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Current status and Management of Final Waste

Inquiry and Public Hearing Report
Chapter 11 - Waste Management in Territories Under Agreements

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Chapter 11 **Waste Management in Territories Under Agreements**

In his mandate letter, the Minister of the Environment and the Fight against Climate Change asked the Bureau d'audiences publiques sur l'environnement (BAPE) to conduct an inquiry on final waste management. To this end, he specified that:

This mandate will cover the entire territory of Quebec, including the territories covered by Sections 22 and 23 of the James Bay and Northern Quebec Agreement (JBNQA) and Section 14 of the Northeastern Quebec Agreement (NEQA) and Section II of the EQA. Thus, I expect that the advisory committees provided for in the JBNQA and NEQA and in Section II of the EQA will be associated with the public consultation exercise. (PR8.3, p. 3)

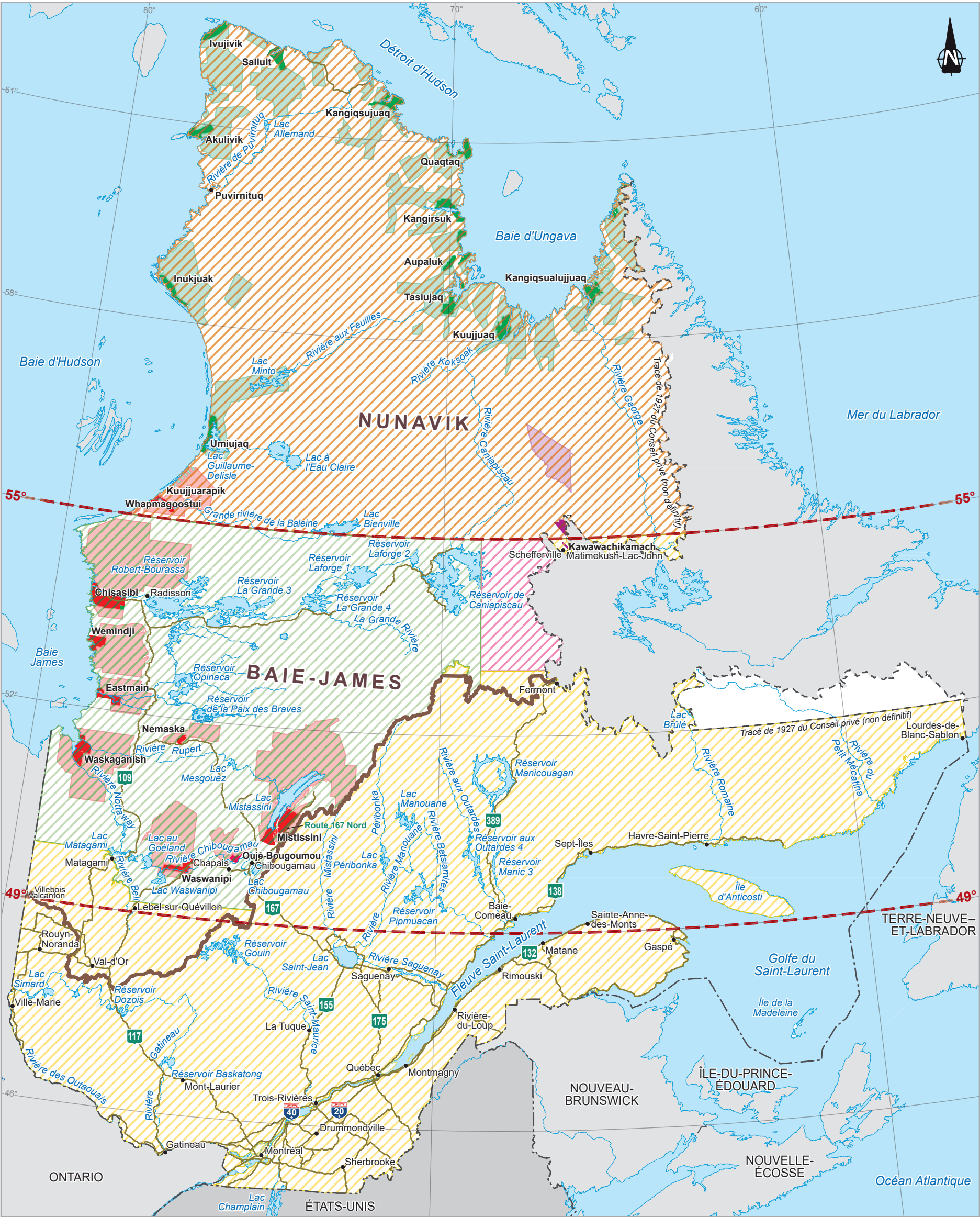
The territories of Northern Quebec, known as Under Agreements, extends north to Hudson Strait and Ungava Bay, from the 49th parallel, and includes the territories of James Bay and Nunavik, where the Naskapi, Inuit and Cree live (Figure 11.1). The administrative and environmental management of most of this vast territory is governed by the James Bay and Northern Quebec Agreement (JBNQA), signed in 1975 by the Cree and Inuit, and by the Northeastern Quebec Agreement (NEQA), signed in 1978 by the Naskapi.

These agreements establish the framework for relations between each of the Aboriginal nations and communities and the Quebec and Canadian governments. They are broad in scope and set out the exclusive rights to hunting, fishing, and trapping, the terms and conditions of industrial development, the participation of the Cree, Inuit, and Naskapi in the decision-making process, in their economic development and in governance by their own institutions. Each of these agreements also defines environmental and social protection regimes.

Therefore, the Commission of Inquiry held specific public consultations in these territories with the collaboration of the Aboriginal nations and communities, namely the Naskapi, the Inuit, and the Cree. This chapter presents a portrait of waste management for each of these communities and their challenges and issues. The findings and recommendations reflect the common opinion of the Commission and each of the Nations or communities with respect to improving waste management in these territories.

Please note that this chapter has been translated from French to English and each section has been translated into the appropriate Aboriginal language.

Figure 11.1 Le territoire conventionné et ses communautés autochtones
(The Territory Covered by the Agreement and its Aboriginal Communities)



Terres de catégorie I et II de la Convention de la Baie-James et du Nord québécois (CBJNQ) et de la Convention du Nord-Est québécois (CNEQ)

	Cris	Inuits	Naskapis
I			
II			

— Limite sud du territoire des conventions nordiques (CBJNQ et CNEQ)

Note 1 : La limite sud du territoire d'application telle que définie sur la carte n'est pas reconnue par les Cris.
Note 2 : Les terres de la catégorie I d'Ivujivik et les terres de catégorie IB d'Oujé-Bougoumou sont en attente de confirmation officielle.

Le territoire d'application des régimes de protection de l'environnement

- Territoire soumis à la CBJNQ (nord du 55^e parallèle)
- Territoire soumis à la CBJNQ (sud du 55^e parallèle)
- Région de Moinier
- Territoire régi par le chapitre 1 de la Loi sur la qualité de l'environnement

Autres éléments

- Réseau routier
- Lac
- Cours d'eau permanent
- Frontière internationale
- Frontière interprovinciale
- Frontière Québec-Terre-Neuve-et-Labrador (cette frontière n'est pas définitive)

Échelle approximative 0 100 km

11.1 Kawawachikamach, Matimekush-Lac-John and Schefferville region

The Town of Schefferville and the communities of Kawawachikamach and Matimekush–Lac-John are located in the Côte-Nord administrative region. The Naskapi community of Kawawachikamach is located about fifteen kilometers northeast of Schefferville and Matimekush–Lac-John and is connected there by a gravel road (Figure 11.1). However, no road network connects the region of Kawawachikamach, Matimekush–Lac-John and Schefferville (hereinafter the “Region”) to the rest of Quebec. Access is only possible by air from, among others, Montreal, Quebec and Sept-Îles, and by rail from Sept-Îles to Schefferville (Gouvernement du Québec, 2021; Dessureault, Grégoire et al., 2014, p. 9; DA6, p. 1).

The only Naskapi community in Quebec, Kawawachikamach, has approximately 930 inhabitants. The Innu community of Matimekush–Lac-John and the town of Schefferville have approximately 810 and 290 inhabitants, respectively (DA6, p. 1).

The Northeastern Quebec Agreement (NEQA) grants the Naskapis exclusive ownership of 326 km² of land divided into two blocks : category IA-N lands, located south of the 55th parallel where Kawawachikamach is located, and category lands. IB-N, located north of the 55th parallel and administered by the Naskapi Village of Kawawachikamach, which acts as the municipal government for these lands. It is because of this status that the Naskapis have a seat on the board of the Kativik Regional Government (KRG). The CNEQ also grants the Naskapis an exclusive hunting, fishing, and trapping territory that extends further north over 4,144 km², in addition to establishing a Naskapi priority use zone and a common use right zone, which form the Naskapi Sector, and the Inuit-Naskapi and Cree-Naskapi-Caribou Zones. All of these areas cover a large portion of the northeastern part of the province. Unlike the Naskapis, the Innu of Matimekush–Lac-John are not signatories to the NEQA and the James Bay and Northern Quebec Agreement (JBNQA).

Given the proximity of Kawawachikamach, Matimekush–Lac-John and Schefferville and the remoteness of the Region, the management of residual materials is carried out in a concerted manner through the Intercommunity Committee for residual materials management (hereafter the “Intercommunity Committee”). The latter is made up of representatives of the Naskapi Nation of Kawawachikamach (hereinafter the “NNK”), the Innu Matimekush–Lac-John Nation (the “NIMLJ”) and the Town of Schefferville (MRC de Caniapiscau, 2020, p. 17; DA6, p. 2).

This section of the chapter will therefore deal with the entire Region and all findings and recommendations are formulated jointly by the Inquiry Commission and the Intercommunity Committee.

11.1.1 Consultations

In order to carry out the ministerial mandate entrusted to it and to involve the NNK in its approach, the Bureau d'audiences publiques sur l'environnement (BAPE) commission held a meeting with its representatives and mutually agreed to planning a specific public consultation for the Region.

It was agreed that this consultation would be carried out in a single phase where participants would have the opportunity to question resource persons from the Ministry of the Environment and the Fight against Climate Change, the Ministry of Health and Social Services and RECYC-QUÉBEC, in order to deal with and better understand the issues, but also to express their opinions and concerns regarding the management of residual materials and final residues in their territory.

Two public sessions were held digitally on the same day of June 8, 2021, due to the health situation surrounding COVID-19. The members of the Intercommunity Committee were invited to participate on that occasion since, as indicated above, residual materials management in the Region is shared (DT29).

11.1.2 Elimination of Residual Material Overview

11.1.2.1 Residual Material Management on the Territory

The laws and regulations governing residual materials management and the environment in Quebec are applicable in the communities of Kawawachikamach and Matimekush–Lac-John and the Town of Schefferville, the main one being the *Regulation respecting the landfilling and incineration of residual materials* (RRLIRM)¹ (PR4.1.0, p. 65).

The Caniapiscau MRC, within which the Region is located, is responsible for regional planning for residual materials management. To this end, it must develop a residual materials management plan (RMMP), revise it every seven years and ensure the follow-up and supervision of the implementation of the actions provided for therein. In addition to the Region, the 2019-2024 RMMP Caniapiscau MRC project targets the City of Fermont (MRC de Caniapiscau, 2020, p. 14 et 16).

Under an agreement between the NNK, the NIMLJ and the Town of Schefferville, the operation and residual materials regional infrastructures management, including the northern landfill site (NLS), are delegated to the Town of Schefferville. The Intercommunity Committee supervises the activities. The communities separately collect residual materials in their respective territories and transport them to NLS.

1. RLRQ, c Q-2, r. 19.

- ♦ *The Commission of Inquiry and the Intercommunity Committee note that the responsibility for waste management in the Region is collaborative and shared between the Naskapi nation of Kawawachikamach, the Innu nation of Matimekush–Lac-John and the Town of Schefferville.*

Despite the existence of the Intercommunity Committee, and as indicated by a speaker from the NNK, the structure of the RMMP of the Caniapiscau MRC is not adapted to the reality of the Region. Although the indigenous communities of Kawawachikamach and Matimekush–Lac-John are located in this MRC, they are not legally part of it. They therefore do not sit on the MRC board and do not actively participate in RMMP development. To this end, the Town of Schefferville and the communities of Kawawachikamach and Matimekush–Lac John have been working together for several years in a multitude of fields and, from a certain perspective, may appear to play the role of an informal independent MRC.

In order to remedy this situation, improve residual materials management efficiency and ensure compliance with the relevant laws and regulations that apply to it, the three communities adopted the implementation plan for a residual materials management Caniapiscau MRC plan in 2012 specifically targeting the Region (DA6, p. 2). As a result of this plan and thanks to funding from Indigenous Services Canada, through the First Nations Residual Materials Management Initiative Program², a collaborative project was set up in 2017. To date, various actions have been undertaken on behalf of this project, including the establishment of a new NLS and the closure of the old site, the completion of a modeling study of atmospheric NLS emissions, the search for an alternative to open burning, setting up and optimizing the eco-centre and planning the shipment to southern Quebec of end-of-life vehicles and other scrap metal (DA6, p. 3).

In order to clarify the roles and responsibilities of each stakeholder, the Intercommunity Committee intends to create an intercommunity board (hereinafter the "Board") which would be responsible for residual materials management for the Region. This governance would be managed by a board of directors composed of representatives of the NNK, the NIMLJ and the Town of Schefferville and would employ a secretary, a treasurer, a coordinator, and all other persons necessary for its operation. Currently, an agreement for its creation is under review and should be submitted to the Councils of the three stakeholders for final approval (DA6, p. 4).

- ♦ *The Commission of Inquiry and the Intercommunity Committee note that the Naskapi Nation of Kawawachikamach, the Innu Nation of Matimekush–Lac-John and the Town of Schefferville have developed an Implementation Plan for MRC Caniapiscau's waste management plan integrating actions adapted to their realities.*

2. Federal government initiative to help First Nations develop sustainable solid waste management systems through modern operations and infrastructure, training, and partnerships (Gouvernement du Canada, 2021).

- ◆ **Recommendations** – *The Commission of Inquiry and the Intercommunity Committee consider that in order to develop waste management adapted to the reality of the Naskapi nation of Kawawachikamach, the Innu nation of Matimekush–Lac-John and the Town of Schefferville, the creation of an intercommunity board is appropriate.*

11.1.2.2 Residual Materials Management Facilities in the Territory

The regional residual materials management infrastructures include an NLS, an eco-centre and a scrap yard with a 5,000-ton capacity, all three located in the territory of the Town of Schefferville, as well as two composting stations, one in Schefferville, located at the eco-centre, and the other in Kawawachikamach. These thermophilic composters each allow the treatment of 350 kg of organic matter per week (DA6, p. 2; MRC de Caniapiscau, 2020, p. 22, 24 and 27).

The NLS has been in operation since 2019 and is expected to meet the needs of the population for the next 20 years (DA6, p. 2). Obviously, this operating period may fluctuate depending on the use of current and future related infrastructure and the management of compostable and recyclable materials in the territory, but also depending on the population and regional economic development.

The NLS is authorized under article 94 of the RRLIRM. As with all NLSs, section 99 requires open burning of combustible waste at least once a week, weather permitting. This burning is required to reduce the space occupied by residual materials, increase NLS lifespan and prevent wild and domestic animals from scattering residual materials (MDDEFP, 2012, p. 245_{PDF}). Any residual material can thus be burned there, with the exception of appliances and other bulky items, fuel oil tanks, water heaters, batteries, hazardous products, propane tanks and tanks and scrap metal (MRC de Caniapiscau, 2020, p. 27).

The opening of the eco-centre in Schefferville in October 2017 made it possible to modify residual materials management by removing several materials from NLS such as car batteries, paint, mercury bulbs, wood, metal, and electronic products. (MRC de Caniapiscau, 2020, p. 24).

