

Blueprint for Action  
on Housing

# Reducing the Costs of Housing

Engagement Tool

Nunavut Housing Corporation



# Introduction

The Nunavut Housing Corporation (NHC) is leading the development of an Action Plan to address Nunavut's housing crisis – the Blueprint for Action on Housing (BPAOH). The BPAOH will serve as a strategic action plan to be implemented over the next ten years. The Action Plan is a GN-wide perspective on the issues, solutions, and actions required to address housing challenges in Nunavut.

To inform the development of the BPAOH, the NHC has been carrying out departmental engagement sessions –supplemented by interviews and small focus groups – from April 1- June 17. The first round of engagement involved over one hundred participants from across the GN and other stakeholder groups.

This report provides a summary of the Issues – Challenges and Potential Solutions that should be addressed in the BPAOH. The table at the end of the report will be the focus of second round of engagement scheduled from May 30 – June 3, 2016. **Departments are asked to review the table and consider what concrete actions could be taken (or are already being taken) to address Nunavut's housing issues.**

NHC thanks you for your continued participation in developing a Blueprint for Action on Housing.

## Goal 2: Reducing the Costs of Housing

The cost of housing construction in Nunavut is very high. On average, construction costs in Nunavut are nearly three times higher than in the Greater Toronto Area. Furthermore, the operation and maintenance costs for social housing are significant and increasing year over year. Operating costs are mostly attributed to water, power, and sewage services, with only a small percentage of these costs being recovered through rental revenues.

Nunavut's pool of skilled labourers, particularly in the areas of construction, maintenance and administration of housing and related infrastructure, is small. This impairs the ability of the NHC to maintain its buildings, limits the capacity of the construction industry to build more private dwellings and in some cases, prevents individuals from purchasing homes due to high maintenance costs.

### Topics for Discussion

The Nunavut Housing Corporation (NHC) proposes that Reducing the Costs of Housing will rely on **strengthening local workforces** in construction, maintenance, and administration of housing and related infrastructure; **increasing technological innovation** to build and maintain housing more efficiently; and on improving **understanding of the true costs of service delivery**.

### Workforce Development

#### a. Issues

Housing construction costs in Nunavut are very high – on average, they are 3 times higher than construction costs in the Greater Toronto Area. In part, housing and infrastructure costs in Nunavut are high due to the **geographic remoteness** of communities and a **short building season**. But housing and infrastructure construction, as well as maintenance and administration costs are further inflated by a **lack of skilled workers across the territory**.

There is a strong need to grow Nunavut's skilled workforce in order to reduce the costs of housing. A strong local workforce will enable the GN to build and maintain housing more efficiently and therefore reduce these costs. **Increased local employment would also benefit the economy and contribute to increased self-reliance among Nunavummiut.**

On one hand, there is need for skilled labour in housing construction, maintenance and administration. There is a need for more programs that **prepare Nunavummiut for employment in construction and related trades**. There is also a complimentary need for job development and retention across the territory so as to increase the self-reliance of Nunavummiut and reduce the demand for social housing, which currently accounts for more than half (57.5%) of all housing Nunavut.

## b. Challenges

Nunavut's short construction season limits opportunities for integrating **apprenticeship opportunities**. There are few incentives for contractors to fulfill local workforce development obligations. Communities have **limited capacity** to provide the resources required (e.g., equipment) to support on-the-job training.

There are few **education and training opportunities** in most communities and most programs are located in regional centres, requiring people to leave their homes and families. A lack of available housing, incentives, and related supports for non-residents to pursue programs outside their community present further **barriers in accessing education and training opportunities**.

The **K-12 school system** is challenged to prepare students for higher education and employment opportunities. High truancy rates coupled with low graduation, **numeracy and literacy levels** limit the preparedness of youth for employment.

A significant constraint to the effectiveness of workforce planning and workforce development initiatives is the **lack of labour market information (LMI) and analysis**. Missing or incomplete labour market information (LMI) representing the capacities and needs of both the **private sector** and **government** prevents an accurate picture of the employment, training and education gaps across the territory. This limits effective planning and resource allocation for programs and services to address these gaps.

There are also a number of social challenges stemming from Nunavut's history with **residential schools** and poverty that prevent more Inuit from accessing education opportunities.

## c. Potential Solutions

Identification of **opportunities for partnerships and better coordination** between departments involved in local workforce development (e.g., DFS, EDT, NAC, EDU) is key to strengthening Nunavut's capacity to meet the demands for housing and associated infrastructure.

