

# LA GRANDE ALLIANCE INFRASTRUCTURE PROGRAM FEASIBILITY STUDIES

## INTERIM REPORT

**Presented by the Cree Development Corporation**  
Presented to the office of the Grand Chief and  
Chairperson of the Cree Nation Government

OCTOBER 14<sup>TH</sup>, 2022





An aerial photograph of a dense green forest. A river with turquoise water flows through the center, dotted with dark rocks. A light-colored gravel road curves around the river. A small bridge crosses the river, with a white truck on it. On the left, a series of overlapping diamond-shaped images show different parts of the forest. The text 'INTERIM REPORT' is in the top left, and 'TABLE OF CONTENTS' is in large white letters below it. The text 'INTERIM REPORT' is also in the bottom left.

INTERIM REPORT

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# CONTEXT

## MISSION

“La Grande Alliance” was the term used to describe the joint exercise undertaken by the Cree and the Quebec governments in the signing of the Memorandum of Understanding on the Cree-Quebec Sustainable Infrastructure Development Program in the Eeyou Istchee James Bay Region. Often development is thrust upon indigenous and non-indigenous communities alike where the only option is to react. This scenario makes land use planning very challenging for communities and government officials, strategic transportation or energy infrastructure planning ambiguous for public utilities and government ministries, and investment by the promoters of development projects themselves risky and uncertain.

The link between transportation and energy infrastructure and the potential for development is undeniable, the ability to ensure that such infrastructure does not provoke development in areas that are sensitive environmentally, culturally or increase risk to vulnerable species is of great importance in avoiding conflict between development and all communities. Providing communities with the opportunity to contribute to the conception, planning, consideration and evaluation of energy and transportation infrastructure which has the potential for shaping the territory for years to come will empower communities and most importantly bring predictability on a long-term scale to the region.

Communities will be able to plan their growth more easily, resources for protecting the environment and wildlife life can be deployed more efficiently, land use planners will work with more certainty and investment by promoters and developers will be more secure.

## PROMOTER

The James Bay Native Development Corporation/Cree Development Corporation (CDC) was chosen by the Cree Nation Government and the Government of Québec to manage the infrastructure Feasibility Studies to examine the economic, technical, and socio-environmental aspects of the proposed infrastructure, broken down in three phases.

The CDC is the modernization of the James Bay Native Development Corporation, created through the James Bay and Northern Quebec Agreement to “assist, promote and encourage the creation, diversification or development of businesses, resources, properties and industries within the territory with a view to stimulating maximum economic opportunities for Cree people and contributing to their general economic well-being”.



## EVOLUTION OF LGA SINCE ITS SIGNATURE

The early exchanges in the planning of the studies between various Cree representatives, Ministries such as Transport and the Ministry of Energy and Natural Resources and Crown Corporations such as Hydro-Quebec, SPN and the Société de Développement de la Baie James demonstrated that there was an enormous value in the exchange of information. For example, Hydro-Quebec representatives of the Distribution division who received hundreds of requests annually for the planning of powerlines from mining exploration companies were introduced to representatives of the Cree Nation and the Ministry of Natural Resources who combined had key information that would allow for a real prioritization of projects according to actual feasibility versus marketing objectives.

A key benefit of the studies for all stakeholders will be the consolidation of years of studies, data and information on all facets of the region which has been collected and maintained in silos. The consolidation of past data with the collection and compilation of current data will provide an introductory global current picture of the region. Having a clearer picture of the current challenges to environmental protection, wildlife protection, natural resource development, transportation and meeting energy demands is especially important in a world with ever increasing uncertainty due to climate change and the impact of global events, such as the COVID Pandemic.

# TRANSPORTATION INFRASTRUCTURE STUDY



## LEGEND

- PHASE I
- PHASE II
- PHASE III

# LA GRANDE ALLIANCE INFRASTRUCTURE IN BRIEF

Conducting a study over such a large timeframe presents its share of challenges, largely due to difficulties predicting outcomes over such a large period. In this sense, the study is an exercise in visualizing a context in which all communities play a more active role in defining future development on the territory, with a predictable and well-conceived transportation network at its center. It therefore follows that the approach includes extensive engagement amongst Cree and non-Cree stakeholders, with a strong emphasis on direct users of the land found in proximity of the infrastructures under study.

The infrastructures examined as part of the Grande Alliance transportation feasibility studies are intended to address a specific need and/or opportunity to fully integrate the regional economy of the Eeyou Istchee/Baie-James region, in particular the Cree communities, in a manner that allows for the sustainable development of its resources. These are summarized below, presented according to three phases outlined in the original MOU, with references to the map in parentheses.

## PHASE I (Years 1-5 as of start of construction)

- **Upgrading and paving of the community access roads (1)** for Waskaganish, Eastmain, Wemindji and Nemaska to provide a modern and reliable link to the Billy-Diamond Highway, the backbone of the regional transportation network.
- A **railway** that follows the existing **Billy-Diamond Highway** corridor **(3)**, so as to minimize truck traffic

along the highway in the face of future development, as well as to avoid the creation of any new north-south transportation corridors in the region. This, in turn, allows to maximize the network of protected areas outside the corridor of the highway. The railway can also provide passenger transportation to numerous land users to their hunting territories, as well as passengers traveling further south. Phase I covers the portion between Matagami (KM 0) to the Rupert River (KM 257).

- The **return-to-service** of the **Grevet-Chapais railway (4)**, thereby providing an east-west rail corridor that links the Billy-Diamond Highway as well as markets further west to economic centres further east, including major ports located along Quebec's lower north shore. This railway can also reduce truck traffic on the Highway 113.

