FINAL REPORT FOR THE NUNANMIT SAPUJJIJIIT: THE CLIMATE CHANGE ACTION PROGRAM



SUBMITTED BY:

DEBBIE NIELSEN

SUSTAINABLE INITIATIVES COORDINATOR

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INTRODUCTION

The City of Iqaluit became a member of the Federation of Canadian Municipalities' Partners for Climate Protection (PCP) in November 2002 and committed to reducing greenhouse gas (GHG) emissions from municipal operations within ten years. In March of 2003, the City completed *A Proposal for Climate Change Action* and received funding from the Aboriginal and Northern Climate Change Program to complete a 6-month project, starting in September of 2003. This report includes the results of the program and details the major tasks completed and some of the challenges faced and lessons learned while developing the program. The major work tasks include developing partnerships, researching, conducting a GHG inventory for all municipal operations, setting a reduction target, developing a local action plan for the City of Iqaluit, implementing a communication strategy and writing funding proposals.

DEVELOPING PARTNERSHIPS

The initial work for this project involved establishing contact with individuals and organizations involved in climate change-related issues to develop partnerships. The first contacts to be made were with those individuals involved in the original proposal to either inform them of the project's commencement or to establish terms and reporting requirements. Following these initial contacts, time was invested in seeking out additional project partners to exchange information on various issues.

One of the lessons learned from this project is that although the work of developing partnerships needs to be one of the first tasks undertaken, it remains an ongoing task for the duration of the project. Partners were integral to the project's success because they provided valuable information on climate change initiatives in the arctic, feedback and advice on the Local Action Plan, and support, both financial and in-kind to implement project initiatives.

The following is list of some of the main contacts established for this project. They are not listed in any particular order.

Jamal Shirley, Manager, Research and Policy Development, Nunavut Research Institute P.O. Box 1720, Iqaluit, NU X0A 0H0

Telephone: (867) 979-7290



Fax: (867) 979-4681 E-mail: jshirley@nac.nu.ca

Ken Church, Project Manager, Community Energy Systems, NRCan

1 Haanel Drive, Ottawa, ON K1A 1M1

Telephone: (613) 947-8952

Fax: (613) 947-0291

E-mail: kchurch@nrcan.gc.ca

Sandra Marshall, Canada Mortgage and Housing Corporation

70 Montreal Road, Ottawa, ON K1A 0P7

Telephone: (613) 748-2660

Fax: (613) 748-2402

E-mail: smarshal@cmhc.ca

Billie Jo Barnes, Nunavut Tunngavik Inc.

P.O. Box 638, Iqaluit, NU X0A 0H0

Telephone: (867) 975-4900

Fax: (867) 975-4949

E-mail: barnesbj@tunngavik.com

Edward Little, Canada-Nunavut Geoscience Office

P.O. Box 2319, Iqaluit, NU X0A 0H0 Telephone: (867) 979-3539, extension 5

Fax: (867) 979-0708

E-mail: elittle@nrcan.gc.ca

Elana Wilson, Inuit Circumpolar Conference

170 Laurier Ave. West, Suite 504, Ottawa, ON K1P 5V5

Telephone: (867) 979-4661

Fax: (867) 979-4661

E-mail: icc@magma.ca etw21@cam.ac.uk

Dale Robertson, Enerscan Consultants Ltd. and Federation of Canadian Municipalities

22 Julies Walk, Halifax, NS B3M 2Z7

Telephone: (902) 445-4433

Fax: (902) 457-3283 E-mail: dale@eei.ca

Jim Little, Nunavut Coordinator for Earth Day Canada and President, Foxe Basin

Contractor

P.O. Box1839, Igaluit, NU X0A 0H0

Telephone: (867) 979-3261

Fax: (867) 979-6400

E-mail: jlittle@nunanet.com

Lee Douglas, Senior Technical Advisor, Qulliq Energy Corporation

P.O. Box 580, Igaluit, NU X0A 0H0

Telephone: (867) 975-3007

Fax: (867) 975-3024



E-mail: Idouglas@npc.nu.ca

Robert Imrie, Senior Policy Advisor, Nunavut Tunngavik Inc.

