

## Eastmain-1-A and Sarcelle Powerhouses and Rupert diversion

# Summary of Mitigation and Enhancement Measures

## Part 5 – *Wemindji*

May 2012



# The Community of Wemindji and the Project

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## REFERENCES





# The Community of Wemindji and the Project

Map WE-1 – Territory of the Community of Wemindji



## INTRODUCTION

This document was prepared as part of the Cree public consultation process introduced by the Environmental and Social Impact Review Committee (COMEX) for the Eastmain-1-A and Sarcelle powerhouses and Rupert diversion project.

It will serve as a reference for COMEX members, Cree land users and Cree community representatives to keep them abreast of the mitigation and enhancement measures implemented on each trapline and the general measures to promote economic spinoffs in the Cree community (workers, companies and tallymen), as well as jobsite integration of Cree workers. It also includes assessments of the measures' efficiency as determined by monitoring programs and interviews with the users concerned.

The document is in six parts, one for each of the six communities of Mistissini, Nemaska, Waskaganish, Eastmain, Wemindji and Chisasibi.

This part presents a summary for the community of Wemindji (see Map WE-1).

Map WE-2 – Components of the Eastmain-1-A/  
Sarcelle/Rupert Project

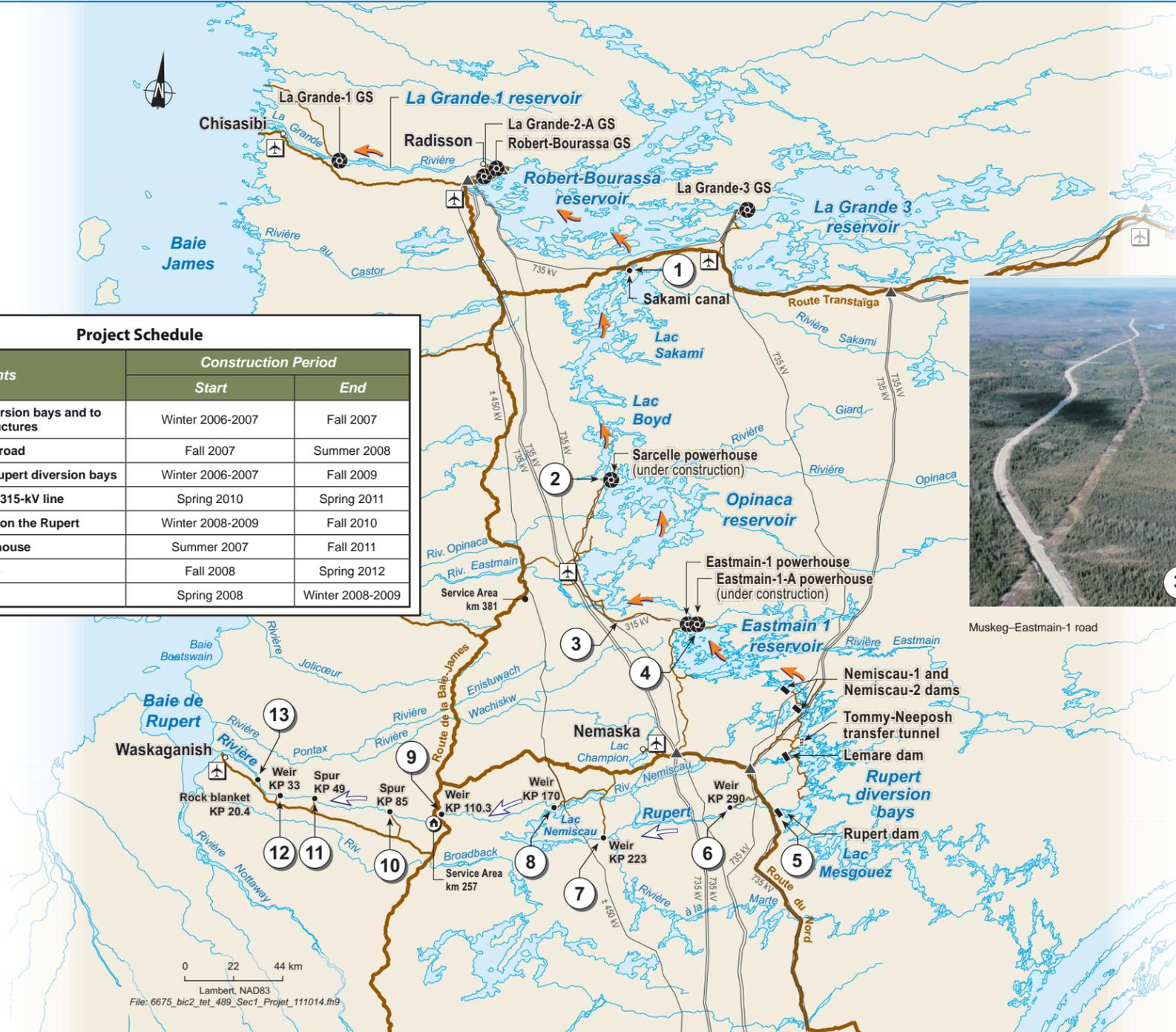


Sakami canal

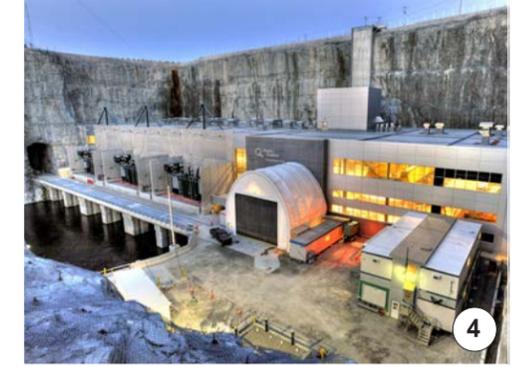


Sarcelle powerhouse (under construction)

Project Components	Construction Period	
	Start	End
Access roads to diversion bays and to Rupert diversion structures	Winter 2006-2007	Fall 2007
Muskeg–Eastmain-1 road	Fall 2007	Summer 2008
Dams and dikes in Rupert diversion bays	Winter 2006-2007	Fall 2009
Eastmain-1–Sarcelle 315-kV line	Spring 2010	Spring 2011
Hydraulic structures on the Rupert	Winter 2008-2009	Fall 2010
Eastmain-1-A powerhouse	Summer 2007	Fall 2011
Sarcelle powerhouse	Fall 2008	Spring 2012
Sakami canal	Spring 2008	Winter 2008-2009



Muskeg–Eastmain-1 road



Eastmain-1-A powerhouse (under construction)



Rupert dam



Rock blanket KP 20.4



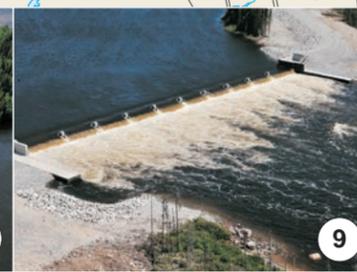
Weir KP 33



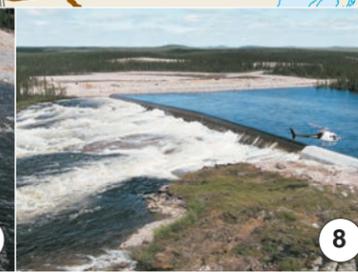
Spur KP 49



Spur KP 85



Weir KP 110.3



Weir KP 170



Weir KP 223



Weir KP 290

# Summary of Mitigation and Enhancement Measures

## 1.0 Project and Agreements

In the *Agreement Concerning a New Relationship Between the Gouvernement du Québec and the Crees of Québec* signed on February 7, 2002, the Crees consented to construction of the Eastmain-1-A powerhouse and Rupert diversion project subject to the environmental assessment required under the *James Bay and Northern Québec Agreement*. Among other things, the Agreement stipulates that:

- Hydro-Québec will pay the cost of all remedial work that is required by the government authorizations for the project;
- Remedial work for the Crees, jobs for Crees, contracts for Crees and Cree companies and other topics related to the project are covered under the *Boumhounan Agreement*.

Hydro-Québec made specific commitments in the *Boumhounan Agreement*<sup>1</sup>:

- Reduce project impacts by implementing remedial and mitigation measures;
- Ensure that Crees participate in project-related studies and construction.

It was in this context that SEBJ signed a letter of undertaking with each tallyman directly affected by the project regarding implementation of the mitigation and enhancement measures. The objective was to ensure that the tallymen could continue to practice their traditional activities during and after project construction.

Then, in 2010, the decision by the parties to the *Boumhounan Agreement* to amend certain provisions related to Sarcelle powerhouse led to the signature of the Convention relative à la centrale de la Sarcelle [Agreement concerning Sarcelle powerhouse] and the Convention complémentaire no 2 [Complementary agreement No. 2]. The latter agreement specifies that the flow of water diverted to Sarcelle powerhouse and the Sarcelle control structure must not exceed 2,770 m<sup>3</sup>/s, except in emergencies.

Finally, note that the community of Chisasibi is not a signatory to the Boumhounan Agreement. However, we took the community into account in the environmental assessment for the project and a mitigation measure was put into effect in response to an important community concern. This measure consisted in installing granular blankets on parts of the southern bank of the river downstream of La Grande-1 that are sensitive to erosion (9.2 km according to the 2004 Environmental Impact Statement). Furthermore, La Grande Rivière and Baie James (James Bay) were included in the study area of certain environmental monitoring programs associated with the Eastmain-1-A/Sarcelle/Rupert project.

1. The Cree signatories of the *Boumhounan Agreement* are the Grand Council of the Crees (Eeyou Istchee), the Cree Regional Authority, the Eastmain Band, the Cree Nation of Mistissini, the Nemaska Band and the Waskaganish Band.

2. In the *Convention relative à la centrale la Sarcelle*, in addition to the description of the Sarcelle project and the La Sarcelle Regional Development Fund, amendments have been made to include the Cree Nation of Wemindji among the beneficiaries of the *Boumhounan Agreement*.

## 2.0 Main Project Components and Construction Phases

In November 2006 and February 2007, upon completion of the environmental assessment process, Hydro-Québec obtained the necessary provincial and federal authorizations to carry out the Eastmain-1-A and Sarcelle powerhouses and Rupert diversion project. This project, located in the Baie-James region, affected the Cree communities of Mistissini, Nemaska, Waskaganish, Eastmain, Wemindji and Chisasibi.

The main project components illustrated on Map WE-2, for which construction began in February 2007, are the following:

- **Eastmain-1-A powerhouse** (768 MW with three Francis turbines) near the existing Eastmain-1 facility.
- **Sarcelle powerhouse** (150 MW with three bulb-type turbines) at the outlet of Opinaca reservoir near the Sarcelle control structure.
- The **Rupert diversion** includes:
  - Four dams, including Rupert dam at KP 314 of the river, and 73 dikes;
  - A spillway on the Rivière Rupert at the dam site that also controls the instream flow;
  - Five other instream flow release structures built into some of the retaining structures in the diversion bays (Nemiscau-1, Nemiscau-2, Ruisseau-Arques, Lemare and LR-51-52);
  - A 2.9-km-long transfer tunnel between the two diversion bays with a maximum capacity of 800 m<sup>3</sup>/s;
  - Nine canals (four in the forebay and five in the tailbay) with a total length of about seven kilometres to facilitate flow to the various parts of the diversion bays.

The Rupert diversion began operation on November 7, 2009 and since December 3, 2009 has channelled part of the Rupert's flow to Eastmain-1 powerhouse and the two new powerhouses (Eastmain-1-A and Sarcelle), and then to Robert-Bourassa, La Grande-2-A and La Grande-1 generating stations. The average annual flow diverted to the Eastmain watershed is about 452 m<sup>3</sup>/s.

The project also includes:

- **Eight hydraulic structures on the Rupert** at KP 20.4, 33, 49, 85, 110.3, 170, 223 and 290, which substantially maintain the water level in nearly half of the river downstream from the diversion point at KP 314;
- **A canal with a concrete weir** at the outlet of Lac Sakami was completed in spring 2009 and channels the additional flow from the Rupert diversion while maintaining the stipulated operating levels in the lake;
- **Two 315-kV transmission lines** to bring the power generated by the new plants onto the grid: one 101-km line links the Sarcelle and Eastmain-1 powerhouses and the other 0.5-km line connects the Eastmain-1 and Eastmain-1-A powerhouses.

