**NWT CLIMATE CHANGE STRATEGIC FRAMEWORK**

**&**

**NWT ENERGY STRATEGY**

**SUMMARY REPORT**

**REGIONAL ENGAGEMENT WORKSHOP**

**NORMAN WELLS, NWT**

**NOVEMBER 15-16, 2016**

****

This page intentionally left blank.

**EXECUTIVE SUMMARY**

The Department of Environment and Natural Resources (ENR) is leading the development of the NWT Climate Change Strategic Framework and the Department of Public Works and Services (PWS) is leading the development of the NWT Energy Strategy. In parallel with this work, the federal department of Indigenous and Northern Affairs Canada (INAC) is leading the development of a Northern Adaptation Strategy and Health Canada is renewing the Climate Change and Health Adaptation Program.

Given the linkages between these different initiatives, the Government of the Northwest Territories (GNWT), INAC and Health Canada collaborated to organize regional workshops across the NWT to gather input on various energy and climate change issues and concerns.

On November 15-16, an invitational workshop was held at the Legion Hall in Norman Wells. In addition to the workshop a public Open House was held during the evening of November 15th to engage with residents. A total of 45 people attended the workshop—28 were representatives of Aboriginal, community, and regional organizations, 4 were from non-governmental organizations, and 13 were from GNWT and Government of Canada departments or Crown agencies. PWS regional staff provided a tour of the GNWT’s 212 kW biomass boiler facility at the Mackenzie Mountain School. Eight participants toured the installation.

The workshop format involved several different sessions, each of which started with brief presentations, followed by breakout group discussions. The first day of the workshop focused on energy issues and through breakout groups two themes reoccured throughout all three sessions: the GNWT needs to provide more funding to support renewable energy initiatives, and partnerships across all levels of government are needed to help communities engage in energy projects and strategies.

The first session, led by PWS, outlined the NWT’s current energy system, and information on the use of new and old renewable energy technologies in the NWT. Participants stated that the feasibility of biomass, wind, hydro, especially run-of-river hydro, and solar energy sources should be explored in Norman Wells and surrounding areas, however the cost of energy should be the key driver for the GNWT when considering development of energy projects. The groups acknowledged that Traditional Knowledge is integral to community economic development as it incorporates community values into projects.

The second session opened with a presentation from the Arctic Energy Alliance (AEA) on energy efficiency, energy conservation and AEA programs. The breakout groups proposed an increase in education, awareness and communication tools to advertise energy efficiency and programs, in addition to better access to energy efficient products. Participants suggested ways the GNWT can lead by example, such as improving the energy efficiency of government buildings, and addressing energy use in public housing. It was also noted that projects need to consider local socio-economic and cultural values.

The third session focused on the NWT’s energy future. To foster and support the transition to a lower carbon economy, participants recommended reviewing and learning from projects in other jurisdictions. Biomass was strongly recommended for heating needs in the Sahtu. Solar power and run-of-the-river hydro were considered available and beneficial to most communities. It was recommended that further research should be undertaken in regards to wind, nuclear and large scale hydro. The breakout groups were largely split on the issues of carbon taxation and emissions targets and suggested that more information and consultation was needed to understand what these policies could accomplish and how they work.

The second day of the workshop focused on climate change impacts and adaptation issues. The sessions had similar topics repeated over the course of the day including: better education, communication and information sharing; more funding and capacity-building; potential loss of culture and artifacts due to the effects of climate change; potential impacts on human health due to food insecurity and natural disasters; risk of losing infrastructure, particularly transportation routes; vulnerabilities due to permafrost thaw; changes in water quantity and quality; and threats to animals and ecosystems from changing environments.

Environment and Natural Resources led the fourth session and explained climate change impacts, knowledge, monitoring and assessments. The breakout groups expressed interest in being more involved at the community level in the identification, planning, prioritization and completion of research and monitoring projects. The use of traditional and local knowledge was also a key concern, notably how it is used and by whom.

