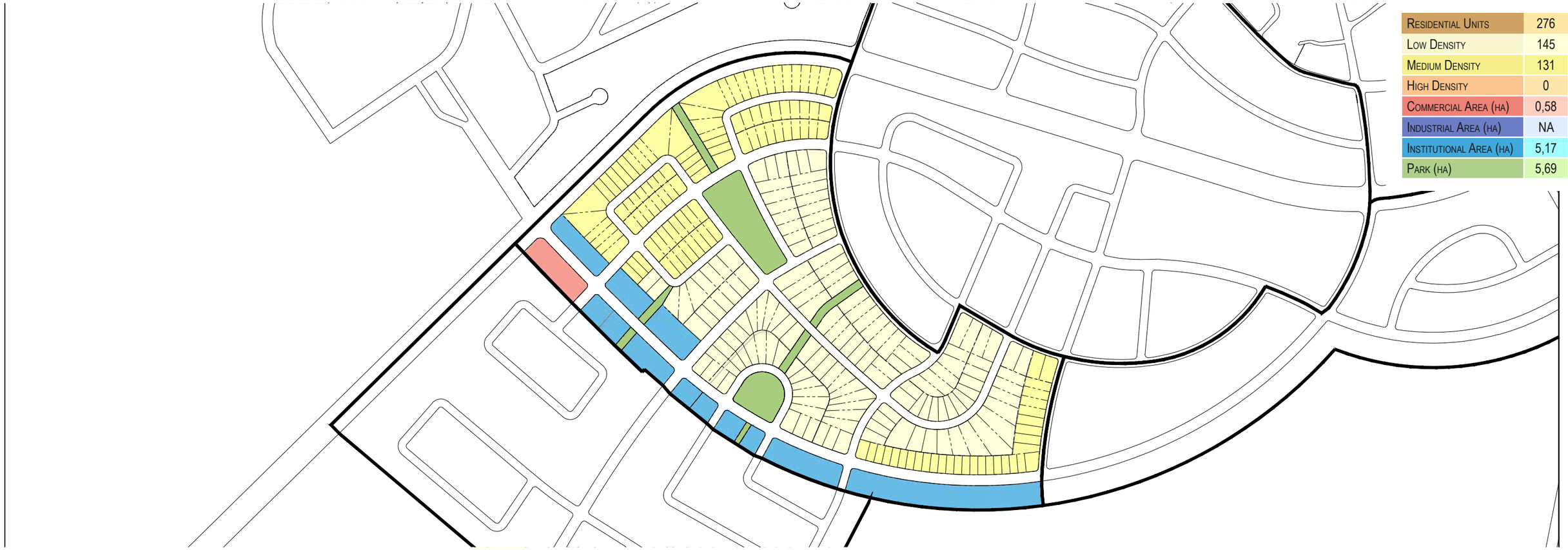
Phase 3 (2030-2035)
Eastern Sector



Residential Units	351
Low Density	230
Medium Density	26
High Density	95
Commercial Area (ha)	8,14
Industrial Area (ha)	NA
Institutional Area (ha)	7,11
Park (ha)	1,73

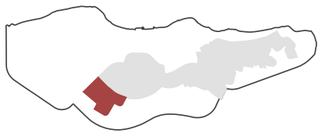
Phase	Population		Proposed Units			Required Units		commercial area		institutional area		industrial area		park	
	Number	Increase	Number	Total	Increase	Number	Shortage	(ha)	Increase	(ha)	Increase	(ha)	Increase	(ha)	Increase
0	5 182		239	1 239	24%	1 824	585	0,8		2,6		1,2		22,0	9%
1	5 721	10%	438	1 677	35%	2 022	345	3,1	281%	12,1	365%			27,1	23%
2	6 316	10%	455	2 132	27%	2 240	108	3,5	13%	26,4	118%			41,0	51%
3	6 974	10%	351	2 483	16%	2 482	-1	11,7	231%	33,5	27%	41,4	3499%	46,7	14%
4	7 700	10%	276	2 759	11%	2 748	-11	12,2	5%	38,7	15%			49,3	6%
5	8 470	10%	322	3 081	12%	NA	NA	12,2	0%	38,7	0%			51,4	4%

Phase 4 (2035-2040)
Western Sector



Phase	Population		Proposed Units			Required Units		commercial area		institutional area		industrial area		park	
	Number	Increase	Number	Total	Increase	Number	Shortage	(ha)	Increase	(ha)	Increase	(ha)	Increase	(ha)	Increase
0	5 182		239	1 239	24%	1 824	585	0,8		2,6		1,2		22,0	9%
1	5 721	10%	438	1 677	35%	2 022	345	3,1	281%	12,1	365%			27,1	23%
2	6 316	10%	455	2 132	27%	2 240	108	3,5	13%	26,4	118%			41,0	51%
3	6 974	10%	351	2 483	16%	2 482	-1	11,7	231%	33,5	27%	41,4	3499%	46,7	14%
4	7 700	10%	276	2 759	11%	2 748	-11	12,2	5%	38,7	15%			49,3	6%
5	8 470	10%	322	3 081	12%	NA	NA	12,2	0%	38,7	0%			51,4	4%

Phase 5 (2040+)
Eastern Sector



Residential Units	322
Low Density	197
Medium Density	85
High Density	40
Commercial Area (ha)	0
Industrial Area (ha)	NA
Institutional Area (ha)	0
Park (ha)	2,12