- ◆ *The Commission of Inquiry and the Intercommunity Committee note that the northern landfill site located in the Town of Schefferville opened in 2019 and should theoretically meet the needs of Schefferville as well as those of Kawawachikamach and Matimekush–Lac-John, for a period of approximately twenty years.*
- ◆ *The Commission of Inquiry and the Intercommunity Committee note that there are various infrastructures for residual materials management in the Region and that the only northern landfill site requires open burning on a weekly basis when weather conditions permit, under the Regulation respecting the landfilling and incineration of residual materials.*

11.1.2.3 Annually Generated Residual Materials

Very little data is available for the Caniapiscau MRC territory regarding annually generated residual materials because systematic weighings are not carried out by all the generators. For example, it is primarily in NLSs that employees make only a visual assessment of the volume of buried construction, renovation, and demolition (CRD) waste. The residual materials inventory generated in the Region is very difficult to establish because no sorting at source is carried out and the garbage bags are not weighed. However, the Town of Schefferville asked the Chair in eco-consulting at the University of Quebec at Chicoutimi in 2014 and 2017 to carry out a characterization of its residual materials, which made it possible to have an estimate of the materials generated in its territory. On this basis, in 2019, CRD residues were estimated for the Region, at 788 t, residues from ICI at less than 200 t, and residues from the residential sector at just over 750 t. In total, the Region therefore generated nearly 1,740 t of residual materials, or the equivalent of around 0.856 t/inhabitant³ (MRC de Caniapiscau, 2020, p. 27, 34 and 36).

- ♦ *The Commission of Inquiry and the Intercommunity Committee note that very little data exists on the quantities and origin of waste generated in the Region. Nevertheless, according to estimated data, each citizen would have generated just over 0.85 tonnes of waste in 2019.*

11.1.3 Local Issues

This section presents the issues specific to the Region, including Kawawachikamach, Matimekush–Lac-John and the Town of Schefferville, relative to residual materials management. These issues are based, in particular, on the comments made by participants during the public consultation day.

11.1.3.1 Open Burning of Residual Materials and Possible Solutions

Due to the presence of permafrost in northern environments and the scarcity of unconsolidated deposits required for the development of other types of landfill sites, NLSs are authorized there (PR4.1.0, p. 27). NLS is therefore the method of eliminating residual materials used in the Region under article 94 of the RRLIRM. The RRLIRM specifies that only residual materials that are generated in a northern environment⁴ are eligible for NLS,

3. Considering that the Region's population totaled 2,031 inhabitants in June 2021, and that it remained relatively stable between 2019 and 2021 (DA6, p. 1).

4. According to article 94 of the RRLIRM, the "northern environment" includes the territory located north of the 55th parallel as well as the municipality of Côte-Nord-du-Golfe-du-Saint-Laurent, the municipalities of Blanc-Sablon, Bonne-Espérance, de Gros-Mécatina and de Saint-Augustin, Town of Schefferville and the territory within a 10 km radius from the limits of that town, the Naskapi Village of Kawawachikamach as well as any other municipality incorporated under the Act on the municipal reorganization of the territory of the Municipalité de Côte-Nord-du-Golfe-du-Saint-Laurent (1988, chapter 55; 1996, chapter 2).

including sludge⁵. Article 4, however, specifies that certain residual materials cannot be disposed of there, in particular hazardous materials and motor vehicle hulks⁶.

During informal discussions as well as during public consultation day, representatives of the NNL raised serious concerns regarding the open burning in the NLS, required on a weekly basis under the RRLRM⁷, and its potential effects on the health of neighbouring communities and the environment.

Open-air burning "refers to any fire or burn that is not carried out in a building" (CCME, 2016, p. 3). Due to the humidity of the household residual materials and their stacking, fires in NLSs reach temperatures too low to produce complete combustion and consequently generate large quantities of particles and numerous contaminants, including polycyclic aromatic hydrocarbons, dioxins, and furans (Dessureault, Grégoire et al., 2014, p. 64). Some researchers point out that the smoke can easily reach surrounding communities when pushed by adverse winds and in a thermal inversion situation. The potential risks to the health of neighbouring communities are therefore real, especially among more vulnerable groups such as children, the elderly and people who are already weakened by health problems (Dessureault, Grégoire et al., 2014, p. 2, 64 and 65).

With this in mind, in 2018, Region communities commissioned a firm to carry out a modeling study on atmospheric emission dispersion from open burning of residual materials at NLS, located 3 km to the northwest of the Town of Schefferville (DA6.1, p. 1 and 5). Overall, the results of this modeling are in line with the trends observed in the literature. In fact, for the majority of the contaminants modeled, the concentrations are several times higher than the applicable standards or criteria of atmospheric quality. Overall, plume dispersion is limited to the proximity of the NLS, but some contaminants extend to the Town of Schefferville and Matimekush–Lac-John (DA6.1, p. 19 and 22).

In addition to health repercussions, contaminants emitted during open burning can affect all ecosystem elements, from microorganisms and plants to fish and mammals (CCME, 2016, p. 4). In addition, the mere presence of an NML on a territory may be of concern for the immediate environment because of the potentially toxic leachate⁸ it can generate (Dessureault, Grégoire et al., 2014, p. 65).

Weekly burning can prevent, if not reduce, the generation of leachate. However, since NLSs do not have leachate collection and treatment systems, their potential for surface water contamination and impacts on aquatic ecosystem quality is very real (Dessureault, Grégoire et al., 2014, p. 63 and 65). Furthermore, no environmental monitoring is required by the

5. RLRQ, c Q-2, r. 19, art. 94.

6. RLRQ, c Q-2, r. 19, art. 4.

7. RLRQ, c Q-2, r. 19, art. 99.

8. Leachate is a liquid produced by the infiltration of water through household garbage in landfills. This substance, often contaminated with organic matter and heavy metals, can aggravate the pollution of the surrounding soil, groundwater, and waterways. (MELCC, 2021a).

MEFCC and no limit value for groundwater quality and surface water is applicable for an NLS (PR4.1.0, p. 27).

Thus, although an atmospheric modeling study has been carried out in the Region, it still appears very difficult to rigorously and accurately estimate the real impacts of open burning on the environment and the health of neighbouring populations. In this regard, the Ministry of the Environment and the Fight against Climate Change and the Ministry of Health and Social Services demonstrated their desire to fill this scientific gap by characterizing environmental contamination during public sessions, and an assessment of the population's exposure to contaminants emitted by open burning (Koffi Banabessey, DT29, p. 30; Virginie Noël-Aloise, DT30, p. 22 and 23; Claude Trudel, DT30, p. 24).

The establishment of the eco-center in 2017 made it possible to remove hazardous materials such as car batteries, paint, mercury light bulbs and electronic products from NLS. Likewise, the composting project, although in its infancy, could help divert some of the organic material from NLS. However, as mentioned by the representative of the Intercommunity Committee, no selective collection is in place in the Region and a large portion of the residual materials generated is still sent to NLS (Robert Prévost, DT29, p. 51).

Therefore, even if concrete actions are gradually being implemented in the Region to promote the diversion of residual materials that are sent to the NLS, open burning remains the prescribed method of disposal and concerns to this effect persist. As a representative of the NNK put it, "the detrimental effects of open-pit burning on health, public safety and the environment, and the difficulty in identifying adequate and feasible alternatives represent great challenges" (DA6, p. 4).

In this context, in 2018, the Intercommunity Committee has begun to think about finding an alternative solution to open burning. Although several solutions have been studied over the years, such as the installation of an incinerator, none to date has been retained as an adequate or feasible solution for considerations linked, in particular, to the size of the population as well as implementation and operating costs (DA6, p 3).

In addition, various options were raised during the public consultation, such as burning in a box with a screen that promotes better combustion and reduced emissions, or the use of a batch incinerator (Khalid Guerinik, DT29, p. 39, 47 and 48). However, as indicated by the MEFCC, the best solution to solve the open-air burning problem remains incineration, but this has various limitations, such as compliance with *Air Quality Regulation*⁹ emission standards and significant investments, both for infrastructure and its operations (Khalid Guerinik, DT29, p. 38, 41 and 42).

9. RLRQ, c Q-2, r.4.1.

In order to identify realistic and viable open-air burning options, solutions that could also be exportable to all northern or isolated communities, a meeting was held in the Spring of 2021 between representatives of the Intercommunity Committee and the Société du Plan Nord¹⁰ (Robert Prévost, DT29, p 36). Discussions are ongoing.

However, it appears clear to the Inquiry Commission that RECYC-QUÉBEC should play a major role in it to prevent each community, each nation, or even each MRC from being left to itself searching for strategies, technologies and means to reduce residual materials. The organization should therefore develop a center of expertise to which all organizations in need could have access.

- ♦ **Recommendations** – *The Commission of Inquiry and the Intercommunity Committee consider it imperative that the Ministry of the Environment and the Fight against Climate Change carry out the characterization of the environmental contamination due to the open burning of waste in the Kawawachikamach, Matimekush–Lac-John and Schefferville regions, where the northern landfill site is located.*
- ♦ **Recommendations** – *The Commission of Inquiry and the Intercommunity Committee consider it imperative that the Ministry of Health and Social Services assess the exposure of the population to the contaminants emitted by the open burning of waste in the Kawawachikamach, Matimekush–Lac-John and Schefferville regions where the northern landfill site is located.*
- ♦ **Recommendations** – *The Commission of Inquiry and the Intercommunity Committee recommend that RECYC-QUÉBEC, the Town of Schefferville, the Naskapi nation of Kawawachikamach, the Innu nation of Matimekush–Lac-John, the Kativik Regional Government, the Ministry of the Environment and the Fight Against Climate Change, the Ministry of Health and Social Services and the Société du Plan Nord, concertedly work together through a joint working group to discuss common issues related to open pit burning in a northern or isolated environment.*

11.1.3.2 Scrap Management

The accumulation of scrap metal in the Region is an important issue and a management challenge. In the absence of nearby recovery services, end-of-life motor vehicles (ELVs) and other metals are currently stored in the scrap yard, located in the Town of Schefferville. The maximum capacity of this 5,000 t site has now been reached. There are currently 15 heavy ELVs, 100 light ELVs and 2,500 t of metal of all kinds stored there. With the disposal site at full capacity for over a year, scrap metal is piling up not only in the Schefferville territory but also on those of Kawawachikamach and Matimekush–Lac-John. The last “clean-up” campaign which made it possible to return the scrap metal to recyclers in southern Quebec already dates back to 2013 (DA6, p. 2; Robert Prévost, DT29, p. 5 and 21).

10. The mission of the Société du Plan Nord is to contribute to the integrated and coherent development of Quebec's northern territory, in accordance with the guidelines defined by the government and in consultation with the representatives of the regions and native nations concerned as well as the private sector (Société du Plan Nord, 2014).

campaign which made it possible to return the scrap metal to recyclers in southern Quebec already dates back to 2013 (DA6, p. 2; Robert Prévost, DT29, p. 5 and 21).

In accordance with the Caniapiscau MRC RMMP implementation plan, in 2017 the three stakeholders initiate aimed at carrying out a scrap inventory on the territory, transporting it to the disposal site and attempting to ship it to recyclers in southern Quebec (DA6, p. 3). As the Region has no road link connecting it with southern Quebec, the only means of transportation is by train to Sept-Îles, then by truck or boat to recyclers; however, scrap metal transport generates high transport costs. Preliminary estimates put them at between \$500,000 and \$900,000, or between \$100 and \$200/t. Scenarios are currently being considered and these are accompanied by a search for funding (DA6, p. 4).

During the consultation, certain financing options for this accumulated scrap metal recycling operation were proposed by resource persons, in particular, from the budget allocated for the implementation of the 2019-2024 Action Plan of the Quebec policy for residual materials management (Claude Trudel, DT29, p. 11 and 15; Sophie Langlois-Blouin, DT29, p. 24 and 25).

Meanwhile, scrap continues to accumulate and is increasing environmental liabilities (DA6, p. 4). This liability can, in some respects, hinder mobilization, making it increasingly urgent to release financial resources to resolve this problem (Dessureault, Perron et al., 2017, p. 55 to 57). Recurring actions to manage new metal residues must be added to this mobilization. To summarize the situation: the Intercommunity Committee has indicated:

In the short term, it is necessary to plan and implement an effective recycling operation and to secure funds to recycle the accumulated scrap metal. In the longer term, it is necessary to develop and establish a sound day-to-day scrap management which should allow recurrent or long-term financing by creating sources of income.
(DA6, p. 4)

As pointed out by the Intercommunity Committee representative during the consultation, the companies that currently drop off scrap metal at the Schefferville eco-centre pay fees in order to financially support its re-shipment to recyclers in southern Quebec (Robert Prévost, DT29, p. 20 to 22). Stakeholders in the Region are now considering implementing an environmental tax for citizens that would be levied on vehicles transported in the Region.

As for the MELCC, application of the extended producer responsibility principle (EPR)¹¹ is preferred (Claude Trudel, DT29, p. 14). Currently in Quebec, there is no EPR that oversees the management of the entire vehicle that has reached its end of useful life; the vehicle components approach (lubricating oils, oil filters, xenon headlights, etc.) having instead been prioritized (DB1.37, p. 2). However, the Ministry indicated that it was considering a possible review of the *Regulation respecting the recovery and reclamation of products by*

11. EPR is an approach that aims to transfer the responsibility for the management of residual materials generated by the consumption of various products to the companies that are at the origin of their marketing in a given territory (MELCC, 2021b).

*enterprises*¹² (RRRRPE) which could target the subjugation of new products in the EPR principle while ELVs appear on the list of priority products (DB1.37, p. 2; MDDELCC, 2015, p. 8). Such an approach, which would aim to transfer the responsibility for the management of all ELVs to a company, could facilitate the return of these vehicles from the Region to southern Quebec for recycling.

In addition, household and air conditioning appliances, which generate a large quantity of metal residues, have been designated under EPR as part of the modification of the RRRRPE enacted in December 2019. To this end, RECYC-QUÉBEC recognized on March 29, 2021, GoRecycle Canada Inc. as the management body for the support of these devices. This EPR is expected to apply to the Schefferville region (DB1.37, p. 1).

- ◆ *The Commission of Inquiry and the Intercommunity Committee note that within the framework of extended producer responsibility (EPR), a management organization, GoRecycle Canada inc., was recently recognized for the support of household appliances and air conditioning and that this program will apply to the Region.*
- ◆ **Recommendations** – *The Commission of Inquiry and the Intercommunity Committee recommend that RECYC-QUÉBEC be explicitly mandated to collaborate with the Intercommunity Committee in order to develop and implement an integrated intervention plan to solve the problem of metal liabilities and to plan future scrap management in the Region.*

12. RLRQ, c Q-2, r. 40.1.

List of acronyms and abbreviations section 11.1

Acronyms

BAPE: Bureau d'audiences publiques sur l'environnement

CCME: Canadian Council of Ministers of the Environment

CQLR: Compilation of Quebec Laws and Regulations

CRD: construction, renovation, and demolition

EPR: Extended producer responsibility

EQA: *Environmental Quality Act*

INMLJ: Innu Nation of MatimekushLac-John

JBNQA: James Bay and Northern Quebec Agreement

KRG: Kativik Regional Government

MEFCC: Ministry of the Environment and the Fight against Climate Change

MHSS: Ministry of Health and Social Services

MSDEFCC: Ministry of Sustainable Development, Environment, and the Fight against Climate Change

MSDEWP: Ministry of Sustainable Development, Environment, Wildlife and Parks

NEQA: Northeastern Quebec Agreement.

NLS: Northern Landfill Site

NNK: Naskapi Nation of Kawawachikamach

OMV: Out of use motor vehicles

RCM: Regional County Municipality

RMMP: Residual materials management plan

RRLIRM: *Regulation respecting the landfilling and incineration of residual materials*

RRRRPE: *Regulation respecting the recovery and reclamation of products by enterprises*

Abbreviations

\$: dollar

\$/t: dollar per ton

c.: chapter

km: kilometer

s.: section

t: ton

t/capita: ton per capita

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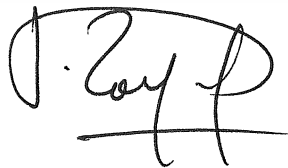
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Site Inventory and Final Waste Management

This inquiry and public hearing mandate assigned to the Bureau d'audiences publiques sur l'environnement (BAPE) by the Minister of the Environment and the Fight against Climate Change addresses the *Current status and Management of Final Waste* and covers the Québec territory as a whole, including the territories referred to under Chapters 22 and 23 of the *James Bay and Northern Québec Agreement*, Chapter 14 of the *Northeastern Québec Agreement* and Chapter II of the *Environment Quality Act*. A commission of inquiry has been established in that regard.

