Portrait of Waste Management in Nunavik

Prepared by the
Kativik Environmental Advisory Committee
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INTRODUCTION

In 2015, the Ministère de l'Environnement et de la Lutte contre les changements climatiques (the environment and the fight against climate change, MELCC) approved the Kativik Regional Government's (KRG) *2015-2020 Nunavik Residual Materials Management Plan* (NRMMP) in accordance with the *2011–2015 Action Plan under the Québec Residual Materials Management Policy*. The NRMMP highlights some of the shortcomings with the current waste management practices in Nunavik and presents feasible alternative methods with associated costs.

Additionally, Action 37 of the Quebec Government's 2011–2015 Action Plan aims to improve the current state of knowledge concerning residual materials management issues in northern Québec. As such, the MELCC mandated the Chaire en éco-conseil (eco-advisory research chair) at the Université du Québec à Chicoutimi (UQAC) to realize a study aimed at improving current knowledge and identifying alternative residual materials management techniques for Nunavik. In October 2017, the UQAC released the document *Gestion des matières résiduelles en milieu nordique* (management of residual materials in the north) that depicts the current state of residual materials management in northern Québec, presents recommendations, and prioritizes a series of actions.

In December 2017, the Nunavik Residual Material Management Working Group held their first meeting following recommendations for its establishment by the UQAC, the KRG and Kativik Environmental Advisory Committee (KEAC). The mandate of the working group, of which the KEAC and KRG are active members, is to facilitate communication with various waste management stakeholders in the Nunavik region and government officials. They also identify the main issues and challenges in promoting safe waste management practices, from a public health and environmental protection standpoint to identify potential solutions. The working group also serves as a forum for discussion on matters relating to the objectives set out in the 2011-2015 Action Plan and the recent 2019-2024 Action Plan. In September 2019, members visited the communities of Kuujjuaq and Kangirsuk as an opportunity to better understand the reality of waste management in a northern context. It was during this meeting that the working group members requested the KEAC, in partnership with the KRG, create the following document to provide the provincial and federal administrators of the James Bay and Northern Québec Agreement (JBNQA) an overview of current waste management initiatives in Nunavik following the implementation of the NRMMP.

IMPLEMENTATION OF THE 2015-2020 NUNAVIK RESIDUAL MATERIALS MANAGEMENT PLAN

The 2015–2020 NRMMP presents four principle guidelines which include:

1. Improve knowledge of residual materials management;
2. Foster management methods applicable in Nunavik based on the concepts of sustainable development;
3. Deliver regional support to the northern villages to ensure that the measures implemented reach the set objectives and;
4. Maintain residual materials processing and management costs at levels that are economically and socially acceptable, the NRMMP set our 29 measures to implement.

In October 2019, the KRG published an implementation report to present the NRMMP accomplishments and identify both successes and the obstacles encountered during its realisation. To date, only 2 of the 29 measures were successfully implemented however, 9 are in progress and 6 are ongoing. The moderate success rate can be explained by the following:

- Difficulty securing funding for the implementation of measures;
- Existing funding programs that do not consider the Nunavik context, in particular constraints related to sea transport;
- Inability to increase municipal taxes at a local level;
- Lack of personnel to develop and implement projects, as well as maintain onsite operations at local landfills;
- Lack of funding for community landfill operations;
- An overall lack of the resources to implement the legislated requisite infrastructure for landfills (fenced perimeters, drainage ditches, operating hours, regular covering activities, etc.);
- Unregulated access and disposal practices by community residents and construction companies;
- Short construction seasons (May to November), lead to accelerated waste accumulation at these sites during these months.
- The short season and strict regulations for transporting residual and hazardous materials by boat, which remains the only option for transporting these materials for the region.

The analysis provided in the 2019 implementation report was made public in order to give regional organizations and residents the opportunity to contribute their input on residual materials management issues. Public consultations were also held in the communities of Kuujjuaq, Kangirsuk, Inukjuak and Kuujjuaraapik. The feedback received touched upon the following:

- Lack of information or clear guidelines on how to treat residual and hazardous materials;
- Concerns with open-air burning at local landfills and its effects on the environment and human health;
- The reuse of residual materials including construction waste and appliances;

- Improving the management and operation of landfills and their associated infrastructure;
- The development of recycling programs and related infrastructure under the *Regulation Respecting the Recovery and Reclamation of Products by Enterprises (EPR);*
- Concerns with the level of compliance with the Quebec regulations regarding the collection and recycling of aluminum cans and beverage containers;
- Potential for composting projects;
- Requests for information on and greater enforcement of municipal by-laws pertaining to plastic-bags and the treatment of end-of-life non-serviceable vehicles;
- The inclusion and support of plans for communities and the region's leadership to implement more residual material management policies under the new NRMMP;
- Concerns with contaminated sites and waste located within and outside community limits.

Both the implementation report and information gathered from the public consultation effort will be used by the KRG in the development of the 2021-2027 NRMMP.