Participants proposed the development of a **comprehensive training continuum** that outlines all existing programs and spending that support, or could be used to support

and sustain ongoing training and skills development. The continuum would align with adult education, career development, income support, etc., and would help **identify training gaps** through tools such as **surveys**. This continuum should integrate a **single point of access** for incoming trainees, workers and employers to manage their progress and **avoid duplication of efforts** by multiple departments and agencies.

Participants stated there is need to decentralize training and trades opportunities by **establishing more training initiatives / programs** across the territory, such as **mobile apprenticeship/training programs**. These programs should be **Nunavut-specific and flexible** to meet the needs of participants and employers. A number of incentive approaches exist such as **wage subsidies** and job **grants**.

Participants noted that **community partnerships** with RIAs, LHOs and other local/regional organizations should be established to enhance **municipal training programs** to build hamlet capacity in a number of needed areas such as infrastructure financing and maintenance.

It was suggested that NAC, DFS, and NHC continue to work together to enhance program opportunities across communities, through **work-readiness initiatives** such as the **G.R.E.A.T.** program. In-high school co-op and “college foundation” programs can foster skills to better prepare students for trades entrance exams and post-secondary education.

Approaches to enhancing the availability and usability of Labour Market Indicators (**LMI**) were suggested by participants. One recommended option is to establish a formal **inter-departmental forum** with a mandate and workplan of tasks to address gaps in LMI, including: collection of data; housing data in a central accessible place; and analysis of these data to uncover and report on trends, gaps, and actions needed to promote workforce development. It was also noted that a review of **LMI initiatives in other jurisdictions** may help to inform Nunavut’s path forward.

Another identified approach was the establishment of **“career pathways”** as a planning tool to both i) outline the education and training requirements for careers in demand and ii) to guide program offerings through NAC, DFS, EDU and other key stakeholders. It was suggested that DFS has done some work to create a **Career Development Framework** that may add value to this approach.

Participants raised dedication of more resources to community-based **career development / liaison officers** as an opportunity to help connect more graduates to potential employers. These staff can also fulfill a role in collecting **community-level data** to help reduce labour market information gaps and focus marketing and human resource efforts on **“in demand” careers** within the territory.

Government **partnerships with the private sector** (e.g., mining companies/ contractors) were another suggested approach to further plan for and extend training and employment opportunities to develop local and regional workforces. For example, **changes to procurement and project planning processes** may encourage **increased local hiring and retention** of labour for housing development.

## Technological Innovation

### a. Issues

As noted, the costs of housing in Nunavut are significantly higher relative to the rest of Canada. There is a need to explore how technological innovation can help reduce the costs associated with building and maintaining housing. Given the high cost of utilities across the territories, more **energy efficient homes** and more sustainable energy solutions could have large impacts on the costs of housing over the long-term.

### b. Challenges

Participants noted that across the territory, there is a **shortage of skilled maintenance workers** and **lack of training** and other resources needed to take advantage of current technologies.

There is a **lack of understanding among public housing tenants of the purpose and utility of certain housing technologies** (e.g., air exchange systems, digital thermostats) and why they are important. There can be a reluctance to use and challenges with maintaining existing or new technologies, which adds to the wear and tear on housing and ends up perpetuating O&M costs.

Session participants strongly agreed that any new technology requires **tenant / owner buy-in** to be effective. That is, the occupant of the house must understand the importance of basic home repair, maintenance, energy savings, etc. in order for the technology or tool to be effective. **Insufficient data** on technological requirements further perpetuates needs and costs.

### c. Potential Solutions

**Greater collaboration** between GN departments and agencies on potential projects will enable more economical construction and maintenance options. Key suggested players include NHC, NAC, CGS, and QEC. As an example, it was discussed that NHC should collaborate with other departments in order to obtain more accurate and complete data on maintenance costs, among other factors.

It was suggested that **partnerships with the private sector** should be encouraged in order to achieve energy efficiencies.

Participants further recommended that **analysis of best practices and potential standards** from other jurisdictions be undertaken to help determine alternatives to build and maintain housing more efficiently. Any technological improvements proposed should be **piloted** first to test their applicability in the North and Nunavut, specifically. The **benefits, risks and costs** (construction and O&M), of specific technologies would require further analysis, using measureable data.

