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LA GRANDE ALLIANCE

ENGINEERING CONSULTING SERVICES

Transportation Infrastructure Program
Feasibility Study, Phase I
Cree Land Use Study - Eastmain
Technical Report

Consultant Reference: LGA-1-EA-S-SCL-RT-0001-01
2024-03-27

Vision Eeyou Istchee
• Connect • Develop • Protect

Stantec ▮ DESFOR ▮ SYSTRA
with subconsultant KPMG

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CREE LAND USE STUDY - EASTMAIN TECHNICAL REPORT

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1. INTRODUCTION

1.1 LA GRANDE ALLIANCE

La Grande Alliance (LGA) program is a plan to protect, connect and develop the Eeyou-Istchee Baie-James territory. It includes a study of a transport development that encompasses a renewal of existing Cree Community roads, the implementation of a north-south link Matagami to the James-Bay area and finally, a deep-sea port. It materialized in 2018 when the Grand Council of the Cree (GCC) and the Governement du Québec (GQ) signed a memorandum of understanding for the study. The study has involved the Cree First Nations communities from the beginning of the initiative to ensure community engagement, and respect for the traditional way of life and values. The study is overseen by the Cree Development Corporation (CDC) on behalf of the Cree Nation Government (CNG).

The CDC, on behalf of the GCC/CNG and the GQ, has been mandated to oversee the study. In turn, they have assigned Vision Eeyou Istchee (VEI), a consortium formed by STANTEC, DESFOR and SYSTRA, to carry out a Feasibility Study on the technical, socio-environmental and economic components in Phase I of the LGA infrastructure program, covering years 1-5 from the beginning of construction. The CDC appointed WSP to perform a pre-feasibility study of Phases II-III of the program (covering years 6-15 and subsequently years 16-30).

Phase I of LGA includes:

- Upgrades to the access roads between the Billy-Diamond Highway (BDH) and the Cree communities of Waskaganish, Eastmain and Wemindji.
- Upgrade to the access road between the Route du Nord (RDN) and the Cree community of Nemaska.
- Construction of a new secondary access road to Mistissini via the RDN.
- A railway line following, as much as possible, the Billy-Diamond Highway between the town of Matagami and KM257 (Rupert River bridge) of the Highway.
- A return to service for the railway line between Grevet (Lebel-sur-Quévillon) and Chapais (approximate distance of 225 km).
- Trans-shipment areas along the Billy-Diamond Highway and the Grevet-Chapais railway corridors, specifically one located at KM257.

Among the tasks to achieve the stated objectives of the Feasibility Study for Phase I — Infrastructure, a socio-environmental feasibility study was conducted. This study included a Cree Land Use Study among the communities potentially impacted by the proposed infrastructures, including Eastmain.

1.2 SOCIO-ENVIRONMENTAL FEASIBILITY STUDY

Development projects cannot be carried out without bringing changes in the environment and to the social environment. The James Bay and Northern Québec Agreement (JBNQA) was established in 1975 to ensure, among other things, that development in the Cree territory is carried out taking into account the protection of the environment and the maintenance of land use by Cree communities for the practice of their traditional activities. The JBNQA also provides a pathway for Cree in the decision-making as part of the environmental assessment process under Chapter 22 of the Agreement.

This Environmental and Social Feasibility Study is an important tool to guide future developers wishing to carry out the Phase 1 of LGA. It is an innovative approach that plans to document, upstream of design by future proponents, the expectations and concerns of affected Cree communities, identify key potential land use conflicts and propose solutions (avoid, mitigate, offset), anticipate key potential impacts and recommend mitigation measures.

