

Iqaluit Waste Management Project: Designing the Future of Solid Waste Management in our Community

Newsletter #2 June 2011

www.iqaluitwasteproject.ca



Thank you for your input!

The City of Iqaluit would like to thank everyone who has provided input/feedback through interviews, the April Open House, a meeting at the Elders Qammaq and written comments.

What we heard

1. Residents are frustrated with how solid waste issues have been handled in the past and the lack of action on this important community issue.
2. Residents are interested in composting and recycling to reduce the amount of waste requiring disposal.
3. Hunters do not want waste/pollution in the rivers and sea and want the impact of the smell on the animals to be considered.
4. Residents want us to build on past work (don't reinvent the wheel!).

Note: A list of past studies and references are available online or at building 2425.

5. Residents are unhappy with how the City currently deals with its wastewater (sewage).

Note: While this is outside of the scope of this project, we heard that wastewater treatment is an important community concern and will take it into consideration in the development of our upcoming Capital Plan.

6. Residents want a cleaner community with less litter.
7. There are concerns about charging tipping/disposal fees to low-income households.
8. Residents are concerned about old dump sites that are not being addressed in this study.

Note: This issue is discussed in the 2010 General Plan.

9. Residents want to understand the true cost of our waste disposal and want to be well informed about the options under consideration.

Get Involved: Open House #2!

Date: Monday June 27, 2011

Time: 6:30-8:00pm

Location: AWG Lobby

As requested, after a short presentation, we will use a roundtable format to evaluate and discuss the diversion, disposal and site options under consideration.

Draft Vision and Goals

Based on the feedback received, we have prepared a draft vision and goals for the new Solid Waste Management Program. Are we on the right track?

VISION:

The City of Iqaluit will be a leader in Northern waste management practices by identifying and implementing locally appropriate waste management solutions that maximize waste diversion and minimize environmental impacts.

GOALS:

1. REDUCE the amount of waste produced and the amount of litter in our streets.
2. REUSE goods and materials that are discarded before the end of their useful life.
3. RECYCLE using methods that are locally appropriate .
4. MANAGE hazardous waste to protect the environment and people in our community.
5. COMPOST household organics for the benefit of the community.
6. DISPOSE of remaining waste in a way that is environmentally, economically and socially sustainable.



Next Steps

We are currently in the process of evaluating different waste management and site options. Diversion and disposal options being considered are summarized in tables on pages 2-5 of this newsletter and a *preliminary* list of sites under consideration is shown on page 6. A more detailed Issues Analysis Brief can be downloaded at the project website(www.iqaluitwasteproject.ca) or picked up at Building 2425. Over the summer months, we will continue to research and evaluate the different options against the project evaluation criteria (see “Evaluation Criteria” text box below). In the fall, we will present a recommended Solid Waste Management Program and waste disposal site.

Evaluation Criteria

Based on your feedback, the following criteria will be used to evaluate the diversion and disposal options and design a new waste management program:


1. Environmental impact.
2. Appropriate technology for our remote Arctic community.
3. Alignment with project goals and objectives.
4. Track record of technology/program.
5. Cost effectiveness/affordability.
6. Social and cultural acceptability.
7. Ease of implementation.

Diversion/Disposal Options

Diversion Options	How it works	Things to consider
Re-use Centre	<ul style="list-style-type: none"> Useable goods and materials are sorted and stored for reuse by the public (e.g., wood, furniture, etc). 	<ul style="list-style-type: none"> How would this program be managed? Would some items need to be protected from the elements to allow for re-use (could seacan containers be used)? Could program be coordinated with local charitable organization(s)? Could available items be posted online?
End of Life Vehicles	<ul style="list-style-type: none"> Trained staff members drain fluids and safely remove hazardous materials and reusable parts. Unsalvageable metal is compacted and shipped south with the scrap 	<ul style="list-style-type: none"> What are the space requirements for processing and storage? (How many vehicles disposed of annually?) Would an indoor service area be required? Would indoor servicing requirements be lower if program was seasonal (e.g. just in summer)? Training/certification and health and safety requirements for staff.

Diversion options continued on next page...

Diversion Options (cont'd)		How it works	Things to consider
Recycling	Residential/ Commercial <ul style="list-style-type: none"> • Plastic containers • Steel cans • Pop cans • Paper & Cardboard • Glass 	<ul style="list-style-type: none"> • Recyclable materials are diverted from the waste stream, sorted, bailed and shipped (sealift and then truck) to a southern recycling facility. • Recyclables are either collected: <ol style="list-style-type: none"> 1) at a depot, or 2) through municipal curb-side collection (e.g., blue bin). 	<ul style="list-style-type: none"> • Paper and cardboard could be composted instead. • Glass diverted from the waste stream could be crushed and used locally as construction aggregate or as landfill cover. Will there be a local demand for the amount of glass aggregate produced? Compost can also be used for landfill cover material (amount of cover material required needs to be assessed). • Indoor sorting facility may be required to continue programs in winter months. How would these facilities be serviced (heat, electricity, water, sewer)? • What type of container would be most convenient for residents and workplaces to sort their recycling materials? (e.g., a bin, bag, etc.).
	Bulky <ul style="list-style-type: none"> • Waste electronics • Tires • Appliances • Scrap metal 	<ul style="list-style-type: none"> • Bulky recyclable material is dropped off at the landfill/recycling depot. 	<ul style="list-style-type: none"> • What pre-processing/sorting is required before shipping to ensure Iqaluit receives maximum value on the sale of recyclable materials? • Materials will need to be stored longer than in southern communities because we have to ship materials out on sealift (also applies to residential/commercial recyclables).
	<p><u>Opportunities for partnership:</u> Arctic Coop (can recycling), NorthwesTel (phone book recycling), Southeast Nunavut Company (bottle return), Government of Nunavut (office paper recycling)</p> <p><u>Policy options for consideration:</u> Deposit-return on beverage containers, mandatory recycling bylaw, municipal ban on hard-to-recycle materials, etc.</p>		