It was also suggested by participants that focus be directed on first improving current technological tools before turning to adopt other newer technologies that must be integrated and managed. Important questions to ask are: **“Is the technology ‘doable’ for Nunavut?” “Is it ‘learnable’?” “Is (use of) the technology ‘maintainable’?”**

For example, it was suggested that **“passive” technologies** which require minimal maintenance, follow-up or training may be applicable to housing in Nunavut. **Incentives** may also be productive to encourage owner/ tenant “buy-in” or support such as offering rewards to energy efficient households based on **utility (heat and water) household consumption monitoring**. In addition, it was noted that **consultation with communities (e.g., Elders Advisory Committee)** on the **cultural relevance and usability** of any new technology would inform decision-making and steps required for implementation.

Other innovative products such as quick assembly and high **energy efficiency** doors, windows, lighting, and structural insulated panel (SIP) prefabricated components may be worth piloting. To build territorial skill capacities to implement and maintain technologies, participants suggested **training and specialized courses / programs** such as maintenance, carpentry, and oil burner mechanics.

Lastly, participants raised an interest in further exploration of **alternative energy sources**, and technologies to foster **climate change adaptation**. QEC for example, is looking into the use of solar panels, and suggested harnessing waste heat in all communities and a forthcoming net-metering policy as opportunities for NHC and small IPPS.

## Municipal Financing

### a. Issues

The operation and maintenance costs for social housing are significant and increasing year over year. A contributing factor in this is the municipal financing structure, or more specifically the cost of water, power and sewage services. According to the NHC, water and sewage costs account for nearly a third (\$42.1 million) of all public housing costs annually, with only a small percentage of these costs being recovered through rental revenues. Financial assistance from the GN to municipalities to offset the cost of water and sewer services has not increased since 1994.

## b. Challenges

There are challenges in planning for municipal financing that are unique to each community. Expenditures are categorized and included in community sustainability plans but it is **difficult to determine priorities for** the effective and equitable allocation of funding across the 25 communities. A **lack of coordination and oversight** results in high costs to the NHC for municipal services that support housing. There is also a lack **of clear service delivery standards** for services such as water available from municipalities on issues such as spillage and overfilling. NHC requires this information in order to adjust the design of housing units.

**Capacity issues** at the community level due to low recruitment, high turnover and lack of training impact service delivery effectiveness and efficiency. Issues with maintenance, infrastructure, qualified staff, and scheduling at the community level affect GN departments such as CGS who are responsible for supporting municipal planning processes.

## c. Potential Solutions

The session participants discussed potential opportunities to investigate ways of **increasing private ownership** to alleviate pressures on NHC. It was suggested that there be **multiple partners (government and private)** to offset costs, including collaboration with RIAs for services on Inuit owned lands as one possible option.

Participants suggested that **profiling demographics** will help to identify gaps and areas to focus to encourage **expansion of the private market / market rents**. Large communities where demand and costs are highest make sense to target first. It is possible that different housing tenures (e.g., young professionals, individuals enrolled in home ownership programs) will lend themselves to market rental structures more easily.

It was suggested that **more efficient delivery of services** will potentially reduce high housing service delivery costs to Hamlets and the NHC. **Greater oversight of rate charges and operating costs** may provide transparency on hidden subsidies and true costs to NHC and others. For example, recalibration of water meters may be one mechanism worth piloting.

The participants shared that **municipalities** also need to come forward and identify **challenges with current financing models** they experience and **specific training needs** with currently operating forums to provide a platform to discuss these opportunities.

Participants agreed that **borrowing best practices** from communities that have been successful in managing their budgets will help other communities to become more efficient.



Lastly, a program review of the [Water Sewer Service Subsidy Policy \(WSSSP\)](#) was conducted in November 2015 to better understand how the transparency of the subsidy and its allocation can be improved. CGS' subsidy for infrastructure has increased based on need (population) and there is an impetus to review the criteria for determining subsidy levels for water and sewage, and rates charged to NHC. A working group composed of municipal, CGS, and NHC staff will be established to begin the implementation of these recommendations. It was suggested that this working group and the recommendations it will implement will assist in providing a solution to this challenge.

The following tables provide a summary of the issues and solutions that were raised in the round one engagement sessions, as well as action items and roles for their implementation (TBD during round 2), for each topic of discussion. There was general consensus from participants on the identified issues, potential solutions and action items presented below. The purpose of round two is to confirm / validate what we heard in round one and further develop action items, roles and responsibilities, and timelines for the Blueprint for Action on Housing (BPOAH).