The CDC made it clear from the beginning of the LGA process that they wanted local community involvement, and environmental and social criteria evaluated at the same level as technical and financial criteria in the infrastructure design and planning. To meet these principles, VEI did the following:

- Organised internal bi-weekly meetings and direct exchanges between colleagues to share relevant land use and environmental information with the other study teams as it was collected;
- Used an online database (interactive ArcGIS map) to make land use, environmental and technical data accessible to targeted team members:
- Organized a workshop, bringing together tallymen and engineers, to review the potential Billy-Diamond Highway railway alignment, and identify main issues;
- Accommodated the tallymen's recommendations as much as possible.
- Encouraged team members to communicate with the Cree Liaison Officers (CIOs) and have ad-hoc discussions with them.
- Prioritised Cree workers and companies in the organization of field campaigns.
- Invited tallymen and land users to meet the field crews and to participate in fieldwork.
- Reviewed and included information shared by the following organizations:
  - Cree Nation Government (Land Use Planning Commission, including the Protected Areas Working Group and Environment Department);
  - Aanischaaukamikw Cree Cultural Institute;
  - Cree Outfitting and Tourism Association;
  - Cree companies, Cree communities, and the CIOs.

1.3 CREE LAND USE STUDY

As part of the socio-environmental study, the mandate included a Cree land use study which covered each proposed infrastructure's study area. The Cree land use study's main goal is to document the land and resources use in the study area, so as to better identify and understand potential risks, conflicts and opportunities related to the transportation infrastructures under study. More specific objectives of this research include:

- Collect traditional knowledge regarding the area to inform and improve the design of the potential infrastructures.
- Identify valued sites and sensitive areas to be protected from potential development.
- Gather concerns and recommendations in relation to the proposed infrastructure, as well as concerning the LGA process in general.
- Assess preliminary potential impacts from the construction and operation of the infrastructures.

- Identify any potential cumulative effects from previous project impacts as well as in light of the potential infrastructures.
- Propose solutions to potential conflicts and alternate options.

It is important to keep in mind the following limitations regarding this component of the study:

- Novelty of the Grande Alliance study and approach for land users for whom this consists of the first contact regarding the infrastructure components under study;
- Relatively short time allotted to conduct the interviews and the study;
- Difficulty to obtain data from past studies or projects (e.g. sites of special interest to the Cree identified during forestry management exercise, as per the Paix des Braves);
- Difficulty to reach and meet all the potentially affected land users;
- Reluctance from certain land users to participate in the study because they do not want their participation to be interpreted as consent to the proposed infrastructure or to LGA;
- Reluctance from certain land users to share specific information about their activities;
- “Consultation fatigue” of certain land users who have shared their knowledge repeatedly;
- Potential loss of precision due to translation (Cree-English/English-Cree).

Is should be seen as a first general picture of the land and resources use in the study areas, to be completed in future stages of the process, rather than a complete list of land use features and recommendations. Indeed, it should be noted that the approach adopted by the LGA team is very innovative in engaging land users and community members from the start of the planning process, before the final infrastructure design. If some of the proposed infrastructure works go ahead, engagement with community members will continue and data will be refined.

The present report presents the results of the Cree Land Use Study conducted in the community of Eastmain.

2. METHODOLOGY

The approach and methodology adopted for the Cree land use study, as well as the consent forms and interview grid were reviewed by and discussed with the CIOs.

2.1 STUDY AREA

The study area defined for the Eastmain access road consist of a 1 km buffer zone on either side of each road's centerline and they extend from the start of the road to its connection with the BDH (see Map 1). However, during the interviews with tallymen and land users, if land use activities or features were reported outside the study area, they were noted as well.

The table below indicates the traplines in Eastmain potentially touched by the upgrade of the access road.

Table 1: Traplines in Eastmain Potentially Touched by LGA Phase 1 Infrastructures

Infrastructure	Number of traplines	Trapline Intersected
Eastmain Access Road	3	RE03A
		RE04
		RE03

2.2 DATA ACQUISITION AND PROCESSING

2.2.1 Literature review

At the beginning of the study, a review of existing information was conducted. General search by key words was carried out as well as search in specific databases, including:

- Hydro-Québec projects that were subject to an environmental impact assessment (Cherloc);
- Projects evaluated by the COMEX;
- Québec environmental assessment registries (MELCCFP and Bureau des audiences publiques sur l'environnement);
- Canadian impact assessment registry (Government of Canada).