P.O. Box 638, Iqaluit, NU X0A 0H0

Telephone: (867) 975-4960

Fax: (867) 975-4949 imrie@tunngavik.com

Tim MacLeod

Sr. Technical Officer Arch/Bldg - Technical Services

Department of Public Works & Services

Government of Nunavut Phone: (867) 975-5422 Fax: (867) 975-5457 tmacleod@gov.nu.ca

Scot Nickels

Director, Environment Department Inuit Tapiriit Kanatami

170 Laurier, Suite 510 Ottawa, ON K1P 5V5

Telephone: (613) 238-8181 (extension 233)

Fax: (613) 234-1991

Jen Turner

Environmental Coordinator

City of Whitehorse 2121 Second Avenue

Whitehorse, Yukon Y1A 1C2 Telephone: (867)668-8312

Fax: (867)668-8386

jen.turner@city.whitehorse.yk.ca

Grant Morrison

Advisor- Information Transfer and Research Canada Mortgage and Housing Corporation

5201- 50th Ave. Suite 806 Northwest Tower Building

Yellowknife, NT X1A 3S9 Telephone: (867) 873-2638 Fax: (867) 873-3922

Cell: (867) 444-5857

gtmorris@cmhc-schl.gc.ca

Robert Marshall Executive Director Arctic Energy Alliance #101, 5102-51st Street Yellowknife, NT X1A 1S7 Telephone: (867) 920-3333

Fax: (867) 873-0303



rmarshal@aea.nt.ca

Rebecca Jerram

Manager Community Planning, Community Planning and Lands Division

P.O. Box 272

Kugluktuk, NU X0B 0E0 Telephone: (867) 982-7653

rjerram@gov.nu.ca

John Purkis

Program Officer, Green Municipal Funds

Centre for Sustainable Community Development, Federation of Canadian Municipalities

24 Clarence Street, Ottawa, ON K1R 5R8 Telephone: (613) 241-5221, ext. 236

Fax: (613) 244-1515 jpurkis@fcm.ca

Rolf Paloheimo

Creative Communities Research Inc.

Telephone: (416) 574-0611 rolf@healthyhousesystem.com

Tim Cross

Physical Scientist

Community Energy Systems / Natural Resources Canada

1 Haanel Drive, Ottawa, Ont. K1A 1M1

Telephone: (613) 996 4804

Fax: (613) 947 0291 tcross@nrcan.gc.ca

George Paul

Winter Cities Association Telephone: (250) 561-7607

gpaul@city.pg.bc.ca

Sheila Watt-Cloutier

Chair, Inuit Circumpolar Conference P.O. Box 2099, Iqaluit, NU X0A 0X0

Telephone: (867) 979-4661

icccan@Baffin.ca

Yvonne Pandke

Coordinator, Aboriginal and Northern Climate Change Action Program

Natural Resources Canada, Ottawa

Telephone: 613 996-5289 ypandke@nican.gc.ca

John Lamb

President, Iqaluit Community Greenhouse Society

Igaluit, NU X0A 0H0



Telephone: (867) 979-2674 minsmere@nunanet.com

Sheldon Nimchuk Nunavut Construction Corporation Iqaluit, NU X0A 0H0 Telephone: (867) 979-8907 sheldon@nunanet.com

Gordon MacKay
Director of Environment & Integrated Resource Management
Department of Sustainable Development, Government of Nunavut
Iqaluit, NU X0A 0H0
Telephone: (867) 975-5917

Paul Crowley Inuit Circumpolar Conference Iqaluit, NU X0A 0H0 Telephone: (867) 979-3396

Alex Taylor
Manager, Public Works and Government Services Canada
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4646

RESEARCH

A large component of the climate change project involved conducting research on issues related to climate change, energy efficiency and sustainable development. A plethora of information is available on these subjects, however, the challenge for this project was to find resources related to the arctic. A number of organizations were able to provide valuable information from a northern perspective and they included the Inuit Circumpolar Conference, Canada Mortgage and Housing Corporation in Yellowknife, Arctic Energy Alliance, Nunavut Research Institute, and Inuit Tapiriit Kanatami.