Considering the proximity of Kawawachikamach, Matimekush–Lac-John and Schefferville, waste management is carried out collaboratively through the Intercommunity Committee on Residual Waste Management (the "Intercommunity Committee"), which comprises representatives of the Naskapi Nation of Kawawachikamach, the Nation Innu Matimekush–Lac-John and the Town of Schefferville. As a result, the commission of inquiry consulted with the Intercommunity Committee, which has been an active participant in the work and reflections pertaining to residual waste management issues faced by the region over its territory.

Consequently, the first section of Chapter 11 of this report, which addresses *Waste Management in Territories Under Agreements*, was elaborated in collaboration with the Intercommunity Committee. Both the BAPE's commission of inquiry and the Intercommunity Committee adhere to the findings and recommendations formulated in this section.



Joseph Zayed
President of the commission of inquiry



Billy Shecanapish
Member of the Intercommunity
Committee, representative of the
Naskapi Nation of Kawawachikamach



Jean-Baptiste Laurent
Member of the Intercommunity
Committee, representative of Nation
Innu Matimekush–Lac-John



Jean Dionne
Member of the Intercommunity
Committee, representative of the Town
of Schefferville

$\Delta \Gamma < \Delta b_{\text{m}}^L \times C \Delta^L$ $\Delta \Gamma b^L$ $\Delta \Gamma \wedge \Gamma C_{\text{m}}^{\circ}$ $\Delta^{\circ} C$ Δ_{m}^L $\Delta_{\text{a}} \Delta^L \Delta C b_{\text{m}}^L$ $\Delta^{\circ} C$ $\Delta \wedge^L$ $\Delta_{\text{a}} \Delta^{\circ}$ $\Delta_{\text{a}} \Delta^L \Delta C b_{\text{m}}^L$
 (DA6, p. 4)_x

20. RLRQ, c. Q-2, r. 40.1.

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ልዋጥ ልዋጋ ርጋል ልዋጥ

KRG: ከገለጽ ልዋጥ ልዋጥ

BAPE: ልዋጥ ልዋጥ ልዋጥ

JBNQA: ልዋጥ ልዋጥ ልዋጥ

CCME: ከገለጽ ልዋጥ ልዋጥ

NEQA: ልዋጥ ልዋጥ ልዋጥ

CRD: ልዋጥ ልዋጥ, ልዋጥ ልዋጥ, ልዋጥ ልዋጥ ልዋጥ

NL: ልዋጥ ልዋጥ ልዋጥ

EQA: ልዋጥ ልዋጥ ልዋጥ

MDDEFP: ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ [Ministère du Développement durable, de l'Environnement, de la Faune et des Parcs]

MDDELCC: ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ [Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques]

MELCC: ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ [Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques]

RCM: ልዋጥ ልዋጥ ልዋጥ

MSSS: ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ [Ministère de la Santé et des Services sociaux]

INMLJ: ልዋጥ ልዋጥ ልዋጥ

NNK: ልዋጥ ልዋጥ ልዋጥ

RMMP: ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ

RRLIRM: ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ

EPR: ልዋጥ ልዋጥ ልዋጥ ልዋጥ ልዋጥ

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11.2 The Inuit

The Inuit inhabit the territory of Nunavik, which covers an area of over 500,000 km² and is located north of the 55th parallel (DA5.2, p. 1). This territory has more than 14,000 inhabitants in fourteen villages located along the coasts of Ungava Bay, Hudson Strait and Hudson Bay (Institut de la statistique du Québec, 2020). Nine of these northern villages have fewer than 1,000 inhabitants (DA5.2, p. 9). There is no road network connecting the northern villages to each other and to southern Quebec, with communities accessible only by air, by sea during open water periods, and by snowmobile in winter (BAPE, 2015, p. 348).

11.2.1 Consultations

To fulfill its ministerial mandate, the BAPE Commission associated itself with the Kativik Environmental Advisory Committee (KEAC) and formed a specific commission for this purpose. The KEAC is an advisory committee on the environment created under the James Bay and Northern Quebec Agreement (JBNQA) for the territory of Nunavik. This federal-provincial-aboriginal body acts as a privileged and official interlocutor in matters of environmental protection and monitors the application of the environmental protection regime provided for in Section 23 of the JBNQA.

An administrative agreement was signed between the BAPE commission and the KEAC commission. The main purpose of this agreement was to establish the terms and conditions of the consultations in Nunavik and to define responsibilities while ensuring that Aboriginal rights were respected (DA5.3). Thus, it was agreed that the consultations specific to Nunavik would be carried out in a single phase in which participants would have the opportunity to question resource persons in order to gain a better understanding of the issues, but also to express opinions and concerns regarding waste management on their territory.

Three public sessions were planned, entirely digitally due to the health situation surrounding COVID-19. A first session was held on the morning of June 9, 2021, specifically for representatives of regional organizations. A second session dedicated to the population of Nunavik was planned for the afternoon of June 9, 2021. Due to the absence of participants, the KEAC and BAPE commissions jointly agreed to cancel this session. A final public session was held on the morning of June 10, 2021, for the representatives of the northern villages (DT30, DT31 and DT32).

As agreed between the two commissions, resource persons from the Ministry of the Environment and the Fight against Climate Change (MEFCC), the Ministry of Health and Social Services (MHSS) and RECYC-QUÉBEC participated in each session

- ♦ *The BAPE and KEAC commissions acknowledge that the consultations in Nunavik were carried out to their satisfaction and in accordance with the administrative agreement signed between the two boards.*

11.2.2 The portrait of residual materials disposal

11.2.2.1 Management of residual materials in Nunavik

The laws and regulations governing waste management and the environment in Quebec are applicable to Nunavik, the main one being the *Regulation respecting the landfilling and incineration of residual materials*²¹ (RRLIRM) (PR4.1.0, p. 65; DA5.2, p. 18).

The Kativik Regional Government (KRG) is a local government and a geographic regional county municipality that covers all of Nunavik. It is responsible for developing municipal infrastructure, including the construction and maintenance of waste management facilities. At the same time, it is responsible for planning waste management in Nunavik and providing assistance to the fourteen northern villages in its daily practices (KRG, DM70, p. 3). To this end, it is required to develop and maintain a Residual materials management plan (RMMP) under section 53.7 of the *Environment Quality Act*²² (EQA) (DQ12.1, p. 1). The KRG produced a first RMMP for the period 2015-2019, followed by a revision of the latter resulting in the 2021-2027 RMMP.

The *Act respecting Northern Villages and the Kativik Regional Government*²³ stipulates that each Northern village has jurisdiction over the management of its waste and its northern landfill site (NLS) (Dessureault, Grégoire *et al.*, 2014, p. 33). Thus, these villages remain the managers of operations related to NLS and residual materials collection. While each community has the authority to adopt its own bylaws, the RMMP aims for more standardized management in each village (DA5.2, p. 18).

In addition to the KRG, two other organizations, formed under the JBNQA, have the mandate to observe, analyze, comment and/or decide on projects that have an environmental and/or social impact in Nunavik. The Kativik Environmental Quality Commission (KEQC) is responsible for the assessment and review of projects located on the territory of Nunavik, while the Kativik Environmental Advisory Committee (KEAC) is primarily mandated to monitor, through the exchange of views and information, the application of Section 23 of the JBNQA (PR4.1.0, p. 65; DA5.2, p. 19).

In addition to these authorities, local entities such as the cooperative stores, the Newviq'vi company in Kuujuaq, the Northern stores as well as the organization I Care, We Care, provide various functions that allow for the recovery and recuperation of certain residual materials (DA5.2, p. 27 to 30).

21. RLRQ, c Q-2, r.19.

22. RLRQ, c Q-2.

23. RLRQ, c V-6.1.

- ♦ *The BAPE and KEAC commissions note that the responsibility for waste management in Nunavik is collaborative and essentially shared between the local authorities and the Kativik Regional Government.*

11.2.2.2 Waste Management Facilities in the Territories

The residual waste management in Nunavik is done in NLSs, and each Northern village has one on its territory. Due to the presence of permafrost and the scarcity of unconsolidated deposits that prevent the development of other types of landfills, NLSs are authorized in Nunavik under section 94 of the RRLIRM (PR4.1.0, pp. 27 and 61; DA5.2, p. 18).

The NLSs in Nunavik are located in the outskirts of the villages, at various distances from the population's place of residence. Their size depends on the size of the villages, ranging from about 4,000 m² to over 52,000 m² (DA5.2, p. 25). Currently, large-scale recycling and composting programs do not exist in these communities. Unsorted garbage is collected in a box or garbage can outside homes and institutional buildings. Collection is done by municipal staff on a weekly basis using a municipal garbage truck. Once transported to the NLSs, the waste deposited in the fuel section is burned in the open at least once a week, weather permitting, as required by Section 99 of the RRLIRM, and then roughly compacted by machinery. In these locations, the addition of cover material is done on a semi-annual or annual basis and is dependent on the presence of nearby material and the time of year. Where possible, non-combustible waste materials are set aside, in separate sections of the NLSs where they accumulate significantly over the decades (DA5.2, p. 23).

Although there are many logistical constraints to waste recovery activities in the territory (distance from major centers, lack of roads linking villages and high shipping costs), there are a few local initiatives aimed at recovery. These include the recovery of refundable beverage containers and their return to recyclers, the summary sorting at the NLSs allowing the population to recover parts and materials for personal use, the return of used tires to the south thanks to the Quebec Integrated Management of Used Tires Program of RECYC-QUÉBEC, as well as the existence of a composting site in Kuujuaq, linked to the community greenhouse, allowing the recovery of a portion of the organic residues from the food market (DA5.2, p.27 to 30).

However, as the KRG indicates in its RMMP, "considering the few recovery activities on the territory, it is possible to affirm that almost all of the residual materials generated are disposed of at the villages' NLSs" (DA5.2, p. 43).

Since each northern village has an NLS, there are currently fourteen sites in Nunavik. This excludes, however, the NLSs owned by mining companies operating in the territory (PR4.1.2b.1). As will be explained in the following sections, the fact that Nunavik has no road links to southern Quebec and is very remote from appropriate infrastructure greatly limits the recovery activities. As a result, the vast majority of residual materials, all materials

combined, are collected, and transported to the NLSs, which are the only local infrastructures dedicated to residual materials management (DA5.2, p. 21).

However, many of these landfills, opened in the 1980s, are reaching capacity (DA5.2, p. 22). The remaining operating time may fluctuate depending on the management of certain recyclable materials in the territory, such as scrap metal. This is the case for the NLSs in Kangirsuk, Inukjuak and Kuujjuarapik, which are practically full today. To partially remedy the situation in Nunavik, three new NLSs in these villages are expected to begin operations in the coming years (PR4.1.0, p. 66).

In Kangirsuk, a new site has been built and will open soon. In Inukjuak, construction of a new site is expected to be completed within five years. In Kuujjuarapik, the Cree Nation Government is planning a new landfill on the territory of the Cree community of Whapmagoostui, which will also be used by the Northern Village of Kuujjuarapik, but the opening date is not yet known.

In addition, in some villages, the area occupied by waste is greater than the area of the NLSs (Table 11.1). In the next 20 years, at least half of the villages in Nunavik will need to develop a new NLS due to the increase in the amount of non-burnable materials accumulating in the NLSs, including out of use motor vehicles, and occupying large areas.

Table 11.1 Area occupied by residual materials by landfill site in the North of Nunavik

Northern village	Area of NLS/Fenced area (m ²)	Area occupied by residual materials (m ²)
Akulivik	20,200	13,857
Aupaluk	12,100	16,180
Inukjuak	45,180	34,414
Ivujivik (site 1 = inflammable)	6,720	5,913
Ivujivik (site 2 = non-flammable)	3,780	5,950
Kangiqsualujuaq	7,600	5,989
Kangiqsujuaq	32,000	15,511
Kangirsuk (former)	19,000	16,599
Kangirsuk (new)	52,383	703
Kuujuaq	28,280	28,700
Kuujuarapik (site 1 = non-flammable)	24,000	17,509
Kuujuarapik (site 2 = inflammable)	23,150	20,880
Puvirnituq	33,670	15,390
Quaqtaq	11,900	7,861
Salluit	20,270	20,780
Tasiujaq	15,310	12,402
Umiujaq	16,220	6,028

Source: adapted from Poly-Géo Inc., 2020, p. 25.

- ◆ *The BAPE and KEAC commissions note that northern landfill sites are practically the only waste management facilities in Nunavik and open burning is required on a weekly basis.*
- ◆ *The BAPE and KEAC commissions note that the northern landfill sites serving each village in Nunavik are, for the most part, reaching capacity and that within the next twenty years at least half of the villages will need to develop a new landfill site to meet their needs.*

11.2.2.3 Residual materials generated annually

In Nunavik's NLSs, there are no scales that allow us to know exactly how much waste is being sent to them. Therefore, in its 2021-2027 RMMP, the KRG made estimates of the quantities generated based on several studies from Quebec and other areas (DA5.2, p. 37).

Table 11.2 presents a summary of the estimated quantities of residual materials generated for the year 2019, for each of the production sectors. The residential sector accounts for almost 50% of the residual materials generated, while construction, renovation, and demolition (CRD) sector residues contribute just over 43% and industrial, commercial, and institutional (ICI) sector residues nearly 7% (DA5.2, p. 44).

Table 11.2 Estimate, in tons, of the quantities of residual materials generated in 2019 in Nunavik¹

		Residual material categories								
		Paper-cardboard	Glass	Metal	Plastic	Construction waste	Household hazardous waste	Organic materials	Other materials ²	Total
Production sector	Residential	1,689	230	230	998	128	46	2,533	1,821	7,675
	ICI ³	311	44	22	100	111	3	434	86	1,111
	CRD	-	-	-	-	6,887	-	-	-	6,887
	Total	2,000	274	252	1,098	7,126	49	2,967	1,907	15,673
	%	12.8	1.7	1.6	7	45.5	0.3	18.9	12.2	100

1. Since it is not possible to quantify the materials recovered (tires, car batteries, EPR products, cans) and since the quantities involved are small, the KRG considers in its RMMP that all residual materials generated are disposed of (DA5.2, p. 43). 2. The "other materials" category includes toys, sporting goods, textiles, and small appliances (DA5.2, p. 37). 3. In Nunavik, since there is no industry in the villages, the ICI include the health, education, public administration, commercial and financial institutions sub-sectors (DA5.2, p. 39).

Source: adapted from DA5.2, p. 39 to 44.

For example, in 2019, the Nunavik region generated nearly 16,000 t of waste, or about 1.1 t/capita (DA5.2, p. 43). However, the 2015-2019 RMMP showed a total of approximately 12,000 t for previous years, which indicates a significant increase for 2019. This situation is undoubtedly explained in part by population growth, which is much higher in Nunavik than in the rest of Quebec. Indeed, "from 1971 to 2001, the population more than doubled. From 2001 to 2016, it grew by 41.4% and a growth of more than 25% is expected by 2036" (DA5.2, p. 10).

- ♦ *The BAPE and KEAC commissions note that, on average, each citizen of Nunavik generated approximately one tonne of waste in 2019 and that the expected population growth could lead to a tangible increase in the quantities generated in the coming years.*

11.2.3 Actions currently being conducted

The 2021-2027 RMMP, which outlines KRG's vision and seven-year planning, aims to:

[...] to continue efforts to improve residual materials management in Nunavik by providing the northern villages with a planning tool that takes into account regional and local particularities. It will also increase awareness of the importance of reducing, reusing, recycling, and recovering residual materials in order to protect the environment. (DA5.2, p. IX)

Beyond this exercise, plans to establish or expand some of the NLSs are currently under development as some sites will soon be at full capacity. As previously mentioned, new landfills will be opened in the next few years, including a new NLS in the village of Inukjuak, a second in the village of Kangirsuk and a third in the village of Kuujjuarapik/Whapmagoostui²⁴ (PR4.1.0, p. 66).

Table 11.3 presents various initiatives put forward by the Government of Quebec to facilitate the management of residual materials in northern territories. A \$20 million envelope from Action 23 of the 2019-2024 Action Plan of the Quebec Residual Materials Management Policy (QRMMP) is specifically aimed at supporting isolated communities, including those in Nunavik, in the implementation of residual materials management projects related to the problems specific to their environment (DB1.17, p. 20). This plan includes support for Nunavik "to fund elements deemed a priority by the Kativik Regional Government" (Gouvernement du Québec, 2019, p. 17). An agreement was signed with the KRG to this effect in March 2020, allocating it a budget of \$4,825 million (Table 11.3) to ensure the transportation to southern Quebec and the recovery of metals accumulated in the territory. Two villages were targeted by this project, Kangirsuk and Aupaluk, with quantities of metals estimated between 1,700 t and 3,200 t and 800 t and 1,700 t respectively (DB1.17, p. 20; DQ1.2, p. 11; DQ7.1, p. 6).