The final session explored the concepts of climate change adaptation and resilience. Participants identified air quality, food security, transportation and extreme weather as priority areas of concern regarding health and safety. Opportunities and barriers to adaptation and resilience building were identified during this session. Attendees set their key priorities in regards to climate change adaptation to be the need for stable, long-term funding to develop adaptation capacity, the need to address food security through better access to country food and supplementary local food production, and the need to understand and plan for alien and invasive species and their interactions with native species.

With the feedback received through the engagement process, the GNWT and their federal partners will continue improving and developing the various strategies that will guide energy and climate change issues moving forward.

**TABLE OF CONTENTS**

**EXECUTIVE SUMMARY . . . . . . . . i**

1. **INTRODUCTION . . . . . . . . 1**
   1. Workshop Objectives and Agenda . . . . . 1
   2. Workshop Participants . . . . . . 2
   3. Energy Site Tour. . . . . . . . 2
   4. Public Information Session . . . . . . 2
2. **WORKSHOP RESULTS . . . . . . . 3**
   1. Day 1: Energy Strategy . . . . . . 3

Session #1: Renewable and Alternative Energy Development 3

Session #2: Energy Efficiency and Conservation Initiatives . 4

Session #3: Long-term Energy and Emissions Vision . . 6

* 1. Day 2: Climate Change Strategic Framework . . . 8

Session #4: Knowledge, Monitoring and Risk Assessments . 8

Session #5: Resilience and Adaptation . . . . 11

1. **CONCLUSIONS / NEXT STEPS . . . . . . 14**

**APPENDIX A . . . . . . . . 16**

**APPENDIX B . . . . . . . . 18**

This page intentionally left blank.

1. **INTRODUCTION**

To respond to concerns about the impacts of climate change and the need to reduce fossil fuel usage, energy costs and greenhouse gas emissions, the Government of the Northwest Territories (GNWT) has committed to develop a NWT Climate Change Strategic Framework and a NWT Energy Strategy.

The Department of Environment and Natural Resources (ENR) is leading the development of the NWT Climate Change Strategic Framework and the Department of Public Works and Services (PWS) is leading the development of the NWT Energy Strategy.

In parallel with the work described above, the federal department of Indigenous and Northern Affairs Canada (INAC) is leading the development of a Northern Adaptation Strategy that will help strengthen climate change adaptation efforts in Yukon, NWT, Nunavut, Nunavik (northern Quebec) and Nunatsiavut (northern Labrador). As well, Health Canada is renewing the Climate Change and Health Adaptation Program which provides funding to address human health impacts resulting from climate change.

Given the linkages between these different initiatives, the GNWT (ENR and PWS) organized regional workshops across the NWT to gather input from Aboriginal organizations, community governments, institutions (regulatory, planning, and co-management), business and industry, non-governmental organizations, and residents on various energy and climate change issues and concerns. INAC and Health Canada provided financial and technical support to the GNWT for these workshops and had participants at most of the workshops.

On November 15-16, an invitational workshop was held at the Legion Hall in Norman Wells. A guided energy site tour of a GNWT wood pellet facility was made available to participants immediately following the first day. To engage with residents, a public Open House session was held during the evening of November 15th. A facilitator was hired to provide support during the workshop.

* 1. **Workshop Objectives and Agenda**

The main objectives for the workshop:

* Discuss content for the NWT Climate Change Strategic Framework;
* Discuss energy planning and the NWT Energy Strategy; and,
* Discuss regional concerns, priorities and actions.

The workshop started with greetings and opening remarks from the facilitator and a prayer was provided by Margaret McDonald.

After the prayer, there was a brief presentation to provide the participants with an overview of the topics for discussion and explain how the participants’ feedback would be used to help inform the various climate change and energy initiatives under development. The balance of the first day focused on energy supply, energy efficiency and energy visioning. The second day started with brief presentations from Health Canada and focused on climate change impacts, monitoring, risk and vulnerability assessments, and adaptation planning and projects.

A copy of the agenda is provided in Appendix A.