## PHASE II (Years 6-15)

- A railway following the existing **Billy-Diamond Highway (6)** corridor to the turnoff to the **Trans-Taiga Highway (KM 541)**
- The extension of the Billy-Diamond Highway to the communities of **Whapmagoostui (Cree)/Kuujjuarapiik (Inuit) (7)**, thereby providing road access to previously isolated communities.
- The **extension** of the **Highway 167 (8)** to connect to the Trans-Taiga Highway, thereby providing a second north-south transportation corridor to serve

the eastern part of the territory, most notably Mistissini. This would significantly reduce travel time between Mistissini/Chibougamau to Chisasibi, thereby connecting the two most populous areas of the territory.

## PHASE III (Years 16-30)

- The **extension** of the **railway** to Whapmagoostui **(9)**, following the new road alignment, designed in such a way as to accommodate both modes of transportation along the entire alignment.
- A new **harbour** at **Whapmagoostui/Kuujjuarapiik (10)**, to create a marine link between Eeyou Istchee-Baie-James to the global economy.

**In addition, several components have been added to the study at the specific request of communities:**

- An **alternative route (4)** for snowmachines and All-Terrain Vehicles currently using a portion of the **Grevet-Chapais** rail alignment, in particular the Chapais snowmobile club.
- The **upgrading** and paving of the **Route-du-Nord (2)**, the privileged east-west link on the territory, which has experienced significant depreciation in the past decades.
- A **secondary access road** for the Cree community of **Mistissini (5)**, to provide for the safe evacuation of the community as well as to allow easy access to markets further north on the territory.

# OUTREACH

## A UNIQUE APPROACH TO STUDYING FEASIBILITY

The LGA approach is involving communities from the start and considers environmental and social criteria at the same level as technical and financial ones. The studies found herein have put local communities at the center of the development process. This way of working, initially proposed by the Cree Nation, strives to shift the dominant paradigm away from natural resources as levers of regional development, towards community development. Natural resource development remains a vital element to this equation but is no longer the sole driver. In this sense, La Grande Alliance goes beyond a standard regional plan but rather proposes a new model for how the Cree, Québec and Jamesian populations can work together on sustainably developing natural resources and the region for the betterment of all.



### ENGAGEMENT/CONSULTATION

- What has been done before?
- How do we connect with local communities?



### FINANCIAL MODEL

- How much will it cost to build and operate?
- Who will own which assets?



### RISK ANALYSIS

- What would be the risks associated with these projects?
- What would be the limitations?



### SOCIO-ENVIRONMENTAL

- How would this affect the Cree and Jamesian communities?
- How would it affect the environment?



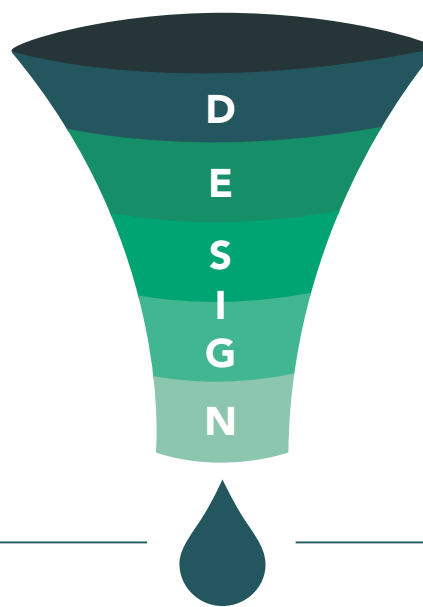
### MARKET STUDY

- Who would benefit?
- How would the railroad operate?
- How would it contribute to the local economy?



### TECHNICAL

- What would need to be repaired and upgraded?
- Who would use the infrastructure?
- Where would it be located?

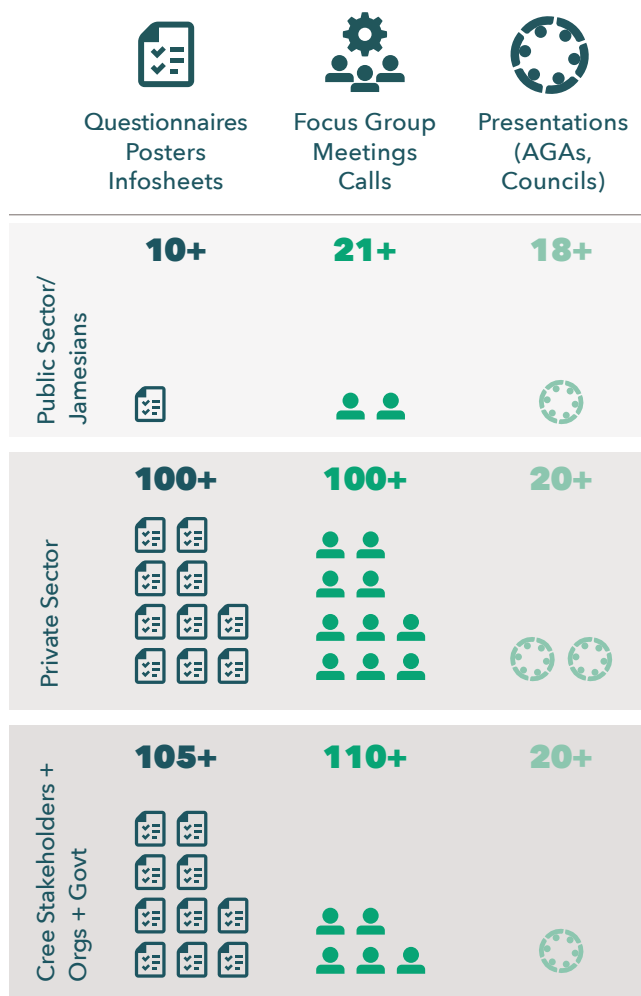


#### Infrastructure solutions (rail, road, port)

- Socially acceptable
- Sustainable
- Economic



## STATISTICAL SUMMARY OF ENGAGEMENT



## THE CIO PROGRAM

Community information officers act as the local antennas of LGA in Cree communities. CIOs have been appointed by their communities to ensure participation and engagement in the studies and to confirm that issues and concerns raised by communities are heard and addressed in the studies. As of August 1, there are 9 active CIOs (only Waswanipi is absent for the moment), with tasks varying from hosting local radio shows to discuss the program, organizing public engagement sessions, overseeing Cree presence when study teams visit the land, etc.