The following a list of useful web sites and web links. It should be noted that this is in no means an exhaustive list, but rather a sampling of some of the existing sources for climate change-related information used for this project.

Government of Canada: www.climatechange.gc.ca/

Climate Change Solutions: www.climatechangesolutions.com/

International Institute for Sustainable Development: www.iisd.org/climate/

Sierra Club: www.sierraclub.ca/national/climate/



Natural Resources Canada: www.climatechange.nrcan.gc.ca/ and

www.climatechangecentral.com/

Climate Change and Health Office: www.hc-sc.gc.ca/hecs-sesc/ccho/

Transport Canada: www.tc.gc.ca/programs/environment/

David Suzuki Foundation: www.davidsuzuki.org/Climate_Change/

Environment Canada: www.ec.gc.ca/climate/home-e.html

Active Transportation

Canada's Transportation Challenge

Check Up for Clean Air

EnerGuide

Environmental Choice Program

EnviroZine - Environmental Action

Healthy Housing and Sustainability

Office of Energy Efficiency's Energy Publications

Personal Vehicle Program

Pollution Prevention - Formula for a Cleaner Environment

What You Can Do - Down to Earth Choices for Sustainable Living

Your Next Move - Choosing a Neighbourhood with Sustainable Features

CONDUCTING A GREENHOUSE GAS EMISSION INVENTORY

In October 2003, Dale Robertson, Project Facilitator for the Federation of Canadian Municipalities, came to Iqaluit to help conduct the greenhouse gas emissions inventory. Prior to Dale's visit, a considerable amount of time was invested in gathering and preparing data for the inventory. Other municipalities attempting to conduct an emissions inventory should be aware of the potential time factor involved in collecting information. For the City of Iqaluit, this required tabulating electrical and fuel consumption from actual energy invoices for every electric meter and fuel oil bill paid by the municipality over the period of one year. Since invoices for energy consumption were not inputted into a database system, tabulations were done manually for all water and sewage facilities, municipal buildings, vehicle fleet, and streetlights. The process of tabulated the required information for the inventory proved to be very time consuming.

In collecting the data for the emissions inventory, it helps to become familiar with the municipality's buildings and facilities. Also, it is also important to determine how fuel consumption is allocated for each use and how that may affect the inventory. For example, fuel for the City's vehicle fleet is drawn from bulk tanks and, therefore, consumption for individual vehicles is not recorded. As a result, it is not possible to determine vehicle fuel consumption by use or to determine individual vehicle consumption for the City of Iqaluit.



SETTING A REDUCTION TARGET

One of the challenges of setting a reduction target for the City of Iqaluit, as most likely for other municipalities participating in PCP, is justifying the target and convincing municipal staff and Council that it is achievable within the City's financial and human resource limits. Although the inventory provides a baseline for tracking future emission levels, it is difficult to justify the target before the local action plan has been developed or suggested reduction measures implemented. The challenge rests in convincing decision makers to adopt a recommended reduction target before any energy savings can be demonstrated.

In an effort to develop an appropriate reduction target, a preliminary review of potential reduction measures was conducted for the City of Iqaluit. Potential savings were estimated, but not based on any conducted assessments or verified through implementation. Based on this preliminary review, the recommendation of the Federation of Canadian Municipalities, and reduction targets set by other municipalities participating in PCP, it was recommended that the City of Iqaluit adopt a reduction target of 20 per cent.