More than 200 documents, concerning at least 40 projects achieved between 1977 and 2021, were consulted. This literature review allowed to collect information about known valued sites and sensitive elements, mainly along the Rupert River on Waskaganish and Nemaska territories. Some information regarding Cree land use near the communities of Waswanipi and Nemaska was also available. However, the literature review also revealed that little information is available for several sectors under study, including:

- Around the community of Wemindji and along the access road;
- Along the Billy Diamond Highway between Matagami and Waskaganish;
- Along the Grevet-Chapais roadbed, except for Lake Opawica area;
- Along the Eastmain access road.

2.2.2 Land user interviews

At the beginning of the study, traplines that could potentially be touched by the proposed works and infrastructures were identified. The VEI team then asked each CIO to validate the identity of each trapline's tallyman and to identify other land users or knowledge holders who should be invited to participate in the Cree land use study. In collaboration with the CIOs, VEI organized information sessions for tallymen and land users in each community potentially affected by LGA Phase 1 infrastructures (eight communities). Tallymen were invited to bring their family members and land users with them. General information on LGA as well as more specific information about Phase 1 studies and the infrastructures that could potentially go through the local traplines were presented and discussed with the attendees.

Sometime after the information session, the tallymen were invited to an individual land use interview in which their family members and land users were also welcomed to participate. The interviews were semi-structured, with open-ended questions, and were conducted mostly in Cree by one of VEI's Cree Liaison Officers and VEI's anthropologist. Large paper maps were used to locate land use features and information shared by the participants. Prior to starting the interview, the participants were asked if they had questions about LGA, and information about LGA and specific infrastructures was presented to those who had not assisted to the information session. The interview questions touched upon the following themes:

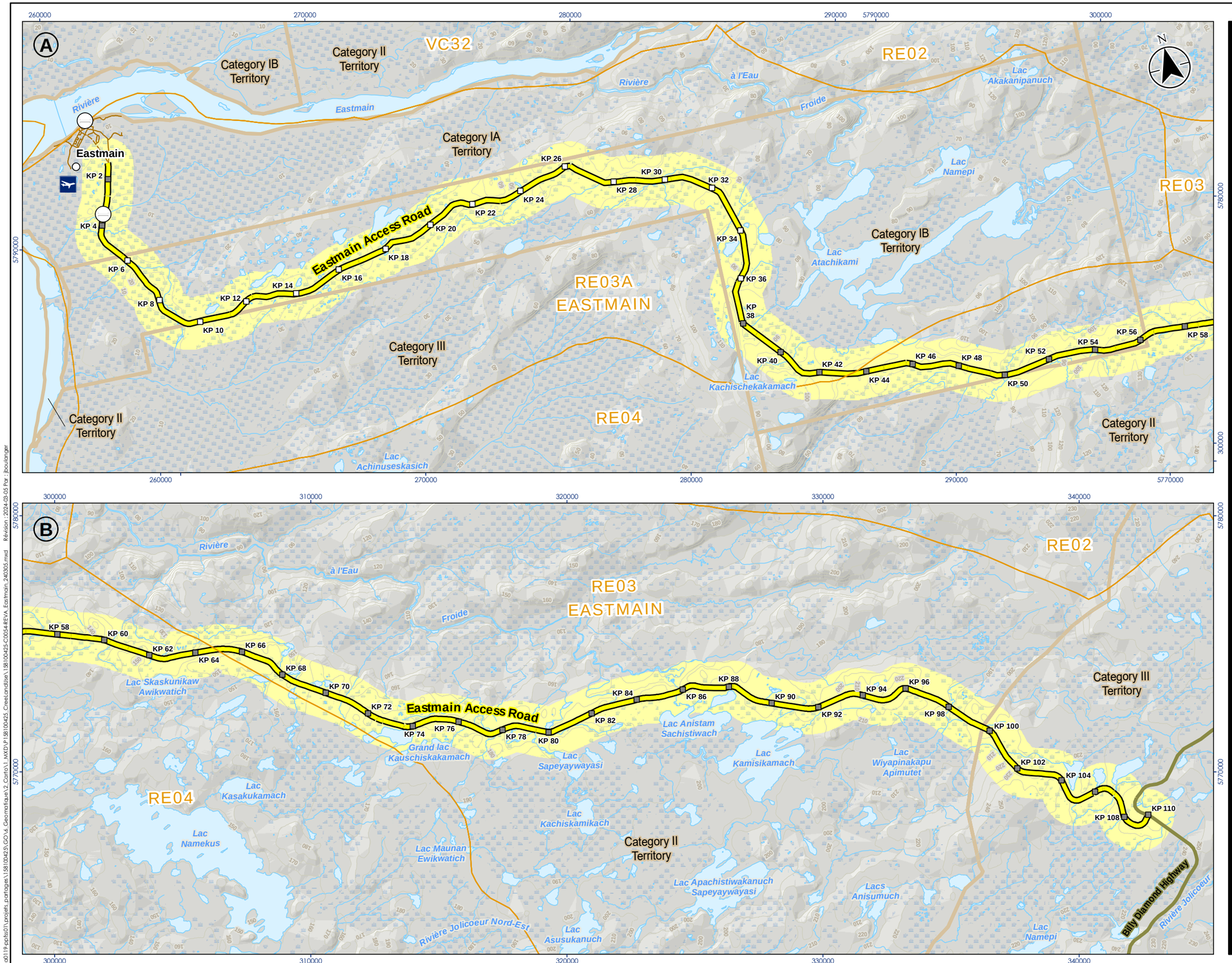
- Description of land use activities and features
  - Harvesting activities (hunting, fishing, trapping, and berries, plants and wood gathering);
  - Habitations sites (camp, cabin, seasonal campsite, tent frame, camping area, house, store, old trading post, old campsite and other building);
  - Trails and travelways (ATV/snowmobile trails, forestry roads, path, boat landing and portages);
  - Social and cultural sites (community, gathering, knowledge transfer, historical, archeological, ceremonial, burial or sacred site, picnic area, landmark).
- Environmental information concerning the study area (traditional ecological knowledge)
  - Wildlife:
    - Species present in the study area, quantity, quality, and potential issues.
    - Trails and migration routes, with special attention to roads and alignments crossings.
    - Calving/kidding aresa.
    - Other areas used by moose or caribou.
    - Beaver lodges/ponds.
    - Goose hunting ponds.
  - Fish:
    - Species present in the study area, quantity, quality, and potential issues.
    - Presence of fish, and species, in each watercourse along the alignments.
    - Spawning and rearing areas.

