PART 1 FORM
PROJECT PROPOSAL INFORMATION REQUIREMENTS

To access NIRB documents, project screenings, and project reviews please visit the Nunavut Impact Review Board's ftp site http://ftp.nirb.ca/. The NIRB's website (www.nirb.ca) is currently under construction. Please contact info@nirb.ca should you have any questions or require further information.

IMPORTANT!
Please be advised that your application will not be processed until the Sections 1 - 9 are completed in their entirety, in both English and Inuktitut (+ Inuinnaqtun, if in the Kitikmeot).

SECTION 1: APPLICANT INFORMATION

1. **Project Name** City of Iqaluit Application for Water License Renewal

2. **Applicant's full name and mailing address:**

City of Iqaluit		Phone:	867-979-5600
P.O. Box 460		Fax:	867-979-5922
Iqaluit, Nunavut	X0A 0H0	Email:	info@city.iqaluit.nu.ca

3. **Primary contact's full name and mailing address:**

John Hussey		Phone:	867-979-5666
PO Box 460		Fax:	867-979-5922
Iqaluit, Nunavut	X0A 0H0	Email:	j.hussey@city.iqaluit.nu.ca

SECTION 2: AUTHORIZATION NEEDED

1. **Indicate <u>all</u> authorizations associated with the project proposal:**

	Regional Inuit Association (RIA)		Canadian Launch Safety (CLS)
X	Nunavut Water Board (NWB)		Environment Canada (EC)
	Nunavut Planning Commission (NPC)		Government of Nunavut (GN)
	Indian and Northern Affairs Canada (INAC)		Department of National Defense (DND)
	Department of Fisheries and Oceans (DFO)		Hamlet
	Community Government & Services (CG&S)		Parks Canada (PC)
	Nunavut Research Institute (NRI)		Canadian Wildlife Service (CWS)
	Department of Culture, Language, Elders, and Youth (CLEY)		Other (please specify):

2. **List the <u>active</u> permits, licenses, or other authorizations related to the project proposal, and their expiry date(s):**

Nunavut Water Board Water License 3AM-IQA0611 (expiry date - July 15, 2012)

3. **List the pending permits, licenses, or other authorizations related to the project proposal:**

Nunavut Water Board Application for Water License Renewal (submitted October 2, 2012)

4. **Has this project or any components of this project been previously screened or reviewed by NIRB?**

☐ **YES** ■ **NO**

If YES, indicate the previous project name and NIRB File No.

SECTION 3: PROJECT PROPOSAL DESCRIPTION

1. **Indicate the type of project proposal (check all that apply)[1,2]: (See Appendix A for Project Type Definitions)**

1	All-Weather Road/Access Trail	☐	9	Site Cleanup/Remediation	☐
2	Winter Road/ Winter Trail	☐	10	Oil and Natural Gas Exploration/Activities	☐
3	Mineral Exploration	☐	11	Marine Based Activities	☐
4	Advanced Mineral Exploration	☐	12	Scientific/International Polar Year Research*	☐
5	Mine Development /Bulk Sampling	☐	13	Harvesting Activities*	☐
6	Pits and quarries	☐	14	Tourism Activities*	☐
7	Offshore Infrastructure (port, break water, dock)	☐	15	Other[2]: Municipal Undertaking	■
8	Seismic Survey	☐			☐

Please note:

1. All project types listed above, except those marked with an asterisk (*), will also require the Proponent to submit a **Part 2 Project Specific Information Requirement (PSIR) Form**. The NIRB application process will not be considered complete without the Part 2 PSIR Form.
2. Please be advised that in order to complete the NIRB process, the NIRB may request additional information at any time during the process.
3. If "Other" is selected, contact NIRB for direction on whether a Part 2 PSIR Form is required.

2. If Project Type 3, 4 or 5 was selected above, please indicate the mineral of interest that is being extracted. Include a brief description.

- [ ] Base Metals (zinc, copper, gold, silver, etc)_____
- [ ] Diamonds
- [ ] Uranium
- [ ] Other: _____

3a. If Project Type 12, 13 or 14 was selected above, complete the table and questions below.

Transportation Type	Quantity	Proposed Use	Length of Use
E.g. Helicopter	*1*	*Site to site pick ups and drop offs*	*6 days*

3b. Describe any docks, piers, air strips or related structures that are to be used in conjunction with the proposed project activities. **Please note**: *the building of new structures may require a Part 2 Form.*

The City of Iqaluit uses Sealift Beach to transport goods to and from the community by ship. The Iqaluit International Airport is used to transport goods, services and personnel to and from the community by air.