DEVELOPING THE LOCAL ACTION PLAN

The Local Action Plan is a working document that sets out a comprehensive and integrated strategy to engage City Council, municipal staff and community stakeholders in reducing the City's GHG emissions. The plan outlines reduction goals and actions that are specific to the municipality. The recommended goals and reduction measures were developed through research and in consultation with municipal staff, community stakeholders, and organizations with expertise in issues related to climate change.

One of the lessons learned from developing the Local Action Plan for the City of Iqaluit was it is important to be clear with municipal staff and City Council that the recommended reduction actions are not meant to serve as steps for implementation. However, they are recommendations for developing an implementation plan. Also, since



the plan is a working document, it will need to be revised as reduction measures are implemented, and as the City grows and changes with time.

IMPLEMENTING A COMMUNICATION STRATEGY

The communication strategy was an integral component of the program that provided opportunities to gather information and ideas, identify project opportunities and constraints, solicit feedback on the Local Action Plan to ensure its viability and relevance, and establish commitment from municipal staff to participate in the program. The communication strategy helped increase awareness of climate change issues, and provided opportunities for municipal staff and community organizations to participate in the development of action plan ideas and steps for implementation. The strategy involved a series of meetings, an information forum and consultations with energy efficiency and climate change experts.

One of lessons learned from a communication perspective was that it is important to establish and maintain a steering committee to oversea and direct the project. Prior to the start of the project, a Sustainable Initiatives Committee was established. In October 2003, a municipal election was held and City Council changed. As a result, the Sustainable Initiatives Committee dissolve and was not reestablished. One of the recommendations made in the Local Action Plan is that a committee be struck to see the project into the implementation stage.

One of the successes of the communication strategy was the coordination of an Information Exchange Forum. The purpose of the forum was to bring a handful of people together to discuss new and existing initiatives around climate change and energy efficiency. Since there is much work being done around the territory to meet international greenhouse gas emission reduction targets, the forum provided opportunities for participants to share some of their innovation, develop a network of partners, and exchange ideas on funding options. Action plan ideas for reducing the City of Iqaluit's greenhouse gas emissions were also presented at the forum and participants had an opportunity to provide feedback.

The following is a list of key meetings organized for the purpose of communicating the objectives of this project.



Ken Church, NRCan, Ottawa - Sept. 15 and October 23, 2003

Steve Burden, Solid Waste Management Committee - Sept. 16 and December 2003

Sheila Watt-Cloutier, Inuit Circumpolar Conference (via telephone) - Sept. 17, 2003

Christopher Ives (via telephone), CMHC, Ottawa - Sept. 17, 2003

Alison Lee and Fran Carter, Iqaluit Community Greenhouse Society - Sept. 24, 2003

Tim MacLeod, Department of Public Works and Services, GN - Sept. 30 and November 26, 2003

Lee Douglas, Senior Technical Advisor, Qulliq Energy Corporation - Oct. 2, November 12 and February 17, 2004

Nehda Gonzalis, NTI, - Oct. 2, 2003

Jamal Shirley, Nunavut Research Institute - Oct. 14, 2003

Grant Morrison, CMHC, Yellowknife - Oct. 27, 2003 and February 11, 2004

WRITING FUNDING PROPOSALS

As part of City of Iqaluit's work to reduce greenhouse gas emissions, two main funding proposals were developed for a feasibility study for a sustainable arctic subdivision. The first proposal was submitted to the Federation of Canadian Municipalities' (FCM) Green Municipal Enabling Funds (GMEF). The second proposal was submitted to Natural Resources Canada's Office of Energy Efficiency request support of the sustainable artic subdivision proposal.

At FCM's Sustainable Communities Conference in Ottawa this February, it was announced that the proposal was approved for \$107,000 by the Green Funds' Board. The City is waiting for final approval from FCM's Board in early March.

Two of the main lessons learned with regards to GMEF program are:

- Establish and maintain contact with a project officer for the duration of the application process and
- Begin the application process at least six months prior to the project start date.