The following were also required to complete the project:

- 131 km of permanent roads to the main structures and temporary construction roads;
- A permanent, 40-km Muskeg-Eastmain-1 road connecting Muskeg substation and the Eastmain-1-Nemiscau road;
- Five temporary workcamps to house workers, including two camps used during construction of Eastmain-1 powerhouse (Nemiscau and Eastmain workcamps) and three new camps (Rupert, Sarcelle and Oujeck);
- Food and lodging services at Siibii camp in the village of Waskaganish, used by workers assigned to construction of the hydraulic structures at KP 20.4, 33 and 49, as well as at the service area at Km 257 for workers assigned to the structures at KP 85 and 110.3

### 3.0 Cree Information and Consultation Process

The Eastmain-1-A/Sarcelle/Rupert project stands out not only because of its technical achievements, but also for its unique approach to relations with the host community. A process for improving our ways of doing things emerged as the various stages of the project proceeded, allowing us to establish a climate of cooperation and respect with the Crees

Formal participation process



#### PRELIMINARY STUDIES 1997-2001

##### 1999 Agreement with Mistissini

The agreement authorized Hydro-Québec to proceed with the necessary technical studies within the Mistissini traplines to examine the alternatives for partial diversion of the Rupert at KP 314 or KP 490



#### DRAFT PHASE 2002-2006

##### Cree-Hydro-Québec Feasibility Study Group (Boumhounan Committee)

Forum for discussing field studies and surveys, project design, impacts and mitigation measures, as well as for consulting and disseminating information to the Crees. The committee is made up of representatives of:

- Wemindji, Eastmain, Chisasibi, Waskaganish, Nemaska and Mistissini;
- Cree Regional Authority (CRA);
- Hydro-Québec/SEBJ.

Boumhounan Committee members:

- **Examined** terms of reference and study results;
- **Were consulted** on technical aspects of the project;
- **Participated** in siting hydraulic structures on the Rupert and in fine-tuning the instream flow regime;
- **Collaborated** in the review of the Environmental Impact Statement.



##### Communication tools:

- Information offices in the communities run by a representative and a coordinator;
- *Boumhounan Newsletter* and *Boumhounan NewsFlash* ;
- Advertising, notices and special advertising sections in *The Nation*;
- CD-ROM on the project (in Cree).



#### CONSTRUCTION 2007-2012

##### Monitoring Committee

The Monitoring Committee combines members of the *Technical and Environmental Committee* for the Eastmain-1 project and the *Boumhounan Committee* for the Eastmain-1-A/Sarcelle/Rupert project and is a discussion forum on technical, social and environmental aspects of the project. The committee is made up of representatives of:

- Wemindji, Eastmain, Chisasibi, Waskaganish, Nemaska and Mistissini;
- Niskamoon Corporation;
- Hydro-Québec/SEBJ.

Monitoring Committee members:

- **Agree** with terms of reference;
- **Discuss** study results;
- **Confirm** the selection of consultants;
- **Participate** in the evaluation of consulting firms;
- **Agree** on certain modifications to technical aspects of the project, such as:
  - Strategies for accessing hydraulic structures,
  - Location of infrastructures for worker accommodations;
- **Support** users in developing and implementing mitigation measures;
- **Create** subcommittees to discuss key issues in greater depth such as fish, the human environment and navigation.

##### Other joint committees

- Cree tourism – Working group made up of COTA, CNACA, Niskamoon Corporation and Hydro-Québec
- Cree health – Committee made up of the Cree Board of Health and Social Services and Hydro-Québec
- Instream flow management – *Rupert River Water Management Board*

##### Communication tools:

- *Boumhounan Newsletter* (quarterly);
- Advertising and notices in *The Nation* and *Destination*;
- *Hydro and Friends*, semi-monthly radio show on JBCCS;
- Visits to Cree schools to present the *Blue water = Green energy* workshop;
- Jobsite tours on request.



84 shows as of  
December 21, 2011



#### OPERATION SINCE 2010

 66 meetings  
as of  
December 13, 2011



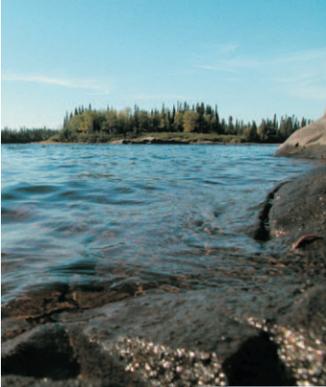
##### Communication tools:

- *Tipaachimuwin* newsletter ;
- Notices and monthly advertising sections in *The Nation*;
- *Hydro and Friends*, semi-monthly radio show on JBCCS;
- Web microsite.

# Information and consultation activities

Activities with tallymen and other users

Activities with communities

PRELIMINARY STUDIES	DRAFT PHASE	CONSTRUCTION	OPERATION
<p><b>Participation in geotechnical field campaigns</b></p> <ul style="list-style-type: none"> <li>Clearing</li> <li>Hydrometric surveys</li> <li>Laboratory analysis of soil samples</li> </ul>   <p>Over 2,000 person-days</p>	<p><b>Participation in technical and environmental studies</b></p> <ul style="list-style-type: none"> <li>Meeting with tallymen to present field study logistics</li> <li>Tallymen or their representatives accompany field crews and participate in field surveys</li> </ul>  <p>23,156 days worked</p>	<p><b>Participation in technical studies and environmental follow-ups</b></p> <ul style="list-style-type: none"> <li>Meeting with tallymen to discuss and plan logistics for field studies</li> <li>Tallymen or their representatives accompany field crews and participate in field surveys</li> <li>Training and orientation of Cree personnel by consulting firms (study objectives, health and safety, traditional knowledge, expectations, etc.)</li> </ul>  <p>20,747 days worked as of December 13, 2011</p> 	
	<p><b>Activities to collect and incorporate traditional knowledge</b> (woodland caribou, spawning ground locations, fish species in the Rupert, land use)</p>	<p><b>Annual individual meetings with the 33 tallymen</b> to review environmental commitments, hear their concerns and elicit their comments</p>  <p>426 meetings from 2007 to 2011</p>	<p><b>Annual meetings</b> with tallymen in each community</p> 
	<p><b>Workshops on impacts and mitigation measures</b> with tallymen and their guests (2003-2004)</p>  <p>24 meetings/ over 500 participants</p>	<p><b>Thematic presentations</b> on request (examples: lake cisco, eelgrass, Weh-Sees Indohoun Corporation)</p> 	
	<p><b>Public information and discussion sessions</b> in the four communities most affected, namely Waskaganish, Nemaska, Mistissini and Eastmain (2003-2004), and <b>presentations on specific topics at the Crees' request</b> (Waskaganish Youth Council, Nadoshtin Corporation, Waskaganish Band Council and Grand Council of the Crees)</p>  <p>9 meetings/ over 364 participants</p>		
<p><b>Public meetings</b> in the communities of Chisasibi, Wemindji, Waskaganish, Nemaska, Mistissini and Eastmain to ensure that the project took the Crees' concerns into account</p>  <p>20 meetings in the summer of 1998</p>	<p><b>Information-sharing meetings with the tallymen</b> affected by the development of the La Grande complex, the Eastmain-1 project and the Eastmain-1-A/Sarcelle/Rupert project (2003)</p>	<p><b>Frequent, regular discussions</b> with team members responsible for relations with Crees at the jobsite (Records of Cree requests and complaints)</p> 	
<p>Visits by Hydro-Québec President and CEO and the President of Hydro-Québec Production to the Cree communities of Chisasibi, Wemindji, Waskaganish, Mistissini and Eastmain, and with the Grand Council of the Crees to propose development of a 1,280-MW project involving partial diversion of the Rivière Rupert at KP 314</p>	<p><b>Regional trappers conference</b> to discuss their perceptions of the project (September 2006)</p>	<p><b>Semi-annual information tours</b> to the Cree communities concerned</p> <ul style="list-style-type: none"> <li>In winter, presentation of studies and upcoming work</li> <li>In summer, presentation of the previous year's follow-up results</li> </ul>  <p>10 tours from 2007 to 2011</p>	
	<p><b>Cree-Hydro-Québec-SEBJ conference</b> on lessons to be drawn from the Eastmain-1 project to ensure that the Eastmain-1-A/Sarcelle/Rupert project proceeds smoothly (November 2006)</p>	<p><b>Participation in annual general meetings</b> in the communities Information booth or presentation</p>	

PRELIMINARY STUDIES	DRAFT PHASE	CONSTRUCTION	OPERATION											
	<p>Joint identification of mitigation measures based on past experience with the La Grande complex project to mitigate anticipated impacts and facilitate land use</p>	<p>Specification of mitigation measures and implementation by tallymen</p>	<p>Follow-up on effectiveness of mitigation measures</p>											
<p><i>Paix des Braves</i> agreement signed in February 2002, under which the Crees agreed to construction of the Eastmain-1 project as defined in the JBNQA, and to the Eastmain-1-A powerhouse and Rupert diversion project subject to the environmental assessment carried out by the relevant authorities</p> <p>Choice of alternative involving partial diversion of the Rupert at KP 314 and signature of the <i>Boumhounan Agreement</i> in February 2002</p>	  	<table border="1"> <tr> <td data-bbox="1631 473 1693 856">Camp relocation</td> <td data-bbox="1693 473 2331 856"> <p><b>The tallyman:</b></p> <ul style="list-style-type: none"> <li>Determined the location of his new camp;</li> <li>Chose the camp layout;</li> <li>Assessed costs;</li> <li>Built his camp.</li> </ul> </td> <td data-bbox="1631 473 1693 856">Instream flow management</td> <td data-bbox="1693 473 2331 856"> <p><b>Rupert River Water Management Board:</b></p> <ul style="list-style-type: none"> <li>Monitors follow-up results;</li> <li>Suggests modifications to the instream flow regime when needed.</li> </ul> </td> </tr> <tr> <td data-bbox="1631 856 1693 1481">Navigation</td> <td data-bbox="1693 856 2331 1481"> <p><b>The tallyman:</b></p> <ul style="list-style-type: none"> <li>Identified corridors to be cleared for navigation and land use;</li> <li>Participated in flyovers of corridors;</li> <li>Participated in marking areas to be cleared;</li> <li>Did the clearing himself or subcontracted it to the contractor of his choice;</li> <li>Participated in river flyovers and navigated the river to test cleared corridors;</li> <li>Determined locations of signs along the shoreline;</li> <li>Installed signs;</li> <li>Commented on navigation charts.</li> </ul>  <p>288 signs</p> </td> <td data-bbox="1631 856 1693 1481">Navigation</td> <td data-bbox="1693 856 2331 1481"> <p><b>The tallyman:</b></p> <ul style="list-style-type: none"> <li>Monitors navigation corridors annually (wood debris, condition of signs, etc.).</li> </ul> </td> </tr> <tr> <td data-bbox="1631 1481 1693 1866">Access roads</td> <td data-bbox="1693 1481 2331 1866"> <p><b>The tallyman:</b></p> <ul style="list-style-type: none"> <li>Identified preliminary route, walked it and marked it;</li> <li>Optimized route (culverts, curves, slopes, wetlands);</li> <li>Executed contract to clear the right-of-way.</li> </ul> </td> <td data-bbox="1631 1481 1693 1866">Fish</td> <td data-bbox="1693 1481 2331 1866"> <p><b>Smokey Hill Liaison Committee:</b></p> <ul style="list-style-type: none"> <li>Identifies measures required for continuation of the traditional cisco fishery.</li> </ul>  </td> </tr> </table>	Camp relocation	<p><b>The tallyman:</b></p> <ul style="list-style-type: none"> <li>Determined the location of his new camp;</li> <li>Chose the camp layout;</li> <li>Assessed costs;</li> <li>Built his camp.</li> </ul>	Instream flow management	<p><b>Rupert River Water Management Board:</b></p> <ul style="list-style-type: none"> <li>Monitors follow-up results;</li> <li>Suggests modifications to the instream flow regime when needed.</li> </ul>	Navigation	<p><b>The tallyman:</b></p> <ul style="list-style-type: none"> <li>Identified corridors to be cleared for navigation and land use;</li> <li>Participated in flyovers of corridors;</li> <li>Participated in marking areas to be cleared;</li> <li>Did the clearing himself or subcontracted it to the contractor of his choice;</li> <li>Participated in river flyovers and navigated the river to test cleared corridors;</li> <li>Determined locations of signs along the shoreline;</li> <li>Installed signs;</li> <li>Commented on navigation charts.</li> </ul>  <p>288 signs</p>	Navigation	<p><b>The tallyman:</b></p> <ul style="list-style-type: none"> <li>Monitors navigation corridors annually (wood debris, condition of signs, etc.).</li> </ul>	Access roads	<p><b>The tallyman:</b></p> <ul style="list-style-type: none"> <li>Identified preliminary route, walked it and marked it;</li> <li>Optimized route (culverts, curves, slopes, wetlands);</li> <li>Executed contract to clear the right-of-way.</li> </ul>	Fish	<p><b>Smokey Hill Liaison Committee:</b></p> <ul style="list-style-type: none"> <li>Identifies measures required for continuation of the traditional cisco fishery.</li> </ul> 
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Cree participation in every phase of implementation of mitigation measures