**Workforce Development**

Issue / Challenges	Potential Solution(s)	Action Item(s)	Existing Initiatives	Parties Involved in Implementation & Lead/Support	Oversight Committee	Timeline
<p>A lack of skilled workers inflate housing and infrastructure construction, maintenance and administration costs.</p> <p>Nunavut's short construction season and lack of appropriate compensation for skilled trades (e.g., multi-residential tradespersons) limits opportunities for integrating apprenticeship opportunities.</p> <p>There is a need for more programs that prepare Nunavummiut for employment in construction and related trades.</p> <p>There is lack of a coordinated approach across government and other agencies to enhance workforce development.</p>	<p>-Another identified approach was the establishment of "career pathways" as a planning tool to both i) outline the education and training requirements for careers in demand and ii) to guide program offerings through NAC, DFS, EDU and other Key stakeholders. It was suggested that DFS has done some work to create a Career Development Framework that may add value to this approach.</p> <p>-Participants proposed the development of a comprehensive training continuum that outlines all existing programs and spending that support, or could be used to support and sustain ongoing training and skills development. (This continuum should integrate a single point of access for incoming trainees, workers and employers to manage their progress and avoid duplication of efforts by multiple departments and agencies.)</p>	<p>-Conduct a gap analysis / develop tools that would help identify training gaps in the continuum, such as surveys.</p> <p>-Build more supports for pre-trades training and make the process (i.e., along the training continuum) more transparent.</p> <p>-Develop a 'joint' website dedicated to linking all of the programs, as well as cross training of frontline staff on all of the various departmental programs (i.e., 'one portal' for clients).</p> <p>-Develop an approach for NHC and CGS (MTO / municipalities) to partner to create work coop terms and to provide apprenticeship opportunities.</p> <p>-Establish a wage incentive program for skilled workers to come to Nunavut to provide training/supervision of apprentices.</p>	<p>-NHC coordinates the training, mentoring, development and staffing opportunities for Nunavut Land Claim Agreement beneficiaries within NHC. An employment succession plan to establish a long-term path for Inuit employees to progress through NHC positions is under development.</p> <p>-NAC has committed to increase post-secondary and apprenticeship opportunities in all occupational categories with an emphasis on workforce development - including Pre-trades, Adult Basic Education, College Foundations, and Pathway to Adult Secondary School Diploma programs.</p> <p>-NAC is working to establish an Equipment Training Centre and Mine Training Centre to expand training opportunities to increase employment in the mining sector.</p> <p>-NAC has received accreditation for the Oil Burner Mechanic, Construction Electrician, Plumbing, Housing Maintainer, and Carpentry Programs. Over the next few years, the College will prepare for accreditation of Welder Millwright, Heavy Duty Equipment Technician and Automotive Technician programs in both apprenticeship and pre-apprenticeship.</p>			

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<p>There are few education and training opportunities available; most programs are located in regional centres, requiring people to leave their homes and families.</p>	<p>-Participants stated there is need to decentralize training and trades opportunities by establishing more training initiatives / programs across the territory, such as mobile apprenticeship/training programs.</p> <ul style="list-style-type: none"> <li>o These programs should be Nunavut-specific and flexible to meet the needs of participants and employers.</li> <li>o A number of incentive approaches exist such as wage subsidies and job grants.</li> </ul>	<p>-It was suggested that NAC and NHC continue to work together to enhance program opportunities across communities, through work-readiness initiatives such as the G.R.E.A.T. program.</p>	<p>-DFS plans to implement program and policy changes that emerge from revisions to the Social Assistance Act and the Apprenticeship, Trades and Occupations Certification Act.</p> <p><b>GN Business Plan Priorities (2016-19)</b></p> <p>-With NAC DFS has been working to implement the Getting Ready for Employment and Training (GREAT) work readiness program.</p> <p><b>-DFS Career Development and Income Assistance</b> branches have committed to improve services and supports to increase the work readiness capacity of income assistance clients. DFS continues to raise awareness of income assistance programs and plans to undertake reviews of the Social Assistance Act and the Apprenticeship, Trades and Occupations Certification Act.</p>			
<p>A lack of available housing, incentives, and related supports for non-residents to pursue programs outside their community present further barriers in accessing education and training opportunities.</p> <p>The K-12 school system is challenged to prepare students for higher education and employment opportunities. High truancy rates coupled with low graduation, numeracy and literacy levels limit the preparedness of youth for employment.</p>	<p>-Dedicate more resources to community-based career development / liaison officers as an opportunity to help connect more graduates to potential employers.</p> <p>-Develop more primary and secondary school engagement programs. Co-op, summer student, and "college foundation" programs can foster skills to better prepare students for trades entrance exams and post-secondary education.</p>		<p>-Within the EIA, the <b>Sivumuaqatigit</b> division is responsible for ensuring that GN departments and public agencies implement and enhance their Inuit employment plans through delivery of training programs and services such as the <b>Sivulitqatsac Internship Program</b>.</p> <p>-Working with EIA, the <b>Department of Finance</b> is evaluating the implementation of priorities set in the GN Human Resource Strategy. The Department has committed to expand student employment opportunities in non-decentralized</p>			