SUMMARY OF THE FUNDING PROPOSAL TO GREEN MUNICIPAL ENABLING FUNDS FOR A SUSTAINABLE SUBDIVISION STUDY



The City of Iqaluit submitted a funding proposal to the Federation of Canadian Municipalities' Green Municipal Enabling Funds (GMEF) for a sustainable subdivision development feasibility study in October 2003. To accommodate a rapid expansion in population, the City plans to develop a large tract of land in Iqaluit starting in 2005. This study will explore best practices to develop a sustainable arctic subdivision. In particular, it will examine sustainable options for energy-efficient housing designs, transportation, municipal infrastructure, and land-use. Recommendations for sustainable development from this project will be applied to a case study, "Area A – The Plateau", and the resulting concept plan will be used for development in 2005.

The total budget for the study is \$207,400 and the City of Iqaluit has requested \$103,700 from GMEF. Canada Mortgage and Housing Corporation is a partner in this study and committed \$50,000 to the study in the form of in-kind and cash donations. The study is expected to be completed over 7 months, with a proposed start date of January 2004. A second funding proposal was submitted to Natural Resources Canada's Office of Energy Efficiency requesting a funding contribution of \$50,000. A decision on this proposal is still pending.

The projected population growth of Iqaluit indicates an immediate need for new housing, which will in turn significantly increase the demand for energy, treatment and supply of potable water, and disposal and treatment of sewage. It is in the City's best interest from a financial and environmental perspective to explore sustainable development technologies. These will not only reduce costs and improve energy performance, but will also extend the life of existing municipal infrastructure. The planning guidelines outlined in the City of Iqaluit General Plan will provide the direction for development. However, it will be the research, financial analysis and consultation for this study that will determine the feasibility of a sustainable arctic subdivision for Iqaluit.

At present, there is a plethora of information on sustainable community design, however, neither a sustainable arctic community model nor feasibility study exists for Canada's arctic. This project will combine both a unique application of existing technology, and the adoption of new technology and knowledge to suit the distinct circumstances of this region. With the combination of the impacts of global warming and rapid population



growth, never has there been a more appropriate time to explore sustainable options for development.

Integral to the overall success and innovation of this study is a commitment to engage the public in the planning process. Since Iqaluit's population is primarily Inuit, recommendations for a sustainable subdivision development must be rooted in culturally appropriate methodologies. Considerable attention will be paid to Inuit heritage and culture when implementing the research and planning phases of this study.

This study will answer important questions about project implementation by building a "business case" for sustainable design. The "business case" will provide the City with the justification for implementing sustainable options over a conventional development. In these days of financial restraints and environmental concerns, the City of Iqaluit, like most municipalities, will benefit from more sustainable and cost saving development options. The study will provide a rationale to demonstrate the financial and environmental gains of a sustainable subdivision design.



PROJECT BUDGET

Statement of Revenue and Expenditure City of Iqaluit, *Nunanmit Sapujjijiit* P.O. Box 460, Iqaluit, NU X0A 0H0

Project Expenses and Expenditures

Experiences	Date	Amount	GST	Totals
Professional Fees for Debbie Nielsen	10/2/2003	7009.34	490.66	7500
Rental of Board Room	10/17/2003	350	24.5	374.5
Professional Fees for Debbie Nielsen	10/22/2003	7009.34	490.66	7500
Professional Fees for Facilitation	10/29/2003	\$600	\$42	642
Refreshments for Information Forum	11/4/2003	167.5	8.09	175.59
Office Supplies	11/24/2003	\$115.11	\$8.11	124.01
Professional Fees for Debbie Nielsen	11/24/2003	7009.34	490.66	7500
Professional Fees for Debbie Nielsen	12/24/2003	7009.34	490.66	7500
Professional Fees for Debbie Nielsen	1/31/2004	7009.34	490.66	7500
Professional Fees for Debbie Nielsen	2/28/2004	7009.34	490.66	7500
TOTAL				\$46,316.10
Project Revenue				
Contribution from ANCCP	July, 2003	\$14,999		
Contribution from ANCCP	Sept, 2003	\$14,999		
Contribution from ANCCP	Dec., 2003	15,003		
TOTAL	,	\$45,000		