For its part, the Société du Plan Nord, through the implementation of its 2020-2023 Action Plan, is providing \$3 million in financial support for the cleanup of hazardous material storage sites in the fourteen northern villages of Nunavik (Table 11.3). A characterization of the storage sites in all the northern villages was conducted, as well as the clean-up of eight of them. Work in the other six villages was to begin in the summer of 2021 and be completed by March 31, 2022 (DB8, p. 1; Véronique Gilbert, DT30, p. 32). The Société du Plan Nord is also conducting a waste-to-energy pilot project in Kuujjuarapik. Based on the studies conducted to date, the recommended solution would be the construction of an incinerator to treat Kuujjuarapik's waste, with the addition of a heat recovery system to heat a future greenhouse and several institutional buildings (DB8, p. 2).

24. Although this future NLS is located south of the 55th parallel and is therefore not within the territory of application of Section 23 of the JBNQA, the Northern Inuit Village of Kuujjuarapik and the Cree community of Whapmagoostui wish to use a single landfill site for their residual materials. The new NLS will be located in Whapmagoostui, but it is expected that the old site located in Kuujjuarapik as well as various sites where residual materials are found will be cleaned up and rehabilitated (PR4.1.0, p. 66).

Table 11.3 Funding sources of the Kativik Regional Government and the fourteen northern villages for residual materials management

Program (or Measure)	Responsible	Amount Awarded	Target Year	Completed Activities
Action 23/Plan d'action 2019-2024 PQGMR	MEFCC	\$4,825m	2020-2025	Transport and valorization of accumulated metals. Two targeted villages: – Kangirsuk – Aupaluk
Isurruutiit Program	MMAH	\$100m (\$8.5m were allocated to the RRM)	2016-2021	Program to improve municipal infrastructure in Nunavik, including residual materials management infrastructure
The Program for Residual Materials Management in Northern Quebec ¹	MEFCC	\$ 670,000	2020-2022	KRG Projects: – implementation of an eco-centre and a recycling centre in Kuujjuaq (\$300K) – implementation of a rotating composter in Inukjuak (\$150K) – general training in RRM and operations (\$220K)
Société du Plan Nord Program	Société du Plan Nord	\$3m	2018-2022	Project for the recovery of hazardous materials accumulated in the fourteen northern villages
CRD Sector Calls for Proposals	RECYC-QUÉBEC	\$190,000	2018-2021	Construction Debris Management Improvement Project: – purchase of equipment to sort construction debris in Kuujjuaq – purchase of a reception station to manage the use of the NLS in Kuujjuaq

1. Program completed as of December 31, 2019 (MEFCC, 2021b).

Sources: adapted from DQ1.2, p. 11; DQ7.1, p. 6; DQ9.1, p. 1; DQ10.1, p. 3; DQ11.1, p. 3; Véronique Gilbert, DT30, p. 30 to 33.

In parallel to these structuring projects, a working group is in place to discuss the main issues and challenges related to waste management in Nunavik. This working group, which is made up of various regional representatives as well as Quebec government departments and agencies, aims to share information, find solutions adapted to the regional context, and analyze their technical and financial feasibility based on the programs in place (DQ7.1, p. 7).

- ♦ *The BAPE and KEAC commissions note that major waste management projects are underway in Nunavik and that these projects are intended to remedy problematic situations as well as to plan infrastructures in accordance with projected needs.*

11.2.4 Local issues

This section presents the residual materials management issues specific to the Nunavik region. These issues are supported by the verbal comments of the various participants heard at the public sessions, the briefs received, the orientations and actions identified in the Nunavik RMMP 2021-2027, as well as by the collaboration with the KEAC commission.

For each of these issues, joint orientations, issued in the form of opinions, are endorsed by the BAPE and KEAC commissions. These opinions may call for one or more actions.

11.2.4.1 Financial support

As discussed in the previous section and as indicated by the Université du Québec à Chicoutimi (UQAC) Eco-Consultancy Chair in its report on waste management in the Northern Quebec, "the good will of the stakeholders is present in the communities and many initiatives have been launched [...]" (Dessureault, Perron *et al.*, 2017, p. v, 53 and 54). However, even if this local will is present in Nunavik and specific actions have been identified in the 2021-2027 RMMP, the financial issue represents a regional reality that may hinder the completion of several activities aimed at solving a number of problems and diverting residual materials from disposal (Véronique St-Onge, DT15, p. 34; KRG, DM70, pp. 4 and 6).

To begin, it is important to note that the Inuit of Nunavik currently receive very little funding from the federal government for waste management. Due to the unique administrative and political context of Nunavik²⁵, the fourteen northern villages and the KRG do not meet the eligibility criteria for many of the federal environmental programs intended for Aboriginal communities or organizations or territories north of 60° and are therefore excluded. They often have access only to provincial sources of funding.

In addition, neither the KRG nor the northern villages are eligible for the program on the redistribution to municipalities of royalties for the disposal of residual materials intended to finance the implementation of the RMMPs, unlike the municipalities located in southern Québec. Since the KRG and the villages dispose of their residual materials in a NLS, which is not covered by the *Regulation respecting the charges payable for the disposal of residual materials*²⁶, and do not pay disposal fees, they do not have access to this program (DQ10.1, p. 1 and 2; DA5.2, p. 69). However, communities in northern territories are eligible for various Quebec government programs and calls for proposals (DQ11.1, p. 1 and 2; DQ10.1, p. 2 and 3).

Thus, although the costs related to the day-to-day activities of collecting and managing municipal, commercial, and institutional waste are covered entirely by the northern villages

25. The 14 Northern villages and the KRG were legally constituted under the *Act respecting Northern villages and the Kativik Regional Government* (RLRQ, c V-6.1.), a provincial law that gives Nunavik communities municipal status.

26. RLRQ, c Q-2, r.43.

that receive partial funding from MMAH, the KRG has had access to various sources of funding, mainly from the Quebec government (Table 11.3) (DA5.2, p. 36; DQ9.1, p. 1).

In many cases, however, the funding received does not cover the entire cost of carrying out the projects. Since it is impossible to increase municipal taxation in Nunavik, it is necessary to find additional sources of funding (DA5.2, p. 69). This is particularly the case for the eco-centre, composter and training projects supported by the grant received under the Programme de gestion des matières résiduelles en territoire nordique (Table 11.3). As a KRG representative indicated at the public session:

So, for the moment, the training project should go ahead, but we still don't know if the eco-centre and the composter will be able to be implemented. [...] These amounts of money do not really match the budgets needed to implement measures like this in Nunavik, so we necessarily needed to seek funding outside of this program to be able to implement the projects, and currently, it is external funding that is problematic, so that is why these projects are on hold.
(Véronique Gilbert, DT30, p. 33)

This insufficient funding to support the costs of carrying out the projects would require more sustained support from MEFCC and RECYC-QUÉBEC to ensure that the amounts granted to the KRG or to the Northern villages are optimal and sufficient. This is what Makivik Corporation, the organization representing the rights and interests of the Inuit of Nunavik, has indicated:

The regional and local organizations must be fully supported so they have the resources to implement new innovative solutions, adapted to our northern reality, that would contribute to protecting the environment and therefore, Nunavimmiut health and well-being.
(Makivik Corporation, DM189, p. 2)

The KRG and the fourteen northern villages could eventually benefit from another support program. Indeed, RECYC-QUÉBEC is currently developing a new program with the MEFCC and the collaboration of the Société du Plan Nord and the KRG for isolated communities, including the Nunavik region. This program should make it possible to finance concrete projects targeting source reduction, reuse, and optimal management of residual materials with a view to their recycling or recovery (DQ6.1, p. 3).

This program, which is part of Action 23 of the QRMMP Action Plan and Action 4.2.1.2 of the 2020-2023 Northern Action Plan, will have a budget of \$5 million, with \$3 million reserved for communities in the Northern Plan territory (DQ1.2, p. 11; DQ6.1, p. 3). Such a program could be greatly beneficial as it prioritizes source reduction and reuse, dimensions that have so far been secondary to recycling.

- ♦ **Recommendations** – *Aware that the amounts granted for waste management must be optimal and sufficient for the realization of projects in Nunavik, the BAPE and KEAC commissions recommend that the Ministry of the Environment and the Fight against Climate Change and RECYC-QUÉBEC collaborate in a sustained manner with the applicants, both for the evaluation of grant applications and for the rigorous follow-up of projects.*

11.2.4.2 Scrap metal management

The accumulation of scrap metal for decades has been a major problem in Nunavik, where, to date, "no metal has been shipped back south" (Véronique St-Onge, DT15, p. 34). Since the region has no road links to southern Quebec, the only means of transportation available to return scrap metal to the south are by plane and boat, both of which are very expensive. For example, the average cost of shipping a 20-foot sea container from Nunavik to Montreal is \$4,800 for a maximum of 14 t, or \$343/t (KRG, DM70, p. 6).

In the absence of other locations to manage them and the lack of recovery services in the region, out of use motor vehicles (OMV) are currently summarily sorted and stored in a separate section of the NLSs, although this is prohibited in the RRLIRM (DA5.2, p. 34; KRG, DM70, p. 4). Indeed, section 4 of the Regulation specifies that motor vehicle carcasses cannot be disposed of in a NLS. The KRG also points out that many damaged vehicles are found inside villages, around homes and garages (DA5.2, p. 34 and 53).

In recent years, characterizations have been carried out in Nunavik to estimate the quantities of metal accumulated in the villages. The villages of Kuujjuarapik, Kangirsuk, Akulivik and Kuujuaq have been the subject of such studies. The estimated quantities of metal vary from just over 1,600 t in Akulivik to over 10,000 t in Kuujuaq (St-Onge, 2019, p. 10 to 13).

This accumulation of scrap metal over time is now a heavy liability that can hinder mobilization and it is imperative that financial resources be made available to help northern communities address this problem (Dessureault, Perron *et al.*, 2017, pp. 55 and 57). In other words, it is important that a major cleanup of accumulated metal tailings be conducted in Nunavik. This would free up the nearly full capacity of the NLSs and allow for better subsequent management of these materials (Véronique St-Onge, DT15, p. 92 to 95).

For several years, the KRG has been taking steps in this direction. In 2019, it conducted a feasibility study on the recovery of residual metal in Nunavik and then included a specific measure in its 2021-2027 RMMP to recover it in two villages, Kangirsuk and Aupaluk (DA5.2, p. 55). As mentioned in the previous section, the KRG received a grant of \$4,825 million in 2020 to begin this project (QD1.2, p. 11). While these projects are essential to address a fraction of the metal liabilities, they will certainly need to be pursued to cover the entire territory of Nunavik.

At the same time, it is important that actions be put in place to manage the new metal residues. In this regard, the KRG proposes:

Implement a system to recover residual metal (out of use motor vehicles, metal appliances, metal construction waste, etc.) on a regular basis. This practice is carried out by private enterprise in southern Quebec because of the high selling price of metal, but it is not sufficient to cover the cost of shipping to Nunavik. This system would contribute to the sustainability of the infrastructure and reduce the ecological footprint associated with metal in the communities.
(DM70, p. 7)

Currently in Quebec, there is no Extended Producer Responsibility (EPR)²⁷ for the management of an entire end-of-life vehicle; instead, a component-based approach (e.g., lubricating oils, oil filters, xenon lights, etc.) has been prioritized (DB1.37, p. 2). Such an approach, which would aim to transfer the responsibility for managing the entire ELV to a company, would nevertheless facilitate the return of these vehicles from Nunavik to southern Quebec for recycling (Véronique Gilbert, DT30, p. 43). The Ministry has indicated that it is considering a possible revision of the *Regulation respecting the recovery and reclamation of products by enterprises*²⁸ (RRRPE) which could aim to subject new products to the EPR principle while OMVs appear on the list of priority products to be designated (DB1.37, p. 2; MDDELCC, 2015, p. 8).

Household appliances and air conditioners, which generate a large amount of metal waste, have been designated under EPR as part of the amendment to the RRRPE enacted in December 2019. To this effect, RECYC-QUÉBEC recognized on March 29, 2021, GoRecycle Canada Inc. as a management organization for the management of household and air conditioning appliances (RECYC-QUÉBEC, 2021). It is expected that this EPR will apply to Nunavik (DB1.37, p. 1).

- ♦ **Recommendations** – *The BAPE and KEAC commissions recommend that RECYC-QUÉBEC be explicitly mandated to develop, in conjunction with the Kativik Regional Government, an intervention program to solve the problem of metal liabilities and to plan for the future management of scrap metal throughout the territory of Nunavik, which program should include funding options.*

11.2.4.3 Deposit and selective collection systems

The notion of final waste in the northern Quebec is quite different from that in southern Quebec, "in Nunavik [this notion] necessarily includes residual materials for which recovery and recycling processes are well established in southern Quebec" (KRG, DM70, p. 6). In fact, the recovery of recyclable materials, which involves many stakeholders, proves to be much more demanding for small communities in northern territory that often have limited human and financial resources (Dessureault, Perron *et al.*, 2017, p. 44). In practice, only organic material can be recovered in Nunavik, while metal, plastic, chemicals, hazardous materials, and their packaging become waste (Véronique St-Onge, DT15, p. 39). The KRG

27. EPR is an approach that aims to transfer responsibility for the management of residual materials generated by the consumption of various products to the businesses that market them in a given territory (MELCC, 2021a).

28. RLRQ, c Q-2, r. 40.1.

is well aware of this situation and its RMMP proposes various measures to increase the detour of residual materials from disposal (DA5.2, pp. 48 to 68).

In March 2021, the Quebec National Assembly adopted Bill 65, *An Act to amend the Environment Quality Act regarding deposits and selective collection*²⁹, laying the groundwork for the modernization of deposit and selective collection systems. This modernization should make it possible to increase recovery and improve recycling according to the principles of the circular economy. The principle of extended producer responsibility will be applied to both systems (MELCC, 2021c). The deposit system will be extended to all beverage containers from 100 ml to 2 L, regardless of whether they are made of plastic, glass, metal, or multi-layer cardboard. In addition, under the curbside recycling reform, businesses that market containers, packaging, printed materials, and newspapers will be responsible for their products from the beginning to the end of their life cycle. They will therefore be responsible for their recovery, sorting, packaging, and recycling (RECYC-QUÉBEC, 2020).

Currently, there is no curbside recycling in Nunavik. Although some local initiatives exist to improve recovery, the majority of the waste generated is disposed of in the NLSs (DA5.2, pp. 27 and 43). Nevertheless, the EPR approach, applied to certain products, has resulted in the establishment of six drop-off stations in Nunavik to recover the targeted products³⁰ in the villages of Kangirsuk, Kuujuaq, Salluit, Kuujuarapik, Inukjuak and Kangiqsujaq (DA5.2, p. 34; KRG, DM70, p. 5). However, recovery rates are still low. The human resources available to adequately manage this program are limited and storage facilities are insufficient (KRG, DM70, p. 5; Nancy Dea, DT15, p. 81 and 82).

Returnable beverage containers in the region are collected by retail stores in accordance with the *Act respecting the sale and distribution of beer and soft drinks in non-returnable containers*³¹. Although these retailers send returnable beverage containers to recyclers each year, the maintenance of compaction equipment and the storage and shipping of returnable containers is expensive and complex to coordinate (KEAC, 2020, p. 6 and 7). Modernizing the deposit and recycling systems will change this situation in Nunavik.

Consequently, the KEAC points out that the designated management organization (DMO) that will be created by the government and that will be responsible for overseeing and supporting the management of the various products targeted by modernization will have to consider a range of factors such as long-term storage, infrastructure and equipment adapted to the northern climate, and the high cost of maritime transportation. A good understanding of regional realities will allow for the provision of efficient and adapted recovery services to Nunavimmiut (KEAC, 2020, p. 6 and 7). Regarding Bill 65, the KEAC adds:

29. PL 65, 2021.

30. The product categories covered by these EPRs are (1) electronics, (2) rechargeable batteries, (3) mercury lamps, (4) paints and their containers, and (5) used oils, antifreeze, coolants, their containers, and filters (MELCC, 2021a).