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<p>Communities have limited capacity to provide the resources required (e.g., equipment) to support workforce development (e.g., on-the-job training).</p>	<p>-Build hamlet capacity in a number of needed areas such as infrastructure financing and maintenance.</p>		<p>communities and has increased participation in the <b>Summer Student Employment Equity Program (SSEEP)</b> to prepare Nunavummiut youth for employment with the GN.</p> <p>-The <b>DYS Career Development</b> branch does outreach to high schools, Community Learning Centres, and to NAC students to provide information on the Financial Assistance for Nunavut Students (FANS) programs, labour market programs and the apprenticeship program.</p> <p>-The <b>Department of Education</b> is developing policies and procedures for the Pathway to Adult Secondary School program. The <b>Curriculum and School Services</b> branch ensures that school curriculum prepares students for post-secondary education and employment.</p> <p><b>GN Strategic Plans</b>                      The <b>GN Human Resource Strategy (2014-2018)</b> sets out actions to enhance the recruitment and retention of Nunavummiut and non-Nunavummiut in order to strengthen the capacity and skills of Nunavut's public service workforce.</p>			
<p>There are few incentives for contractors to fulfill local workforce development obligations.</p>	<p>-Draft Action Plan: Research and develop plans to ensure new construction is delivered efficiently.</p>	<p>-Revise procurement and project planning processes to improve rates of local hire and retention of labour for housing development</p> <p>-Draft Action Plan: Implement Lessons Learned from the Nunavut Housing Trust Initiative. For example:                      o Use of supply ship and Erect tendering methods</p>				

Issue / Challenges	Potential Solution(s)	Action Item(s)	Existing Initiatives	Parties Involved in Implementation & Lead/Support	Oversight Committee	Timeline
<p>Missing or incomplete labour market information (LMI) representing the capacities and needs of both the private sector and government prevents an accurate picture of the employment, training and education gaps across the territory. This limits effective planning and resource allocation for programs and services to address these gaps.</p>	<p>-One recommended option is to establish a formal inter-departmental forum with a mandate and work plan of tasks to address gaps in LMI, including: collection of data; housing data in a central accessible place; and analysis of these data to uncover and report on trends, gaps, and actions needed to promote workforce development.</p> <p>-It was also noted that a review of LMI initiatives in other jurisdictions may help to inform Nunavut's path forward.</p> <p>Government partnerships with the private sector (e.g., mining companies/ contractors) were another suggested approach to further plan for and extend training and employment opportunities to develop local and regional workforces.</p>	<ul style="list-style-type: none"> <li>o Ensure incremental costs are understood and accounted for before incorporating training and other initiatives</li> </ul> <p>-Draft Action Plan: Identify additional means of supporting apprenticeships in housing construction. For example, develop means to connect journeypersons with available apprentices, and apprentices with contractors.</p> <p>-Establish a formal inter-departmental forum with a mandate and work plan of tasks to address gaps in LMI</p> <p>-Conduct a review of LMI initiatives in other jurisdictions</p> <p>Collect community-level data to help reduce labour market information gaps and focus "in demand" careers within the territory</p> <p>-Engage career development / liaison officers in collecting community-level data to help reduce labour market information gaps and focus marketing and human resource efforts on "in demand" careers within the territory.</p>	<p><b>GN Business Plan Priorities (2016-19)</b></p> <p>-DFS collects data on labour gaps and labour market needs in Nunavut in order to inform funding allocations and training activities across the territory's employment sectors.</p> <p>-Longer-term DFS priorities include a review of best practices to implement a labour market program to better connect Nunavummiut youth with employment opportunities.</p> <p><b>GN Strategic Plans</b></p> <p>Under the <b>GN Human Resource Strategy (2014-2018)</b>, the Departments of Family Services (DFS) and <b>Community and Government Services (CGS)</b> have a role to identify opportunities to recruit and hire apprentices in the skilled trades that the GN requires.</p>			