The CIO program does not extend to Jamesian towns as early discussions with local officials indicated that they should be the contact point for LGA-related information. After a round of discussions in the 5 towns (to be completed with public meetings in Chibougamau and Lebel-sur-Quévillon in September), the team has established contact with numerous local stakeholders, in particular economic development officers, with which information will be shared directly from now on.

## STAKEHOLDER ENGAGEMENT

- Public sector involvement in the Study (socio-environmental and technical)
- Private sector involvement in the Study (market)
- Cree organizations mandated by the James Bay and Northern Quebec Agreement and key stakeholders
- Cree Territory Governance



## CREE LAND USE STUDY

In the spirit of La Grande Alliance's innovative collaborative approach to the feasibility study, the team is carrying out a **Cree land use study** with tallymen and land users from all traplines (61) potentially touched by the infrastructure work under study. The objectives of the study are:

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### TO DOCUMENT

Cree land use in each study area



### TO GATHER

the land users' comments and concern



### TO INTEGRATE

Cree knowledge and perspective into the design and planning of the potential infrastructures, from the beginning of the process.

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Interviews (engagement and validation) and information sessions, tallymen and land users helped document their use of the territory to protect as much as possible the integrity of the activity zones. Land use information and comments were shared with the Technical Team as they were collected, so they can effectively be considered into design and planning.

# FOUR MAJOR HEALTH AND SOCIAL IMPACTS ON THE COMMUNITIES HAVE BEEN IDENTIFIED:



## GROWTH AND DEVELOPMENT

More individual and collective independence if local communities are sufficiently empowered in decision making and ownership; decrease in social and health issues by providing more opportunities and options.



## HEALTH

Changes in family dynamics and additional pressure on health and social services, especially during construction.

Easier access to psychoactive substances that may lead to increased social problems.



## WAY OF LIFE

Positive impacts on quality of life, job creation, education and health access, cost of living; and impact of studied infrastructure on fauna and traditional practices.



## ACCESS TO THE TERRITORY

Changes in local traditions and culture are the first ones, as the territories become more accessible to non-Cree populations.



An aerial photograph of a coastal town at sunset. The town is built on a peninsula, with houses and buildings illuminated by the warm light of the setting sun. A large body of water, likely a lake or bay, stretches out to the right, with a small island visible in the distance. A bridge crosses the water in the foreground. The sky is a mix of orange, pink, and blue. The overall mood is peaceful and scenic.

## CONSULTATION WITH JAMESIANS

The LGA team has met with with elected officials, citizens and socio-economic actors of the 5 main Jamesian towns during the last months. First online, then in-person, these meetings gave access to over 100 non-Cree territory residents and allowed the team to better understand their questions and concerns around the studied infrastructure. Below are the most interesting comments received.

*Thank you very much for coming to meet us. You can see that the Grande Alliance is important to us. It is important to have a vision of development and to make sure that we have the right players around the table so that it is a win-win situation for everyone on the territory. Thank you for the openness of the Grand Council of the Crees, for seeing the potential and for knowing that the territory can be protected, but that development can be done with the people who live there. We are pleased to hear from you on the project and to make sure that we are as collaborative as possible to make it a success.*

- Jamesian Mayor, February 9, 2022

*We like the collaborative spheres with the Cree in the perspective of connecting local infrastructure to that imagined by LGA, to coordinate interests. The LGA is an extraordinary opportunity in this sense to better plan the development of the territory that Jamesians and Crees share.*

- Economic development officer, January 25, 2022



*The program is extraordinary and the Whapmagoostui deep water port project makes sense with the opening of the Northwest maritime link with climate change, which is an issue that goes beyond their local and regional interests, because the interest is provincial, even national.*

**- Jamesian Mayor, January 25, 2022**

*In infrastructure planning, the priority is the need for manpower, as presented in the predictability objective of the LGA. Institutions must be given sufficient notice to train the workforce knowing that this is a multi-year plan. The knowledge transfer that can occur is an incredible opportunity and the training of the workforce is an important point.*

**- Economic development officer, January 25, 2022**

*There is a desire to create a northern route that would be oriented east-west and developed in a vision of global development on a Canadian scale. Developing our territory and a northern transportation corridor would save transportation time and make Canada competitive at the global level. The network would be more fluid. The Grevet-Chapais line fits into this east-west vision.*

**- Jamesian Mayor, September 28, 2022**

*The train must be multi-use and allow for the transportation of passengers. With the disappearance of the bus to the Saguenay and the lack of rental vehicles on the territory, the train would be an important means of transportation.*

**- Tourism officer, May 26, 2022**

*The train would favour tourism and development, it would increase the attraction of the industrial park with a transshipment area, as well as tourists with a train station.*

**- Economic development officer, May 26, 2022**

*The most important thing for us would be the railroad, for the supply of food, materials, raw and secondary materials, not to mention the impact on climate change.*

**- Citizen of Radisson, June 1, 2022**

*Improved transportation infrastructure could have a positive impact on the recreational and tourism potential of the protected areas and the rest of the territory.*

**- Jamesian City Councilor, January 25, 2022**

*The ability to process metals nearby and export them is important. A truck can't compete with a train, so intermodality is crucial.*