FUNDING

The costs of realising waste management projects are high in Nunavik and financial support is often found through combining serval funding programs available to either KRG or the communities. With this, come added costs for the already limited human resources needed to complete funding applications, activity reports and payment requests for each of the programs, on an annual basis with different deadlines.

In 2018, the Québec Government announced the *Programme de gestion des matières résiduelles en territoire nordique* (residual materials management in the north program) with a $1 million budget. The program is intended for community level projects and regional authorities in areas with no access to a road network including, but not specific to, Nunavik. It provides funding for projects aimed at reducing the volume of residual materials at the point of collection, however maximum funding allotment is $150 000 per community project or $250 000 per project involving more than one (1) community. From this program, the KRG has obtained $220,000 for a training project for landfill operators in the 14 Northern Villages, as well as $150,000 for each of the 3 priority projects discussed on pages 6-8 of this document. The funding agreement for these projects has not yet been signed between the KRG and the MELCC and the delays caused by COVID-19 may jeopardize access to this funding since program rules require that expenditures are completed by December 2020. There is currently a request to extend the deadline until December 2021.

Additionally, in its *2019–2024 Action Plan under the Québec Residual Materials Management Policy*, the Québec Government invested $20 million to assist the province's isolated regions with waste management initiatives. At present the details and terms of this program require further discussion, however the KRG is making use of the support being offered, signing an agreement with the MELCC to assist with funding for a project to assist with the recovery and reduction of accumulated residual metal in local landfills.

With their unique status, Nunavik's 14 municipalities are sometimes ineligible to receive funds under federal government programs such as the First Nation Waste Management Initiative. Access to these programs is necessary to ensure the realization and development of the projects cited in the NRMMP. The KEAC is aware that options to continue funding through the First Nations Waste Management Initiative beyond 2021 are being examined and in an April 2020 letter, have requested to the concerned federal ministers that the communities of Nunavik also have access to the program.

CURRENT PORTRAIT AND PRIORITIES

The solutions proposed in the 2015-2020 NRMMP are comprehensive, correspond to regional needs, and consider the particular constraints and challenges faced in Nunavik. Since the approval of the 2015-2020 NRMMP, only a limited number of objectives have been achieved due to several factors as described above. In spite of this, the sustained efforts of the KRG and the NVs have made it possible to implement several meaningful initiatives such as:

- Hazardous waste and spill management training for municipal and KRG employees as well as representatives from various regional organizations (2016, 2017, and 2018);
- Collection points for products covered under the EPR in 6 communities;
- Project to cleanup residual hazardous materials storage sites in Nunavik communities (2018-2021, funded by Société Plan-Nord);
- Improvement of CRD debris management in Kuujjuaq (funded by Recyc-Québec);
- Program for the recycling of tires in Nunavik communities (funded by Recyc-Québec);
- Adoption of municipal By-Laws regarding dumping fees at all local landfills and banning of single-use plastic bags in Kuujjuaq;
- Awareness campaign for the deposit system on aluminum beverage containers (with assistance from KEAC);
- Development and distribution of guides regarding the management of hazardous waste (with assistance from KEAC).

At present, a selective collection system does not exist in Nunavik. Domestic and non-residential waste is not sorted at a point of collection or deposition at local landfills. Most waste, regardless of type, is burned according to the requirements of the *Regulation Respecting the Landfilling and Incineration of Residual Materials*. Although a few collection and recycling initiatives have been realized in some villages, larger items, such as non-serviceable vehicles and appliances continue to accumulate at the municipal landfills. Furthermore, dangerous and hazardous materials such as coolants, hydrocarbons and car batteries remain in the vehicles where they continue to contaminate the surrounding environment.

In 2019, the KRG undertook three feasibility studies to prioritize the implementation of projects under the 2015-2020 NRMMP as alternatives to open-air burning:

Priority Project 1: Thermophile Composter Project in Inukjuak

Organic waste represents approximately 33% of the total amount of residual materials that must be eliminated annually in northern landfills. This figure would exceed 50% if paper and cardboard products were included. Burial of these materials in landfills produces greenhouse gasses and may contaminate nearby soil and bodies of water.

The implementation of organic waste management projects will serve to enhance knowledge on composting in northern environments and establish parameters as well as the technical, operational, financial and organizational feasibility of composting on a larger scale in every community across the region.

Inukjuak has a population of 1,826 inhabitants and its landfill is located in close proximity to the community. Although regular burning of waste is required by law, community expansion in proximity to the landfill over recent years has impeded this. Accumulated waste is therefore buried which can attract animals and insects. The community, with support from the KRG, desire to implement a project to reduce organic waste through composting with the composted material being used in development projects and eventually in the community greenhouse.

This initiative is projected for 2020-2021 and its cost is estimated at $987,000 and includes infrastructure development and the first year of operation. Project funding has, to-date, included 5 different sources available to Nunavik communities.

Priority Project 2: Eco-centre and Re-store Project in Kuujjuaq

The development of collection and recycling facilities such as eco-centres would respond to the need to optimize the sorting of residual materials in order to reduce the problems associated with accumulation and burning at landfills. Such facilities would also treat hazardous materials in an efficient and safe manner. A scalable eco-centre could include sections for the recovery and re-use of parts from non-serviceable vehicles as well as house-hold goods and appliances.