Technological Innovation

Issue / Challenges	Potential Solution(s)	Action Item(s)	Existing Initiatives	Parties Involved in Implementation & Lead/Support	Oversight Committee	Timeline				
<p>Housing supply and quality in Nunavut is limited by high building and repair/maintenance costs.</p> <p>Lack of housing supply (overcrowding) and aging infrastructure perpetuate wear and tear on buildings.</p>	<p>-Greater collaboration between GN departments and agencies on potential projects will enable more economical construction and maintenance options.</p> <ul style="list-style-type: none"> <li>o For example, it was discussed that NHC should collaborate with other departments in order to obtain more accurate and complete data on maintenance costs, among other factors.</li> </ul> <p>-Examine partnership opportunities with federal, external stakeholders to take advantage of funding.</p> <p>-Explore opportunities to adopt technologies / techniques that enable more diverse housing to be built to meet needs.</p> <p>-Analysis of best practices and potential "state of the industry" standards from other jurisdictions be undertaken to help determine alternatives to build and maintain housing more efficiently.</p> <p>-Draft Action Plan: Research and develop plans to ensure new construction is delivered efficiently.</p>	<p>-Draft Action Plan: Identify cost-saving efficiencies in the delivery of existing housing programs.</p> <p>-Draft Action Plan: Increase life cycle of existing public housing units by improving maintenance and material standards.</p> <p>-Draft Action Plan: Enhance inspection and improvement programs to expand unit monitoring and upkeep.</p>	<p>-Draft Action Plan: Participate on Nunavut Building Advisory Committee, responsible for the development of the Nunavut Building Code Regulations.</p> <p>-Conduct life cycle assessment of capital infrastructure</p> <p>-Draft Action Plan: Review NHC maintenance operations to identify cost saving initiatives</p> <p>-Draft Action Plan: Develop best practices, guides and material standards to reduce maintenance costs and increase life of housing components.</p> <p>-Draft Action Plan: Perform cost-benefit analysis on NHC Unit Condition Rating and utility databases to determine the ability to realize savings. For example, justification of supplying breakage resistance windows and abuse resistant drywall.</p>	<p><b>GN Business Plan Priorities (2016-19)</b></p> <p>-EDT has set a priority to collaborate with NHC, local governments and the construction industry to establish new standards and programs to build more energy efficient housing and infrastructure in the territory.</p> <p><b>GN Strategic Plans</b></p> <p>The <b>Parnautic Strategy</b> outlines the objective of building long-term and sustainable community and regional infrastructure required for continued mineral exploration and responsible development in the territory.</p>	<p>Key suggested players include NHC, NAC, CGS, and QEC</p>					
			<p><b>GN Business Plan Priorities (2016-19)</b></p> <p>-CGS, <b>Community Infrastructure</b> is developing a strategic plan to address infrastructure maintenance in Nunavut and has implemented a new computerized maintenance management system to track infrastructure maintenance costs, along with life cycle renewal, energy management, and GN asset inventory.</p> <p>-NHC continues to implement new financial, property management and full life cycle maintenance software to improve the management of NHC's aging public housing stock.</p>							

Issue / Challenges	Potential Solution(s)	Action Item(s)	Existing Initiatives	Parties Involved in Implementation & Lead/Support	Oversight Committee	Timeline
<p>Insufficient data on technological solutions, including applicability and requirements, further perpetuates needs and costs.</p>	<p>A recommended approach to the adoption of technological improvements is to first pilot any new technologies to test their applicability in the North and Nunavut, specifically.</p> <p>-Analyze the benefits, risks and costs (construction and O&amp;M), of specific technologies, using measurable data. Important questions to ask are: "Is the technology 'doable' for Nunavut?" "Is it 'learnable'?" "Is (use of) the technology 'maintainable'?"</p> <p>-One suggested approach is to focus on first improving current technological tools before turning to adopt other newer technologies that must be integrated and managed.</p>	<p>-QEC is looking into the use of solar panels, and suggested harnessing waste heat in all communities and a forthcoming net-metering policy as opportunities for NHC and small independent Power Producers (PPPs).</p> <p>-Examine the effectiveness of implementing 'control systems' in buildings. This tool has been successful in Iqaluit, resulting in savings and is being rolled out in Kivalliq. Similar approaches might be using temperature monitoring systems that remotely inform is there is an issue instead of employing staff to perform maintenance checks.)</p> <p>-Draft Action Plan: Research developments in innovative technology that support climate change adaptation, and energy and water efficiency initiatives.</p>	<p><b>GN Business Plan Priorities (2016-19)</b></p> <p>-EDT has committed to support communities, private industry and the QEC's Energy Management Group (EMG) in exploring opportunities for energy savings as well as potential alternative renewable energy.</p> <p>-With NHC, EDT is currently determining the feasibility of adding solar hot water systems to new and existing multiplex housing units.</p> <p>-The Department of Environment, Climate Change section is focused on community-based adaptation to climate change, including changes to infrastructure.</p> <p>-EDT and the Energy Secretariat are responsible for implementation of <b>Kuummatit – the GN's Energy Strategy (2007)</b> – to address the territory's dependence on imported fossil fuels.</p> <p><b>GN Strategic Plans</b></p> <p>The Energy Strategy sets policy and planning objectives for the GN, such</p>	<p>GN Energy Secretariat EDT QEC Environment</p>		