**- Economic actor, September 27, 2022**

# MARKET STUDY AND ECONOMIC MODELLING

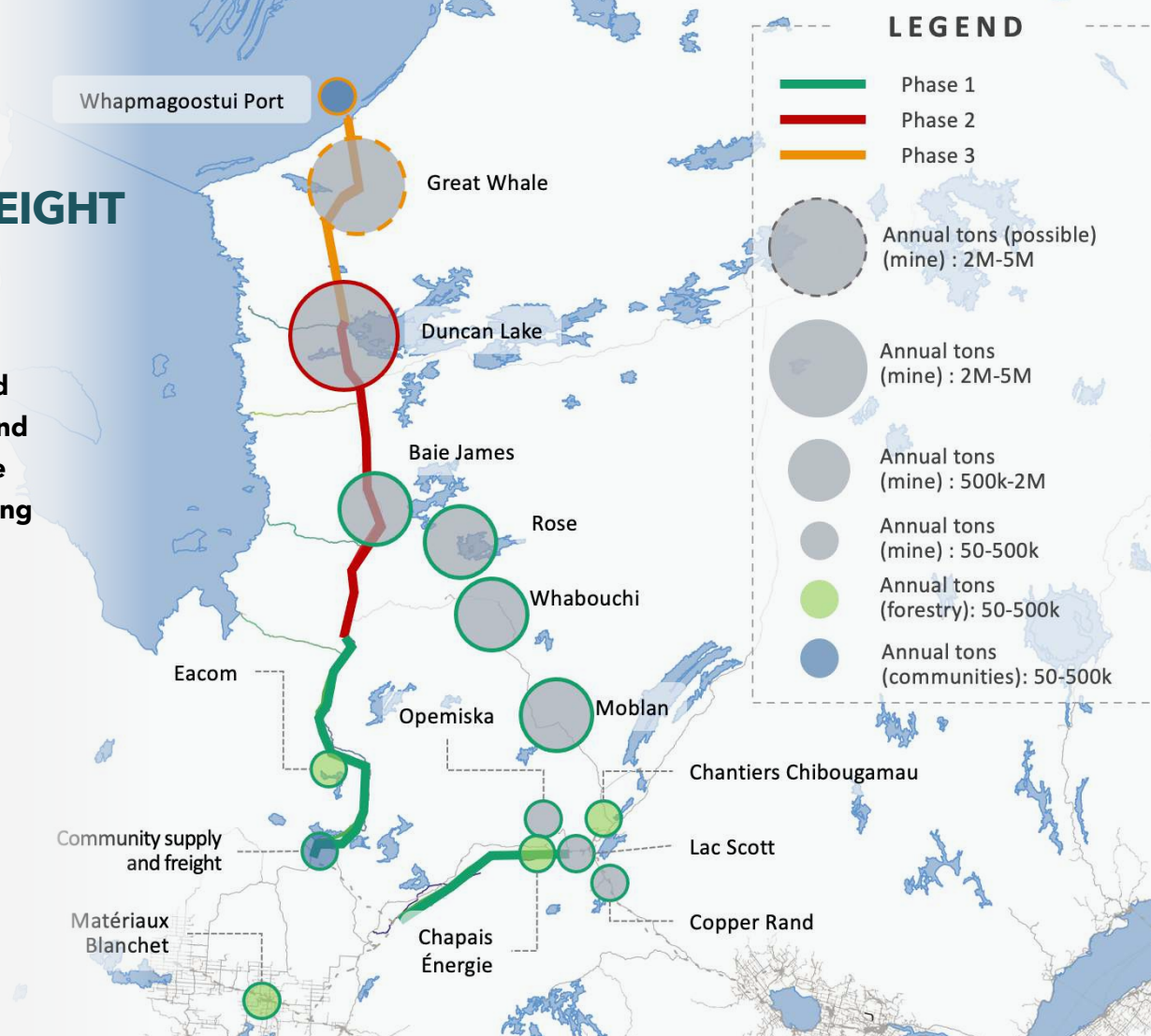
## A UNIQUE APPROACH TO STUDYING FEASIBILITY

### **The general approach to the Market Study consisted of:**

- The review and analysis of documentation and secondary data pertaining to the relevant factors that will influence the use of the proposed infrastructure and stimulate development in the region.
- A survey with the main economic agencies (companies in forest, mining, transport, and tourism) and consultation with stakeholders and community groups.
- The development of an economic model to gather, calculate and forecast the population, the economic output, and the traffic of the different transportation components of the LGA infrastructure program.
- The results will be compared to similar infrastructures.
- Evaluate the potential market; forecast freight and passenger traffic for each segment of LGA infrastructure program over a 50-year lifespan and quantify the required resources for the technical and economic analyses.

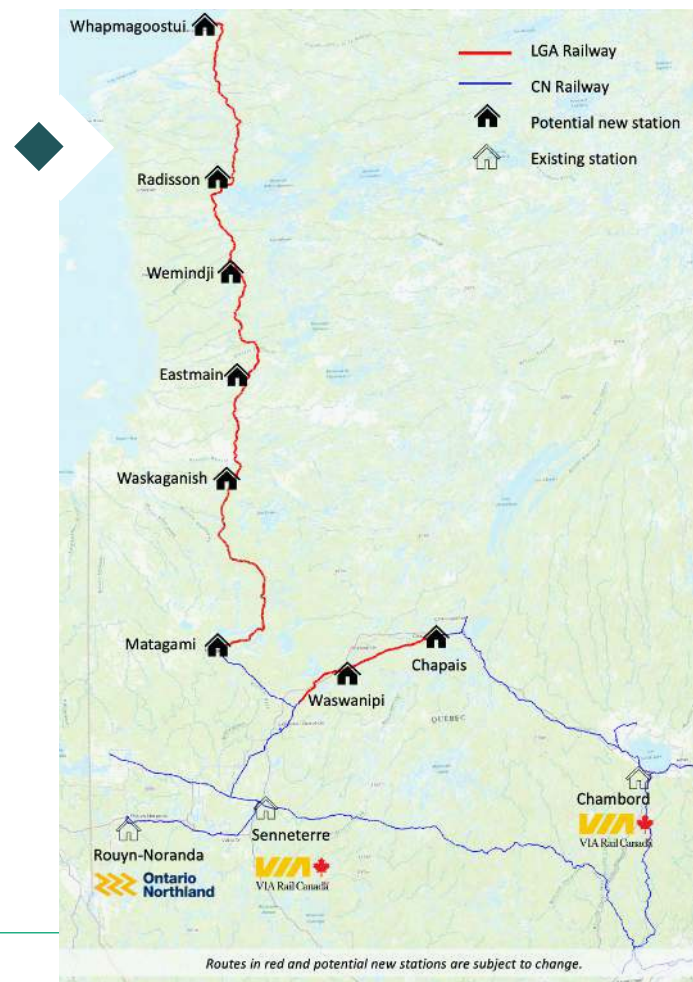
## POTENTIAL RAILWAY FREIGHT TONNAGE

The results of the surveys, analysis and forecasted freight and passenger traffic are shown in the following two schematics.