  - Water Resources
  - Wetlands, bogs, swamp areas
  - Invasive species and changes observed in the last 25 years.
- Condition of the existing infrastructures
- Potential effects and recommendations.

Once the interviews notes were compiled, the information collected was integrated into a GIS database specifically created for Phase 1 feasibility study, so it could be shared with the technical and the archaeological teams (note that access was limited to a small number of people).

Validation interviews were organized with the study participants, so they can review the data collected, verify its accuracy, and add precisions if required. The georeferenced database was also used during the validation process, to make sure the land use information was properly located. The interview notes were also read with the participants to validate the accuracy and clarify some information, if needed. The validation process also offered the land users an opportunity to share additional data or express additional concerns and recommendations.

It is important to note that some of the information collected is not presented in this report or is mentioned with very few details to preserve confidentiality and respect its sensitive nature. However, it will be provided to the CDC along with relevant non-disclosure agreements.



Map No.
1

Title

Cree Land Use Study Area in Eastmain

Client/Project
Cree Development Corporation
La Grande Alliance – Feasibility Study
Phase 1

Project Location
Eeyou Istchee, Québec

158100425-C0054 REVA
Prepared by Julie Brunette le 2024-03-05
Verified by E. Ferland on 2024-03-05
Independent Review by F. Vinet on 2024-03-05

Human Environment Components
- Cree Village
- Bridge
- Airport
- Category I, II or III Territory

Study Components
- Eastmain Access
- Study Area – 1 km Buffer on Each Side of the Access Road

Trapline Limit and Community Name
- Eastmain

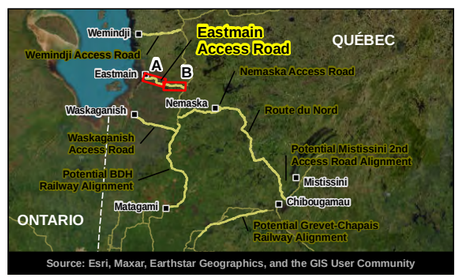
Wetland
- Potential Wetland

Hydrography
- Body of water
- Intermittent Watercourse
- Permanent Watercourse

Road Network
- Kilometric Point (MTQ, 2021)
- Kilometric Point (Created by Stantec)