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<p>Lack of in-territory capacity to effectively implement, manage and use technologies is a barrier to achieving efficiencies.</p>	<p>-To build territorial skill capacities to implement and maintain technologies, participants suggested training and specialized courses / programs such as maintenance, carpentry, and oil burner mechanics.</p>	<p>-Work with the High Arctic Research Station on waste to energy systems, alternative energy systems, and other innovations</p> <p>-National Research Suppression – examine new fire suppression systems to reduce building fires</p> <p>-Draft Action Plan: Identify ways NHC can reduce administrative burden on Local Housing Organizations. For example, continue process of streamlining financial management procedures begun with the automation of utility billing.</p> <p>-Search for “passive” technologies which require minimal maintenance, follow-up or training and are applicable to housing in Nunavut.</p> <p>-Develop incentives may also be productive to encourage owner/ tenant “buy-in” or support such as offering rewards to energy efficient households based on utility (heat and water) household consumption monitoring.</p> <p>-Draft Action Plan: Improve engagement and communication with NHC’s tenants to promote a</p>	<p>as development of a new Energy Code for Retrofitting Existing Buildings. (EDT is anticipated to begin stakeholder consultations by 2019 for the renewal of the GN’s Energy Strategy.)</p> <p>Changing permafrost and ice conditions as a result of climate change require adaptations in infrastructure engineering and construction practices. The GN’s Climate Change Impacts and Adaptation Strategy – Upaiglaqtawut – sets objectives for building innovative partnership opportunities across government, communities, organizations, universities and the private sector for integrating climate change considerations into planning and decision-making processes.</p> <p>GN Business Plan Priorities (2016-19)</p> <p>-NAC works with NRI to deliver an Environmental Technology Program, which is scheduled for expansion over 2016. NAC has also committed to work with the Canadian High Arctic Research Station to build research capacity in Nunavut.</p>			
<p>There is a lack of understanding of the purpose and utility of certain housing technologies (e.g., air exchange systems, digital thermostats); there can be a reluctance to use and maintain technologies, adding to the wear and tear on housing and O&amp;M costs.</p>	<p>-Explore approaches to gain tenant / owner buy-in to enhance the effectiveness of technologies adopted by the GN. For example, academic research on Inuit preferences re: housing design to incentivize buy-in (e.g., “Arctic Inspiration Prize”).</p> <p>-Undertake consultation with communities (e.g., Elders Advisory Committee) on the cultural relevance and usability of any new technology to inform decision-making on technological applicability and steps required for implementation.</p>					



Issue / Challenges	Potential Solution(s)	Action Item(s)	Existing Initiatives	Parties Involved in Implementation & Lead/Support	Oversight Committee	Timeline
		sense of personal responsibility for conservation and unit up keep. For example, a tenant awareness campaign to engage public housing tenants and encourage proper care of their home.				