## POTENTIAL RAILWAY PASSENGER SERVICE

It is proposed to have a passenger train service along the entire length of the potential railway from Matagami to Whapmagoostui, with stations near each population center. The expected passenger service is designed to reach the northern limits of VIA Rail's network at Senneterre and Chambord, and Ontario Northland's network easternmost limit at Rouyn-Noranda. For the passenger trains planned to serve Chambord, two additional stations on Grevet-Chapais line (Waswanipi and Chapais) which will also be served. The following map shows the overall placement of the stations over the network.



# SOCIO-ENVIRONMENTAL WORK

The feasibility studies' objective is to document the social and environmental baseline context in which the studied infrastructure will take place and to identify their preliminary potential impacts. The study area lies between the towns of Matagami (west), Whapmagoostui (north) and Mistissini (east).

## FLORA

8

### RECORDS FOR PROTECTED PLANTS

are included in the sparse forest in the lichen spruce forest bioclimatic domain. The area's vegetation is not very diversified because of the harsh climatic conditions and consist extensively of black spruce.

## FAUNA



### 30 FISH SPECIES,

an essential food source for Cree communities, can be found in the diversity of aquatic habitats provided by the important watercourse network.



### 54 SPECIES OF TERRESTRIAL MAMMALS

have also been recorded in the area. Black bear and moose are at the northern limit of their geographic distribution, with low population densities. Amongst all wildlife species on the landscape, caribou and Canada goose are keystone species embedded in the Cree culture.



### 184 BIRD SPECIES

are likely to be found in the study area at some time during the year including the Canada goose and many species of waterfowl that are traditionally hunted by the local communities.



### 16 SPECIES HAVE A PROTECTION STATUS.

Belugas of the eastern Hudson Bay population are likely to be met in summer while polar bears are likely to be met on the ice in winter and inland and over the coast during summer.



## PROTECTED AREAS

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OVER  
**18000 KM<sup>2</sup>**

**OF PROTECTED AREAS, EXISTING  
AND PROJECTED, ARE INCLUDED  
IN THE STUDY AREAS.**

## ARCHEOLOGY

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**221**  
**ARCHEOLOGICAL  
SITES**

have been recorded within the  
study area and its four corridors.



**10**  
**CULTURAL HERITAGE  
SITES**

have been identified throughout the  
area under study.

## CLIMATE CHANGE

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**8 CLIMATE  
HAZARDS**

were identified as having a  
potential impact on the studied  
infrastructures and should  
therefore being further studied  
and considered in the detailed  
design of the next steps.