CONCLUSION

The completion of Milestone 3 of PCP marks the completion of the City of Iqaluit's *Nunanmit Sapujjijiit: The Climate Change Action Program*. Since the original proposal for this project requested funding to complete all five Milestones of PCP, it is recommended that City seek additional funding to complete Milestones 4 and 5. This project was successful in increasing awareness of climate change issues and developing partnerships to address some of these issues. Momentum has been created within the municipality to reduce energy consumption for the City, and therefore the time is right to continue on from where this project leaves off. By taking this project into the implementation phase, the City will be able to realize some of the benefits associated with reducing energy consumption.



APPENDIX A: INFORMATION EXCHANGE FORUM MINUTES

INFORMATION EXCHANGE FORUM CLIMATE CHANGE ACTION PROJECT, CITY OF IQALUIT FRIDAY, OCTOBER 24, 2003, 9:00 – 3:30 PM PARNAIVIK BUILDING, SECOND FLOOR

IN ATTENDANCE: Jamal Shirley, Nunavut Research Institute, Ken Church, Natural Resources Canada, Sandra Marshall, Canada Mortgage and Housing Corporation, Billie Jo Barnes, Nunavut Tunngavik Inc., Chrystal Fuller, City of Iqaluit, Edward Little, Canada-Nunavut Geoscience Office, Elana Wilson, Inuit Circumpolar Conference, Dale Robertson, Federation of Canadian Municipalities, Jim Little, Earth Day Coordinator and Foxe Basin Contractor, Geoff Baker, City of Iqaluit, Lee Douglas, Qulliq Energy Corporation, Robert Imrie, Nunavut Tunngavik Inc, Debbie Nielsen, City of Iqaluit

FACILITATOR: Lorraine Thomas

The Information Exchange Forum began at 9:05 am with introductions. Each participant was asked to state what they would like to get from the session. The following are some of those comments:

- to learn about energy-related activities in Nunavut and to collaborate with other organizations
- to expand involvement in climate change issues
- to make climate change a high priority within organizations
- to determine what can be done about climate change at the local level
- to find ways to work together to reduce greenhouse gas (GHG) emissions
- to ensure waste management is included in today's discussion
- to see the development of integrated designs that take on a holistic approach
- to learn what the issues and priorities are related to climate change

At 9:20 am, Ken Church, Project Manager for Community Energy Systems, Natural Resources Canada gave a presentation on Community Energy Systems. A copy of his



presentation is available (just phone Debbie Nielsen at the City of Iqaluit). Some of the key points from Ken's presentation are as follows:

- Community Energy Planning (CEP) involves managing the use of energy within a community at the planning and design stage
- CEP considers energy use in a holistic manner
- All costs associated with energy use are considered, including social, economic and environmental costs
- A community is a defined area and not necessarily an entire city or town
- CEP implementation is achieved by a team of skilled resources and with a longterm guiding plan; it requires the following 5 steps:
 - 1. Create a vision: Where do you want to be?
 - 2. Assess the status quo: Where are you now?
 - 3. Develop the goals associated with the vision: What do you need to meet your vision?
 - 4. Back cast from the goals to the status quo: What steps need to be taken?
 - 5. Develop programs and then projects
 - 6. Implement and monitor
- A community energy system will increase wealth, reduce GHG emissions and reduce expenditure
- A community energy system will encourage building contractors to do things more efficiently and improve building designs by adopting a holistic approach
- Case Study: Arviat, Nunavut: recovered waste heat from diesel engine jacket and exhaust to supply local school, hotel and college
- NRCan and other federal web sites:

Buildings Group – C2000, R2000, Green Building Challenge, Detailed Design Software: http://www.buildingsgroup.nrcan.gc.ca