Information on the location of the gauging stations



Seeding of exposed banks along the Rupert River



Training on safety when close to open water



Bathymetric surveys



Job site visit by Cree elders



Signage in the navigation corridors on the Rupert diversion bays



Development of brook trout spawning grounds



Signage in the navigation corridors on the Rupert diversion bays



Anadromous cisco fishing at the Smokey Hill site



Construction of fishing pools at the Smokey Hill site



Consultations with tallymen on mitigation measures

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## 4.0 The Project and the Community of Wemindji

The Cree village of Wemindji, with a population of over 1,300, is located on the Baie James coast at the mouth of the Rivière Maquatua on the north shore. By road, the village is:

- 96 km from Route de la Baie-James;
- 220 km from the junction of the access road to Opinaca reservoir;
- 262 km from the Opinaca aerodrome;
- 273 km from Sarcelle workcamp;
- 282 km from Sarcelle powerhouse;
- 181 km from the outlet of Lac Sakami (Sakami bridge) via Route Transtaïga.

The Cree Nation of Wemindji hunting grounds cover more than 28,373 km<sup>2</sup>. The land is divided into 20 traplines, each operated by a tallyman who, with his family, harvests the wildlife resources. With the agreement of the tallymen concerned, other community members may build camps on the traplines and use the resources.

### Traplines affected

The project affects five of the 20 Wemindji traplines, namely, from south to north, VC23, VC28, VC22, VC21 and VC20. (See Map WE-3.)

The main activities and areas of these traplines used before the project are covered in section 2.

The Environmental Impact Statement (2004) states that for four of these traplines:<sup>3</sup>

*« The four traplines are used by at least 65 regular users, about 15 of whom are ISP (Income Security Program for Cree Hunters and Trappers) beneficiaries. The remaining users use the traplines during their holidays or when they are not employed. »*

The northern edge of Opinaca reservoir (the Rivière Eastmain watershed) as well as the 135 kilometres of Boyd and Sakami lakes (La Grande Rivière watershed) are located in the increased-flow section. The water from the Rupert diversion must flow through these bodies of water before reaching Robert-Bourassa reservoir, crossing the above-mentioned traplines successively. This additional flow occurs without any change to the minimum and maximum operating levels of Opinaca reservoir due to the construction of the new Sarcelle powerhouse adjacent to the Sarcelle control structure. However, the additional flow results in an increase of approximately 0.9 m in the maximum water level of Lac Boyd and approximately 0.1 m in the maximum water level of Lac Sakami<sup>4</sup>.

Table WE-1 shows the project components on each affected trapline and any related hydrological modifications.

The charts in Figure WE-1 show the inflows to the Rupert diversion since its commissioning in 2009, the flows through the Eastmain 1, Eastmain-1-A and Sarcelle structures, and the variations in water levels in Opinaca reservoir and Boyd and Sakami lakes.

3. Trapline VC28 was added following a modification to the Sarcelle powerhouse construction method, which involved excavating a temporary diversion canal on the trapline and channeling the flow toward Lac Boyd via a short secondary valley west of Opinaca reservoir dike OA-2.

4. The maximum level of Lac Sakami as stipulated in the Sakami Lake Agreement is nevertheless respected, at 187.04 m.

Map WE-3 – Project Components Located on the Wemindji Territory



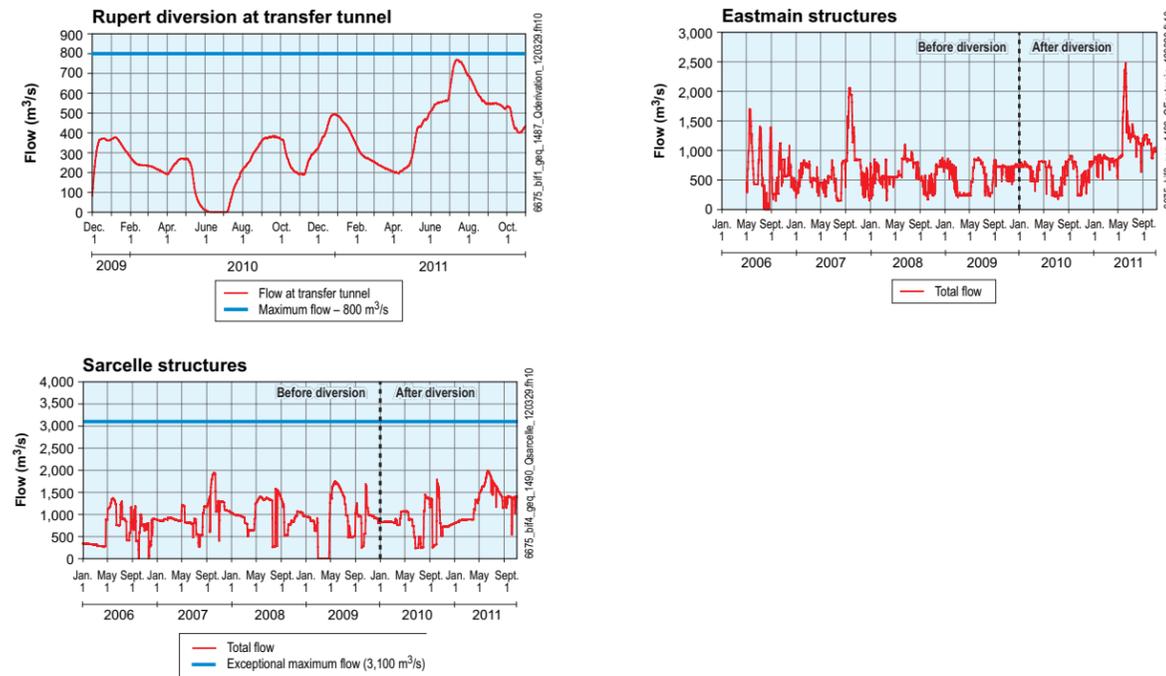
Table WE-1 – Project Components on the Wemindji Traplins

Traplins (Area – km <sup>2</sup> )	Tallyman	Permanent Project Infrastructure <sup>a</sup>	Other Activities	Bodies of Water with Increased Flow
<b>VC20</b> (1,989 km <sup>2</sup> )	Visitor family	<ul style="list-style-type: none"> <li>Sakami canal and weir</li> </ul>		<ul style="list-style-type: none"> <li>Lac Sakami: maximum level increased by 0.1 m</li> </ul>
<b>VC21</b> (3,147 km <sup>2</sup> )	James Shashaweskum	<ul style="list-style-type: none"> <li>None</li> </ul>		<ul style="list-style-type: none"> <li>Lac Sakami: maximum level increased by 0.1 m</li> </ul>
<b>VC22</b> (1,479 km <sup>2</sup> )	Ronnie Georgekish	<ul style="list-style-type: none"> <li>Sarcelle powerhouse</li> <li>9.1 kilometres of the 315-kV transmission line</li> </ul>		<ul style="list-style-type: none"> <li>Opinaca reservoir: maximum and minimum levels unchanged</li> <li>Lac Boyd: maximum level increased by 0.9 m</li> <li>Lac Sakami: maximum level increased by 0.1 m</li> </ul>
<b>VC23</b> (1,140 km <sup>2</sup> )	Roderick Georgekish	<ul style="list-style-type: none"> <li>15.5 kilometres of the 315-kV transmission line</li> </ul>	<ul style="list-style-type: none"> <li>Sarcelle workcamp</li> </ul>	<ul style="list-style-type: none"> <li>Opinaca reservoir: maximum and minimum levels unchanged</li> <li>Lac Boyd: maximum level increased by 0.9 m</li> </ul>
<b>VC28</b> (2,216 km <sup>2</sup> )	Frank Visitor	<ul style="list-style-type: none"> <li>Sarcelle powerhouse</li> </ul>	<ul style="list-style-type: none"> <li>Temporary diversion at the site of Opinaca reservoir dike OA-2</li> </ul>	<ul style="list-style-type: none"> <li>Opinaca reservoir: maximum and minimum levels unchanged</li> </ul>

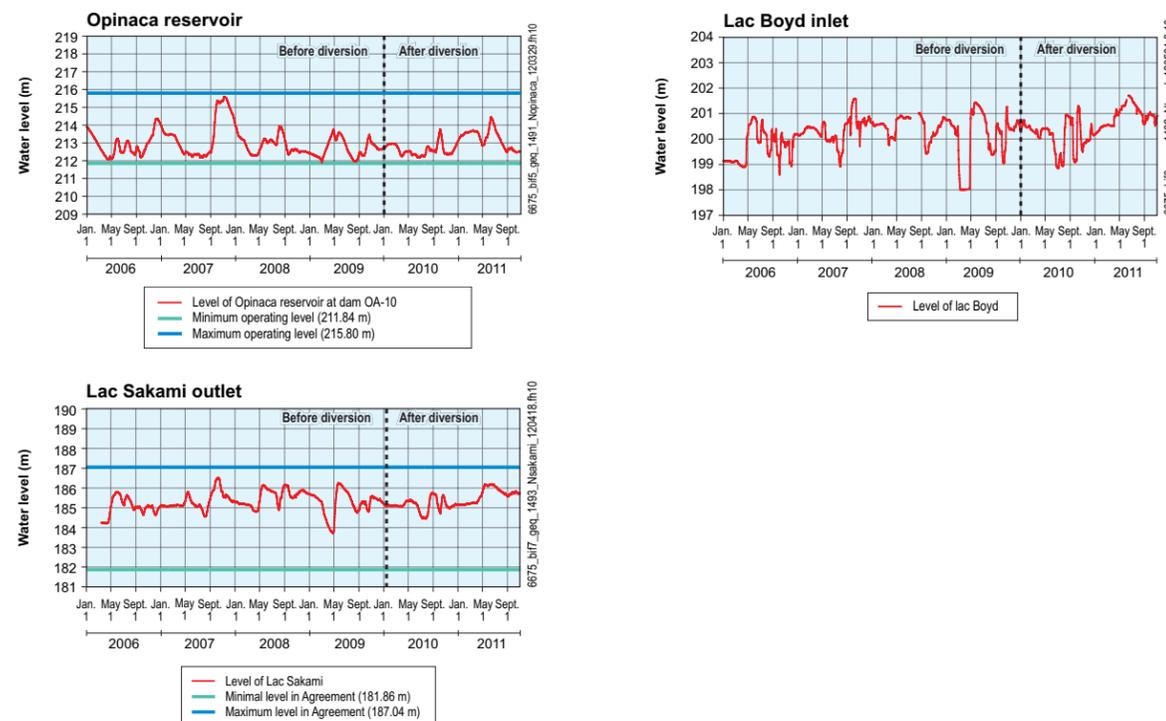
a. Areas used temporarily during the construction of the structures (construction roads, contractor areas, borrow pits, quarries, waste disposal sites, etc.) are also located on most of these traplins. Once decommissioned, these areas were or will be redeveloped and reforested, except for the construction roads the tallymen elected to preserve in order to facilitate use of their traplins.

Figure WE-1 – Main Hydraulic Characteristics (normal hydrological conditions)

Daily Flows



Water Levels



Operation before (2006–2009) and after diversion (2010–2011) but before full commissioning of Eastmain-1-A and Sarcelle powerhouses

Opinaca reservoir

Maximum operating level (215.80 m) and minimum operating level (211.84 m) of the reservoir are unchanged.