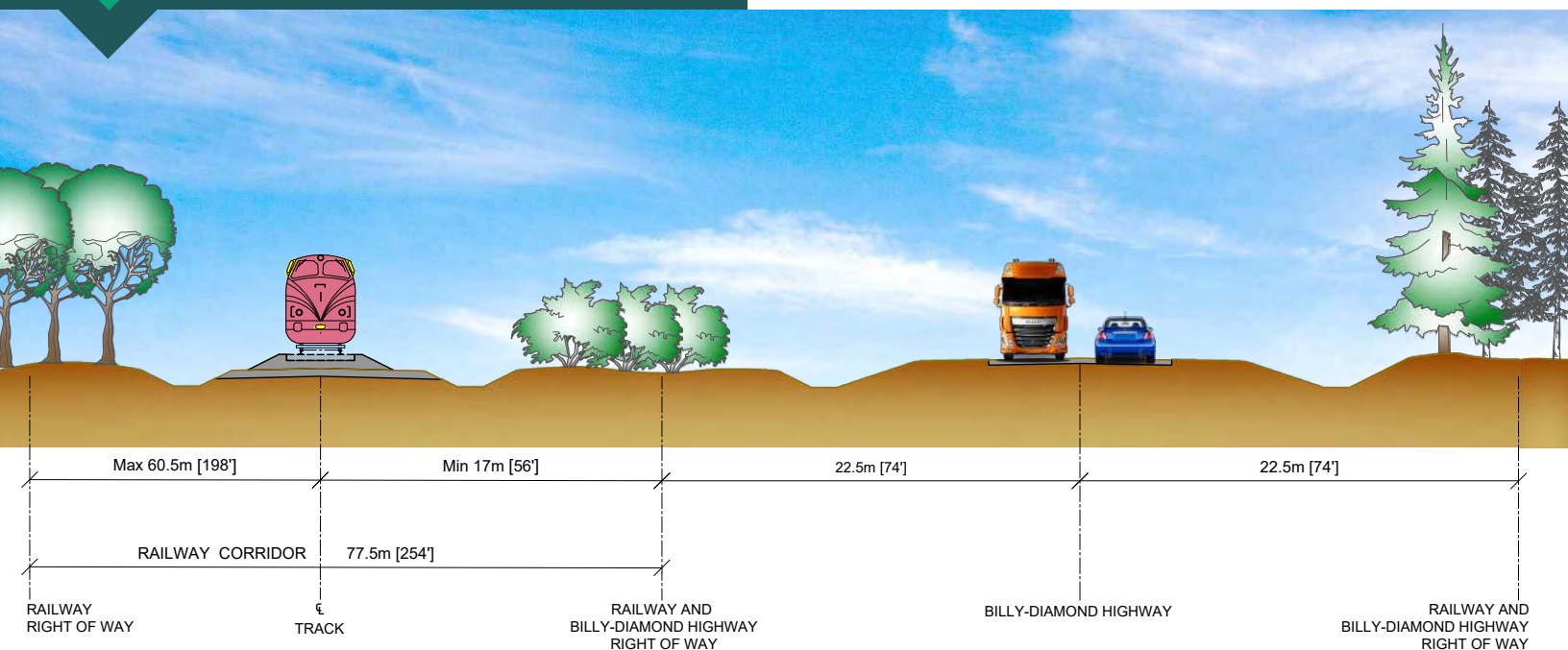
# TECHNICAL WORK

While technical work remains active during Fall 2022, the study teams have already advanced on key components of the study, including geotechnical work. Geotechnical work allows a reduction in design allowances of bridges, culverts and earthworks. That work is completed for community access roads, including for quarries, as well as for the Grevet-Chapais Railway. Work on Billy Diamond Railway is planned for September 2022.

STUDIED RIGHT-OF-WAY FOR  
THE BDH RAILWAY

## ROADS

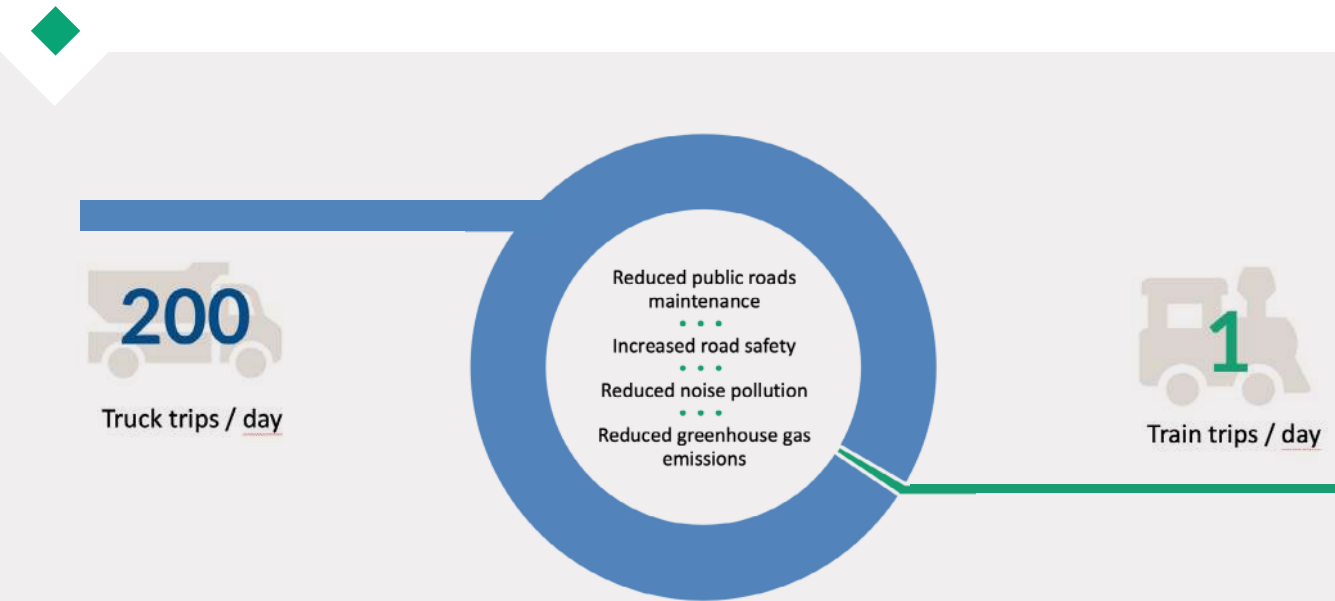
| SEGMENT                                                     | APPROX. LENGTH | NATURE OF WORK                                                                 |
|-------------------------------------------------------------|----------------|--------------------------------------------------------------------------------|
| Whapmagoostui/<br>Kuujuarapik                               | 200 - 220 KM   | New construction / 35 m / Modified type E cross section (DN-I-5-005)           |
| Wemindji<br>Access road                                     | ±80 KM         | Transition, changement de certains ponceaux, nettoyage de fossé, rechargement  |
| Eastmain<br>Access road                                     | ±80 KM         |                                                                                |
| Waskaganish<br>Access road                                  | ±75 KM         |                                                                                |
| Nemaska<br>Access road                                      | 6 KM           |                                                                                |
| Route 167<br>extension to connect with the Trans-Taiga Road | 170 - 235 KM   | New construction / 35 m / Modified type E cross section (DN-I-5-005)           |
| Second access road to Mistissini                            | ± 40 KM        | Nouveau chemin pour une 2e acces pour Mistissini type E modifier               |
| Route du Nord from Route 167 to Billy Diamond highway       | ± 400 KM       | Transition, changement de certains ponceaux, nettoyage de fossé , rechargement |



RAILWAY

| SEGMENT        | APPROX. LENGTH | GENERAL ALIGNMENT DATA                                                              |
|----------------|----------------|-------------------------------------------------------------------------------------|
| BDH Phase 1    | 260 KM         | Is within 100m of the Billy Diamond highway approximately two-thirds of its length. |
| BDH Phase 2    | 340 KM         | Generally along the Billy Diamond highway for most of its length                    |
| BDH Phase 3    | 225 KM         | Generally along the new road (yet to be finalized)                                  |
| Grevet-Chapais | 160KM          | Follows historic ROW 100% of its length                                             |

POTENTIAL TRADE-OFF  
BETWEEN ROAD AND RAIL



PORT

Since the market survey and cargo forecast study results show that expected demand in the near and intermediate future is not sufficient to sustain a deep-water port investment, the study team has developed a conceptual design of a Small Craft Harbour to answer community needs, accommodating fishing vessels and transporting goods from sealift vessels to the shore. A site selection study has been conducted through available data including ice conditions, coastal geomorphology, coastal processes and accessibility.