3c. If a temporary camp site is to be established, describe the proposed structures in detail and indicate the type and source of power for the camp site if applicable.

Not Applicable

4. Personnel (estimated for Water Treatment Plant, Wastewater Treatment Plant and West 40 Landfill only)

Total No. of personnel on site = (A) 10 | Total No. of days on-site = (B) 365 | **Total No. of Person days (A) × (B) = 3650**

5. Timing

Period of operation: from Ongoing to October 2018

Proposed term of authorization: from October 2013 to October 2018

6a. Region (check all that apply):

- [ ] North Baffin
- [X] South Baffin
- [ ] Kivalliq
- [ ] National Park
- [ ] Kitikmeot
- [ ] Transboundary: _____

6b. Describe the location of the proposed project activities in a regional context, noting the proximity to the nearest communities and any protected areas.

Iqaluit is located on Koojesee Inlet at the south end of Baffin Island near the end of Frobisher Bay. It neighbors Sylvia Grinnell Territorial Park. Iqaluit is 120km northeast of Kimmirut and is 320km southwest of Pangnirtung.

6c. Discuss the history of the site if it has been used for any project activities in the past.

The Water Treatment Plant is approximately 50 years old and was recently upgraded in 2003. Lake Geraldine Dam was constructed in 1958 and the level of the dam was subsequently raised in 1985, 1995 and 2006. The West 40 Landfill was built in 1995 and has been upgraded several times since. The Sewage Lagoon was built in 1978 and the Waste Water Treatment Plant was built in 2000 and retrofitted to its current use in 2005.

6d. Indicate if there are any known archaeological/palaeontological historical sites in the area.

Several archaeological sites have been identified in the area (see figure provided in Appendix A). The majority of the sites are located along Sylvia Grinnell River in Sylvia Grinnell Territorial Park. One site is located on Tarr Inlet and two other sites are located in the West 40 along Sylvia Grinnell River, opposite the territorial park. The Water Treatment Plant, Wastewater Treatment Plant, Sewage Lagoon, and West 40 Landfill are all located on lands designated as "Heavy Industrial" in The City of Iqaluit's 2010 General Plan and do not overlap with any of the archaeological sites.

7. Land Status (check all that applies):

[ ] Crown	[X] Commissioners'	[X] Municipal
[ ] Inuit Owned Surface Lands	[ ] Inuit Owned Sub-Surface Lands	

8a. Co-ordinates:

Min Lat (degree/minute)	63° 41'	Min Long (degree/minute)	68° 18'
Max Lat (degree/minute)	63° 50'	Max Long (degree/minute)	68° 39'

NTS Map Sheet No: 025N (Also, please see City of Iqaluit Map provided in Appendix B)
(Please ensure that maps of the project are attached (1:50,000 **if available**, 1:250, 000 **Mandatory**) available from Natural Resources Canada)

8b. If the project proposal includes a **camp**, please provide the coordinates of the camp location

Not Applicable

Min Lat (degree/minute)		Min Long (degree/minute)	
Max Lat (degree/minute)		Max Long (degree/minute)	

If different from above for the camp:
NTS Map Sheet No:
Please ensure that maps of the project are attached (1:50,000 **if available**, 1:250, 000 **Mandatory**) available from Natural Resources Canada

Please note that additional location information may be required in a subsequent Project Specific Information Requirement (PSIR) submission. This may take the form of a digital Geographic Information Systems (GIS) file.

SECTION 4: NON-TECHNICAL PROJECT PROPOSAL DESCRIPTION

Please include a non-technical description of the project proposal, no more than 500 words, in English and Inuktitut (+Inuinnaqtun, if in the Kitikmeot). The project description should outline the following:

- The project activities, their necessity and duration;
- Method of transportation;
- Any structures that will be erected (permanent/ temporary);
- Alternatives considered; and
- Long-term developments, the projected outcome of the development for the area and its timeline.

IMPORTANT: IF THE PROPOSED ACTIVITIES REQUIRE SUBMISSION OF A NIRB PART 2 PSIR FORM, PLEASE COMPLETE SECTION 8 ONLY, OTHERWISE CONTINUE ON WITH SECTION 5.

The City of Iqaluit (City) has submitted an Application for Water License Renewal for its Type "A" Water License (3AM-IQA0611). No changes to water use or waste disposal previously authorized are being requested at this time. As per the terms of this license, the City wishes to continue:

- Water use from Lake Geraldine to a maximum of 1,100,000 m^3/year,
- Solid waste management at the West 40 Landfill, and
- Wastewater management at the West 40 Wastewater Treatment Plant and backup Sewage Lagoon.