After diversion, average water levels in the Opinaca reservoir decreased by 0.08 m, in comparison with pre-diversion levels.

- 2006–2009 – Minimum 211.91 m – Maximum 215.57 m – **Average 212.97 m** – Maximum range of 3.66 m
- 2010–2011 – Minimum 212.16 m – Maximum 214.44 m – **Average 212.89 m** – Maximum range of 2.28 m

On average, winter drawdown in the reservoir after diversion has been similar to that before diversion.

Lac Boyd

After diversion, average operating levels in Lac Boyd were 0.33 m higher in comparison with pre-diversion levels.

- 2006–2009 – Minimum 198.00 m – Maximum 201.58 m – **Average 200.14 m** – Maximum range of 3.58 m
- 2010–2011 – Minimum 198.84 m – Maximum 201.70 m – **Average 200.47 m** – Maximum range of 2.86 m

Lac Sakami

Maximum level (187.04 m) and minimum level (181.86 m) at the outlet of Lac Sakami are unchanged.

After diversion, average operating levels in Lac Sakami were slightly higher, by 0.05 m, in comparison with pre-diversion levels, but the maximum level reached was lower by 0.31 m.

- 2006–2009 – Minimum 183.70 m – Maximum 186.49 m – **Average 185.30 m** – Maximum range of 2.79 m
- 2010–2011 – Minimum 184.43 m – Maximum 186.18 m – **Average 185.35 m** – Maximum range of 2.86 m

## 5.0 Issues and Concerns

For the community of Wemindji, the main issues identified in the Environmental Impact Statement (2004) were:

- Continuation of hunting, fishing and trapping activities;
- Economic spinoffs (jobs and contracts).

### Concerns expressed in the draft-design phase

The main concerns expressed by the Wemindji participants at the public hearings in 2005 are presented below. It should be noted, however, that the concerns shown in italics are shared by the neighboring communities affected by the project (Mistissini, Nemaska, Waskaganish and Eastmain).

#### General concerns

*Impacts associated with the La Grande complex:*

- *Flooding of hunting and trapping sites;*
- *Drop in fish population and quality;*
- *Opening of the territory due to the access roads;*
- *Risks of navigation accidents caused by wood debris on the bodies of water;*
- *Risks associated with snowmobile crossings on Boyd and Sakami lakes and on the reservoirs due to ice conditions.*

#### Specific concerns

*Water levels in the increased-flow section*

- Increase in the water levels of Boyd and Sakami lakes and doubts regarding adherence to the maximum level of Opinaca reservoir;
- Cree participation in monitoring water levels;
- Flooding of valued hunting and trapping sites;
- *Flooding of burial sites due to diversion bay impoundment.*

*Water quality in the bodies of water downstream of the diversion bays and the Rivière Rupert*

- Fear of greater turbidity associated with the increased flow in Eastmain and Opinaca reservoirs and Boyd and Sakami lakes;
- Use of Lac Sakami water for domestic purposes;
- *Decreased water quality in the Rupert due to lower flows and flow velocities.*

*The safety of the structures*

- Safety of the structures surrounding the various bodies of water downstream of the diversion bays, given the additional flow associated with the Rupert diversion;
- *Safety of the structures in the event of an earthquake or an act of terrorism.*

*The impact on fish*

- Worsening of the impact of increased flow on fish populations, including sturgeon, which have already been affected by Phase 1 of the La Grande hydroelectric complex;
- *Impact of the project on sturgeon spawning grounds in the Rivière Rupert;*
- *Impact of the weirs to be built on the Rivière Rupert on sturgeon access to spawning grounds;*
- Reduced quality of fish and other game in all sectors affected by the project.

*Jobs*

- Under-representation of Cree workers in the construction and operation of Hydro-Québec facilities;
- Training of young people so that they can have access to specialized jobs;
- Presence of wood debris in Eastmain 1 and Opinaca reservoirs and the opportunity for Hydro-Québec to award cleaning contracts to young people and to make boat travel safer.

*Ongoing Cree consultation program*

- Lack of consideration of traditional knowledge by the project proponent and the differences between traditional knowledge and scientific knowledge;
- Need for an ongoing Cree consultation process in every construction and operation phase of the project to ensure that:
  - Their concerns are taken into consideration;
  - Project impacts and efficiency of the mitigation measures are evaluated according to their point of view.

### Concerns expressed during the construction and operation phases

During land-use follow-up studies (2007 and 2008–2009) and as the project progressed, the tallymen's concerns became more specific. They are summarized below and presented in section 2.

#### Economic spinoffs

- Participation in the project as contractors for clearing work areas and for mitigation and enhancement measures on their traplines.

#### Camps, land accessibility and safety

*Camps*

- Maintaining access to camps and hunting grounds during construction (passage through the checkpoint and access to the work area subject to security requirements);
- Risks of flooding in camps located near Lablois, Usausinak and Boyd lakes as well as in Passe Amunischiminanuch in Lac Sakami, in the event that water levels increase more than expected;
- Safety and the loss of tranquility at certain camps located near the access road to Sarcelle or access roads to the construction sites;

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#### *Camps (continued)*

- Time required to install road signs indicating the location of Cree camps;
- Water quality in Lac Sakami.

#### *Boating*

- Navigating on Opinaca reservoir, in particular when water levels are extremely low;
- Access to Lac Boyd for navigating near the Sarcelle structures;
- Greater variations in Lac Sakami water levels and the consequences on navigation conditions;
- Wood debris in Boyd and Sakami lakes and the impact on navigation.

#### *Snowmobile trails*

- Ice conditions along the snowmobile trails on Opinaca reservoir and Boyd and Sakami lakes.

#### ***Environmental resources and hunting and fishing activities***

- Operations at the Sarcelle structures and the risks of greater variations in water levels;
- Fear that Lac Boyd will overflow into an adjacent watershed via Lac De Rotis.

#### *Trapping*

- Harvesting beaver in Boyd and Sakami lakes before the diversion is implemented.

#### *Moose and caribou*

- Mortality risks for caribou and moose who wander onto the ice cover of Opinaca reservoir following the project.

#### *Goose hunting*

- Peacefulness of the goose-hunting areas and the need to define the boundaries of the helicopter no-fly zones;
- Relocation of spring goose-hunting activities due to worksite activities.

#### *Fishing*

- Impact of the Sarcelle structures and work on sturgeon fishing at the entrance to Lac Boyd.

#### *Sport hunting and fishing*

- Increase in sport hunters and fishers along road to Sarcelle powerhouse, the inclusion of certain traplines in the territory managed by the Weh-Sees Indohoun Corporation for non-Cree fishing and moose hunting, and the installation of a checkpoint to monitor access to the worksite;
- Sport moose-hunting activities carried out along the Sarcelle road, the number caught, camp security risks, poaching, the efficiency of control measures.

#### *Archeological sites and valued areas*

- Loss of birthplaces and burial sites associated with flooded areas around Boyd and Sakami lakes during Phase 1 of the La Grande complex.

## 6.0 Mitigation and Enhancement Measures on the Traplines

Mitigation and enhancement measures on the Wemindji traplines affected by the project targeted two main objectives:

- Maintenance and improvement of land access;
- Maintenance and improvement of wildlife potential and maintenance of hunting and fishing activities.

These measures are presented in Tables WE-2, WE-3 and WE-4 and identified on Maps WE-4 and WE-5. They were set out in one of the following documents:

- Hydro-Québec guarantees, assurances and commitments in the *Boumhounan Agreement*;
- The Environmental Impact Statement and Supplement;
- Conditions in the authorizations issued by the Québec Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP) [Québec's department of sustainable development, environment and parks], Fisheries and Oceans Canada (DFO) and Transport Canada;
- Letters of undertaking with each of the tallymen concerned by the project (see the box below).

### Context for the letters of undertaking with the tallymen

As part of the Environmental Impact Statement, and in response to questions 290, 291 and 292, which requested additional information concerning the measures to ensure the continued pursuit of traditional activities during the various project phases, the tallymen and their guests were asked, in 2005, 2006 and 2007, to tell Hydro-Québec about the measures they hoped would be implemented so that they could continue to practise their traditional activities during and after project construction.

At the end of this process, Hydro-Québec/SEBJ signed a letter of undertaking with each of the 34 tallymen directly affected by the project, including five in the Wemindji community. Each letter included:

- The list of measures requested by the tallyman and accepted by Hydro-Québec/SEBJ;
- A map showing the approximate location of these measures.

Every year, a meeting is held with each tallyman to review implementation of the undertakings and make any necessary adjustments.

## 6.1 Measures to Maintain and Improve Land Access

Measures to maintain and improve land access involve relocation of Cree camps and three main types of access and travel on the traplines (see Table WE-2 and Map WE-4).

Most of the Wemindji tallymen affected by the project opted for measures designed to improve the accessibility of their existing camps on the banks of Boyd and Sakami lakes or adjacent bodies of water as well as portions of their trapline where they want to maintain or intensify their traditional activities.

### 6.1.1 Relocation of Camps

The relocation of a camp, which could include several buildings (cabins, annexes, tent frames, etc.), was deemed necessary if its use was disturbed by construction work or the use of access infrastructure.

As a result, four camps, including four cabins, were relocated. They were built relatively close to the original locations, which allowed users to pursue their activities in an area of the traplines that they regularly occupy.



Ronnie Georgekish's new camp on trapline VC22



Ernest Tomatuk's new camp on trapline VC23

### 6.1.2 Navigation on Opinaca Reservoir and Boyd and Sakami Lakes

#### Opinaca reservoir

Although Opinaca reservoir, located in part on traplines VC23, VC22 and VC28, lies on the Rupert diversion route, the navigation conditions remain unchanged, given that the minimum and maximum operating levels are respected.

Nevertheless, navigation measures were planned for Opinaca reservoir, including:

- A navigation corridor map;
- Signs forbidding navigation in the area of Sarcelle powerhouse, including two near the intake canal and four on either side of the tailrace;
- Repairs to the boat ramp adjacent to dike OA-02 after the OA-02 temporary diversion was closed.

Finally, a boat ramp near Km 34.5 on road to Sarcelle powerhouse was built for the workers at the Sarcelle workcamp for sport fishing.

#### Lac Boyd and Lac Sakami

Although the maximum water levels of Boyd and Sakami lakes are slightly higher, by 0.4 m and 0.1 m respectively, the navigation conditions are essentially unchanged. It is also important to remember that during Phase 1 of La Grande complex construction, several mitigation measures were implemented with regard to navigating on these lakes. These measures included a major clearing program covering 4,248 ha designed to improve access, landing and navigation conditions and clear the mouths of tributaries.

Additional navigation measures were planned for Boyd and Sakami lakes, including:

- Map of the navigation corridors used by the tallymen;
- Boat ramp at Lac Boyd, west of the Sarcelle control structure;
- Program to collect wood debris in about 10 critical areas in the navigation corridors or near the camps;
- Navigation prohibition signs in the area of Sarcelle powerhouse, near the intake canal and the tailrace as well as in the area of the Sakami canal and its weir.



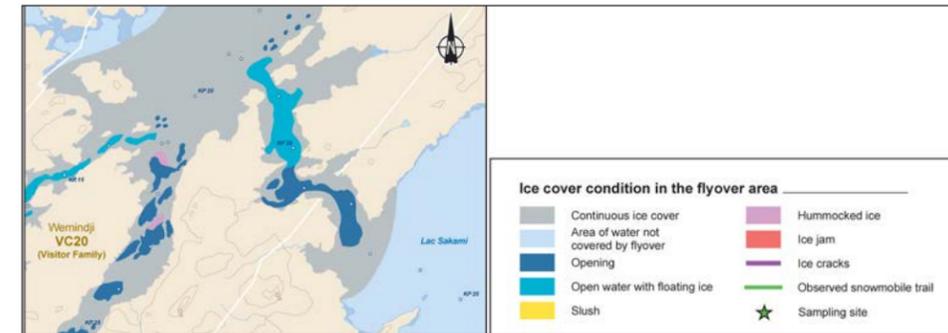
Map of wood debris and navigation corridors



Boyd boat ramp built on trapline VC22

### 6.1.3 Snowmobile Crossings

A map illustrating the ice conditions (continuous cover, thin or patchy ice and areas of open water) in the main channels of flow in Opinaca reservoir and in Boyd and Sakami lakes was produced for the Wemindji tallymen concerned. This information, rounded out by the users' close watch on the ice cover and traditional knowledge, is essential for safe snowmobile travel over these water bodies.