Considering recent landslide upstream from the mouth of Great Whale River and the perceived risk of excessive sedimentation, the proposed Small Craft Harbour is considered as a mitigation measure providing an alternative to the community if the existing natural beach harbour would become non-operational. Details for the selected site and proposed Small Craft Harbour arrangement remain to be finalized, but will allow for a future development of a Deep-Water Port when required.

# NEXT STEPS

During Fall 2022, the study teams will remain active, first on the field until mid-October, then in the office to work on financial analysis, including OPEX/CAPEX, Economic Benefit Analysis and Risk Mitigation.

The below elements, along with all the work presented in this document, will compose the final report of the Grande Alliance Infrastructure Program Feasibility Study. The final report is expected after the Holidays and will be submitted by the CDC to the Cree Nation Government and then to the Gouvernement du Québec.

During Winter and Spring 2023, the Grande Alliance team will publicize the results of the final report through in-person, digital and media events and activations. The team will continue with its proactive and transparent approach to communications and ensure that all questions are answered clearly and quickly.

# APPENDIX

## PARTICIPATION OF PARTNERS

Technical and socio-environmental work wouldn't have been possible without the participation of the Cree organizations and the following ministries, agencies and other stakeholders:

|                        |                                                                                                                                              |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Cree Communities       | <ul style="list-style-type: none"> <li>Access road photos</li> </ul>                                                                         |
| MTQ                    | <ul style="list-style-type: none"> <li>Multimodal study</li> <li>Quarries and borrow pit reports</li> <li>Road inspection reports</li> </ul> |
| Hydro-Québec           | <ul style="list-style-type: none"> <li>Previous projects' environmental impacts statements</li> </ul>                                        |
| Tallymen               | <ul style="list-style-type: none"> <li>Land use</li> <li>Support for site activities</li> </ul>                                              |
| MERN                   | <ul style="list-style-type: none"> <li>Geotech permits</li> <li>Caribou status</li> <li>Mining claims and activity</li> </ul>                |
| SDBJ                   | <ul style="list-style-type: none"> <li>LIDAR data of BD highway</li> <li>Road condition reports</li> </ul>                                   |
| Cree Nation Government | <ul style="list-style-type: none"> <li>Previous reports</li> <li>Caribou status</li> </ul>                                                   |
| MELCC                  | <ul style="list-style-type: none"> <li>Geotech permits</li> <li>Wetland shapefiles</li> <li>Flora shapefiles</li> </ul>                      |
| SAAQ                   | <ul style="list-style-type: none"> <li>Accident reports</li> </ul>                                                                           |
| Jamesian towns         | <ul style="list-style-type: none"> <li>Chapais – Memoir on the Grevet-Chapais rail line</li> </ul>                                           |
| MFFP                   | <ul style="list-style-type: none"> <li>Geotech permits</li> </ul>                                                                            |
| CN                     | <ul style="list-style-type: none"> <li>Bridge reports</li> <li>Alignment plan and Profile</li> <li>Infrastructure list</li> </ul>            |



# PARTICIPATION TO MARKET STUDY

| ONT RÉPONDU                                                                                                                                        |                                                                                                                              | PAS DE RÉPONSE / À SUIVRE                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EXPÉDITEURS                                                                                                                                        |                                                                                                                              |                                                                                                                                                                          |
| INDUSTRIE FORESTIÈRE                                                                                                                               |                                                                                                                              |                                                                                                                                                                          |
| Chantiers Chibougamau<br>Résolu Comtois<br>Eacom Timber                                                                                            | Barrette-Chapais<br>Chapais Énergie (Nexolia)<br>MFFP                                                                        | Resolute<br>Mishtuk / Nabakakuk<br>Eenatuk Forestry Corp / Eskan                                                                                                         |
| INDUSTRIE MINIÈRE                                                                                                                                  |                                                                                                                              |                                                                                                                                                                          |
| Qc Copper & Gold<br>Century Global<br>Mine Rose (Critiques)<br>Century Global (Duncan)<br>Nemaska Lithium (Wabouchi)<br>Bonterra (Bachelor, Barry) | Fénélon (Wallbridge)<br>Éléonore (Newmont)<br>MERN<br>Galaxy Lithium (James Bay)<br>Doré Copper Mining<br>Newmont (Éléonore) | Voyager Metals (Mont-Sorcier)<br>Osisko (Windfall, etc)<br>Vanadium Corp. (Lac Doré/Iron-T)<br>Stornoway Diamond<br>Sayona (Moblan Lithium)<br>Troilus Gold<br>BlackRock |
| CONSTRUCTION                                                                                                                                       |                                                                                                                              |                                                                                                                                                                          |
| Pavage Wemindji<br>Vieux-Comptoir Construction<br>CCDC<br>Construction Stajune<br>Nemaska Eenou Company                                            | Blais et Langlois<br>Entreprises Alain Maltais<br>Équipements JVC<br>CCQ                                                     |                                                                                                                                                                          |
| ÉLECTRICITÉ ET PRODUITS PÉTROLIERS                                                                                                                 |                                                                                                                              |                                                                                                                                                                          |
| Hydro-Québec                                                                                                                                       | Pétronor                                                                                                                     | Les Pétroles MJ                                                                                                                                                          |
| TOURISME                                                                                                                                           |                                                                                                                              |                                                                                                                                                                          |
| COTA                                                                                                                                               | Tourisme Baie-James                                                                                                          | CNACA                                                                                                                                                                    |
| TRANSPORTEURS                                                                                                                                      |                                                                                                                              |                                                                                                                                                                          |
| Whapchiwem<br>Air Creebec<br>Kepa Transport<br>Transport Auger<br>SDBJ<br>FEDNAV                                                                   | NEAS<br>Desgagnés Transarctick<br>Canadien National<br>MTQ<br>Transbordement Matagami                                        |                                                                                                                                                                          |
| COMMUNAUTÉS                                                                                                                                        |                                                                                                                              |                                                                                                                                                                          |
| CRIS                                                                                                                                               |                                                                                                                              |                                                                                                                                                                          |
| Wemindji<br>Chisasibi<br>Whapmagoostui<br>Nemaska                                                                                                  | NCG - CI<br>CREECO<br>GCC                                                                                                    | Waswanipi<br>Oujé-Bougoumou<br>Mistissini<br>Waskaganish<br>Eastmain                                                                                                     |
| INUIT                                                                                                                                              |                                                                                                                              |                                                                                                                                                                          |
| Kativik                                                                                                                                            |                                                                                                                              | Kuujuarapik                                                                                                                                                              |
| JAMÉSIENS                                                                                                                                          |                                                                                                                              |                                                                                                                                                                          |
| Matagami<br>Chapais<br>Radisson                                                                                                                    | Lebel-sur-Quévillon<br>Chibougamau                                                                                           |                                                                                                                                                                          |
| SOCIÉTÉ PLAN NORD                                                                                                                                  |                                                                                                                              |                                                                                                                                                                          |