**Municipal Financing**

Issue / Challenges	Potential Solution(s)	Action Item(s)	Existing Initiatives	Parties Involved in Implementation & Lead/Support	Oversight Committee	Timeline
<ul style="list-style-type: none"> <li>Financial assistance to municipalities has not increased since 1994.</li> <li>The operation and maintenance costs for social housing are increasing year over year for water, power, and sewage services, with only a small percentage of these costs being recovered through rental revenues.</li> <li>Difficult to determine priorities for the effective and equitable allocation of funding across the 25 communities.</li> <li>NHC has difficulty establishing budgetary horizons when water and sewer rates are subject to change annually, based on municipality's need to balance the</li> </ul>	<ul style="list-style-type: none"> <li>-Examine existing municipal financing structure and the role of utility charges in reconciling municipal budgets.</li> <li>-Explore potential alternative financing models, including increased investment from the GN.</li> <li>-municipalities also need to come forward and identify challenges with current financing models they experience and specific training needs.</li> <li>-More efficient delivery of services will potentially reduce high housing service delivery costs to Hamlets and the NHC.</li> <li>-Greater oversight of rate charges and operating costs may provide transparency on hidden subsidies and true costs to NHC and others.</li> <li>-Investigate ways of increasing private ownership to alleviate pressures on NHC.</li> <li>-Using profiling demographics will help to identify gaps and areas to focus to encourage expansion of the private market / market rents.</li> <li>-Explore changes to billing methods for residential units. For example, CGS could implement a 'residential subsidy' approach similar to how QEC operates.</li> <li>-update funding formula cost drivers / inputs to reflect current realities e.g., 'forced growth' needs to be included in the fiscal budget cycle.</li> <li>-Draft Action Plan: Identify ways in which NHC can reduce administrative burden on Local Housing Organizations</li> <li>-Draft Action Plan: Review NHC maintenance operations to identify cost-saving initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>-Review the criteria for determining subsidy levels and rates charged to NHC.</li> <li>-Draft Action Plan: Review electrical rate structure and a Public Housing user pay program to rationalize costs.</li> <li>-Draft Action Plan: Continue process of streamlining financial management procedures begun with the automation of utility billing.</li> <li>-Draft Action Plan: Review rent scale and rent scale software to find ways to simplify calculating of rents.</li> <li>-Draft Action Plan: Perform cost-benefit analysis on NHC Unit Condition Rating and utility databases to determine the ability to realize savings.</li> </ul>	<ul style="list-style-type: none"> <li>-CGS is working on a formula funding review. The review found that the formula funding approach was a good one, and that other jurisdictions (NWT/Yukon) are considering adopting that approach.</li> </ul>	<ul style="list-style-type: none"> <li>Key suggested players include NHC, NAC, CGS, and QEC</li> </ul>		

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<p><b>books.</b></p> <p><b>Standards:</b></p> <ul style="list-style-type: none"> <li>There is a lack of clear service delivery standards available from municipalities on issues such as spillage and overflowing. NHC requires this information in order to adjust the design of housing units.</li> </ul> <p><b>Municipal Capacity</b></p> <ul style="list-style-type: none"> <li>Issues with maintenance, infrastructure, qualified staff, and scheduling at the community level affect GN departments such as CGS who are responsible for supporting municipal planning processes.</li> <li>Capacity issues at the community level due to low recruitment, high turnover and lack of training impacts service delivery effectiveness and efficiency.</li> </ul> <p><b>Governance</b></p> <ul style="list-style-type: none"> <li>A lack of</li> </ul>	<ul style="list-style-type: none"> <li>-Develop a service level standard in collaboration with NAM and NAMA, based on best practices for reducing operating costs. Include incentives for municipalities to control costs (as all costs are paid by GN/NHC (the only economic rate payers)).</li> <li>-One approach is for PPD rates and municipal water rates to all flow through a more robust utility rate review process. A jurisdictional scan may help guide the development of such a process.</li> <li>-Draft Action Plan: Increase life cycle of existing public housing units by improving maintenance and material standards.</li> </ul>	<ul style="list-style-type: none"> <li>-<u>Draft Action Plan:</u> Enhance inspection and improvement programs to expand unit monitoring and upkeep.</li> <li>-<u>Draft Action Plan:</u> Improve engagement and communication with NHCs tenants to promote a sense of personal responsibility for conservation and unit up keep.</li> <li>-Draft Action Plan: A tenant awareness campaign to engage public housing tenants and encourage proper care of their home.</li> <li>-Draft Action Plan: Develop best practices, guides and material standards to reduce maintenance costs and increase life of housing components.</li> </ul>	<p><a href="#">GN 2016-19 Business Plan</a></p> <p>-CGS, Community Development provides financial support to communities to develop self-reliance and improve service delivery capacities. The Community Development Fund provides communities with training and development to increase capacity in program management and delivery, monitoring and self-evaluation.</p>	<p>GN Energy Secretariat; EDT; QEC; Environment</p>		
	<p>-Investigating the level and appropriateness of</p>	<p>-Recalibration of water meters may be one mechanism worth piloting.</p>				

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<p>coordination and oversight results in high costs to the NHC for municipal services that support housing.</p>	<p>control given to municipalities in regulating and determining the costs of municipal services and land development</p>	<p>-Establish the territorial - municipal working group to begin implementing recommendations from the Water Sewer Service Subsidy Policy program reviews. (CGS, NHC, and municipalities). -Draft Action Plan: Consider the regulation of municipal services</p>	<p>-A review of the WSSP Subsidy program was conducted in November 2015.</p>			