* 1. **Workshop Participants**

In total, 45 participants attended the workshop. A breakdown of the participants is below:

* 28 participants from Aboriginal , community, and regional organizations;
* 2 student participants from the Mackenzie Mountain school in Norman Wells;
* 2 participants from non-governmental organizations; and,
* 13 participants from GNWT and Government of Canada departments and Crown agencies.

A list of the participants is provided in Appendix B.

* 1. **Energy Site Tour**

Immediately following the first day of the workshop, PWS regional staff guided a tour of the GNWT’s wood pellet boiler facility at the Mackenzie Mountain School. The 212kW facility was viewed by ten participants

* 1. **Public Information Session**

During the evening of November 15th, a public Open House was held at the Legion Hall to provide information about the workshop and the various topics and initiatives under discussion. The Open House was only attended by one person and lasted from approximately 7:00 to 8:00 pm.

1. **WORKSHOP RESULTS**

The format for the workshop consisted of a series of sessions that focused on different topics. On Day 1, there were three energy sessions and on Day 2 there were two climate change sessions. Each session started with brief presentations, followed by breakout group discussions and ended with brief reports back from each breakout group to the plenary group.

The results of all the breakout group discussions were recorded. During each session, the breakout groups prepared three key messages, based on their discussion results. The results are summarized below.

* 1. **Day 1: Energy**

**Session #1: Renewable and Alternative Energy Development**

Session #1 started with two brief presentations from Public Works and Services. The first presentation, entitled “2017 Energy Strategy”, provided information on the NWT’s current energy system, including statistics on the NWT’s energy supply and usage, energy costs and greenhouse gas emissions. The priorities used by the GNWT for energy planning purposes were also mentioned. The second presentation, entitled “Renewable and Alternative Energy”, outlined the GNWT’s current renewable energy projects and provided some background on the pros and cons of using different renewable energy technologies (solar, wind, hydroelectricity, and biomass) in NWT communities.

The breakout groups used the following questions to help initiate and support their discussions:

* What do you see as most important for the GNWT to consider when assessing energy projects? (For example: climate change, local pollution, ownership, local economic impacts, direct costs to residents, etc.)
* What renewable or alternative electricity technology would be best for your community? Why?
* What renewable or alternative heating or transportation technology would be best for your community? Why?
* How should your community be involved and consulted when energy projects are being developed?

The key themes and results from this session included:

* *Using local energy sources* - Participants stated that wood and biomass should be used more for heating as there is a lot of wood available in the Norman Wells area. Traditional Knowledge could be used to find wind or hydro sites. Use of solar energy should also be increased in Norman Wells.
* *Costs* - Participants noted that the cost of energy should be the key driver for the GNWT when considering development of energy projects. Building the Mackenzie Valley Highway would help to reduce energy costs in Norman Wells, especially for transportation of wood pellets. The highway would also provide better access to local oil and gas reserves.
* *Wind -* Wind feasibility studies should be conducted for Norman Wells and locations close to the community. The Norman Wells Land Corporation is interested in exploring wind energy potential on their lands near the community.
* *Funding for local renewables-* The GNWT needs to provide more funding to collect data and conduct research into renewable energy sources near communities, especially wind energy in the Sahtu area.
* *Partnerships -* Partnerships across all levels of government are needed to help communities. Partnerships encourage the exchange of information and resources, benefitting communities.
* *Traditional Knowledge* - Traditional Knowledge is integral to community economic development as it helps to incorporate community values into projects and economic development programs.

**Session #2: Improving Energy Efficiency and Conservation**

Session #2 opened with a brief presentation from the Arctic Energy Alliance (AEA) on energy efficiency, energy conservation and AEA programs. A number of different energy efficiency measures and funding programs were described.

The breakout groups used the following questions to help initiate and support their discussions:

* What can we all do to improve our energy use?

• How would you improve energy efficiency programs (access and what they cover)?

• What can be done at the community level to improve efficiency?

• What can the GNWT do to help Northerners overcome barriers to being more efficient?