The City has requested a 5-year renewal term (October 2013 to October 2018). The City will continue to use sealift and the Iqaluit International Airport for transportation of goods and services to and from the community. Once capital funding is secured, as per the terms of its last license, the City plans to upgrade the West 40 Wastewater Treatment Plant to secondary treatment.

Over the term of its last license, which expired on July 15, 2012, the City has invested considerable time and resources to move towards achieving compliance with its License:

- The Lake Geraldine Dam Safety Review was completed in 2006;
- Dam Safety Inspections (DSI) were completed on Lake Geraldine Dam in 2009, 2010, 2011, 2012;
- Work was undertaken to address all DSI recommendations,
- Dam Safety Inspections of the Sewage Lagoon were completed in 2006, 2009, 2011;
- A Technical Overview of 2005 Secondary Sewage Treatment Design was completed in 2011 to determine the work required to update the design to meet current needs and regulatory requirements;
- A funding application for priority municipal infrastructure projects has been submitted to the Government of Nunavut (includes upgrading the Wastewater Treatment Plant, which is currently on hold due to funding constraints);
- Sewage Lift Stations #1 and #2 were completely renovated in 2006 and 2011, respectively (the new control system and backup generator reduce the likelihood of a sewage spill at these new facilities);

- Water management improvements at the West 40 Landfill were completed in 2006 and 2011;
- A Water Management and Treatment Options Report for the West 40 Landfill was completed in 2011;
- A Sewage Sludge Management Composting Pilot Project was undertaken in 2006; and
- The Sludge Management Operation and Maintenance Manual was completed in 2006.

Moving forward, the City remains committed to continuing its work towards compliance. Currently, the following work is underway:

- The Iqaluit Waste Management Project, which includes:
  - the development of a new Solid Waste Management Plan,
  - the identification of a new solid waste management site, and
  - the development of a Decommissioning Plan for the West 40 Landfill;
- The development of the Lake Geraldine Dam Emergency Preparedness Plan (to be complete in early 2013);
- The development of a Water Balance; and,
- The development of a Supplementary Water Supply Plan and Preliminary Design.

As indicated above, the City is currently in the planning phase for new solid waste management facilities and a supplementary water supply. Once the necessary information is ready, the City plans on submitting the required Application for Water License Amendments.

SECTION 5: MATERIAL USE

1. **List equipment to be used** **(including drills, pumps, aircraft, vehicles, etc.):** (Note: Equipment is listed for solid waste, water and wastewater services only.)

Equipment type and number	Size – dimensions	Proposed use
Solid Waste		
928G Wheel Loader	3.27m x 7.30m x 2.56m (HxLxW)	Moving material around the landfill
816F Wheel Dozer (Compactor)	3.34m x 6.80m x 3.76m (HxLxW)	Compacting waste
Pump	2 inch hose	Decanting the retention pond
Pump	4 inch hose	Decanting the retention pond
Shred Max Shredder	2m x 3m x 1.5m (HxLxW)	Shredding wood waste
Garbage Trucks (3)	35 cubic meter box	Picking up household and commercial waste
Ford F250 (2)	3/4 tonne 1.96m x 6.68m x 2.66m	Staff vehicle
Bulb Buster	205 L Drum	Extracting mercury from light bulbs
Freon Remover	47.7 lbs Tank	Extracting Freon from white goods
Water		
Water Trucks (4)	12,000 L -14,000 L tank capacity	Water Delivery
Ford Escape	1.76m x 4.39m x 1.78m	Staff vehicle
Wastewater		
Sewer Vacuum Trucks (4)	12,000 L tank capacity	Sewage pick up
Water Blaster (2)	1,200 L - 2,800 L tank capacity	Blasting clogged water and

		sewer mains
Chevrolet 2500	1.94m x 5.64m x 2.02m	Staff vehicle
Ford F350 (2)	2.03m x 6.68m x 2.66m	Staff vehicle

2a. Detail fuel and hazardous material use:

Fuel	Number of Containers and Capacity of Containers	Total Amount of Fuel (in Litres)	Proposed Storage Methods
Diesel	1x 20,000 L	The City's fuel tanks are filled by Uqsuq on a regular basis. In 2011, all City vehicles used 392,352.62 L of Diesel.	Outside storage in a tank
Gasoline	1x 5,000 L	The City's fuel tanks are filled by Uqsuq on a regular basis. In 2011, all City vehicles used 88,709.51 L of Gasoline.	Outside storage in a tank
Aviation fuel	N/A		
Propane	N/A		
Other			
Hazardous Materials and Chemicals		**Total Amount of Hazardous Materials and Chemicals (in Litres)**	
Hydrofluosilic Acid		85x 135 L Drums	Small amounts are stored inside the Water Treatment Plant in a concrete berm. The majority is stored outside in a sea can.
Chlorine Gas		63x 150lbs Cylinders	Stored in a secured sea can outside Water Treatment Plant
Caustic Soda		20x 205 L Drums	Stored inside Water Treatment Plant in a concrete berm
Sodium Hypochloride		8x 205 L Drums	Stored inside Water Treatment Plant in a concrete berm
Sodium Hypochloride		10x 20 L Containers	Stored inside Water Treatment Plant in a concrete berm

2b. Describe the proposed Spill Prevention Plan.

Where possible, the City uses spill containment structures/tanks where fuel and chemicals are being stored. The City's Spill Contingency Plan is attached in Appendix C.

3a. Detail the anticipated daily water consumption rates

Daily amount (m^3)	Proposed water retrieval methods	Proposed water retrieval location
< 3,013 m^3/day (<1,100,000 m^3/year as per the terms of the City's Water License)	Raw water from Lake Geraldine is gravity fed to the Water Treatment Plant through a 360m long, 400mm diameter high-density polyethylene insulated pipe protected by a gauge metal jacket. To prevent the water in the pipe from freezing, a recirculation line injects tempered water (7°C) into the 400mm dam intake main at the Access Vault on the downstream side of the dam.	Lake Geraldine Dam

3b. Have you applied for a water License with the Nunavut Water Board?

■ **YES** ☐ **NO**

If yes, what class of licence?

■ **Class A Water Licence** ☐ **Class B Water Licence**

SECTION 6: WASTE DISPOSAL AND TREATMENT METHODS

1. List the types of waste associated with the proposed project activities:

Type of waste	Projected amount generated	Method of Disposal	Additional treatment procedures
Sewage (human waste)	2230 m^3/day	Preliminary and primary treatment is provided by Wastewater Treatment Plant, where sewage goes through a manual inlet screen, mechanical auger screens, and a Salsnes Filter (primary filter) before it is discharged into the environment.	The sewage lagoon is used only for backup when the mechanical system is shutdown for either emergency or planned maintenance.
Greywater	Not Applicable		
Solid non-hazardous residential and commercial waste, including:	235m^3/day	Household waste is piled, compacted and covered with cover material, such as crushed wood waste.	

Paper Plastic Organics Metal			
Bulky Items/ Scrap Metal Scrap metal Appliances Mattresses Wood Tires	2.9m^3/day	These items are separated from the main garbage pile and stored in designated locations within the landfill. The scrap metal is sorted, bailed (when equipment is available) and then stored until it can be sent south for recycling. Tires are stored until they can be shipped south. Appliances are drained of fluids (e.g. Freon) before they are stored. Mattresses are stockpiled and stored separately. Scrap wood is segregated, crushed and used as cover material.	
Overburden (organic soil, waste material, tailings)	1.7m^3/day	The sludge generated by the wastewater treatment process falls into a trailer located directly below the primary treatment room of the Wastewater Treatment Plant. The trailer is unloaded in a designated area at the West 40 Landfill every second day. A pilot program for sludge treatment has completed in 2009 and found that a freeze-thaw dewatering and composting process provided effective treatment for the City's sludge. Unfortunately, significant space constraints at the West 40 landfill have limited the City's ability to fully implement this process.	
Hazardous waste	0.02m^3/day	Hazardous waste is segregated and stored	

Batteries, Fluorescent Bulbs, Propane Cylinders, Paint		in designated areas until it can be shipped south to a hazardous waste disposal facility.	
Other: Animal Waste	0.02m^3/day	Animal waste is buried in the garbage pile so that it does not attract animals and birds.	

2. Describe the proposed Waste Management Plan.

The City has undertaken the Iqaluit Waste Management Project, which involves extensive public consultation and technical analysis to develop a new solid waste management plan and identify a new solid waste management site. The project also involves the development of a decommissioning plan for the West 40 Landfill and the update of its operation and maintenance manual. This project involves ongoing stakeholder and community consultation and communication throughout all four phases of the project:

1. Understand the problem;
2. Identify potential waste management options;
3. Evaluate alternative Solid Waste Management Program options; and,
4. Recommend preferred Solid Waste Management Programs.