A section of the map of ice conditions in a narrow strait of Lac Sakami

### 6.1.4 Land Access – Vehicles, ATVs and Snowmobiles

In order to shorten the long trips to their camps by boat or snowmobile on Lac Sakami, which they consider risky, the tallymen opted for the creation of new snowmobile and ATV trails and, to a lesser degree, the construction of new access roads and the preservation of construction roads.

All in all, on four traplines in the community of Wemindji, close to 50 kilometres of land access was added:

- 40.7 km of snowmobile trails (2 trails);
- 2.4 km of ATV trails (1 trail);
- 3.0 km of construction roads are kept in place at the request of the tallymen (3 roads);
- 1.6 km of new or improved access roads (3 roads).

Road signs were also erected for road users' safety (presence of caribou or moose) or for the safety of trapline users approaching Cree camps or snowmobile trail crossings.



ATV trail developed on trapline VC20



Snowmobile trail developed on trapline VC21



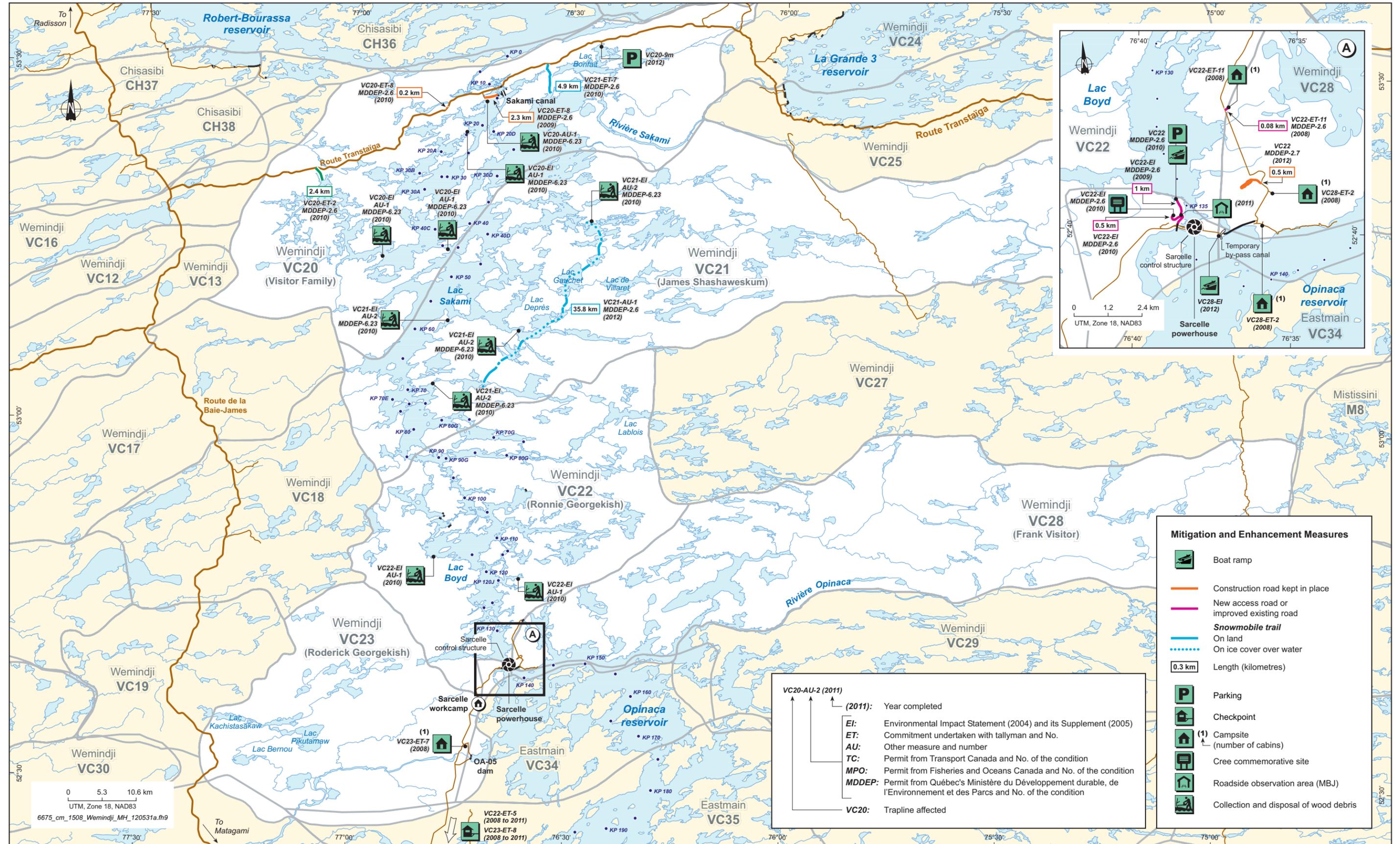
Weir access road kept in place on trapline VC20

Table WE-2 – Summary – Measures to Maintain and Improve Trapline Access

Trapline		VC20	VC21	VC22	VC23	VC28	TOTAL
Measure	Unit	Scope					
<b>Camps</b>							
Relocation of camps	Number of camps/ No. of cabins	–	–	1/1	1/1	2/2	4/4
<b>Navigation</b>							
Construction of boat ramp and parking area	No.	–	–	1	–	1	2
Installation of signs indicating obstacles	No.	4	–	6	–	–	10
Production of navigation charts	No.	1			–	1	2
Collection and disposal of wood debris	No. of sites	4	4	2	–	–	10
<b>Snowmobile crossings</b>							
Production of maps of ice conditions – Safe snowmobiling	–	Since 2010				–	Since 2010
<b>Land access</b>							
Construction roads kept in place	No. (km)	2 (2.5 km)	–	1 (0.5 km)	–	–	3 (3 km)
Access road construction	No. (km)	–	–	3 (1.6 km)	–	–	3 (1.6 km)
Development of ATV trail	No. (km)	1 (2.4 km)	–	–	–	–	1 (2.4 km)
Development of snowmobile trails	No. (km)		2 (35.8 and 4.9 on VC20)	–	–	–	2 (40.7 km)
Development of parking area	No.	1	–	–	–	–	1
Installation of road signs (moose/caribou)	No.	–	–	–	–	–	–
Installation of road signs (Cree camps)	No.	–	–	2	2	–	4
Installation of checkpoints (Sarcelle road)	No.	–	–	1		–	1

a. Measure common to several traplines

Map WE-4 – Summary – Measures to Maintain and Improve Trapline Access



## 6.2 Measures to Maintain or Improve Wildlife Potential and Maintain Hunting and Fishing Activities

The measures regarding wildlife and hunting and fishing activities defined either in the Environmental Impact Statement or by the Wemindji tallymen concerned referred to:

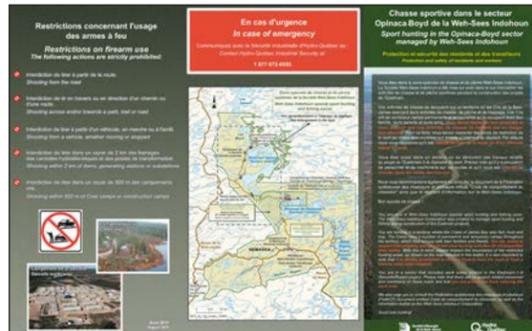
- Fish;
- Birds;
- Land animals.

The beaver population at the edges of Boyd and Sakami lakes, the moose population in the Opinaca-Boyd area and the fish populations in the bodies of water closest to the main access roads represented the tallymen's primary concerns and were key to defining the mitigation measures (see Table WE-3 and Map WE-5).

### 6.2.1 Measures for Fish

The main measure implemented to mitigate the impacts on fish consisted of reducing the risk of overfishing in the bodies of water associated with workers' sport fishing by applying specific Weh-Sees Indohoun regulations for sport fishing. For instance, maximum catch quotas per species, per body of water and per season were established to maintain fish populations (walleye, pike, brook trout). During the 2008–2011 period, no lake had to be closed because the sport fishing quotas were never reached.

To compensate for the loss of habitat related to Sarcelle powerhouse tailrace excavation, a multispecies spawning ground of over 13,590 m<sup>2</sup> (walleye, suckers, lake sturgeon, lake whitefish) was developed on the edge of the canal.



Excerpt from the WSI folder on sport hunting in the Opinaca-Boyd sector



Multispecies spawning ground developed in the Sarcelle powerhouse tailrace

### 6.2.2 Measures for Birds

Only one type of measure regarding birds was requested by the tallymen concerned, namely the development of four goose ponds in the borrow pits or the areas affected by the project including seeding. The ponds are next to the Sakami canal and the Sarcelle structures.



Goose-hunting pond developed west of the Sakami canal, on trapline VC20



Seeded goose-hunting area in the disposal site near the Sakami canal, on trapline VC20

### 6.2.3 Measures for Land Animals

The beaver trapping-out program in both Boyd and Sakami lakes was designed to harvest the resource before the diversion was put into operation. The program, carried out in 2008 and 2009, was preceded each fall by an aerial inventory of the active beaver lodges in which the tallyman or his representative participated. More than 148 beaver lodges were trapped.

To protect the moose population in the area from possible overharvesting due to sport hunting, particularly by workers, the following measures were applied:

- The mandate of the Weh-Sees Indohoun Corporation, created in 2002 at the beginning of the Eastmain-1 project to manage workers' sport hunting and fishing activities, was extended;
- The special sport hunting and fishing area managed by the Weh-Sees Indohoun Corporation was expanded to include the portions of the Wemindji traplines near the Sarcelle camp and structures (VC28, VC23, VC22, VC19 and VC18) because they are more easily accessible for sport hunting;
- The specific regulations regarding sport moose hunting in the new sector were enforced, namely:
  - The bow-hunting pre-season was abolished;
  - The hunting season was shortened from four to three weeks, with kills limited to males and calves.

On the entire territory of the community of Wemindji included in the Weh-Sees Indohoun Corporation area during the 2008–2011 period, 10 moose were killed by sport hunters.



Tallyman Ronnie Georgekish trapping beaver

Table WE-3 – Summary – Measures to Maintain or Improve Wildlife Potential and Maintain Hunting and Fishing Activities

Trapline		VC20	VC21	VC22	VC23	VC28	TOTAL	
Measure	Unit	Scope						
<b>Fishing</b>								
Development of multispecies spawning grounds	No. (m <sup>2</sup> )	–	–	2 (13 590 m <sup>2</sup> )	–	–	2 (13,590 m <sup>2</sup> )	
WSI and special regulation to control sport fishing (2008–2011)	No. of bodies of water closed	–	None					None
Guide to fish consumption (mercury)	Year published	–	–	–	–	2015 and every 3 yrs.	2015 and every 3 yrs.	
<b>Waterfowl/Hunting</b>								
Development of goose ponds (borrow pits)	No.	2	–	1	–	–	3	
Development of goose pond (other)	No.	1	–	–	–	–	1	
<b>Land Animals/Hunting</b>								
WSI and special regulation to control sport moose hunting (2008–2011)	No. of moose killed	–	1	2	4	3	10	
Trapping-out of beaver lodges	No. of lodges	86	26	35	–	1	148	

## 6.3 Redevelopment and Enhancement

### 6.3.1 Worksite Rehabilitation

Worksite rehabilitation is an integral part of the planned mitigation measures. These sites include quarries and borrow pits, access road rights-of-way, service areas used by contractors, and material storage areas (see Table WE-4 and Map WE-5).

With the exception of the construction roads kept in place at the tallymen's request, all affected sites were or will be physically rehabilitated (levelling, slope grading, restoration of natural drainage, scarification of compacted soil, spreading of previously stripped topsoil) and replanted or seeded or both, depending on the situation.

In 2012 and 2013, the seeding (with a mix of grasses and leguminous plants) that was carried out in the borrow pits redeveloped as goose ponds (9.65 ha) will also be conducted on sites near the Sarcelle structures, the access road to the boat ramp on Lac Boyd and the access road to the Cree commemorative site for the communities of Wemindji and Eastmain.

### 6.3.2 Enhancement

The enhancement work carried out includes a roadside observation area of the municipality of Baie-James at Lac Boyd and a Cree commemorative site for the Wemindji and Eastmain communities located on a shared portion of Wemindji trapline VC22 and Eastmain trapline VC34 (see Table and Map WE-4).