Phase	Population		Proposed Units			Required Units		commercial area		institutional area		industrial area		park	
	Number	Increase	Number	Total	Increase	Number	Shortage	(ha)	Increase	(ha)	Increase	(ha)	Increase	(ha)	Increase
0	5 182		239	1 239	24%	1 824	585	0,8		2,6		1,2		22,0	9%
1	5 721	10%	438	1 677	35%	2 022	345	3,1	281%	12,1	365%			27,1	23%
2	6 316	10%	455	2 132	27%	2 240	108	3,5	13%	26,4	118%			41,0	51%
3	6 974	10%	351	2 483	16%	2 482	-1	11,7	231%	33,5	27%	41,4	3499%	46,7	14%
4	7 700	10%	276	2 759	11%	2 748	-11	12,2	5%	38,7	15%			49,3	6%
5	8 470	10%	322	3 081	12%	NA	NA	12,2	0%	38,7	0%			51,4	4%

6. ACTION PLAN

THEME	SUB-THEME	OBJECTIVES	ACTIONS	Priority	LEAD DEPARTMENT						
					Community Planning	Capital Projects	Housing	Economic Development	Land & Environment	Emergency and Public Safety	Recreation
CULTURE	**Land and Cultural Tradition**	**Create a living environment that could secure the traditional values of the community's lifestyle and activities in order to promote their long-term development;**	Create a Cree cultural tradition and Knowledge guide with policies for investors, developers and construction companies	**2**				**X**			
	Architecture and Urban Development		Develop an urban design programming checklist for any development project: function, activities, sociological requirements, flexibility, spatial relationships, etc,	**2**	**X**						
			Develop a construction guide that includes strategies and policies for construction techniques and material adapted to Chisasibi's northern condition	**1**		**X**					
LOCAL CONTEXT	**Housing**	**Provide affortable and appropirate housing for all residents**	Develop a long term Housing Strategy Plan	**1**			**X**				
			Continue to advocate with the federal government for housing financing	**1**			**X**				
	Health	**Build a healthy and safe community**	Develop an Age Friendly Community Plan	**2**	**X**						
			Space planning guide for community health care facilities	**1**	**X**						
			Build and implement the greenhouse project	**2**					**X**		
	Education	**Develop a regional educational pole**	Planning sufficient and enjoyable spaces for future schools and daycares and create safe environments.	**2**	X						
	Economy	**Create ease of doing business in Chisasibi**	Establish a community economic development plan with actions	**1**				**X**			
			Provide appropriate spaces to accommodate new businesses and entrepreneurial endeavours	**1**	**X**						
			Encourage the development of tourism by planning appealing activities and spaces	**1**				**X**			
LAND	**Natural Constraints and Hazards**	**Build resiliency into Community Planning to account for: climate change, disasters, risk mitigation and response**	Landscaping and Beautification Plan that includes: - Maintain mitigation measure along the shore - Maximize the use of vegetation, specifically along roads, to provide better air quality - Develop strategies and policies for sustainable landscape development	**1**	**X**						
	Anthropogenic Constraints		Create a Zoning By-law that enforces building heights, buffer zones around major infrastructure such as the airtrip, the lagoon, the water intake, the power station. Also, ensure to maintain sufficient distances between the industrial zones from the others (residential, commercial and institutional)	**3**	**X**						

THEME	SUB-THEME	OBJECTIVES	ACTIONS	Priority	LEAD DEPARTMENT						
					Community Planning	Capital Projects	Housing	Economic Development	Land & Environment	Emergency and Public Safety	Recreation
INFRASTRUCTURE	**Roads**	**Ensure our infrastructure meets the functional needs of the Community**	Transportation planning study that includes: - Comprehensive review of the existing transportation system, including streets, VTT and snowmobile routes, pedestrian networks, and facilities, any planned improvements and existing parking facilities. - Identify strategies and policies to address future transportion needs for active transportation, for VTT and snowmobile routes and roadway classification.	**2**		**X**					
			Review the Community Evacuation Plan base on the 20-Years Development Plan	**1**						**X**	
	Services Infrastructure		Develop an Infrastructure Master Plan that includes: - Locate and Increase the capacity of current infrastructure that will service projects planned for the short-term. - Review the drainage work - Establish a strategy to manage surface water runoff. - Review the efficiency of the water pumping station and water treatment plant and plan for new ones according to the needs of future development. - Plan for storm water ponds in the community to support the capacity of sewers. - Review snow deposal site to insure no contamination of land and water.	**1**		**X**					
	Waste Management		Develop a Residual Materials Management Plan that assesses and recommends ways to reduce, reuse, recycle and recover these materials in ways appropriate for Chisasibi.	**1**					**X**		
			Build an Eco Center that will allow for more sustainable management of waste	**2**		**X**					
			Feasibility study for the establishment of an incinerator	**3**					**X**		
LAND USE	**Uses**	**Plan development and use of the land taking into account:** **- Population growth** **- Climate change and environmental considerations** **- Existing infrastructure - Community structure and morphology** **- Financial and HR realities**	Update Community Master Plan every 5 years and ensure to: - Plan secondary institutional and commercial nodes in the community - Create mixed-use neighbourhoods that are interesting at the pedestrian scale - Consolidate institutional and commercial streets, potentially by creating visual identities - Develop conservation, recreational and cultural zones.	**3**	**X**						
	Land Development		Update Community Master Plan every 5 years: Consolidate the built form of the community and design higher density areas that provide a sense of privacy.	**3**	**X**						
			Housing typology study: Balance single-family dwelling typology with contemporary multi-unit dwellings so as to respect the morphology of the community but still move towards more sustainable development practices	**2**			**X**				
	Parks, Green Spaces and Rereational Infrastructure		Parks and recreational Master Plan: - Develop more spaces for parks and recreational activities (extend trail network) - Develop sports and cultural activities programs	**1**							**X**

INTER-NATION COLLABORATION

NORTHERN
INDIGENOUS
SOUTHERN

CREE NATION OF CHISASIBI + BC2