In 2011, two project newsletters were distributed and two public meetings were held to engage the public and key stakeholders in the first two phases of the project. Another newsletter and public meeting are planned for 2012, to give the public an opportunity to provide feedback on the evaluation of the options and recommended program.

SECTION 7: COMMUNITY INVOLVEMENT & REGIONAL BENEFITS

1. List the community representatives that have been contacted and provide the minutes of the meetings if available:

Community	Name	Organization	Date Contacted
Iqaluit	Public consultations on the development of the 2010 General Plan	Entire community	2009
Iqaluit	Iqaluit Waste Management Project Public Meeting #1	Entire community	April 13, 2011
Iqaluit	Iqaluit Waste Management Project Public Meeting #2	Entire community	June 27, 2011

SECTION 8: GENERAL QUESTIONS

1. Will you be disturbing any known archaeological sites?

☐ **YES** ■ **NO**

SECTION 9: APPLICANT SIGNATURE

Please sign and date your application:

John Hussey	Chief Administrative Officer	October 31, 2012
Signature	**Title**	**Date**

APPENDIX A
Project Type Definitions

Access Trail: A project proposal with the objective of providing vehicular access to an area of interest involving minimal alteration to the terrain.

Advanced Exploration: A project proposal with the objective of identifying size, grade, and physical characteristics of a mineral occurrence and to assess the economic and technical feasibility of developing the mineral deposit into a producing mine

All-Weather Road: A project proposal with the objective of road construction for use in all seasons.

Bulk Sampling: A project proposal with the objective of extracting of large samples of mineralized material involving hundreds to thousands of tonnes. Samples are selected as representative of the potential mineral deposit being sampled. May involve crushing/milling (on small-scale)

Harvesting activities: A project proposal with the objective of harvesting animals, marine mammals and/or fish from their natural habitats by means of hunting or trapping for traditional and commercial use.

Marine Based Activities: Any activity occurring in the marine environment, such as vessel use associated with land-based activities or disposal at sea.

*Please note that normal community re-supply or individual ship movements not associated with land-based project proposals shall not be screened by NIRB (Section 12.12.2 of NLCA).

Mine Development: A project proposal with the objective of extracting broken rock with mineralization of sufficient grade and tonnage to sustain commercial mining operations (ore). Mining a body of ore can be achieved by either open pit and/or underground development. Mine development may involve milling. Milling involves treatment of the extracted ore through a combination of mechanical and chemical processes to selectively recover the valuable mineral.

Mineral Exploration: A project proposal with the objective of exploring an area to find geological anomalies. It involves site reconnaissance (ground and/or air) to locate broad and fiscal mineral deposits.

Offshore Infrastructure: A project proposal with the objective of building off loading facilities constructed off the shoreline and connected to the mainland of the marine or freshwater environment. Examples include a jetty, dock, or port facility.

Oil and Gas Exploration/Activities: A project proposal that includes 1) exploration, such as seismic or geological mapping, 2) drilling of oil and gas wells, 3) construction and operation of a pipeline, a gas processing plant or any oil and gas facility within Nunavut.

Pits and Quarries: A project proposal with the objective of pitting, which involves the extraction of granular material (i.e. sands and gravels) and quarrying, which involves the removal of consolidated rock (i.e. bedrock, frozen soil).

Scientific Research: A project proposal with the objective of implementing a series of site activities comprised of observation of phenomena, measurement and collection of data necessary for scientific investigation in designated areas within a limited time period.

Seismic Survey: A project proposal with the objective of conducting a survey to map the depths and contours of rock strata by timing the reflections of sound waves released from the surface. Survey site locations may be offshore (not within 12 nautical miles of any coast), near shore, and extended onshore.

Site Cleanups: A project proposal with the objective of site cleanups (includes DEW line site cleanups), which focuses on the remediation of chemically contaminated soils, stabilization of landfills and dumps, demolition/disposal of infrastructure and debris and monitoring after cleanup is completed.

Tourism Activity: A project proposal with the objective of conducting travel predominantly for recreational, sport or leisure purposes within a designated area and limited time period.

Winter Road: A project proposal with the objective of building a road for winter use by leveling and compacting surface snow and ice. Winter road is removed at end of season.

Winter Trail: A project proposal with the objective of building a trail for winter use by a single pass of a tracked vehicle using a blade, if necessary.