#### *Roadside observation area in the municipality of Baie-James*

In co-operation with the municipality of Baie-James, Hydro-Québec/SEBJ developed a platform and parking area next to the access road to the boat ramp at Lac Boyd in order to create an observation area with a view of Sarcelle powerhouse and the Sarcelle control structure. In addition to tables and washrooms, there are also information signs about the structures and the mitigation and enhancement measures carried out in the area of Opinaca reservoir and Boyd and Sakami lakes.



New MBJ roadside observation area near Sarcelle powerhouse



Future commemorative site

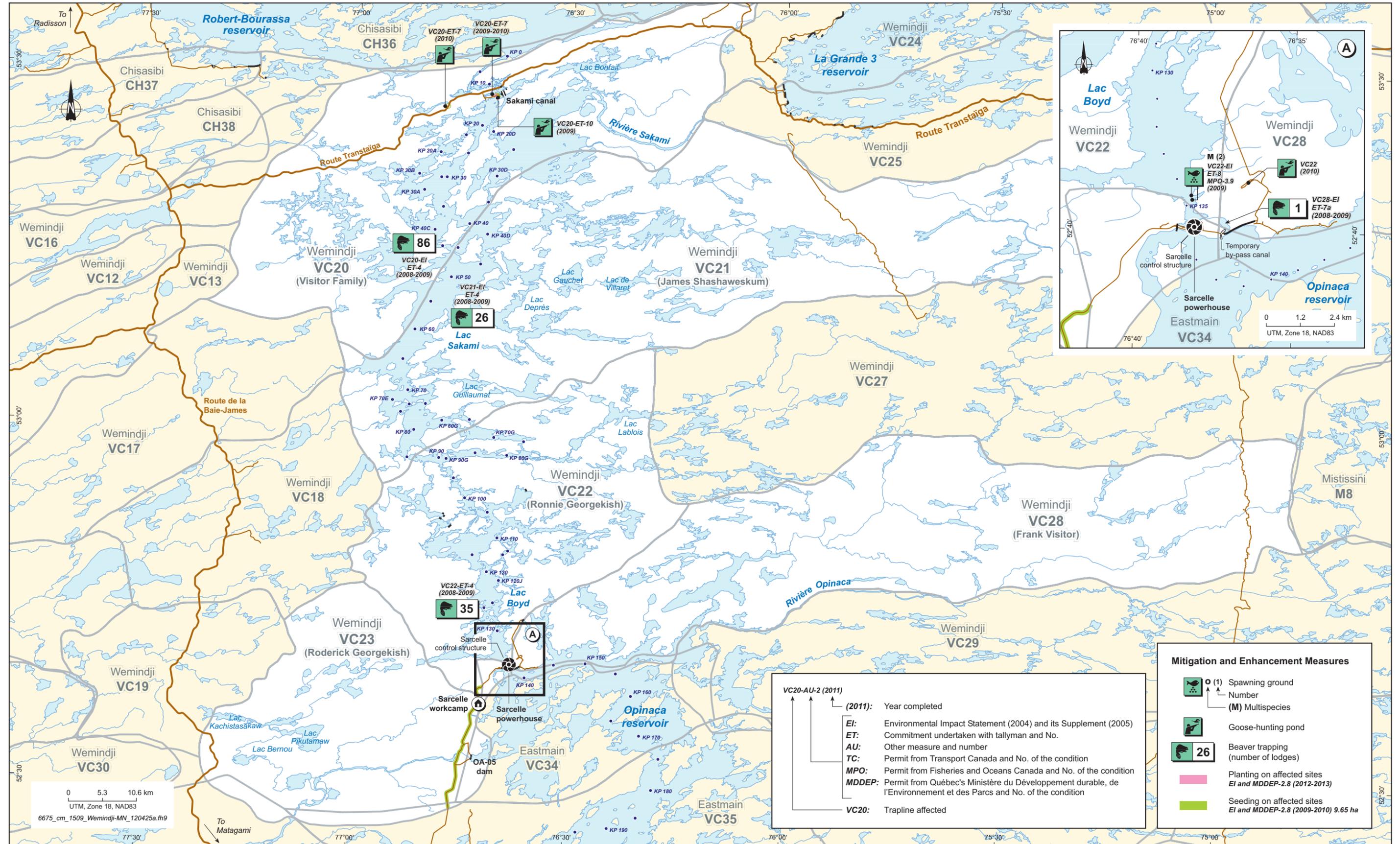
#### *Cree commemorative site for the Wemindji and Eastmain communities*

The Cree elders agreed to develop a commemorative site on a hilltop located west of the Sarcelle structures with a panoramic view of Opinaca reservoir, Sarcelle powerhouse and Lac Boyd. The tallymen and their families will use the site to pay tribute to their ancestors and to the people who walked this land, lived on its resources, and are buried here. The development was a joint venture of Niskamoon Corporation and Hydro-Québec. The latter built all the infrastructure to accommodate the components of the commemorative site, such as the access road, the parking areas and the site's hilltop reception platform.

Table WE-4 – Summary – Redevelopment and Enhancement Measures

Trapline		VC20	VC21	VC22	VC23	VC28	TOTAL
Measure	Unit	Scope					
Planting of affected sites	No. of plants	2012-2013					2012-2013
Seeding of affected sites (2008–2011)	ha	6.5	–	–	3.15	–	9.65
Development of a Cree commemorative site	No.	–	–	1	–	–	1
Development of MBJ roadside observation area	No.	–	–	1	–	–	1

Map WE-5 – Summary – Measures to Maintain or Improve Wildlife Potential and Maintain Hunting and Fishing Activities



VC20-AU-2 (2011)  
 (2011): Year completed  
 EI: Environmental Impact Statement (2004) and its Supplement (2005)  
 ET: Commitment undertaken with tallyman and No.  
 AU: Other measure and number  
 TC: Permit from Transport Canada and No. of the condition  
 MPO: Permit from Fisheries and Oceans Canada and No. of the condition  
 MDDEP: Permit from Québec's Ministère du Développement durable, de l'Environnement et des Parcs and No. of the condition  
 VC20: Trapline affected

- Mitigation and Enhancement Measures**
- (1) Spawning ground Number
  - (M) Multispecies
  - 26 Beaver trapping (number of lodges)
  - Planting on affected sites EI and MDDEP-2.8 (2012-2013)
  - Seeding on affected sites EI and MDDEP-2.8 (2009-2010) 9.65 ha

## 6.4 Effectiveness of Mitigation and Enhancement Measures

The effectiveness of the mitigation and enhancement measures carried out as of December 31, 2011 was evaluated based on the following:

- The assessment by the tallymen interviewed during the land-use follow-up;
- Available results of environmental follow-up studies.

The assessment addressed the following:

- Mitigation measures, which are specifically designed to mitigate any impact on wildlife or land use as set out in the project's Environmental Impact Statement or the environmental follow-up studies;
- Enhancement measures, which are designed to help land users benefit from certain project components (construction roads, borrow pits) or that meet the needs expressed by the tallymen to continue using and facilitating the use of the territory during and after the project.

The opinions expressed by each tallyman regarding the measures implemented on their respective trapline as well as the results of the follow-up studies are included in the fourth table of the summary of each of the five traplines presented in Section 2. Certain measures were not commented on by the tallymen, either because they have only recently been implemented and it is too early for the tallymen to evaluate their relevance or effectiveness, or because they haven't seen them yet.

No environmental follow-up program results are available regarding the mitigation measures that were carried out.

The following considerations must be kept in mind:

- The opinions of the tallymen and other users were collected during the summer and fall of 2011 and may have changed since;
- In several cases, the tallymen expressed their opinions in Cree. An interpreter then translated them into English (in their entirety or a summary) and then the interviewer wrote them down;
- Certain terms used for the assessment of measures do not have a direct equivalent in Cree (e.g. «satisfaction»).

### 6.4.1 Effectiveness of Mitigation Measures

#### ***New camps***

Four new camps were built in 2008 to replace the camps located in the work areas, including one on trapline VC22, one on VC23 and two on VC28. The tallyman on trapline VC28 is the only one who has not used his new camp, the bumpy surface of the entrance making it difficult for him to access the camp due to his reduced mobility.

The tallyman on trapline VC22 asked to have the entrance to his camp improved.

#### **Navigation**

##### *Boat ramp*

A new public boat ramp at Lac Boyd was built in 2010 to replace the one located at the Sarcelle powerhouse development site. The tallyman's brother (VC22) doesn't use the boat ramp because he feels that the slope is too steep. The tallyman's son also mentioned the presence of sharp rocks in the surface course of certain sections of the road leading to the ramp.

##### *Production of a navigation corridor map*

Maps that identify the navigation corridors were produced for the users of traplines VC20, VC21 and VC22 to navigate on Boyd and Sakami lakes. One of the two tallymen who commented on the measure is aware that the maps exist but hasn't received them yet whereas the other tallyman thinks they could be in the collection of maps that he has received.

##### *Collection and disposal of wood debris*

Wood debris collection and disposal activities were carried out in 2010 on the sites identified by the tallymen on traplines VC20, VC21 and VC22 on Boyd and Sakami lakes. A company in Wemindji carried out the work with the participation of the tallymen affected and other trapline users. The work was completed without incident.

Nevertheless, the tallyman on trapline VC20 is still waiting for an answer to a request he made regarding the cleaning of an additional area.

The users of trapline VC21 believe that one of the cleaned areas located near one of their camps is likely already obstructed by new debris.

#### ***Snowmobile crossings***

Maps on the ice conditions at Boyd and Sakami lakes were produced monthly between 2010 and 2012 to ensure the safety of individuals travelling by snowmobile.

The two tallymen travelling on Lac Sakami (VC20 and VC21) consider the maps to be useful. One of them noted that he did not receive the maps in the winter of 2010–2011 and hoped he would receive the maps for the winter of 2011–2012. The second tallyman, who received the maps, would like follow-ups to be performed more frequently and continued in the future. He nevertheless commented that the maps provide a good illustration of the areas with continuous ice cover but that they do not indicate how solid the ice is.

The tallyman on trapline VC22 does not find these maps to be useful because he doesn't travel on the lake by snowmobile given that, in his opinion, the ice cover is unsafe due to the strong currents.

#### ***Land access***

##### *Signage*

The tallymen were dissatisfied with the road signs indicating the presence of Cree camps either because it took many years before they were installed or because they simply were not installed. Only the signs indicating the presence of a camp at trapline VC23 were installed.

### *Parking*

The tallyman on trapline VC23 is satisfied with the parking area, which has space for three vehicles and was built as a safety measure for his camp located near the road to Sarcelle powerhouse.

### *Access checkpoint*

One of the two tallymen affected by the installation of a checkpoint on the road to Sarcelle powerhouse feels that it was not effective because it was unhelpful in controlling access to the territory by non-Native users.

### **Fish/Fishing**

#### *New spawning ground*

According to the tallyman on trapline VC22, it is too early to comment on the effectiveness of the multispecies spawning ground developed downstream of Sarcelle powerhouse. He believes that the sturgeon won't come if the water is not of good quality given that it is a very sensitive species.

#### *Weh-Sees Indohoun (WSI) and special regulation to control sport fishing*

The tallyman on trapline VC28 appreciates this measure but believes that enforcement carried out by wildlife conservation officers is insufficient. The tallyman on trapline VC23 commented that he doesn't know the WSI regulations but that he would like there to be a regulation prohibiting fishermen from throwing fish remains back into the water.

The tallymen on traplines VC21 and VC22 are not very concerned about the activities of the fishermen on their traplines—the first tallyman thinks his trapline is too difficult to access and the second tallyman is more concerned about the activities of hunters on his trapline.

### **Land animals/Hunting**

#### *Trapping-out of beaver lodges*

The three tallymen involved in the beaver trapping-out on Boyd and Sakami lakes believe that it was a good measure given that the resource would have been lost due to the higher water levels. It was also a more effective option than a relocation program.

Nevertheless, the tallyman on trapline VC21 said that he didn't have enough time at the end of the winter of 2009–2010 to finish the trapping-out due to dangerous snowmobile traveling conditions after the Sarcelle control structure opened. He also believes that the allocated amount for the trapping of certain difficult-to-access lodges was insufficient.