31. RLRQ, c V-5.001.

Both systems promise very important advances for Nunavik in waste management, provided that the provisions of Bill 65 and the resulting regulations cover all of Quebec, do not allow for exceptions or discriminatory management methods, consider the high operating costs in Nunavik, and include a strong and transparent monitoring component. (KEAC, 2020, p. 5)

Furthermore, the KRG maintains that it is important for Nunavik's regional organizations to take responsibility for the residual materials they generate. Such materials include hazardous materials, household appliances, and construction-renovation-demolition materials, which are non-combustible and require additional management by the NLSs in the villages, which in most cases do not have the financial means to recover them or to transport them to southern Quebec for recycling. The management of these residual materials should therefore be taken in charge by the institutions or organizations that produce them or are responsible for them (ARK, DM70, p. 7; Véronique Gilbert, DT30, p. 36). In this regard, the KRG's Assistant to the Director of Environment and Territory suggests that this management be detailed in the calls for tenders issued by the regional organizations. In this way, contractors would be contractually obliged to respect the appropriate procedures and the responsibility would not be relegated entirely to the northern village (Véronique Gilbert, DT30, p. 37).

- ◆ **Recommendations** – *The BAPE and KEAC commissions believe that it is essential that the modernization of the deposit and selective collection systems be applied to Nunavik and consider the territorial realities. In the interest of fairness and improved performance, details to this effect should be included in the regulations that will be enacted for the implementation of the Act to amend the Environment Quality Act regarding deposits and curbside recycling.*
- ◆ **Recommendations** – *The BAPE and KEAC commissions are of the opinion that the responsibility of organizations, regional institutions, and entrepreneurs on the territory of Nunavik with respect to waste management should be formally recognized and applied.*

11.2.4.4 Northern Landfills and Open Burning

As previously mentioned, only the NLSs allow for the disposal of waste in Nunavik, and this is in accordance with section 94 of the RRLIRM. In almost all northern villages, landfills are built on permafrost, which is frozen ground all year round. It is therefore impossible to dig to allow for the burial of residual materials (Véronique Gilbert, DT30, p. 35). Because of the presence of this permafrost and the scarcity of loose deposits needed for other types of landfills, NLSs are permitted (PR4.1.0, p. 27).

The RRLIRM specifies that only residual materials that are generated on the territory are eligible for the NLS, including sludge³². Section 4, however, specifies the residual materials that cannot be disposed of such as hazardous materials and motor vehicle bodies. And

32. RLRQ, c Q-2, r. 19, art. 94.

unlike the engineered landfill sites in southern Quebec, scrap tires can be disposed of there³³.

Section 99 of the RRLIRM requires the burning of combustible waste materials deposited in NLSs at least once a week, weather permitting. This burning is necessary to reduce the space occupied by the waste material, increase the life of the NLS, and prevent wildlife and domestic animals from scattering the waste material (MDDEFP, 2012, p. 245_{PDF}).

Impacts of open burning

Many of the comments heard during the Inquiry focused on open burning and its potential effects on human health in bordering communities and on the environment. These same concerns were also raised during regional public consultations conducted by the KRG in the fall of 2019 on the new RMMP (KRG, DM70, p. 5).

Open burning refers to "any fire or burning that is not conducted within a building" (CCME, 2016, p. 3). Figure 11.2 illustrates an accidental tire burn in the Village of Kangirsuk. Due to the moisture content of household waste and its piling, fires in NLSs reach temperatures that are too low to produce complete combustion and consequently generate very large amounts of particulate matter and very many contaminants, including polycyclic aromatic hydrocarbons, dioxins, and furans.

Some researchers point out that smoke can easily reach surrounding communities when blown by unfavourable winds and in a thermal inversion situation. The potential health risks to the surrounding communities are therefore very real, especially for more vulnerable groups such as children, the elderly and people who are already compromised by health problems (Dessureault, Grégoire *et al.*, 2014, p. 2, 64 and 65).

In addition to health impacts, contaminants released during open burning can affect everything from microorganisms and plants to fish and mammals (CCME, 2016, p. 4). In addition, the mere presence of an NLS on a land area can be a concern for the immediate environment due to the potentially toxic leachate it can generate.

Although weekly burning can avoid the generation of leachate, as these landfills are not equipped with leachate collection and treatment systems, their potential to contaminate surface water and their impacts on the quality of aquatic ecosystems are more than likely (Dessureault, Grégoire *et al.*, 2014, p. 63 and 65). Moreover, no environmental monitoring is required by the MEFCC and no limit values for groundwater and surface water quality are applicable for an NLS (PR4.1.0, p. 27). In Nunavik, contamination of groundwater or surface water by leachate percolation represents a minimal risk since the NLSs are, for the most part, far from drinking water sources, except for the community of Kuujjuarapik (DB3.12, p. 6).

33. RLRQ, c Q-2, r. 19, art. 4.

Figure 11.2 Accidental Tire Burning at the Kangirsuk Northern Landfill



Source: courtesy of the Kativik Regional Government

To date, no studies have been conducted in Nunavik on the substances emitted during open burning in the NLS (DB3.11, p. 1). It is therefore very difficult to rigorously, and accurately, estimate the real impacts on the environment and on the health of the neighbouring populations.

The Nunavik Public Health Department does not have enough information at this time to assess the actual health risks. A true risk assessment of the populations of Nunavik communities would require a better understanding of the nature of the chemical compounds emitted specifically from Nunavik's NLSs, the actual or predicted concentrations of the compounds that could reach the population, the possible routes of exposure to the population (inhalation, ingestion), the duration of actual exposure to the general population as well as the number of vulnerable individuals who could be exposed (DB3.12, p. 5)

In this regard, the Ministries of the Environment and Health have expressed, during the public sessions, their willingness to fill this scientific void by characterizing the environmental contamination and assessing the exposure of the population to the contaminants emitted by the open burning in the NLS (Virginie Noël-Aloise, DT30, p. 22; Claude Trudel, DT30, p. 24).

Furthermore, the location of the NLSs is a crucial element. Currently, the NLSs in operation in each of Nunavik's northern villages are generally located a few kilometres from the communities (DA5.2, p. 23). However, some are relatively close to inhabited areas. This is the case for the Inukjuak NLS, which is literally inside the village. Because of this proximity, the burning of residual materials is practically impossible (Shaomik Inukpuk, DT32, p. 10; Véronique Gilbert, DT32, pp. 12 and 13). It should also be noted that several residents of the village of Kangiqsualujjuaq have complained about the smoke and pollution, while in the village of Kuujjuarapik, asthma symptoms during burning days are more numerous (Nancy Dea, DT15, p. 80; Véronique St-Onge, DT15, p. 37 and 38).

Various requirements in the RRLIRM guide the establishment of an NLS in the territory. Section 95 requires that an NLS be located a minimum of 1) 150m from any watercourse or water body, unless it is not likely to affect the quality of the watercourse or water body; and 2) 500m from any surface or groundwater catchment facility intended for human consumption (PR4.1.0, p. 27). Thus, the RRLIRM does not prescribe any distance between an NLS and populated areas.

Considering that the environmental impacts of NLSs and the potential health risks of burning waste have not yet been documented, it is important that the location of future NLSs be chosen with great care, using strict criteria. In this regard, the MEFCC committed in a public meeting to consult the MHSS in order to define health criteria, such as distance from dwellings and direction of prevailing winds, which should be factored in while awaiting the results of the characterization studies (Michel Bourret, DT32, p. 21).

- ♦ **Recommendations** – *The BAPE and KEAC commissions believe that it is imperative that the Ministry of the Environment and the Fight against Climate Change proceed with the characterization of the environmental contamination due to the open burning of waste in Nunavik.*
- ♦ **Recommendations** – *The BAPE and KEAC commissions believe that it is imperative that the Ministry of Health and Social Services assess the exposure of the population to contaminants emitted by the open burning of waste in Nunavik. To this end, it could use the residents living closest to a landfill site as a model.*
- ♦ **Recommendations** – *While awaiting the results of characterization studies on environmental contamination and public exposure to contaminants emitted during the burning of residual materials in Nunavik, the BAPE and KEAC commissions consider it essential that health criteria be defined by the Ministry of Health and Social Services and taken into account by the Ministry of the Environment and the Fight against Climate Change in the siting of new landfill sites.*

Alternatives to burning residual materials

For the time being, due to the specific conditions in Nunavik that do not allow for the development of another type of landfill that does not require open burning, NLSs appear to

be the only short and medium-term solution for the disposal of residual materials in this territory.

As previously mentioned, there is no selective collection in Nunavik, which means that most of the waste generated is sent to the NLSs. Theoretically and ideally, these materials should be sorted upon arrival at the landfill. However, given the significant accumulation of metal in some of these sites, the fact that they are open at all times and the scarcity of trained personnel to maintain them, sorting is only rudimentary (DA5.2, p. 23, 27 and 43). As noted by the MHSS, the lack of sorting within the NLSs and the subsequent burning promotes the release of multiple potentially toxic chemical compounds (PR4.5, p. 53).

Therefore, it is important to "sort [residual materials] upstream to avoid burning waterlogged organics, metal, and [household hazardous waste]" (Dessureault, Perron *et al.*, 2017, p. iv). In its brief, KRG supports this position by stating that:

Even if all recyclable materials were not accepted, such as paper and cardboard that would degrade due to prolonged storage, the collection of recyclable materials would have a significant impact, particularly on plastics. This material, when burned, emits airborne contaminants that are particularly harmful to health. Reducing the amount of plastic disposed of would therefore be beneficial to northern communities. (DM70, p. 7 and 8).

Sorting would also allow the recovery of hazardous materials that contribute to the emission of many potentially very toxic contaminants through burning. Although these materials are not included in the current mandate of the Commission of Inquiry, their management is an important issue in Nunavik. The reality on the ground is that, although it is mandatory to dispose of hazardous materials in an authorized treatment facility, they are very often disposed of in the NLSs and are found among other residual materials, since the only center authorized for this purpose in Nunavik is located in Kuujuaq and it only recovers certain materials (KRG, DM70, p. 4 and 5).

As previously mentioned, the Société du Plan Nord has allocated \$3 million for the clean-up of storage sites and the safe disposal of residual hazardous materials in Nunavik. Thus, eight villages have been secured to date. Beyond this clean-up of liabilities, the KRG recommends the implementation of a system for the recovery of household hazardous waste, for example through the development of a network of eco-centres in all communities (DB8, p. 1; KRG, DM70, p. 7).

The sorting of residual materials is thus a pivotal action to reduce the quantities brought to the NLS. Nevertheless, it seems appropriate that further thought and research should be given to identifying an option or options to NLS and to the mandatory burning of residual materials (Larry Watt, DT15, p. 51; Nancy Dea, DT15, p. 81).

Theoretically, incineration is also a feasible alternative, but it has several limitations. In fact, as previously mentioned, the Société du Plan Nord is currently conducting a pilot project for

the energy recovery of residual materials in Kuujuaq through the construction of an incinerator. In addition to the construction costs of this infrastructure, estimated at \$20M, additional funds estimated at \$1M annually would be required to ensure the operation of the incinerator (DB8, p. 2 and 3; Myriam Blais, DT15, p. 79). The KRG also points out in its brief that:

However, it is an expensive management method to purchase and operate, complex and requires meticulous maintenance and therefore special expertise. [...] The incineration technology, if this management method is chosen, must be carefully selected, and adapted to the regional context to ensure its success.
(DM70, p. 8)

However, the KRG is open to exploring this possibility and is continuing its collaboration with the Société du Plan Nord (DM70, p. 8).

- ♦ **Recommendations** – *The BAPE and KEAC commissions are of the opinion that RECYC-QUÉBEC and the Ministry of the Environment and the Fight against Climate Change must work in collaboration with the Kativik Regional Government to develop an action plan, with the necessary financial resources that will promote the source separation of waste in Nunavik.*
- ♦ **Recommendations** – *The BAPE and KEAC commissions believe that RECYC-QUÉBEC should create a sectoral table bringing together representatives of the Kativik Regional Government, the Ministry of the Environment and the Fight against Climate Change, the Société du Plan Nord, and the northern villages to promote cooperation in the search for technological choices and methods adapted to the northern reality that would reduce the use of open burning in Nunavik.*

11.2.4.5 Liabilities

In Nunavik, past human activities have left their mark on the territory. In fact, there are illegal dumping sites for residual and hazardous materials abandoned by mining exploration companies, outfitters, tourism businesses, as well as by former military activities, all over the territory, outside of the community boundaries. These sites include large quantities of hazardous waste, such as hydrocarbons, propane tanks, mine waste, electrical equipment, and metal. These sites, which have become orphaned in the majority of cases, can be harmful both for the inhabitants who live on the territory and for the environment (KRG, DM70, p. 5; Alexandre-Guy Côté, DT30, p. 5).

Various investments have been made by the Quebec government and other organizations to clean up some of these sites. Among other things, the Strategy for the vitality and enhancement of northern heritage, with an envelope of \$16.1 million over five years, will mainly allow for the dismantling of some two hundred mobile camps in place on the territory of Northern Quebec following the closure of the sport hunt for migratory caribou. A sum of \$5 million has been set aside for the Inuit and Naskapi Aboriginal communities to administer and coordinate activities aimed at dismantling mobile camp facilities (DB1.37, p. 2 and 3).

In 2007, a financial agreement was signed between the KRG, the Makivik Corporation, Ministry of Natural Resources and Forestry and the Restor-Action Nunavik Fund (RANF), formed by mining companies. This agreement aims to rehabilitate abandoned mining exploration sites in Nunavik (Dea, 2016).

Similarly, the Environmental Damages Fund, created by Environment and Climate Change Canada following the payment of a fine by a company for an environmental offence in the country, paid \$1.45 million to KRG to, among other things, clean up and restore permanent outfitting camps in the Caniapiscau River watershed area located in Nunavik (Gouvernement du Canada, 2018).

To date, efforts and money have been invested to clean up these former abandoned sites. However, the magnitude of the task remains and as such, requires a continued commitment from the government to continue the clean-up. As indicated by Makivik Corporation, which is working to clean up the former mobile camps as part of the Strategy for the vitality and enhancement of northern heritage, the negative impacts of these sites as well as the health risks to Nunavimmiut due to the presence of hazardous materials must be seriously considered (DM189, p. 3).

Although this issue is not included in the mandate of this BAPE commission, the KEAC commission believes that this environmental liability must be considered by the responsible authorities and addressed in order to support the clean-up of each of the orphan sites.

- ◆ *The BAPE and KEAC commissions note that, in addition to the problems generated by residual materials within the northern villages, there are illegal and abandoned dumping sites accumulating residual and hazardous materials for which clean-up actions must be pursued over the next years.*

List of acronyms and abbreviations section 11.2

Acronyms

BAPE: Bureau d'audiences publiques sur l'environnement

CCME: Canadian Council of Ministers of the Environment

CQLR: Compilation of Quebec Laws and Regulations

CRD: construction, renovation, and demolition

DMO: Designated Management Organization

EPR: Extended Producer Responsibility

EQA: *Environmental Quality Act*

IBI: industries, businesses, and institution

JBNQA: James Bay and Northern Quebec Agreement

KEAC: Kativik Environmental Advisory Committee

KEQC: Kativik Environmental Quality Commission

KRG: Kativik Regional Government

MEFCC: Ministry of the Environment and the Fight against Climate Change

MHSS: Ministry of Health and Social Services

MMAH: Ministry of Municipal Affairs and Housing

NEQA: Northeastern Quebec Agreement

NLS: Northern Landfill Site

OMV: Out of use motor vehicles

QRMMP: *Quebec Residual Materials Management Policy*

RANF: Restor-Action Nunavik Fund

RMM: Residual Materials Management

RMMP: Residual Materials Management Plan

RRLIRM: *Regulation respecting the landfilling and incineration of residual materials*

UQAC: University of Quebec at Chicoutimi

Abbreviations

\$: dollar

\$/t: dollar per ton

c.: chapter

\$ k: thousand dollars

km²: square kilometer

m: meter

\$ M: million dollars

m²: square meter

s.: section

t: ton

t/capita: ton per capita

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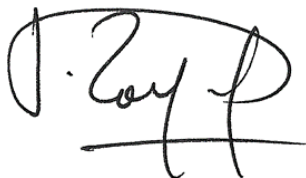
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Site Inventory and Final Waste Management

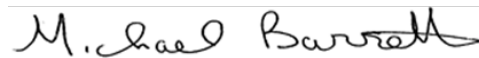
The present mandate of inquiry and public hearing entrusted to the Bureau d'audiences publiques sur l'environnement (BAPE) by the Minister of the Environment and the Fight against Climate Change concerns the *Current Status and Management of Final Waste* and covers the entire territory of Québec, including the territories covered by chapters 22 and 23 of the *James Bay and Northern Québec Agreement*, chapter 14 of the *Northeastern Québec Agreement* and chapter II of the *Environment Quality Act*.