Office of Energy Efficiency – Energuide, Energy Innovators Initiative (\$), Federal Buildings Initiative, ANCAP: http://oee.nrcan.gc.ca



Renewable Energy & Electrical Division –Renewable Energy Deployment Initiative, Wind Power Production Incentive, Renewable Energies Technology Program: http://www.nrcan.gc.ca

Canada Mortgage and Housing Corporation – Provides technical advice or involvement at a research level, and organizes design charettes: http://www.cmhc-schl.gc.ca

Infrastructure Canada –Infrastructure Canada Partnership, Municipal Rural Infrastructure Fund, Canada, and Strategic Investment Fund: http://www.infrastructurecanada.gc.ca

Environment Canada – EcoAction Community Funding Program: http://www.ec.gc.ca

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A round table discussion was held from 10:30 – 12 noon. Everyone was given an opportunity to discuss their initiatives and interests.

Chrystal Fuller and Debbie Nielsen, City of Iqaluit

- The City has amassed funds for a \$50 million infrastructure program and received funding from Aboriginal and Northern Climate Change Program to hire a Sustainable Initiatives Coordinator, Debbie Nielsen, to develop a Local Action Plan to reduce GHG emissions for the City
- The City has submitted a proposal to Green Municipal Enabling Funds to conduct
 a feasibility study to build a sustainable subdivision development, which is
 intended to be a model for other arctic communities
- The City is interested in partnering with organizations within Iqaluit to reduce GHC emissions and developing a sustainable subdivision design

Jamal Shirley, Nunavut Research Institute

 The Nunavut Research Institute is involved in research issues related to the impacts and adaptations of climate change



- C-CIARN North is a national network that brings people and organizations together to research Canada's vulnerability to climate change, to help understand the impacts of climate change in the north, and to develop adaptation strategies
- Completed research will help NRI determine where to focus its efforts
- C-CIARN North has a web site, mailing lists, workshops on-line, and databases
 of information and contacts
- Web sites: <u>www.c-ciarn.ca</u> or <u>www.taiga.net/c-ciarn-north</u>

Sandra Marshall, Canada Mortgage and Housing Corporation (CMHC)

- CMHC is a Federal Government housing agency responsible for administering the National Housing Act, designed to aid in the improvement of housing and living conditions in Canada
- CMHC organizes and facilitates design charettes and conducts research
- Research reports with a northern focus are available on-line
- Web site: <u>www.cmhc-schl.qc.ca</u>
- Information is available on mechanical systems, best practice options for architects and affordable housing

Ted Little, Canada-Nunavut Geoscience Office (CNGO)

- CNGO would like to see Iqaluit as a model for 'how to do things right' by ensuring our development is based on best practices
- Climate change is a second priority for CNGO
- CNGO can play an advisory role and undertake small research projects, such as how climate change will effect the Iqaluit airport
- CNGO can bring key research organizations together
- CNGO is "people" driven and can therefore push their mandate to focus on climate change

Elana Wilson, Inuit Circumpolar Conference (ICC)

- ICC was founded in 1957 in response to rapid environmental change and includes Canada, Greenland, Iceland, and the US
- Its mandate is to deal with climate change and how it effects Inuit lifestyle



- ICC has been successful in representing the Inuit on issues related to climate change and how it will impact their lives
- ICC plans to approach climate change proactively and offer solutions
- ICC is releasing a document on Arctic Climate Impact Assessment
- ICC will have a new office opening in Iqaluit in January 2004

Please note: Chyrstal Fuller commented on ICC's partnership with the City for their Climate Change Action Program and noted that ICC was instrumental in helping the City get their funding from Aboriginal and Northern Climate Change Program. She also acknowledged the Federation of Canadian Municipalities' partnership role. She extended her thanks to both organizations for their support.