Road Classification
- Collector
- Local
- Access Path

Topography
- Contour Line (10 m)



Notes
1. Coordinate System: NAD 1983 UTM Zone 18N
2. Geotechnical Investigation: Stantec, 2023
3. Road Network: Adresses Québec, 2021
4. Hydrography: GRHQ, 2017
5. Orthoimagery: ESRI-World Imagery, 2017

0 1,5 3 km
1:150 000
(At original document size of 11x17)

3. COMMUNITY PROFILE

Eastmain territory is divided into 15 traplines covering 15,240 km^2 (CMEB, 2022). The community, located approximately 100 km from the BDH, is accessible by the Eastmain Road. Named in 1730 by the Hudson Bay Company, Eastmain was at that time the Hudson Bay trading headquarters for the east coast of James Bay and Hudson Bay. The town was originally located on the north shore of the Eastmain River, but in 1762, Eastmain was relocated to the south shore because it provided easier access to the town from the James Bay (CNE, 2022).

As of August 2022, the Cree First Nation of Eastmain had a total registered population of 953 (CIRNAC, 2022), with 840 members living on reserve, 51 living off reserve and 62 living on other reserves or Crown land.

The only LGA Phase 1 infrastructure located on Eastmain territory is the entire Eastmain Access Road.

According to the Land Commission Report (EPC, 2017a), the Eastmain Crees valued the protection of freshwater sources. they also stated that the freshwater source further away on a hill at kilometer 37 of the access road may be eventually damaged or spoiled by future economic development. Also, the Eastmain Crees stated that they believe that the Eastmain River and its tributaries are highly valuable. Those body of water are valued because of the kinds of fish they host: the habitat of sturgeon and Cisco trout for example.

3.1 ISSUES AND VISION

In 2017, the Eeyou Planning Commission undertook a consultation process with Eastmain community members. The results are presented in the "Report on Community Input on Land Use Planning Goals" (EPC, 2017b) and included information on the community's values, issues and vision for the future. Some of it is summarized below:

Issues that Eastmain Faces:

- Impacts of hydroelectric development
- Concerns about impact of mineral exploration and exploitation
- Constraints on land use due to activities from southerners
- Lack of forest due to recent large-scale forest fires on their territory
- Littering and pollution
- Over-harvesting and break down of the tallyman system
- Breakdown of the trapline system
- Access to hunting areas

Elements of an Eastmain vision for the future:

- Governance
- Environmental monitoring and management
- Environmental protection
- Maintained and enhanced access to land-based activities
- Addressing potential over-harvesting
- Cree-led development
- New community cultural site

4. RESULTS

The interviews provided a general idea of the land use taking place along the access road and surrounding areas, rather than a complete picture. The number of land users of the study area, the frequency of their visits and quantity of resources harvested were not estimated since it was not in the scope of the Cree land use study carried out as part of the LGA Phase 1 Feasibility Study. It is worth noting that such an estimation exercise would be a big undertaking since various community members use the lands in proximity to their community's access road.

While being relatively recent on the territory, modern roads are widely used by the Cree population. In terms of transportation routes, they have overtaken rivers. The communities' access roads are not only important to connect with other communities and with "the south", but also to facilitate land use and harvesting activities. The fact that most land users do not live from the land anymore and occupy paid jobs partly explains the growth in importance of modern roads, as they provide faster access. Major changes in important rivers' hydrology and ice cover, following hydroelectric development in the last decades or due to climate change, also contributed to the increase in use of modern roads. Since it is now more dangerous, complicated, or sometimes impossible to navigate on some watercourses as well as to travel by snowmobile, roads offer interesting alternate options.