The BAPE Commission of Inquiry and the commission of the Kativik Environmental Advisory Committee (KEAC), formed for this purpose, worked together to carry out the consultation in Nunavik. The two commissions also collaborated closely and continuously in the analysis of the issues facing the Inuit communities and regional organizations of Nunavik with respect to waste management on their territory.

Thus, the second section of Chapter 11 of this report, which is devoted to the *Waste Management in Territories Under Agreements*, contains findings and recommendations that are shared by the two commissions.



Joseph Zayed
Chairman of the Commission of Inquiry



Michael Barrett
Chair of the KEAC Committee

Date
November 11, 2021

Date
November 17, 2021

11.2 ΔφΔ^c

11.2.1 $\mathcal{DP}_2 \sigma \triangleleft^c \sigma^c$

ርከፈላቸው ከመከላከል ውጭ ሆኖ ለፍጥነት 1980-ዓ. ርገፍ ለመገንባት ርዕሰ ጉዞ (DA5.2, p. 22). ይህም ርገፍ ለመከላከል ውጭ ሆኖ ለፍጥነት 1980-ዓ. ርገፍ ለመገንባት ርዕሰ ጉዞ (DA5.2, p. 22). ይህም ርገፍ ለመከላከል ውጭ ሆኖ ለፍጥነት 1980-ዓ. ርገፍ ለመገንባት ርዕሰ ጉዞ (DA5.2, p. 22).

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በሌላ በኩል ለመከላከል ውጭ ሆኖ ለፍጥነት 1980-ዓ. ርገፍ ለመገንባት ርዕሰ ጉዞ (DA5.2, p. 22). ይህም ርገፍ ለመከላከል ውጭ ሆኖ ለፍጥነት 1980-ዓ. ርገፍ ለመገንባት ርዕሰ ጉዞ (DA5.2, p. 22).

ጥንቃቄ 11.1 ሙሉ ለመሙላት ርዕሰ ጉዞ ከመከላከል ውጭ ሆኖ ለፍጥነት 1980-ዓ. ርገፍ ለመገንባት ርዕሰ ጉዞ (DA5.2, p. 22).

ርዕሰ ጉዞ	NL. ሙሉ/ከመከላከል ውጭ ሆኖ ለፍጥነት 1980-ዓ. ርገፍ ለመገንባት ርዕሰ ጉዞ (m²)	ሙሉ ለመሙላት ርዕሰ ጉዞ (m²)
ሙሉ ለመሙላት ርዕሰ ጉዞ	20,200	13,857
ሙሉ ለመሙላት ርዕሰ ጉዞ	12,100	16,180
ሙሉ ለመሙላት ርዕሰ ጉዞ	45,180	34,414
ሙሉ ለመሙላት ርዕሰ ጉዞ (ሙሉ ለመሙላት ርዕሰ ጉዞ 1 = ሙሉ ለመሙላት ርዕሰ ጉዞ)	6,720	5,913
ሙሉ ለመሙላት ርዕሰ ጉዞ (ሙሉ ለመሙላት ርዕሰ ጉዞ 2 = ሙሉ ለመሙላት ርዕሰ ጉዞ)	3,780	5,950
ሙሉ ለመሙላት ርዕሰ ጉዞ	7,600	5,989
ሙሉ ለመሙላት ርዕሰ ጉዞ	32,000	15,511
ሙሉ ለመሙላት ርዕሰ ጉዞ (ሙሉ ለመሙላት ርዕሰ ጉዞ)	19,000	16,599
ሙሉ ለመሙላት ርዕሰ ጉዞ (ሙሉ ለመሙላት ርዕሰ ጉዞ)	52,383	703
ሙሉ ለመሙላት ርዕሰ ጉዞ	28,280	28,700
ሙሉ ለመሙላት ርዕሰ ጉዞ (ሙሉ ለመሙላት ርዕሰ ጉዞ 1 = ሙሉ ለመሙላት ርዕሰ ጉዞ)	24,000	17,509
ሙሉ ለመሙላት ርዕሰ ጉዞ (ሙሉ ለመሙላት ርዕሰ ጉዞ 2 = ሙሉ ለመሙላት ርዕሰ ጉዞ)	23,150	20,880
ሙሉ ለመሙላት ርዕሰ ጉዞ	33,670	15,390
ሙሉ ለመሙላት ርዕሰ ጉዞ	11,900	7,861
ሙሉ ለመሙላት ርዕሰ ጉዞ	20,270	20,780
ሙሉ ለመሙላት ርዕሰ ጉዞ	15,310	12,402
ሙሉ ለመሙላት ርዕሰ ጉዞ	16,220	6,028

ሙሉ ለመሙላት ርዕሰ ጉዞ ለመከላከል ውጭ ሆኖ ለፍጥነት 1980-ዓ. ርገፍ ለመገንባት ርዕሰ ጉዞ (DA5.2, p. 25).

L^ar^C 11.2 ፖሊስፕላር ልግግር ልግግር ካፍ ልግግር 2019-ፖ ልግግር¹, metric tons-ባጋ

		ገጠናዊ ልማት ስራ								
		የሰው ኃይል	የጥሬ ኃይል	የፍጥነት	የፍጥነት	የፍጥነት	የፍጥነት	የፍጥነት	የፍጥነት	የፍጥነት
የፍጥነት	የፍጥነት	1,689	230	230	998	128	46	2,533	1,821	7,675
	የፍጥነት	311	44	22	100	111	3	434	86	1,111
	የፍጥነት	-	-	-	-	6,887	-	-	-	6,887
	የፍጥነት	2,000	274	252	1,098	7,126	49	2,967	1,907	15,673
	%	12.8	1.7	1.6	7	45.5	0.3	18.9	12.2	100

11.2.3 $\Delta \triangleright \mathcal{L}^C \nabla \mathcal{C} \triangleright \mathcal{L}^C \nabla \mathcal{C} \nabla \mathcal{L}^C \nabla \mathcal{L}^C$

11.3 The Cree Nation

The traditional territory occupied by the Cree communities is called Eeyou Istchee, or "land of the people". It is in the southern part of the Northern Quebec administrative region and covers nearly 350,000 km². The Cree population is over 20,000 people in nine communities and over three hundred traditional family hunting and trapping territories. Except for the Cree community of Whapmagoostui, whose village is located north of the 55th parallel on the territory of Nunavik and is accessible only by sea or air, each of the eight other communities is accessible by road. These are the communities of Chisasibi, Eastmain, Mistissini, Nemaska, Oujé-Bougoumou, Waskaganish, Waswanipi and Wemindji (DA7.4, p. 1; Gouvernement de la Nation Crie, 2021a; Société de développement de la Baie-James, 2008-2009; Gouvernement du Québec, 2021).

The Territory also includes a Jamesian population of nearly 14,000 people in the towns of Chibougamau, Chapais, Matagami and Lebel-sur-Quévillon as well as the communities of Radisson, Villebois and Valcanton, which are under the jurisdiction of the Regional Government of Eeyou Istchee Baie-James (GREIBJ) (Institut de la Statistique du Québec, 2020).

Since the signing of the James Bay and Northern Quebec Agreement (JBNQA) in 1975, the various treaties and agreements negotiated between the Cree and the governments of Canada and Quebec have structured the Territory into different administrative units. The JBNQA established a land regime consisting of three categories of land where provincial and federal jurisdictions apply according to their areas of jurisdiction. Thus, on Category I lands, the Band Councils of each Nation have full self-government authority and exclusive use rights. Category II lands are public lands on which the Cree have exclusive rights to hunt, fish, and trap and where the Cree Nation Government has certain governance powers. Category III lands are public lands where certain species are reserved for the exclusive use of the Cree (DA7.4, p. 1 and 2).

11.3.1 Consultation

To carry out its mandate, the BAPE commission collaborated with the James Bay Advisory Committee on the Environment (JBACE), which formed a specific commission for this purpose. An administrative agreement was signed between the BAPE commission and the JBACE commission (DA7.3). The main purpose of this agreement was to establish the terms and conditions for consulting the Cree and Jamesian populations and to share responsibilities while ensuring that Aboriginal rights were respected.

Thus, it was agreed that the consultation on the Territory would benefit from simultaneous translations in English and Cree and would take place in two sessions during the same day, on September 16, 2021. The participants had the opportunity to question the resource persons from the Ministry of the Environment and the Fight against Climate Change

(MEFCC), the Ministry of Health and Social Services⁴⁴ and RECYC-QUÉBEC who were present in order to deepen and better understand the issues related to the management of residual materials and final residues on their territory. These two sessions also provided an opportunity for participants to give their opinions, raise their concerns and make recommendations.

- ♦ *The BAPE and JBACE commissions recognize that the consultations in James Bay were carried out to the satisfaction of both parties and with respect for the rights and interests of the Cree Nation.*

11.3.2 The portrait of residual materials disposal

This section was written based on information provided by the Cree Nation Government. It presents a detailed picture of waste disposal in the Cree and Jamesian communities and in the entire territory covered by Section 22 of the James Bay and Northern Quebec Agreement (Figure 11.1, hereafter the Territory).

11.3.2.1 Residual materials management

The laws and regulations governing waste management and the environment in Quebec are applicable in the Territory, the main one being the *Regulation respecting the landfilling and incineration of residual materials*⁴⁵ (RRLIRM). The Cree First Nations, who are locally self-governing through Band Councils in each community, have the authority to enact laws relating to the management of lands and natural resources, including the management of waste on Category I lands. The Cree Nation Government, which exercises governmental and administrative functions on behalf of the Cree Nation, may also make laws to regulate the environment and essential sanitation services on Category I and II⁴⁶ lands (DA7.4, p. 2 and 3; Gouvernement de la Nation Crie, 2021b).

Waste management is a shared responsibility between the Cree Nation Government and each First Nation. The Cree Nation Government is thus responsible for the management of funding programs, the assistance to First Nations in their waste management projects as well as the completion of regional studies for planning purposes (DA7.2, p. 4; DA7.4, p. 2 and 3).

44. The MHSS delegated the Cree Board of Health and Social Services of James Bay to participate in the meeting.

45. RLRQ, c Q-2, r.19.

46. The land regime defined by the JBNQA divides the territory into three types of land tenure. Category I lands are reserved exclusively for the signatory communities of the agreements (Cree, Inuit, or Naskapi) while the villages are established on these territories. Category II lands are public lands generally located around the villages on which the beneficiaries hold exclusive hunting, fishing, and trapping rights (MELCC, 2021c).

The current funding for waste management is mainly obtained through agreements⁴⁷ (hereafter called NRA/PdB program) under the responsibility of the Cree Nation Government. Thus, the construction and operation of a landfill site, including equipment and collection of residual materials, as well as the construction and operation of an eco-center, including the purchase of trucks and containers required for its operations, are eligible for funding in the Cree communities (DA7.4, p. 2).

For their part, each Cree community is responsible for local waste management, including the construction and operation of infrastructures and door-to-door collection services. The services offered and their frequency differ from one community to another. For example, household waste is collected 2 to 5 days per week, depending on the community. The lack of collection of recyclables and organics, the absence of an eco-centre, the risk of olfactory pollution from hunting and fishing waste, and a high occupancy rate of dwellings are all factors that can explain the variable frequency of collection in the communities (DA7.4, p. 3).

Mechanical garbage collection using standard plastic roll-off bins and metal containers is done in four communities. Five other communities collect garbage manually, some of them from wooden garbage cans, either for single-family homes or from wooden containers that serve groups of two to ten housing units. As for bulky waste collection, it is done on a weekly basis (five communities), monthly (one community) or on demand (three communities) (DA7.4, p. 3).

Currently, only four communities collect recyclable materials. Door-to-door collection of these materials is done once a week in two Cree communities, while two other communities have drop-off containers in public places. As for the recovery of returnable beverage containers, it is offered in most grocery stores and cooperatives in each of the communities (DA7.4, p. 3).

The shipment of certain categories of residual materials out of the communities is contracted between First Nations and private companies for metals and certain hazardous wastes. There is no funding program for the collection, transportation and disposal of metals and several types of hazardous waste. Non-profit organizations offer the service for certain hazardous wastes (batteries, used oil, mercury lamps, electronic products, household appliances) under extended producer responsibility (EPR) or RECYC-QUÉBEC, when tires are involved. The operating and maintenance costs for the collection, transportation and sorting of recyclable materials through curbside recycling are financed by RECYC-QUÉBEC at 70% of eligible costs. Despite all these programs, services are not available in most Cree communities (DA7.4, p. 3).

47. The funding comes from the Agreement between the Government of Quebec and the Crees of Quebec (the "Paix des Braves") of 2002 (PdB) and the Cree Nation Governance Agreement between the Crees of Eeyou Istchee and the Government of Canada of 2008 (NRA), as well as from the Local Services Capital Grants and Operations and Maintenance Agreements referred to for the purpose of this "NRA/PdB Program" (DA7.4, p. 2).

- ♦ *The BAPE and JBACE commissions note that the responsibility for waste management in Eeyou Istchee is shared between the Cree Nation Government and each of the Cree First Nations as well as with non-profit organizations and RECYC-QUÉBEC.*

11.3.2.2 Residual materials management facilities in Cree communities

The management of residual materials is mostly done in trench landfills (TL), authorized under the RRLIRM⁴⁸. In fact, due to the low population density and its distance from urban centers, these landfills are permitted on this territory (MDDEFP, 2012, p. 222^{PDF}). The presence of loose deposits facilitates the digging or development of trenches in which waste materials are deposited (PR4.1, p. 61). Such sites can be built on the ground or in tailings piles, although only waste generated on the territory is eligible⁴⁹.

Because of the great distances separating each of the Cree communities (between 148 and 357 km), no waste management services, or infrastructure are shared between the communities. Thus, except for the community of Whapmagoostui, each of the eight other Cree communities has a TL. These are located at an average distance of 14 km from the first settlements (between 3 and 30 km). In most of these sites, metal, tires, and hazardous waste are sorted for later transportation. However, due to the high cost of transportation and the lack of infrastructure, waste materials accumulate in inadequate conditions in some TLs (DA7.4, p. 4).

For the management of its residual materials, the community of Whapmagoostui has access to a Northern Landfill Site (NLS)⁵⁰, which is owned and operated by the neighbouring Inuit village of Kuujjuarapik, and an agreement has been signed between the two communities for the joint use of this infrastructure. Each of these two communities, however, has a separate accumulation site for bulky waste, which has a large historical inventory of end-of-life vehicles, machinery, and hazardous waste, some dating back to the 1950s (DA7.4, p. 4).

Some communities reuse certain materials for other specific purposes, such as concrete that is crushed for use in road work. As for wood, in some communities, it is accumulated and then chipped to be used for the weekly collection of residual materials in the TLs (DA7.4, p. 4). In fact, to limit the release of odors, the spread of fires, the proliferation of animals or insects, the RRLIRM prescribes a weekly covering of residual materials in these landfills between the months of May and October⁵¹.

Eight of the nine Cree communities have reached or are close to reaching their landfill capacity. Various measures and alternative management methods are currently being used in these sites to extend their lifespan. For example, at the Nemaska TL, a compactor is being

48. RLRQ, c Q-2, r. 19, art. 86 et 87.

49. RLRQ, c Q-2, r. 19, art. 86 et 89.

50. NLSs are permitted in the Northern territories under Section 94 of the RRLIRM where waste is deposited and open burning is required at least once a week, weather permitting, as prescribed by Section 99 of the Regulation.