Diversion Options (cont'd)	How it works	Things to consider
<p>Composting</p> <ul style="list-style-type: none"> • Food waste • Paper • Cardboard • Wood chips 	<ul style="list-style-type: none"> • Organics are diverted from the waste stream and are either collected: 1) at a depot or, 2) through municipal curb-side collection (ex. green bin). • <u>Option 1: Open Windrow</u> Composting occurs in long piles that are turned regularly for aeration and mixing. • <u>Option 2: In-vessel</u> Composting occurs in controlled, enclosed reactors. 	<ul style="list-style-type: none"> • Option 1 is a low cost, low-tech approach that has been successfully implemented in Iqaluit by The Bill Mackenzie Humanitarian Society. • Option 2 is more expensive but allows for greater control, which results in a shorter composting process and less odour problems. Can enough organics be diverted to make such a system feasible? • Could potentially produce energy through anaerobic biogas production. Would this energy be used on-site or in nearby facilities? • Can our sewage sludge management program also be included in either of the processes? • Composting system could accept approximately 1/3 of Iqaluit's wood waste. If wood shredding is to take place, an indoor facility may be required during winter months. Wood for shredding should be clean (no nails or screws, etc.). • Existing shredder may be of suitable size/type for shredding food waste and cardboard.
<p>Household Hazardous Waste</p> <ul style="list-style-type: none"> • Corrosive, flammable, explosive or poisonous waste 	<ul style="list-style-type: none"> • Hazardous waste is dropped off at a designated area at the waste management facility where it is sorted and prepared for shipping to a southern hazardous waste facility. 	<ul style="list-style-type: none"> • Should a more central drop-off location be considered? Could programs be run seasonally? • Education program important to ensure that hazardous waste is identified and separated out of the regular waste stream. • Would the City consider privatizing this part of its solid waste management?

Disposal Options	Description	Pros	Cons	Discussion
Waste to Energy	INCINERATION <ul style="list-style-type: none"> "Burns" waste under carefully controlled conditions. High temperatures (> 1000 deg C) and pollution control processes are used to reduce/ control air emissions. 	<ul style="list-style-type: none"> Reduces volume of waste that needs to be landfilled (maximize usable life of the landfill or minimize landfill footprint). Potential for energy/heat recovery. Minimizes animal issues. 	<ul style="list-style-type: none"> More complex to operate/maintain. Technical training requirements. More expensive to build and operate. Not a proven technology in the arctic. Emissions of pollutants, especially if run improperly . 	<ul style="list-style-type: none"> Residual ash is landfilled but could also be used as aggregate substitute (depending on its chemistry). Some materials may be better than others for incineration/thermal treatment (e.g., wood, papers and plastics combust better than glass or metals). Might be possible to use up waste from the current West 40 landfill, but several issues must be carefully considered: <ul style="list-style-type: none"> Safety of "mining" the pile (risk of fire, stability of pile). Blowing litter when cover material is removed. Sorting out material that is not safe for incineration (health and safety issues, added labour expense). Advanced thermal treatments generally require a significant amount of waste to efficiently run and to make them financially feasible. Availability of incinerator or advanced thermal treatment facility may reduce political/public will to fund diversion programs. Alternate means of disposal required in case of equipment breakdown.
	ADVANCED THERMAL TREATMENT <ul style="list-style-type: none"> Uses an indirect source of heat to decompose carbon-based materials into a synthetic gas. <u>Pyrolysis</u> is undertaken in the absence of oxygen, while <u>gasification</u> and <u>plasma</u> use a limited amount of oxygen. The limited use or absence of oxygen in these processes results in the production of fewer air emissions. 			
Landfill	<ul style="list-style-type: none"> Waste that cannot be diverted by other programs (e.g., non-recyclable plastics) is disposed of in an area designed to separate the waste from groundwater and surface water. Precipitation that comes in contact with the waste (runoff) will be treated before it is discharged into the environment. Waste is compacted to reduce volume and is covered to reduce blowing litter, odour and animal problems. Landfill will be designed to meet the needs of Iqaluit for the next 40+ years. 	<ul style="list-style-type: none"> Fewer emissions. Less expensive. Easier to operate and maintain. Less technical training requirements. 	<ul style="list-style-type: none"> More space required. Odour from breakdown of organics (would be minimized by compost program). Less aesthetically pleasing. Clustering of birds. 	<ul style="list-style-type: none"> Site selection criteria will include : <ul style="list-style-type: none"> Size requirements. Setback from airport and residential areas. Development and servicing costs. Ecological impact. Groundwater and surface water protection. Geotechnical suitability. Visibility from town. Ability to access landfill site during winter months. Ability to house other waste management services (e.g., reuse centre, recycling depot). Method of onsite runoff treatment needs to be determined.

Selection of New Waste Disposal Site

Iqaluit's future Solid Waste Management Program will need a new worksite for diversion and disposal. The figure below shows the sites that are currently under consideration. Sites marked with a star (*) were identified by residents at Open House #1. Distance from City centre is indicated in brackets. See landfill discussion on previous page for site selection criteria.



Questions ?

Comments?

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