#### *WSI and special regulation to control sport hunting (moose)*

Four of the five Wemindji tallymen are concerned by this measure and three of them commented on it, saying that they believe that the WSI was a good measure because there is a real need to control the activities of non-Native moose-hunters in the area. The tallyman on trapline VC22 would like the WSI moose hunting regulation to be maintained after the project to better control the activities of the many non-Native hunters and occasionally dangerous behaviour.

The tallymen would nevertheless have liked more frequent patrols by the conservation officers to avoid poaching.

### **Restoration of affected sites**

The two Wemindji tallymen concerned with the seeding of sites affected by the construction work (VC20 and VC23) did not comment on this measure.

## **6.4.2 Effectiveness of Enhancement Measures**

### **Land access**

#### *Construction roads kept in place*

On trapline VC20, two construction roads were kept in place. The 2.3-km road leading to the Sakami weir is used for hunting and fishing by many users, including the family. However, when waterlogged, this road is only passable by ATV. In the winter, it is used as a snowmobile trail.

The other road that was kept in place, which provides access to a borrow pit in which the family would like to develop a goose-hunting pond, was not used.

#### *ATV trail*

An ATV trail was developed on trapline VC20. The family uses it to avoid traveling on Lac Sakami when accessing a camp.

### **Waterfowl/Hunting**

A goose-hunting pond was developed on trapline VC20 near the Sakami canal. However, the family is dissatisfied with this development because the water level is too high to allow for the installation of decoys. The family hunted there in the spring of 2010 and 2011, but the hunting was not productive. The family would also like to see a goose-hunting pond developed in a borrow pit accessible by one of the construction roads that have been kept in place. They believe that it would need to be dug to a sufficient depth to ensure its effectiveness.

## 7.0 General Measures to Promote Economic Spinoffs for the Crees (Workers, Companies, Tallymen)

### 7.1 Measures to Benefit Cree Workers

The measures for Cree workers include:

- Presence of a resource person with the Commission de la construction du Québec (CCQ) [Québec construction board] to help Crees obtain certification:
  - By removing labor pool restrictions in the JBNQA territory and giving Crees priority;
  - By making the English versions of documents available to Crees so they can prepare for the various CCQ examinations.
- Presence of Cree employment counselors on the jobsite to:
  - Facilitate and supervise the hiring of Cree workers;
  - Educate employers and SEBJ personnel about hiring Cree workers;
  - Participate in various management activities, such as health and safety committees.

### 7.2 Measures to Benefit Cree Companies

The most important measures to benefit Cree companies were<sup>5</sup>:

- Establishment of a minimum of \$240 million in contracts under the *Boumhounan Agreement* and another \$50 million under the *Sarcelle agreement* to be negotiated with Cree companies during construction, mainly in the following categories:
  - Clearing;
  - Workcamp construction and operation;
  - Road construction and maintenance;
  - Air transport;
  - Fuel supply.
- Establishment of service contracts with the Cree Regional Authority (CRA) and the Cree communities of Mistissini, Nemaska, Waskaganish, Eastmain, Wemindji and Chisasibi;
- Direct negotiation of the terms of contracts between the designated Cree companies and SEBJ.

5. Cree companies are designated by the Contracts Review Committee set up by the Grand Council of the Crees of Québec (Eeyou Istchee) and by the Cree Regional Authority (CRA).

### 7.3 Measures to Benefit Tallymen

The measures for tallymen were implemented mainly in the planning and contracting phases. Some measures were also introduced to support tallymen during contract granting, execution and management. The measures are listed below.

Developing and awarding contracts for mitigation and enhancement measures:

- Breakdown of contracts by trapline;
- Contracts offered to tallymen on a priority basis;
- Simplification of plans and specifications and of tender documents;
- Replacement of financial guarantees with holdbacks on invoice payments;
- Reduction of the term of invoice payments from 60 to 30 days;
- Support for tallymen in preparing bids.

Executing contracts for mitigation and enhancement measures:

- Support and supervision upon request (planning of performance phases, information about equipment and management, support for invoicing, logistics, support for implementation of safety measures, etc.).



Workers from Vieux Comptoir Construction at the Sarcelle jobsite

## 7.4 Economic Spinoffs in the Community of Wemindji

From 2007 to 2011, Cree workers accounted for an average of 10% of all workers on the project. Out of that number, 3% were Cree workers from Wemindji, representing an average of six people each month. In addition, 13 contracts were awarded to two Cree companies in Wemindji. Tallymen obtained 12 contracts worth a total of \$0.77 million. The value of the contracts awarded was \$20.36 million.

Table WE-5 – Cree Workers and Companies from Wemindji

<i>Number of Workers (Monthly average)</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Average (2007-2011)</i>
Total workers	1,308	2,543	2,682	1,759	1,048	1,868
Total Cree workers	212	282	215	145	60	183
<b>Proportion of Cree workers</b>	<b>16 %</b>	<b>11 %</b>	<b>8 %</b>	<b>8 %</b>	<b>6 %</b>	<b>10 %</b>
<i>Number of Cree Workers (Monthly average)</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Average (2007-2011)</i>
Total Cree workers	212	282	215	145	60	183
Cree workers from Wemindji	2	6	11	9	4	6
<b>Proportion of Cree workers from Wemindji</b>	<b>1 %</b>	<b>2 %</b>	<b>5 %</b>	<b>6 %</b>	<b>7 %</b>	<b>3 %</b>

<i>Companies from Wemindji</i>	<i>2007-2011 (No. of contracts)</i>	<i>2007-2011 (\$M)</i>
Vieux Comptoir Construction	1	12.52
Eeyou G.D. Lumberjack	12	7.06
<b>TOTAL</b>	<b>13</b>	<b>19.59</b>

Tallymen	12	0.77
<b>TOTAL</b>	<b>25</b>	<b>20.36</b>

In 2011, of the 12 contracts awarded to the tallymen, one contract representing a value of nearly \$28,000 was given to another trapline user.

## 8.0 Measures to Promote Jobsite Integration of Cree Workers

To promote the integration of Cree workers, three groups of measures were implemented:

Specialized Cree personnel hired at the jobsite:

- Cree liaison officers to assist Sécurité industrielle [industrial safety] officers in their dealings with Cree workers and to promote awareness of camp regulations among the workers;
- A Native social worker;
- A Native recreation attendant.

Support for Cree cultural projects in cooperation with Niskamoon Corporation:

- Construction of three Cree gathering places (*Shaapuhtuwaan*) at Rupert, Nemiscau and Sarcelle workcamps;
- Organization of traditional suppers for Cree workers;
- Use of the *Shaapuhtuwaan* by Cree workers to cook game or hold friendly gatherings;
- Organization of French courses in 2009 and 2010.

Access for Cree workers to electronic media and infrastructure to maintain ties with their families and their community:

- Local Cree radio broadcasts in the workcamps;
- Free Internet access in recreation centers for all workers;
- Possibility for each worker to have a family member visit the workcamp instead of taking a regular leave.

## 9.0 Participation by Tallymen in Implementation of Mitigation and Enhancement Measures

The various aspects of implementing the mitigation and enhancement measures on the traplines, from design to execution, are shown in Table WE-6.

Note also that the tallymen or designated family members:

- Were systematically included in consultants' crews during field work and surveys required to determine and optimize mitigation measures;
- Participate in all environmental monitoring, including studies on the efficiency of mitigation measures.



Removal of wood debris in the Boyd-Sakami sector by the company Eeyou G.D. Lumberjack

Table WE-6 – Implementation of Mitigation and Enhancement Measures

Design and Site Selection	Execution	
<i>Incorporation of Cree Users' Traditional Knowledge</i>	<i>Contracts with Wemindji Tallymen</i>	<i>Contracts with Cree Companies from Wemindji</i>
<ul style="list-style-type: none"> <li>• Validation of navigation corridors</li> <li>• Validation of access road, ATV and snowmobile trail corridors</li> <li>• Choice of construction roads to be kept in place</li> <li>• Validation of goose-pond sites in affected areas</li> <li>• Validation of active beaver lodges</li> <li>• Identification of wood debris collection sites</li> </ul>	<ul style="list-style-type: none"> <li>• Four camps relocated (2008–2009)</li> <li>• Construction of an ATV trail (2.4 km) (2010–2011)</li> <li>• Construction of two snowmobile trails (40.7 km) (2010–2012)</li> <li>• Planting on affected sites (2012–2013)</li> </ul>	<ul style="list-style-type: none"> <li>• Collection and disposal of wood debris at Boyd and Sakami lakes (10 sites) (2010)</li> </ul>

## 10.0 Effectiveness of the General Measures to Promote Economic Spinoffs and the Integration of Cree Workers

Table WE-7 summarizes the results of the 2010–2011 follow-up studies monitoring the efficiency of these measures. Note that the efficiency of the mitigation and enhancement measures on the five community traplines is discussed in section 2.

Table WE-7 – Effectiveness of the General Measures to Promote Economic Spinoffs for the Crees and Jobsite Integration of Cree Workers

Measures	Follow-Up Results (as of December 31, 2011)
<b>General Measures to Promote Economic Spinoffs for the Crees (Workers, Companies, Tallymen)</b>	
Measures to promote the recruitment of Cree workers	
<p><b>Presence of a resource person at the Commission de la construction du Québec (CCQ) [Québec construction board] to help Crees obtain competency certificates</b></p> <ul style="list-style-type: none"> <li>By removing labour pool restrictions in the JBNQA territory</li> <li>By making the English versions of documents available to Crees so they can prepare for the various CCQ examinations</li> </ul>	<p>According to the CCQ representative, the assessment of the CCQ competency certificates issued since 2007 is positive. Most Crees who have competency certificates obtained their first one on the Eastmain-1 and Eastmain-1-A/Sarcelle/Rupert jobsites. These projects were catalysts with regard to Cree worker accessibility in the construction field and helped them obtain good working conditions.</p> <p>To support their certification, the CCQ worked closely with an SEBJ Cree counsellor on the jobsite to make the application and processing of certain administrative measures more flexible.</p> <p>2007, 2008 and 2009 were the most productive years with, respectively, 123, 180 and 206 Crees with a competency certificate, excluding exemption certificates. Many of them worked on the Eastmain-1-A/Sarcelle/Rupert project.</p>
<p><b>Hiring of Cree employment counsellors at the jobsite:</b></p> <ul style="list-style-type: none"> <li>To facilitate and supervise the hiring of Cree workers</li> <li>To educate employers and SEBJ personnel about hiring Cree workers</li> <li>To participate in various management activities, such as health and safety committees</li> </ul>	<p>In early 2007, two Cree counsellors were hired to work at the Rupert and Eastmain workcamps. In 2008, when work began on Sarcelle powerhouse, a third counsellor joined the team. When activity slowed in 2011, the team was reduced to two counsellors for Sarcelle and Eastmain.</p> <p>The Cree counsellors promoted the hiring of Cree workers among contractors. However, the results were poor among non-Native contractors namely due to language issues, lack of experience or skills, restrictions regarding obtaining CCQ competency certificates and certain tax constraints.</p> <p>The Cree counsellors also promoted jobs offered on the jobsite in the Cree communities even though obtaining a job on the jobsite resulted mainly from a referral from a friend (47%); 18% were contacted by their employer and 15% had communicated with their current employer. Twelve workers, i.e. 8%, were hired through their band council.</p>
Measures to promote the awarding of contracts to Cree companies	
<p><b>Establishment of at least \$240M and \$50M in contracts to be negotiated with Cree companies during construction</b></p>	<p>Under the project, 165 contracts were awarded to 37 Cree companies and 151 to tallymen between 2007 and 2011. Most of the contracts were obtained based on the mechanism designed to give preference to Crees in the awarding of contracts (\$447M).</p> <p>The amount paid to the companies as at December 31, 2011 was close to \$831M, i.e. 27% of all expenses incurred during the project (\$3,083,098,853). More than half of the contracts awarded to the Cree were in regard to work to be carried out, i.e. primarily clearing work and building permanent structures such as roads or weirs.</p> <p>In addition, contracts for the provision of services represented 43% of the value of the contracts awarded to Cree companies (\$360M) whereas 4% (\$32M) were in regard to camp infrastructures.</p>
<p><b>Direct negotiation of contract terms between the designated companies and SEBJ</b></p>	<p>Based on the mechanism designed to give preference to Crees in the awarding of contracts (Cree-designated companies), \$427M of contracts were awarded to Cree companies out of a total amount of close to \$791M.</p>
<p><b>Establishment of service contracts with the CRA and the Cree communities of Mistissini, Nemaska, Waskaganish, Eastmain, Wemindji and Chisasibi</b></p>	<p>For the six Cree Monitoring Committee representatives, salaries and administrative costs total approximately \$0.5M annually.</p> <p>In addition, the environmental field work and studies led to employment for close to 500 different workers for both 2007 and 2008, 711 workers in 2009 and 455 workers in 2010. They generated income of approximately \$7.42M during the 2007-2010 period.</p>