51. RLRQ, c Q-2, r. 19, art. 90.

used to save landfill space. In addition, two new TLs have been constructed in recent years (DA7.2, p. 7; DA7.4, p. 4):

- one in Mistissini with an authorized capacity of 200,000 m³, for an estimated life span of 20 years, ending in 2041;
- a second one in Waswanipi with an authorized capacity of 183,250 m³ for a period of 25 years. This last site is not yet used by the community.

Buildings for the management of recyclable materials are present in Mistissini, Wemindji and Chisasibi. They are essentially garages for machinery equipped for the reception and pre-sorting of recyclable materials and the baling of cardboard. Shipping is then done to private transfer stations located in Amos and Chibougamau. These buildings are not adapted to receive mechanically collected recyclable materials and their capacity is already exceeded (DA7.4, p. 4).

Eco-centres are present in Mistissini, Wemindji and Nemaska where, among other things, there are spaces for aggregates, dumpsters, and containers for hazardous waste. Gravel pads for bulky waste storage have also been built by these three communities. Eco-centers improve outreach to community members and are safer than landfills (DA7.4, p. 4).

The only organics management facility was recently constructed in Mistissini and is not yet fully operational. Detour of organics from TLs is desired to reduce the potential impact on groundwater and surface water quality as these facilities are not watertight and leachate water is not collected or treated (DA7.4, p. 6).

- ♦ *The BAPE and JBACE commissions note that trench landfills are the main waste management facilities in the Cree communities, while eight of the nine communities have them and only one has a northern landfill site. Eco-centres and other infrastructures specific to the management of recyclable materials are also present in certain communities.*
- ♦ *The BAPE and JBACE commissions note that only one organics management project has recently been implemented in a Cree community and as a result, most organics are not yet diverted from landfill.*
- ♦ *The BAPE and JBACE commissions note that most of the trench landfills serving the Cree communities are reaching capacity and that two new ones have recently been constructed.*

11.3.2.3 Residual materials generated annually

For planning purposes, a regional study was conducted in 2020-2021 for the Cree Nation Government. This study revealed a lack of reliable data on the residual materials generated, disposed of, and recycled in each community (DA7.2, p. 15). To remedy this, the study made estimates based on data available in certain Cree communities, on provincial averages

adapted to the realities of the communities and on the results of a characterization conducted in the Inuit village of Kuujuaq.

The quantity of residual materials generated annually in the Cree communities has been estimated at 14,700 t, of which only 17% is currently recovered, leaving nearly 12,200 t in landfills (DA7.2, p. 12). The residential sector would account for 59%, including residues from small-scale industries, businesses, and institutions (IBI)⁵², for a total of 8,730 t. Of this amount, 6,980t would be recovered in the residential sector. Of this amount, 6,980t, consisting mostly of recyclables and organics, but also metal, tires, textiles, and hazardous materials, would have been landfilled. The remaining 1,750t would be recycled and would consist of vehicles, tires, and other cumbersome metals (DA7.4, p. 5).

As for the construction sector, it would represent 41% of the residual materials generated annually, with 5,990 t. Most of this (5,160 t), consisting mainly of wood, aggregates, gypsum, and mixed waste, is landfilled and the rest (840 t), including 40% metal and 40% aggregates, is currently recycled (DA7.2, p. 14).

- ♦ *The BAPE and JBACE commissions note that the quantity of residual materials generated in the Cree communities was estimated at approximately 14,700 tons, of which more than 80% would have been landfilled.*
- ♦ *The BAPE and JBACE commissions note that the residential sector accounts for 59% of the waste generated annually in the Cree communities, while the construction sector generates the remaining 41%.*

11.3.2.4 The portrait of residual materials disposal outside Cree communities

Excluding the Cree communities, the James Bay territory includes the Jamesian towns of Chapais, Chibougamau, Lebel-sur-Quévillon and Matagami, as well as the communities of Radisson, Valcanton and Villebois (Figure 11.1). It also includes all Category III lands (Attraction Nord, 2021; GREIBJ, 2021b).

The towns of James Bay are responsible for the management of their residual materials while the Eeyou Istchee James Bay Regional Gouvernement (EIJBRG), is responsible, among other things, for the management of residual materials for the towns of James Bay, the 55 rest stops on the territory, the campgrounds, and certain TLs on Category III land (Corporation de développement économique de Chapais, DM177, p. 4; DA7.1, p. 4; GREIBJ, 2021a). The EIJBRG was created following the adoption, in 2013, of the *Act to establish the Regional Government of Eeyou Istchee James Bay*⁵³ to implement the Agreement on Governance in the Territory of Eeyou Istchee James Bay between the Crees of Eeyou Istchee and the Government of Quebec. The EIJBRG thus replaces the Municipality of James Bay (MJB). It is governed by the laws of Quebec and exercises the

52. The quantity of waste produced by the large scale IBI is unknown.

53. RLRQ, c G-1.04.

same jurisdiction, functions, and powers over Category III lands as those previously assigned to the MJB.

Due to the size of the populations of the cities of Chibougamau and Chapais and their proximity to each other, they are not among the territories that were eligible for the establishment of a TL under the RRLIRM when it was adopted in 2005, even though they are located on the James Bay territory⁵⁴ (MDDEFP, 2012, p. 222_{PDF}). They are therefore required to dispose of their residual materials in an engineered landfill site (ELS), while the other cities and towns have TLs. Moreover, the cities of Chibougamau and Chapais are the only ones to have a residual materials management plan (RMMP) for their respective territories.

Because of their proximity, they share several infrastructures. The City of Chibougamau has a sorting centre for recyclable materials from the selective collection, an engineered landfill site (ELS), an eco-centre adjacent to the ELS and a sludge treatment center on its territory. Since May 2015, the City of Chapais has had an eco-centre on its territory. This infrastructure has made it possible to improve the management of residual materials on the territory by reducing the quantity of residual materials sent to the ELS (Ville de Chapais, 2017, p. 19 to 25, 43; Ville de Chibougamau, 2017, p. 16).

In operation since 2009, the Chibougamau ELS, which is the only one in the Northern Quebec territory, has a maximum capacity of 300,000 m³ or 195,000t and an estimated lifespan of 25 years. The materials landfilled come from the City of Chibougamau, the City of Chapais and the territory under the responsibility of EIJBRG (Ville de Chibougamau, 2017, p. 15).

As the City of Chibougamau does not have precise data for each sector, the quantities of residual materials generated were estimated in their 2016-2020 RMMP. Thus, for 2014, the city's residential sector would have generated 3,646t, of which 1,269t would have been recycled. For its part, the IBI sector would have generated 3,599t of materials, of which 1,039t would have been recycled. As for the CRD sector, the quantities generated would have been 7,150t, of which 5,562t would have been recycled (Ville de Chibougamau, 2017, p. 31, 34 and 35).

The Town of Chapais points out in its 2016-2020 RMMP that it was unable to provide specific data for each of the residential, IBI and CRD sectors (Ville de Chapais, 2017, p. 31). Thus, for all activity sectors combined, the Town of Chapais and nearby resort areas⁵⁵ generated nearly 968t of residual materials sent for disposal in 2015, while curbside recycling recovered just over 220t (Ville de Chapais, 2017, p. 33).

54. RLRQ, c Q-2, r. 19, art. 87.

55. These sectors include Opémiska Lake, Cavan Lake, David Lake, Dulieux Lake, Buckell Lake and Demers Bay as well as a portion of Queylus Bay (Corporation de développement économique de Chapais, DM177, p. 5).

- ♦ *The BAPE and JBACE commissions noted that in the James Bay territory, only the cities of Chibougamau and Chapais have a waste management plan and share an engineered landfill site. The commissions also note that the other cities and towns have developed trench landfills.*

11.3.3 Improving the management of residual materials

Capital projects are currently being prepared in each Cree community, either for the replacement of landfills and/or the construction of new infrastructure. Although there is no adopted regional waste management plan in Eeyou Istchee, an ambitious action plan is part of the regional waste management study being conducted for the Cree Nation Government in 2021.

11.3.3.1 Infrastructure projects for residual material disposal

As previously mentioned, the disposal infrastructures and their equipment are funded by the NRA/PdB program under the responsibility of the Cree Nation Government, with confirmed budgets until 2028.

An incinerator was used in Wemindji until a fire in 2018 caused it to be shut down and demolished. The First Nation currently uses the landfill that was originally designed only for construction waste and ash from the incinerator. Pre-feasibility studies for new incinerators have been conducted for Wemindji (2018), Nemaska (2018) and Waskaganish (2012), but this alternative is currently under discussion or ruled out for environmental and safety reasons (DA7.4, p. 6)

TL projects are in development in six communities, with varying levels of progress from site selection (3 communities), to permitting (2 communities), to design (1 community) (DA7.2, p. 16).

A NLS project is also in the design stage by the community of Whapmagoostui. The landfill, located 5 km from the community, is expected to have a lifespan of 25 to 35 years and will also be used by the Inuit village of Kuujjuarapik. The community wants to avoid the practice of open burning of waste and aims to transition to trench landfill operations by 2028 at the same site (DA7.4, p. 6).

Furthermore, in Whapmagoostui, the shipment of accumulated cumbersome waste and an assessment of a remediation of the site is being prepared. The same type of exercise was conducted in Chisasibi in 2018 and will be required in each Cree community since, as previously stated, most TLs are reaching the end of their lifespan and final closure is expected in the near future (DA7.4, p. 6).

- ♦ *Considering that the majority of landfills have almost reached their maximum capacity, the BAPE and JBACE commissions note that various infrastructure projects are underway in Eeyou Istchee.*

11.3.3.2 Infrastructure projects for sorting, recycling, and composting

Eco-centres are the only waste re-routing infrastructure funded by the NRA/PdB program, with confirmed budgets also ending in 2028. The gravel pads type of infrastructure for cumbersome waste and organics facilities were funded by the federal government's First Nations Waste Management Initiative, a program that ends in 2021 (DA7.4, p. 6).

Eco-centre projects are being developed in seven communities at various stages of completion. Gravel pads for cumbersome waste are not covered by current funding under the NRA/PdB program. In addition, this type of infrastructure is insufficient to meet the provincial standards outlined in the *Regulation respecting the environmental impact assessment and review of certain projects*⁵⁶ (RREIARCP), adopted in 2020 (DA7.4, p. 6). To comply with these provincial standards, a waterproof concrete pad and a shelter for certain activities are required⁵⁷.

An organics processing facility was constructed in Mistissini in late 2019, but the pilot door-to-door collection project was delayed due to the COVID-19 pandemic. Pre-feasibility studies for similar projects were completed in 2018 in Nemaska and Chisasibi (DA7.4, p. 6).

- ♦ *The BAPE and JBACE commissions note that infrastructure projects for sorting, recycling, and composting in Eeyou Istchee are essentially centered around eco-centres and, to a lesser degree, composting facilities.*

11.3.3.3 Action plan for the management of residual materials

According to section 53.7 of the *Environment Quality Act* (EQA)⁵⁸, regional county municipalities (RCMs) must develop and maintain in force a residual materials management plan (RMMP). Section 1 of this same law establishes the definition of a municipality which does not include indigenous communities. They are therefore not subject to section 53.7 of the EQA and are not required to develop a RMMP (DB2.20, p. 1). Thus, the Cree Nation Government is not considered a municipality under CEQA and is not required to develop an RMMP. The same is true for EIJB RG. Nevertheless, the Cree Nation Government and the EIJB RG could, by resolution, declare in relation to all or part of Category II or III Lands that they will exercise any jurisdiction, function or power assigned by law to an RCM, in relation to waste management planning⁵⁹ (DA7.4, p. 6 and 7).

Thus, except for the cities of Chibougamau and Chapais which have developed an RMMP for each of their territories, no waste management plan is in force in the Territory. This absence of a regional RMMP means that the Territory is not eligible for the Program of Redistribution to Municipalities of Charges Payable for the Disposal of Residual Materials,

56. RLRQ, c Q-2, r. 17.1.

57. RLRQ, c Q-2, r. 17.1, art. 268.

58. RLRQ, c Q-2.

59. Agreement on Governance in the James Bay Territory of Eeyou Istchee between the Crees of Eeyou Istchee and the Government of Quebec (2012), section 18 h) and 126 g).

a financial incentive set up by the MEFCC for the implementation of RMMP action plans (Michel Bourret, DT34, p. 45).

In the absence of an RMMP, the regional residual materials management study conducted in 2020-2021 for the Cree Nation Government now serves as the basis for the development of a preliminary ten-year action plan for residual materials management in Eeyou Istchee (DA7.4, p. 7).

To optimize waste management and develop a regional approach, this plan could integrate the hiring of a coordinator, the carrying out of studies and inventories and several actions aimed at improving waste management, improving financing, and setting up pricing mechanisms for construction contractors (DA7.4, p. 7 and 8). Several of these actions will be discussed and analyzed in the following section on local issues.

- ♦ *The BAPE and JBACE commissions note that, for the time being, no waste management plan is in effect on the territory of Eeyou Istchee and that the Cree Nation Government as well as the Cree First Nations are not required to do so. This situation deprives the Cree communities of important funding for the implementation of their action plan.*
- ♦ *The BAPE and JBACE commissions note that an action plan, resulting from a regional study on waste management carried out in 2020-2021, is being developed by the Cree Nation Government.*

11.3.4 Local Challenges

This section presents the issues specific to the Cree Nation on the territory with respect to waste management. These issues are mainly documented by the information provided by the JBACE Commission and by the positions of various people who participated in the public sessions.

For each of these issues, joint orientations, issued in the form of opinions, are endorsed by the BAPE and JBACE commissions. These opinions may call for one or more actions.

11.3.4.1 Regional planning

The Cree Nation Government envisions that an action plan resulting from the regional waste management study conducted in 2021 would ultimately be adopted as an RMMP since it would incorporate both strategic and operational planning (DA7.4, p. 7).

The Cree Nation Government wishes to include in this plan data collection actions to improve knowledge on its territory in terms of generated, buried, and recycled materials. Such information should allow the Cree communities to properly plan their needs and to foresee the most adequate means to meet them (DA7.2, p. 17; Guillaume Bédard, DT33, p. 16). To this end, it provides for, among other things:

- conducting a waste characterization study in at least two communities;
- conducting a study on the potential of sewage sludge valorization.

In this way, subsequent actions would have a solid foundation since they could be based on a synthesis of evidence. As highlighted in a study on waste management in Innu and Cree communities:

To be able to improve the management of residual materials and to implement actions, it is essential for the communities to identify the materials generated on the territory, the quantity of these materials and the infrastructures in place. In this way, it is possible to target the steps to be implemented so that indigenous communities have the power to manage their residual materials at the same level as the rest of the province.
(Brammer, 2014, p. 56)

The great distances between communities and urban centers represent a daily challenge for waste management. Currently, no waste management infrastructure is shared between the Cree communities because of these distances. This situation leads to duplication in terms of operating costs, and the number of infrastructures and energy deployed by each Cree community. Aware of this situation, the Cree Nation Government is considering the possibility of including in its action plan a study to evaluate the opportunities of a regional waste disposal strategy (DA7.4, p. 8). Such a strategy could provide inter-community and city/local collaborations. Similarly, as part of a larger scale approach, other opportunities with neighbouring industries and municipalities could be explored.

This collaborative work resonates with the comments of representatives of the Town of Chapais and the Regional Government of Eeyou Istchee James Bay, according to whom collaboration is essential in order to decide on solutions adapted to regional realities, to harmonize practices and to ensure the efficiency of residual waste management on the territory (Stéphanie Houde, DT34, p. 25; Johanne Lacasse, DT34, p. 13).

In 2014, a study recommended "exploring the potential for partnerships between indigenous communities and nearby municipalities. Such as agreements granting indigenous communities access to ecocentres" (Brammer, 2014, p. 56).

This type of regional collaboration exists in southern Quebec, where the EQA provides that regional municipalities may agree to jointly develop their RMMP⁶⁰. The responsibility for developing a management plan can also be delegated to an intermunicipal⁶¹ board or any other grouping of local municipalities⁶². RECYC-QUÉBEC believes that this choice of grouping may be advantageous because of the shared costs of human and financial

60. RLRQ, c Q-2, art. 53.7.

61. An intermunicipal board is a legal entity created for the purpose of carrying out the agreement and is a separate entity from the municipalities represented on the board. It is administered by a board of directors made up of representatives from each municipality party to the agreement (MAMH, 2010).

62. RLRQ, c Q-2, art. 53.8.

resources related to the implementation and monitoring of the measures included in the RMMP (RECYC-QUÉBEC, 2020b, p. 11 and 12^{PDF}).