Kuujjuaq has a population of 2,785 inhabitants. Its expansion and development generate a considerable volume of waste when compared to other Nunavik communities. It is crucial that alternative and more efficient methods for reducing waste generation and accumulation be explored. However, certain factors must be considered such as elevated construction and maintenance costs in the region.

The desire to improve waste management practices has been expressed by its municipal leaders and residents. At present, a municipal employee is present at the landfill on a full-time basis to assist with residual materials management activities and a collection point for products covered under the EPR is available in the community. The municipality, with support from the KRG, intends to develop an eco-centre and re-store facilities in their community. These would improve present methods for sorting and recycling waste and promote reuse of materials while diverting them from the local landfill. This initiative is projected for 2020-2021 and its costs are estimated at $1,250,000. Project funding has, to-date, included 5 different sources available to Nunavik communities.

Priority Project 3: Accumulated Residual Metal Recovery Project in Nunavik

Large quantities of residual metal have accumulated in the landfills throughout Nunavik over the years. Non-serviceable vehicles and appliances represent on average 29% of the volume at these sites. The types of non-serviceable vehicles including heavy machinery, cars, snowmobiles and off-road vehicles. Metal appliances and metal construction waste are also present in significant quantities. An operational strategy and budget for managing and recycling these residual material types was presented in the 2015-2020 NRMMP. This has not been implemented due to lack of operational funding. Furthermore, many of the non-serviceable vehicles remain untreated and still contain a number of hazardous materials and other pollutants.

The waste metal recovery project involves identifying suitable methods for processing and transporting these materials found in Nunavik's communities. The bulk of the project's costs, are associated with the transportation of the metal to recycling facilities outside the region. Negotiating reduced shipping rates with maritime transport companies is essential should this project be realized. At present, a three-year pilot project is estimated to cost $6.4M. On March 26, 2020, a financial agreement was signed with the MELCC, for $4.8M to assist with project development, which will terminate on March 31, 2024.

The Association des recycleurs des pièces d'auto et de camion (automobile and truck parts recycling, ARPAC) are one of the associations responsible for the collection and recycling of non-serviceable vehicles in Québec. Although ARPAC is not mandated to supply their services to isolated regions such as Nunavik, they have signalled they are willing to assist KRG with a training program in northern communities. Both the KRG and KEAC have requested the working group obtain information regarding extending ARPAC's mandate to the Nunavik region and propose a form of government compensation to all regions not served by associations such as ARPAC. This is essential for these regions to prepare, package and transport non-serviceable vehicles to southern Québec for recycling.

Household and industrial appliances such as refrigerators, stoves, freezers, washers, dryers, dishwashers and air conditioners represent another source of residual metal and hazardous materials both al local landfills and in the communities. These products are widely used in Nunavik; however, the programs and infrastructure needed to collect, sort and recycle these items is not currently present in the region. In a September 2017 letter to the MELCC, the KEAC proposed that a recovery and reclamation program under the EPR should include a drop-off center for each community in the region and that the products collected must be transported at least once a year to a treatment and recycling facility. The KEAC is of the opinion that the organization responsible for implementing the collection and reclamation program for these products should communicate with the KRG who are presently collaborating with other entities regarding the application of the EPR in Nunavik.

Empty propane tanks are also very common in the region's landfills. 20- and 5-pound tanks are not collected by retailers and are sent directly to the landfill or accumulate in designated areas if available. The KRG and the KEAC have requested that the working group consider adding these products to the EPR should the regulation be amended in the future.

It should also be noted that in February 2020, the Québec Government announced a new deposit system for beverage containers, managed by Récyc-Québec and that will come into force in all regions, including Nunavik, in the fall of 2022. Due to the unique situation of NVs in terms of minimal infrastructure, isolation from road transportation networks, remoteness from recycling facilities and over-winter storage, the KRG has requested Récyc-Québec discuss with commercial leaders the implementation of a pilot project in a Nunavik community to gather data and experience on how the new deposit system will operate in an isolated region.

CONCLUSION

Considering the UQAC's recommendations, feedback from the 2019 KRG implementation report and public consultations, as well as available funding programs, the elaboration of an updated version of the NRMMP for 2021-2027 has become priority for KRG and the NVs. The new NRMMP aims to continue efforts to improve waste management in Nunavik by providing communities with a planning tool that considers regional and local characteristics and priorities. It also aims to increases awareness of the importance of reducing, reusing, recycling and recovering residual materials in order to protect the environment.

In conclusion, waste management in Nunavik presents unique challenges but also potential for unique solutions. Projects implementation involves many stakeholders: regional, provincial and federal governments and organizations, as well as businesses (stores, transport companies, construction companies etc.). Funding and implementing innovative waste management measures are not only positive for the environment, but also for the social and economic sectors of Nunavik and will lead to a better understanding of reduction at source, material reuse, recycling, and valorization in isolated regions.