Table WE-7 – Effectiveness of the General Measures to Promote Economic Spinoffs for the Crees and Jobsite Integration of Cree Workers (continued)

Measures	Follow-Up Results (as of December 31, 2011)
<b>General Measures to Promote Economic Spinoffs for the Crees (Workers, Companies, Tallymen) (continued)</b>	
<b>Measures to benefit the tallymen</b>	
<p>In accordance with the commitments set out in the <i>Boumhounan Agreement</i>, SEBJ implemented various measures to promote the participation by the tallymen in carrying out the mitigation measures.</p> <p>Steps taken to meet this commitment were initiated in 2007 when the project began. In fact, it was at that point that the company first decided to offer the tallymen the experience of carrying out clearing work in the sectors where there had been no recovery. Given that the experience was generally positive, SEBJ began awarding more and more contracts for increasingly diversified work as the project progressed.</p>	<p>The most used measure was the breakdown of contracts based on trapline boundaries. For instance, the clearing of the diversion bays was broken down into 17 contracts awarded to 8 tallymen or their company for an approximate value of \$15M. Similarly, with regard to carrying out portages, instead of negotiating and managing a single contract, the company chose to divide the work between 10 contracts awarded to the tallymen. The same was true for the seeding of exposed banks and planting in the areas affected by the project.</p>
<b>Measures to Promote Jobsite Integration of Cree Workers</b>	
<b>Specialized Cree personnel hired at the jobsite</b>	
<ul style="list-style-type: none"> <li>• Cree counsellors hired to organize awareness-building activities with employers (preventing integration issues, promoting sponsorship, etc.) and with Cree workers (information on the services available, awareness of camp regulations, etc.) to promote the integration of Cree workers</li> <li>• Cree liaison officers to assist industrial safety officers in their dealings with Cree workers and to promote awareness of camp regulations among the workers</li> <li>• A Native social worker</li> <li>• A Native recreation attendant</li> <li>• A resource person able to act as a Cree-French or Cree-English interpreter where necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Three Cree counsellors were hired and worked in the different workcamps used during the project. They participated in the jobsite management committees and played a key role in implementing the measures designed to promote the integration of Cree workers.</li> <li>• Approximately 10 liaison officers were hired between 2007 and 2010. According to the jobsite representatives interviewed in 2008 and 2010, the hiring of a Cree liaison officer was a very useful measure. The liaison agents reduce the potential for conflict during dealings involving security agents and their daily interaction with Cree workers help raise awareness regarding the camp regulations and industrial safety.</li> <li>• A Native social worker was hired in 2008. She had between 81 and 102 consultations per year in 2009 and 2010.</li> <li>• One Cree recreation attendant was hired. The attendant's presence and work were appreciated by the Cree workers. Participation in leisure activities was good on all the camps. Their participation seems to have been related more to the fact that they liked the activities offered (hockey, volleyball, bingo, etc.) than to the presence of a Cree attendant.</li> <li>• The Cree counsellors and other Cree SEBJ employees occasionally played this role but most interpretation needs were met within the work teams.</li> </ul>
<b>Consultation with Cree agencies regarding prevention and support measures for Cree workers</b>	
<p><b>With the Natimachewin project financed by the Niskamoon Corporation, many activities were carried out for Cree workers, including:</b></p> <ul style="list-style-type: none"> <li>• Construction of three Cree gathering places (Shaapuhtuwaan) at Rupert, Nemiscau and Sarcelle workcamps</li> <li>• Organization of traditional suppers for Cree workers at Rupert and Nemiscau workcamps</li> <li>• Organization of French courses</li> <li>• Organization of various activities based on the workers' interests (health walks, berry picking, etc.)</li> <li>• Support in creating a Cree AA group</li> <li>• Managing violations of camp regulations</li> </ul>	<ul style="list-style-type: none"> <li>• The <i>Shaapuhtuwaan</i> at the Rupert workcamp (2008 to 2009), the <i>Cree Cabin</i> at the Nemiscau workcamp (2009 to 2010) and the <i>Mitchuap</i> at the Sarcelle workcamp (2009 to 2012) were used by Cree workers to organize traditional meals or other social activities. According to follow-up results, 63% of Cree workers participated in activities or gatherings in these sites.</li> <li>• In their free time, an average of 63% of Cree workers participated in traditional meetings or suppers organized by the Natimachewin project. The traditional suppers were the most popular activity among Cree workers.</li> <li>• French classes were provided from 2008 to 2010. The initial enthusiasm for these courses decreased over time.</li> <li>• From 2008 to 2010, a Cree activity coordinator organized traditional suppers and occasional activities based on the needs expressed by the workers.</li> <li>• A meeting place could have been made available for this type of group but a Cree AA group was not created given that the Cree workers preferred meeting with the social worker individually.</li> <li>• Based on the camp management regulations, expelled workers were allowed to return to the camp to work following a specific time period depending on the seriousness of the violation. An average of 5% of Cree workers were expelled from the workcamp between 2002 and 2010.</li> </ul>

Table WE-7 – Effectiveness of the General Measures to Promote Economic Spinoffs for the Crees and Jobsite Integration of Cree Workers (continued)

Measures	Follow-Up Results (as of December 31, 2011)
<i>Measures to Promote Jobsite Integration of Cree Workers (continued)</i>	
Measures to promote ties between workers and their families/community	
<ul style="list-style-type: none"> <li>• Local Cree radio broadcasts in the workcamps</li> <li>• Free Internet access in the recreation centres</li> <li>• Possibility for a Cree worker to have a family member visit the workcamp, rather than take a regular leave. Visits by a family member were permitted. Visits of several days, including accommodation, could be authorized if a worker wished.</li> <li>• News from the workcamp was relayed to the communities</li> </ul>	<ul style="list-style-type: none"> <li>• During their time at the camp, 73% of the Cree workers listened to community radio broadcasts.</li> <li>• Free Internet stations were available in the leisure centers at all the workcamps. The Internet was used by 54% of the Cree workers in their free time, particularly the youngest workers, and 28% of the workers said they used the Internet to maintain contact with their family.</li> <li>• The possibility of replacing the regular leave with a visit was not used very often, but it was appreciated by those who did take advantage of it.</li> <li>• News from the workcamp was delivered via the Boumhounan Newsletter, the Hydro and Friends program and the Monitoring Committee's information tours.</li> </ul> <p>Based on follow-up results, all the workers said they maintained contact with their family during their stay at the workcamp. They did so mainly by phone (99%) or through visits during their free time (55%).</p>
Measures to promote relations between Cree workers and non-Native workers	
<ul style="list-style-type: none"> <li>• Building awareness among camp residents regarding Cree culture</li> <li>• Building awareness among SEBJ personnel regarding Cree culture</li> <li>• Promoting Cree participation in sport and leisure activities</li> </ul>	<p>At the mandatory orientation session, the workers are made aware of the presence of Cree workers. In addition, the jobsite welcome centres highlight different aspects of the Cree culture and Cree involvement in the project. Posters illustrating Cree culture were placed in different locations (airport, cafeteria, administration offices). Some Crees nevertheless feel that more could have been done in terms of raising awareness of all of the workers on the project.</p> <p>The Hydro-Québec's Aboriginal Relations training program was given on three occasions on the jobsite in 2008. From 2007 to 2010, 44 SEBJ employees took the training program either at the jobsite, in Montréal or in Québec City. It should be noted that 121 SEBJ employees had already taken the training program as part of the Eastmain-1 project.</p> <p>The Crees' interests were taken into account when organizing the leisure activities. Participation by the Crees was good: 37 % participated in team sports, 51 % opted for individual sports (weightlifting/working out, badminton, golf) and 85 % participated in games (bowling, pool, etc.). Although there were sports teams including both Crees and non-Crees, people generally formed teams with people from their background.</p> <p>Relations between Cree workers and non-Native workers are good. Based on follow-up results, 94% of Cree workers feel that relations with their non-Native colleagues are very good (53%) or fairly good (41%) and 95% of workers feel that social relations at the workcamp are very pleasant (55%) or fairly pleasant (40%).</p>

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## CONCLUSION

The signature of the *Boumhounan Agreement* in 2002 launched the Eastmain-1-A and Sarcelle powerhouses and Rupert diversion project, which was intended to be carried out under the new relationship between Hydro-Québec/SEBJ and the Cree, a relationship based on cooperation and mutual respect.

This new relationship was reflected in the participation by the Cree in designing both the project and the mitigation and enhancement measures. Cree companies, workers and tallymen were also involved in the work related to the project and in carrying out the mitigation and enhancement measures. Finally, the tallymen participated in all the technical and environmental surveys in the draft design and construction phases as well as in all the environmental follow-up studies, some of which are currently scheduled until 2021.

### ***Mitigation and Enhancement Measures***

On the five Wemindji traplines affected, approximately 20 types of mitigation and enhancement measures were defined, namely to maintain or improve access to the territory, to maintain hunting and fishing activities and to facilitate use of Boyd and Sakami lakes. At the end of 2011, most of these measures were in place. Any remaining measures will be completed in 2012, with the exception of some measures that may be needed to facilitate access to some shores on Boyd and Sakami lakes near the navigation corridors, as well as the last planting and seeding work to be completed in the affected areas.

In the fall of 2011, the tallymen were consulted on the effectiveness of close to 30 mitigation and enhancement measures carried out on their respective traplines.

Whatever measures are put in place, none of them seems to fully satisfy all the tallymen concerned, who express reservations regarding the quality of access to certain camps (VC28), the surface course of the boat ramp access road and the slope of the boat ramp (VC22), the usefulness of ice condition maps (VC20, VC21 and VC22), the wood debris collection plan for Sakami and Boyd lakes (VC20 and VC21), the duration of beaver trapping-out and the amounts allocated for these contracts (VC21), the activities of the Weh-Sees Indohoun Corporation (VC22 and VC23), and the development of certain goose ponds (VC20).

### ***Economic Spinoffs***

Since 2007, two Wemindji companies have obtained 13 contracts, the largest of which was regarding janitorial and food services for the Sarcelle workcamp and the operation of the convenience store and resto-bar. One of these companies carried out several contracts on behalf of the tallymen, including the collection of wood debris on the shores of Boyd and Sakami lakes, the development of ATV and snowmobile trails and clearing work.

In addition, the tallymen were awarded 12 contracts to carry out mitigation and enhancement measures on their respective traplines, a few of which were executed by a Wemindji company.

From 2007 to 2011, 3% of Cree workers on the project were from the community of Nemaska. In general, the results of the follow-ups carried out with Cree workers show that they appreciated their work experience on the jobsites. In fact, 92% of them would like to have a similar experience due to the nature of the work, the knowledge and experience they acquired and the good salaries. Finally, their reintegration into the community was relatively straightforward and 81% of them found new jobs.

### ***Environmental Follow-up***

Between 2007 and 2011, the concerned tallymen or their representatives participated in the follow-up studies carried out in the territory of Wemindji. They will continue to participate in future follow-up studies, some of which are scheduled to be conducted in 2021. These studies address various issues, including ice cover conditions in Boyd and Sakami lakes, use of the spawning ground developed downstream of the Sarcelle structures, use of Boyd and Sakami lakes by Canada geese, changes in fish mercury levels and land use.

## ***Committees***

During 2012, the transition from the construction crews to the operations crews will accelerate. Continuity will be assured, in part, by the Cree–Hydro-Québec joint committees, including the Monitoring Committee.

## ***Agreements***

As part of the agreements between Hydro-Québec and the Cree managed by the Niskamoon Corporation, several dedicated funds are available to meet the needs of the Cree regarding community projects as well as projects designed to help them pursue their traditional activities.

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