On the other hand, the Cree Nation Government is aware that such regional collaboration also presents a level of complexity due to overlapping jurisdictions between Cree communities, cities, and towns (DA7.2, p. 18).

Therefore, the involvement of the MEFCC as well as RECYC-QUÉBEC and the organizations that manage the extended producer responsibility (EPR) for certain products, within the framework of the exchanges and discussions necessary to arrive at integrated and collaborative agreements could be considered as a facilitating factor (Johanne Lacasse, DT34, p. 13; Corporation de développement économique de Chapais, DM177, p. 14).

In addition to this need for regional collaboration, the Cree Nation Government believes that coordination between the communities is necessary in order to take advantage of the synergy of each one and to optimize the services and management of residual materials (Guillaume Bédard, DT33, p. 45). In this sense, the hiring of a regional coordinator for waste management in the Cree communities is being considered. This coordinator would ensure the effective implementation of proposed projects, develop internal expertise, promote collaboration between the communities and work towards a regional approach to residual materials management (DA7.4, p. 7).

In a guidance document for remote and northern communities, Environment and Climate Change Canada notes that "responsible waste management requires careful planning, investment, and ongoing management and monitoring" (ECCC, 2017, p. 4).

- ◆ **Recommendations** – *In the absence of a residual materials management plan, the BAPE and JBACE commissions recognize the will of the Cree Nation Government to develop an action plan for the management of waste and are of the opinion that this plan should considerably help concerted planning and increase the efficiency of territorial governance.*
- ◆ **Recommendations** – *The BAPE and JBACE commissions are of the opinion that, while respecting indigenous rights, the support of the Ministry of Environment and the Fight against Climate Change and of RECYC-QUÉBEC represents an asset that should be put to good use within the framework of the development of the action plan for the management of waste planned by the Cree Nation Government.*
- ◆ **Recommendations** – *The BAPE and JBACE commissions are of the opinion that RECYC-QUÉBEC should ensure that the organizations that manage the extended producer responsibility offer a service that can meet the needs of the Cree communities.*

- ♦ **Recommendations** – *The BAPE and JBACE commissions believe that a sectoral table bringing together local and regional representatives, the Ministry of Environment and the Fight against Climate Change and RECYC-QUÉBEC, should be created to promote concerted action in the search for solutions to the problems related to waste management and adapted to territorial realities, including technological choices and alternatives to the road transport of residual materials.*

11.3.4.2 Financial support

The territorial reality reminds us of the extent to which financial support has a preponderant place in the planning of actions in residual materials management and more specifically in the efforts that could be made for reuse, recovery, recycling, and reclamation. As the MEFCC indicates:

The remoteness of these populations and the limited access to transportation of goods and merchandise make it very difficult to recover residual materials in these regions. The lack of local solutions requires the transportation of materials, which significantly increases costs. Large quantities of waste are therefore piled up waiting for a solution. (PR4.1, p. 61)

In addition, according to the Chair in Eco-Counseling at the University of Quebec at Chicoutimi, "the evolution of good practices and the hiring of dedicated residual materials management staff are hindered by the lack of budget." Indeed, the funding sources of indigenous communities are often limited and the financial needs to ensure sound management of residual materials clash with the ability to pay small communities (Dessureault, Perron *et al.*, 2017, p. 41 and 42).

For the time being, and as previously mentioned, funding for activities related to waste management comes mainly from the NRA/PdB program. Although this program covers a large part of the daily collection and management of residual materials at the residential level for each of the communities, the funding remains clearly limited. For example, the Cree Nation Government feels that funding is insufficient to cover the costs of transporting certain materials such as metal and cardboard and does not allow for the development and maintenance of many infrastructures (such as sheltered concrete pads for cumbersome waste and organic waste facilities) (DA7.2, p. 18; DA7.4, p. 2 and 7).

Nevertheless, there are various initiatives put forward by the Quebec government to facilitate the management of residual materials in northern territories. A budgetary envelope of \$20 million from Action 23 of the 2019-2024 Action Plan of the Quebec Residual Materials Management Policy (QRMMP) is specifically aimed at supporting isolated communities in project implementation (DB1.17, p. 20). To date, one project in Nunavik has been funded from this envelope, as well as one project in the Magdalen Islands and another on Anticosti Island (DB1.2, p. 11). MEFCC specifies that, as of July 2021, a residual amount of \$5.3M is still available (DQ10.1, p. 3).

Other sources of funding available to indigenous communities in the North are also in place through RECYC-QUÉBEC, notably the Home and Community Composting Assistance program (HCCA) and the financial assistance program aimed at optimizing the network of Quebec eco-centres (DQ11.1, p. 1 to 3).

RECYC-QUÉBEC is currently developing with the MEFCC, in collaboration with the Société du Plan Nord, a new program for isolated communities, including the Northern Quebec region. This program should make it possible to finance projects targeting source reduction, reuse, and optimal management of residual materials with a view to their recycling or recovery (DQ6.1, p. 3). This program, which is in line with Action 23 of the QRMMP action plan and Action 4.2.1.2 of the 2020-2023 Northern Action Plan, will have a budget of \$5 million, with \$3 million reserved for the communities targeted by the Northern Action Plan territory (DQ1.2, p. 11 and 12; DQ6.1, p. 3; DQ20.1, p. 1).

For the Cree Nation Government, existing or future funding sources should be complementary to the NRA/PdB program. They should support infrastructure construction, planning, studies, hiring of specialized resources and any other needs (DA7.4, p. 7). In addition, the funding programs under development, including the one under RECYC-QUÉBEC, should notably allow for financial support for territorial characterization projects, action plan development and implementation of identified actions. Thus:

To make sustainable waste management possible and to provide the same management opportunities to indigenous communities, there must be major investments in programs and infrastructure. It was found that it is not a lack of political will that explains...for example, the lack of recycling, but rather a lack of resources. (Brammer, 2014, p. 57).

Among its recommendations to improve long-term management, the Cree Nation Government suggests providing all information related to all funding programs, available materials, and training in English to ensure access to the Cree communities (DA7.2, p. 21; Guillaume Bédard, DT33, p. 20).

- ◆ **Recommendations** – *The BAPE and JBACE commissions are of the opinion that it is essential that the financial support provided to the Cree Nation Government be sufficient to enable it to develop and implement the actions that will result from its action plan for waste management in Eeyou Istchee territory.*
- ◆ **Recommendations** – *The BAPE and JBACE commissions recommend that the Ministry of the Environment and the Fight against Climate Change and RECYC-QUÉBEC collaborate with the Cree Nation Government in order to identify the sources of funding that will ensure the development and implementation of the actions that will result from its action plan for the management of waste in Eeyou Istchee territory.*

- ♦ **Recommendations** – *The BAPE and JBACE commissions are of the opinion that the designation of resource persons, both from the Ministry of the Environment and the Fight against Climate Change and from RECYC-QUÉBEC, is of great importance in order to assure the Cree Nation Government that the waste management programs are harmonized with the territorial reality.*
- ♦ **Recommendations** – *The BAPE and JBACE commissions recommend that the Ministry of the Environment and the Fight against Climate Change, RECYC-QUÉBEC and the Extended Producer Responsibility Organizations ensure that services, documents, and training are also offered in English in order to limit the language barrier that restricts access to the services available to the Cree communities.*

11.3.4.3 Extended producer responsibility and the modernization of deposit and selective collection systems

Extended producer responsibility (EPR) extends the producer's obligations beyond production to include the management of residual materials. The objective is to transfer responsibility for the management of residual materials generated by the consumption of various products to the businesses that market them in a given territory (MELCC, 2021a). Under the *Regulation respecting the recovery and reclamation of products by enterprises*⁶³ (RRRRPE), five categories of products are covered by EPR: (1) electronic products; (2) batteries; (3) mercury lamps; (4) paints and their containers; and (5) oils, coolants, antifreeze, their filters, their containers, and other related products⁶⁴.

The Regulation establishes that the Territory must, among other things, take measures to recover and reclaim designated products when they reach the end of their useful life. Thus, there is an obligation to provide appropriate disposal facilities and the recovered products must be transported at least once a year to a processing site indicated in the recovery and reclamation program⁶⁵ (DB1.37, p. 1).

Similarly, the Quebec scrap tire management program 2021-2026, managed by RECYC-QUÉBEC, consists of recovering all scrap tires generated in Quebec and redirecting them as a priority to the remoulding and recycling sectors as well as to energy recovery. The program serves the regions of Quebec located south of the 51st parallel, including the cities of Chibougamau, Chapais, Lebel-sur-Quévillon and Matagami, the communities of Radisson and Villebois, as well as the Cree villages of Mistissini, Chisasibi and Waswanipi in the Territory. For the other collection points located north of the 51st parallel, the collection and transportation service is adapted to the territorial realities of the local communities (RECYC-QUÉBEC, n.d., p. 5 and 7). The RECYC-QUÉBEC representative made this point when he

63. RLRQ, c Q-2, r. 40.1.

64. RLRQ, c Q-2, r. 40.1, art. 22 à 53.

65. RLRQ, c Q-2, r. 40.1, art. 17.

emphasized that EPR services were spatially and temporally variable (Francis Vermette, DT33, p. 34).

For its part, the Cree Nation Government did not fail to point out that the current EPR services were not adapted to the needs and realities of northern communities (DA7.2, p. 19). It added that the frequency of service was, for the majority of EPR products, insufficient and that several materials were not covered, with the result that several wastes, such as metals and hazardous wastes, are currently accumulating in the Cree communities (DA7.2, p. 10 and 19).

- ♦ **Recommendations** – *The BAPE and JBACE commissions recommend that the extended producer responsibility management methods be adapted to allow the implementation of collection means for all communities in Eeyou Istchee territory. To this end, the collaboration of RECYC-QUÉBEC and the extended producer responsibility management organizations is essential.*

The modernization of the deposit and selective collection systems should increase recuperation and improve recycling according to the principles of the circular economy. The EPR principle will be applied to both systems (MELCC, 2021b). It is expected that the deposit system will be extended to all beverage containers from 100 ml to 2 L, regardless of whether they are made of plastic, glass, metal, or multi-layer cardboard. In addition, when the reform of the selective collection system is completed, companies that market containers, packaging, printed matter, and newspapers will be responsible for their products from the beginning to the end of their life cycle. They will therefore be responsible for their recovery, sorting, packaging, and recycling (RECYC-QUÉBEC, 2020a).

Currently, curbside recycling is only available in two communities, while two others have containers in public places for the deposit of recyclable materials. As for the recovery of returnable beverage containers, it is offered in most grocery stores and cooperatives in each community (DA7.4, p. 3).

Thus, more than half of the Cree communities do not have a selective collection system, with the result that a large proportion of potentially recyclable materials end up in landfills (DA7.2, p. 12 to 14).

The modernization of deposit and curbside recycling systems should change this situation and increase the detour of waste from landfill. However, modernization will need to ensure that regional realities are taken into consideration to adapt the measures to be implemented and to offer efficient recovery services. For example, modernization requires not only collection and transportation services, but also the construction of transfer infrastructures for long distance transportation and should be covered by the program.

- ♦ **Recommendations** – *The BAPE and JBACE commissions believe that it is essential that the modernization of deposit and curbside recycling systems take into consideration the infrastructure needs arising from territorial realities. This clarification should be integrated into the regulations currently being developed in Quebec.*

11.3.4.4 Pricing mechanisms for construction contractors

According to estimated data, 41% of the residual materials generated in Cree communities come from the construction, renovation, and demolition (CRD) sector. Most of these materials are accumulated in eco-centres, TLs or often buried (Guillaume Bédard, DT33, p. 15). The main reason for this burial is that access to TLs is free for contractors working in the communities; the costs for the management of these materials are thus assumed by the communities. Landfilling of construction materials is also due to the remoteness of sorting facilities⁶⁶, the lack of infrastructure and the high cost of shredding and crushing services (DA7.4, p. 4).

In the 2011-2015 Action Plan of the Quebec Residual Materials Management Policy (QRMMP), the government's objective was to "sort at source or send to a sorting center 70% of construction, renovation, and demolition waste from the building segment" (Gouvernement du Québec, 2011, p. 11^{PDF}). Despite this objective, there is currently no obligation for CRD waste to be sent to a sorting center. They can therefore be sent directly to disposal sites (Sophie Langlois-Blouin, DT1, p. 50). Thus, the responsibility for managing CRD waste lies with the generating construction companies, that include the costs of this management in their bids (Christine Duchaine, DT17, p. 102).

To limit the quantities of construction materials landfilled, the Cree Nation Government proposes to implement pricing mechanisms for construction contractors as well as for businesses and institutions that currently use the waste management services and infrastructures free of charge. Similarly, waste management requirements could be added to the calls for tenders issued by the regional organizations (DA7.4, p. 7 and 8).

- ♦ **Recommendations** – *In order to reduce the quantities of construction, renovation and demolition waste landfilled in Eeyou Istchee territory, the BAPE and JBACE commissions are of the opinion that specific pricing mechanisms for construction contractors should be developed by the Cree Nation Government. To this end, RECYC-QUÉBEC should play an advisory role.*

66. A private construction waste sorting center operated by the Ungava Group in Chibougamau is located at a reasonable distance from the three closest communities (88 to 137 km). However, it has no competition and is too far from the other six (6) communities (329 to 749 km).

List of acronyms and abbreviations section 11.3

Acronyms

BAPE: Bureau d'audiences publiques sur l'environnement

CQLR: Compilation of Quebec Laws and Regulations

CRD: Construction, renovation, and demolition

ECCC: Environment and Climate Change Canada

EIJBRG: Eeyou Istchee James Bay Regional Government

ELS: Engineered landfill site

EPR: Extended producer responsibility

EQA: *Environmental Quality Act*

HCCA: Home and Community Composting Assistance program

IBI: Industries, businesses, and institutions

JBACE: James Bay Advisory Committee on the Environment

JBNQA: James Bay and Northern Quebec Agreement

MEFCC: Ministry of the Environment and the Fight against Climate Change

MHSS: Ministry of Health and Social Services

MJB: Municipality of James Bay

MMAH: Ministry of Municipal Affairs and Housing

MSDEWP: Ministry of Sustainable Development, Environment, Wildlife and Parks

NEQA: Northeastern Quebec Agreement

NRA: Agreement on Cree Nation Governance Between The Crees of Eeyou Istchee and the Government of Canada

Pdb: Peace of the Brave (2002)

QRMMP: *Quebec Residual Materials Management Policy*

RCM: Regional County Municipality

RMMP: Residual materials management plan

RRLIRM: *Regulation respecting the landfilling and incineration of residual materials*

RRRRPE: *Regulation respecting the recovery and reclamation of products by enterprises*

RRRSAABEI: *Regulation respecting the regulatory scheme applying to activities on the basis of their environmental impact*

TL: Trenched Landfill

Abbreviations

?: percentage

c.: chapter

km: kilometer

km²: square kilometer

M \$: million dollars

m³: cubic meter

s.: section

t: ton

Bibliography section 11.3

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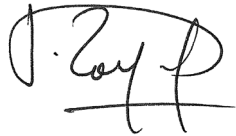
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Site Inventory and Final Waste Management

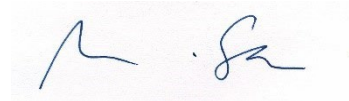
The present mandate of inquiry and public hearing entrusted to the Bureau d'audiences publiques sur l'environnement (BAPE) by the Minister of the Environment and the Fight against Climate Change concerns the *Current Status and Management of Final Waste* and covers the entire territory of Québec, including the territories covered by chapters 22 and 23 of the *James Bay and Northern Québec Agreement*, chapter 14 of the *Northeastern Québec Agreement* and chapter II of the *Environment Quality Act*.

The BAPE Commission of Inquiry and the commission of the James Bay Advisory Committee on the Environment (JBACE), formed for this purpose, worked together to carry out the consultation with the Cree and Jamesian communities. The two commissions also collaborated closely and continuously in the analysis of the issues facing these communities with respect to waste management on their territory.

Thus, the third section of Chapter 11 of this report, which is devoted to the *Waste Management in Territories Under Agreements*, contains findings and recommendations that are shared by the two commissions.



Joseph Zayed
Chairman of the Commission of Inquiry



Melissa Saganash
Chair of the JBACE Commission

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