

Solid Waste Management in Small Arctic Communities

Discussion Paper by Aleut International Association

A common understanding of pollutants in the Arctic is that their residence time is longer than at other latitudes and that this magnifies the effect of the pollutant when compared with other areas of the globe. The transition by small Arctic communities from strictly traditional, subsistence economies to the current mix of cash/subsistence brings with it a problem of waste; that is material that is not used or reused and is discarded.

For some time, the system was to bring your waste outside your house, dump it, possibly burn it, and the organic natural waste would return to the earth. “The problems began when 20th century inventions were injected into this system, inhibiting the cycle from continuing to function the way it used to. Plastic packaging, oil containers, tires, batteries, and electronics – all interfere with nature’s absorption capacity. In the same way these products originate from an artificial production cycle, they require an artificial treatment at the end of their lifespans” (Buhner, 2012). Today open waste dumps remain the dominant processing method in the Arctic.

While open dumping has been the leading method of waste management, it presents many hazards. This waste can clog drains and cause flooding when it rains, run off into lakes and streams affecting clean water and ecosystems. The decomposition of organic material produces methane, which can cause fire and explosions, and contribute to global warming. Methane is a greenhouse gas, which has 21 times the global warming potential of carbon dioxide (CO₂). Waste disposal is the fourth largest source of non-carbon dioxide greenhouse gas (Waste Management World, 2010). The biological and chemical processes that occur in open dumps produce strong leachates, which pollute surface and ground water. Fires cause smoke, polluting the air and further, food waste attracts animals that feed in the dumps. In addition, cold temperatures in the Arctic can interfere with normal biological breakdown of organic materials, trapping larger quantities that then decompose all at once when temperatures rise.

With improper waste disposal we are contributing to ground, air, and water pollution which can cause a threat to our health and the health of the ecosystem. On a fiscal level, open solid waste is not attractive and can lead to reduced tourism which some Arctic communities rely on as a source of income. To find a solution, we need to examine what is not working and what is.

Technical solutions may be limited by the local lack of experience with waste management and little know-how to sustain the system. When national or regional governments supply a system to help, the systems may not be a good fit for the community and can cause other issues that can lead to the plan being abandoned.

There is also the issue that waste management may not be a high priority for small communities. Many communities are faced with social and political issues, health issues, and more, leaving waste management low on the list of priorities. On that low priority list, there is frequently no single institution responsible for waste management. Waste management can be a small component of many government or private positions which leads to lack of cohesion, duplicated efforts, and generally unsuccessful projects. This sometimes stems from a lack of legislation applicable to waste management. Since waste management is a developing problem there may not be previous legislation set to solve the issues and provide structure to deal with the problems.

A lack of funding can play a major role in limiting both, the development and implementation of solutions in small communities. The problem can be acute at the local level where taxation systems are often inadequately developed and therefore, the financial basis for solid waste management is weak. This weak financial basis of local governments can be supplemented by the collection of user service charges. However, users' ability to pay for the service can be limited in small Arctic communities and they may be reluctant to pay for services which are irregular and ineffective. An effective strategy for raising funds needs to be found in any collaborative project to ensure its sustainability. It is not surprising that low income people do not want to pay for bad service. By improving the system, it may begin to give some incentive for local people to pay for waste management service.

Another component of waste management is social stigma. This leads to a negative perception of people regarding the work which involves the handling of waste or unwanted material. Such perception can lead to lack of respect for the work which in turn can result in poor quality of work. Reducing this stigma would help to allow all community members to address the issue and work together to solve it. An understanding of Indigenous knowledge regarding waste disposal can help develop an understanding of how communities dealt with waste in a socially acceptable manner. By applying Indigenous communities' predilection for finding uses or ways to reuse everything, we can employ this perspective to construct better, more sustainable waste management for Arctic communities.

Attempts at assistance from outside the community may not be sustainable due to many factors including technical, financial, economic or social constraints. Systems intended to aid a small community can fail after external assistance is removed. For example, trash compactors intended to reduce waste may break down and if the community does not have the parts or expertise to fix the equipment it sits idle adding to rather than helping the problem.

With the wide set of potential variables across the Arctic, solutions to waste management issues are not easy. Succeeding in this sector calls for the closest possible cooperation between the public and private sectors, understanding needs but also recognizing limitations to find a long-term, sustainable solution for solid waste management.

Anticipated project goals and deliverables are:

- An examination of current best practices in solid waste management among the Arctic States.
- A determination of the potential need for policy actions to address waste management issues.
- Assessing the potential for recycling/reusing plans that will lower waste and provide revenue, building on Indigenous traditions of "nothing wasted, everything used".
- Examine programs to educate communities and raise awareness about waste management and how changes can positively affect them.
- An assessment of contaminants issues related to solid waste disposal in the Arctic.

We envision that this project will operated under the auspices of the SDWG, but will also include close cooperation with ACAP which will provide expertise in articulating contaminants

issues related to solid waste handling. In addition, the involvement of the Arctic Economic Council (AEC) will be invaluable in exploring the potential for public/private partnership approaches to waste management.

With solid waste disposals potential for damage to the health of communities and ecosystems, it is everyone's problem to find feasible community based solutions, including those that may exist beyond our own back yards. Developing the benefits of recycling, creating new systems, and working together, we can begin to develop long term solutions to create cleaner, safer, sustainable, Arctic Communities.