4.1 CREE LAND USE

The construction of the actual Eastmain access road was completed in 1994 (MTQ, 2022). The road has a total length of 104 km, from the outskirts of the community to its connection with the BDH, around km 350. Starting west, the first 5.7 km, located on category I lands, are already paved. The road continues on category IB lands for 48.9 km (km 22 to km 94), then on category II lands for 41.8 km, and on category III lands for the rest of its alignment (approximately 6 km). The access road crosses three traplines, namely RE03A, RE04 and RE03.

On October 20, 2022, VEI conducted land use interviews with a total of four participants which included the tallymen, their family members and/or the land users of two out of two of the Eastmain traplines (RE03A and RE03) intersected by the access road. VEI was not able to meet with the tallyman of the trapline RE04.

4.1.1 Trapline RE03A

The tallyman and land users indicated three camps in the vicinity of the Eastmain access road, which includes the Cree School Board Camp and a cultural camp where the Sun Dance Ceremony takes place. The site is used as a cultural site since 2010. There has been shaking tents ceremony and walking out ceremonies there. Spring water is also collected near one of those camps and along the road. Participants also reported three paths leading to hunting areas, camps and lakes from the access road, and mentioned a projected fishing camp.

Hunting activities mostly for moose, rabbit, geese, and beaver were mentioned. Participants pointed out five goose ponds along the road and indicated some locations where people park on the access leading to the pit or within the pit. Beavers have been active around the culverts located at km 4, 6, 40 and 41 of the Eastmain Road. They moved around, "but they'll be back". Blueberry picking areas were identified along the road and wood cutting activities by community members were reported. There is trout, as well as different species like pike, sturgeon and whitefish, in the lakes along the road.

The beaver creek around km 4 of the road is the Eastmain community's water source, where the pump house is. It pumps into an artificial lake and it creates a reservoir. Anything east of km 4 (upper branch of the stream) is the source of it; anything west of it goes downstream, into the bay.

4.1.2 Trapline RE03

Camps can be reached from the Eastmain access road, but hunting activities are concentrated in the middle of the trapline. There are three old campsites along the road on trapline RE03 where cultural activities are held.

The federated snowmobile trails burned down during the 2013 forest fire, but the Niskamoon trails are still used (one is 28 km long, and the other is approximately 10 km long).

The tallyman reported several hunting activities along the Eastmain access road, and in the surrounding area. Tallyman and land users hunt all types of animals on their trapline, but especially goose and moose. A lot of hunters go on this trapline and it could imply safety issues.

Approximately 85% to 90% of trapline RE03 was touched by a forest fire in 2013. Most berry-gathering areas were burned down and most beaver dams too, except those located on lakes. Most of the area was too dry for vegetation. The peat moss burned as well, so there is only sand now. A catastrophic change in wildlife and vegetation was observed after the forest fire and since then, fish is the main subsistence they can get from the trapline. They fish in a chain of three lakes located south of the Eastmain Road. They catch brook trout, rainbow trout, hybrid trout (like salmon), whitefish, cisco, and walleye. Before the forest fire, they could get around 100 fish in an hour, but it is not like that anymore. It takes seven years for nature to recover from a forest fire, so they tell people from the community to catch and release the fish now. The tallyman and land users take their drinking water at the km 381 road stop. Before the forest fire, they used to get it from the creeks.

The area between km 80 and km 86, approximately, is a sacred spot for the tallyman's family, an area that they want to protect. The participants also mentioned a burial site but did not located it.

The area around the lake located south of the road, near km 95, is used to do a lot of hiking, walking, and canoe.

In the trapline's easternmost area, close to the BDH turn-off, there are fox, wolverine, moose and bear. A bear den can be found near small river. An increase in invasive species is observed on the side of the road. The participants are seeing willow growing on their territory, which was not present before.

4.2 Comments, Concerns and Recommendations

The Cree land use study participants shared information regarding the Eastmain access road and made interesting recommendations concerning its potential upgrade and paving. Their comments, concerns and recommendations are presented in the table below:

Table 2: Comments, Concerns and Recommendations – Upgrade and Paving of Eastmain Access Road

Alignment / Conception
• The road is too soft in the area of km 48.
Safety
• The curve at km 26 is dangerous. • People ride on bicycles up to km 12 of the road. • The road is too narrow to park roadside, so it is dangerous when people have an emergency.

5. REFERENCES

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