Jim Little, Earth Day Canada and Foxe Basin Contractor

- Jim has completed a considerable amount of research on waste management, has attended a trade show and visited the waste management facility in Halifax, Nova Scotia
- He has presented a number of waste management documents to the City and would like to see them adopt a waste management plan
- Ken Church commented that there needs to be a coordination of departments and senior staff to make some decisions and plans in waste management

Geoff Baker, Department of Engineering, City of Iqaluit

- The Engineering Department has approximately 30 projects planned
- Geoff would like to see his department work more closely with Planning and Lands and explore ways to conserve energy

Lee Douglas, Qulliq Energy Corporation

- Igaluit consumes one third of all energy used in Nunavut
- Igaluit consumes 50 million liters of fuel per year
- Nunavummiut consume the largest amount of energy per capita in Canada and Canada is the third largest consumer of energy in the world
- Qulliq Energy Corporation (QEC) has taken on a mitigation role



- QEC has been mandated by the government to create an energy strategy that is linked to other strategies in the territory
- The Deputy Minister Steering Committee is overseeing the strategy with input from other organizations
- There are a number of interesting initiatives underway: a wind generation review, 8 operating district energy systems in the territory with plans in place for more, and a proposal to use waste heat from NPC to heat Iqaluit's new hospital
- The Memorandum of Understanding between Canada and Nunavut will soon be signed off and will outline specific priorities related to climate change
- Qulliq's priorities are hydro projects (a feasibility study was recently completed), wind generation (Environment Canada is creating a wind map to show potential for wind energy), and a new Nunavut Energy Centre
- Qulliq can collaborate with the City of Iqaluit on monitoring climate change initiatives, community energy planning and in the area of policy development

At 1:30 pm Dale Robertson, of the Federation of Canadian Municipalities gave a presentation on the Partners for Climate Protection (PCP). The follow are some key points from his presentation:

- Partners for Climate Protection is a partnership between the Federation of Canadian Municipalities and the International Council for Local Environmental Initiatives
- PCP helps municipalities reduce GHG emissions and provides inspiration to meet national reduction targets
- Iqaluit became the 100th municipality to join PCP; presently there are 110 municipalities participating in PCP
- PCP encourages participating communities to achieve 5 milestones to meet their reduction targets:
 - ✓ Milestone 1: Taking stock complete a GHG inventory for all municipal buildings and vehicles (Iqaluit is presently working to complete its GHG inventory)
 - ✓ Milestone 2: Setting a reduction target
 - ✓ Milestone 3: Developing a local action plan



- ✓ Milestone 4: Implementing the plan
- ✓ Milestone 5: Measuring progress

Following Dale's presentation, Debbie Nielsen gave a brief presentation on some initial ideas the City has developed for its Local Action Plan for reducing GHG emissions (Milestone 3). A group discussion ensued and the following are ideas and comments generated from that session:

- Put regulating thermostats in public and government housing
- Follow up with public participants regarding GHG issues
- The City of Igaluit should get involved in the Memorandum of Understanding
- Establish a community group to monitor and provide guidance for reducing GHG emissions
- Ensure that a vision and plan are well in place before tackling any action items to reduce GHG emissions
- GHG emission audit should include emissions created by planes to bring resources into Iqaluit
- Everyone should work to make climate change an organizational priority instead of a individual priority
- Solicit university support to do research on climate change and have an appointed university chair to work on global warming issues
- Attempt to change the way people think by taking some immediate action: a positive process will help drive future change
- Support local initiatives
- Help enable the private sector to reduce GHG emissions
- Develop a public education campaign
- Develop a solid waste management strategy for the City of Iqaluit
- Create forums that will influence decision makers on these issues
- Create a Nunavut Energy Centre
- Create an information network for climate change
- Secure more human resources to work on climate change issues
- Build internal capacity to work on climate change issues
- Make the statement that the people of Nunavut are working to meet national reduction targets



Involve children and youth in climate change initiatives

The Information Exchange Forum finished at approximately 5:00 pm.