# COMPARABLE PROJECTS HIGHLIGHTS

The objective of identifying comparable infrastructure is to set up a database that will serve as a benchmark for the upcoming various components that will be developed as part of this pre-feasibility study. Comparable infrastructures were selected based on the similarity or relevance to key criteria such as Design Parameters, Construction Cost and Financing, Impact on the Environment and Economic and Land Use Impact.

## Road Infrastructure

We have compiled a list of roads that already exist or are under development to serve the northern isolated areas. Since the Grande Alliance already includes serving users and existing communities, we have disregarded roads solely serving mining and forestry industries functional vehicle transportation needs. Therefore, the retained infrastructures are in Canada, on First Nations lands and meant to accommodate both passenger and commercial vehicles.

| Elements of Comparison           | Studied LGA Road                                                                                                       | Inuvik to Tuktoyaktuk                                                                                                                                                               | Road 167 Extension                                                                                                                                                                  |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment                      | Undeveloped area                                                                                                       | Undeveloped area on permafrost                                                                                                                                                      | Undeveloped area                                                                                                                                                                    |
| Operational Season               | all year                                                                                                               | all year                                                                                                                                                                            | all year                                                                                                                                                                            |
| Elements of interest / Relevance | <ul style="list-style-type: none"><li>• two-lane - gravel</li><li>• all year operation</li><li>• remote area</li></ul> | <ul style="list-style-type: none"><li>• two-lane</li><li>• Same territory</li><li>• Similar road-way uses and construction conditions</li><li>• Recent and available data</li></ul> | <ul style="list-style-type: none"><li>• two-lane</li><li>• Same territory</li><li>• Similar road-way uses and construction conditions</li><li>• Recent and available data</li></ul> |

## Railway Infrastructure

The study team has compiled a list of northern railways that already exist or are under development. Various elements of comparison developed by the Phase 1 Study Team are used to evaluate the infrastructure, and some of them are presented in the table below.

| Elements of Comparison              | Studied LGA Rail                                               | Tshiuetin Rail Transport                         | Québec North Shore and Labrador Railway | ArcelorMittal Mining Railway | Alaska - Alberta Railway |
|-------------------------------------|----------------------------------------------------------------|--------------------------------------------------|-----------------------------------------|------------------------------|--------------------------|
| Track class                         | <b>Class 3</b>                                                 | Class 3                                          | Class 3 / 4                             | Class 2 / 3                  | N/A                      |
| Status                              | <b>Study Underway</b>                                          | Operating                                        | Operating                               | Operating                    | Concept                  |
| Ownership                           | <b>Cree</b>                                                    | Naskapi and Innu communities                     | Private                                 | ArcelorMittal                | A2A Rail                 |
| Track length                        | <b>700 km</b>                                                  | 216 km                                           | 418 km                                  | 420 km                       | 2570 km                  |
| Transport mode                      | <b>Freight / Mine / Passenger</b>                              | Freight/Mine, Passenger                          | Freight/Mine, Passenger                 | Freight/Mine                 | N/A                      |
| Annual tonnage                      | <b>N/A</b>                                                     | 4 MTPA                                           | 30-35 MTPA                              | 25 MTPA                      | N/A                      |
| Environmental and Social conditions | <b>Northern forested area; coordination with First Nations</b> | Northern forested area; operated by First Nation | Northern forested area                  | Northern forested area       | Northern forested area   |

## Port Infrastructure

We have compiled a list of facilities that already exist in different parts of the world (mainly in the North). Since it is also part of the pre-feasibility study to define the type of the future port facility, we have compiled a list of 29 projects that have different vocations to provide perspectives on the type and scope of facilities that can be developed within the framework of the Grande Alliance. Here are some of the 29 identified:

| Elements of Comparison | Studied LGA Port                 | Deception Bay Port   | Voisey's Bay Mine Wharf   | Port of Churchill  | Pond Inlet                | Hay River Wharf       | Nuuk Port and Harbour            |
|------------------------|----------------------------------|----------------------|---------------------------|--------------------|---------------------------|-----------------------|----------------------------------|
| Location               | <b>QC</b>                        | QC                   | NL                        | MT                 | NU                        | NWT                   | Greenland                        |
| Type                   | <b>Fish, cargo</b>               | Minerals             | Minerals concentrate      | Grain, bulk, cargo | Fish, cargo               | Fishing               | Container, cruise                |
| Vessel Type(s)         | <b>Fishing and cargo vessels</b> | Ore-Bulk-Oil Carrier | Ice-breaking Bulk Carrier | Panamax            | Fishing and cargo vessels | Small fishing vessels | Container, cruise, bulk carriers |