The key themes and results from this session included:

* *More education and awareness* - More awareness of renewable and alternative energy technology, and GNWT/AEA energy incentive programs are needed, especially for younger people. For youth, energy and climate change issues should be included in school curriculums to help them understand how to use energy efficiently. The GNWT and AEA should hold workshops in the communities and bring in energy experts to discuss options to help communities use less energy.
* *Communication tools -* Tools can be used to raise awareness of energy efficiency and what programs are available. Examples include: cartoons or visuals to target youth, social media, advertisement in schools, and on the land programs to promote health and well-being. Translation resources should be available to help elders with energy awareness. A plain language guide to energy efficiency and conservation would be useful.
* *Funding -* The GNWT needs to provide more funding for current energy efficiency programs and products. There was strong support for the wood stove installation program which switches out old wood stoves. These new stoves help create local jobs for people to go out and get wood.
* *Better access to energy efficient products and programs -* Local stores should be encouraged to sell energy efficient products, especially appliances. Some Housing Corporation tenants would like to have woodstoves but this is not allowed.
* *Leadership* - The GNWT, communities and individuals need to lead by example on energy efficiency. Community-based energy efficiency programs will help communities become energy leaders.
* *Local energy solutions* - It was stated that community energy projects need to consider local socio-economic and cultural values and that one size does not fit all.
* *Housing* - Government buildings should be built using energy efficient designs, furnaces and appliances. Improving older government buildings to become more energy efficient may be too expensive and not worthwhile. Some Housing Corporation programs are withheld if the resident owes land taxes. The Housing Corporation should have attended the workshop.
* *Transportation* - Less idling of vehicles would help reduce energy usage. It was noted by the NWT Power Corporation that they have a company policy limiting idling of their vehicles. AEA could subsidize vehicle warmers that run off the vehicles fuel tank and don’t require electricity.

**Session #3: Energy Visioning**

Session #3 opened with a brief presentation on what the NWT’s energy future might look like. It was noted that 25 of the NWT’s 33 communities are remote and rely on imported diesel fuel for electricity and heating. This isn’t sustainable in the long term so what should the NWT’s energy sector look like in the future?

The breakout groups used the following questions to help initiate and support their discussions:

* How should we foster and support the transition to a lower carbon economy and what kinds of initiatives will create this transformation?
* What is the role of government and partnerships in the transformation?
* Should the GNWT set greenhouse gas emissions or renewable energy targets as part of its vision?
* Should the NWT pursue larger scale hydroelectric development as well as community-based projects?

The key themes and results from this session included:

* *Carbon tax* – Opinions about carbon taxation were mixed. Many felt that taxing air pollution/carbon was a good thing, and that polluters should pay more, but there were many concerns about the cost of living in the Sahtu, how a carbon tax would increase these costs, and whether viable, renewable energy sources were available for transition. The majority of participants felt that revenues from a carbon tax should be put back into renewable and alternative energy projects and conservation initiatives.
* *Other jurisdictions –* The NWT, governments and residents should look at what other territories, provinces and circumpolar countries are doing and see how we can learn from them.
* *Alternative power sources* – Many different energy sources were brought up during the breakout sessions. Most groups felt that biomass, wind and run-of-the-river hydro were viable energy options for the Sahtu. All groups felt that investigating and understanding alternatives, including wind, biomass, hydro, solar, and nuclear, were key to long term planning.
* *Partnerships* - Ensure communities are engaged on energy projects and strategies; this could include hiring of local liaison person to help keep the community informed. Aboriginal Governments need to be equal partners in energy development. Funding should be allocated on a permanent, core-funding basis if true partnerships are desired.
* *Emissions targets:*
  + Groups were divided on the idea of setting emissions reduction targets – ranging from setting a target for the NWT and trying to meet it, to the NWT not being ready to set a target;
  + Some other suggestions included setting a target that focuses on individuals (personal accountability), setting a target based on real, viable renewable energy projects that will realistically achieve this goal, and setting community-specific targets, rather than regional/territorial targets; and,
  + More information and consultation is needed to understand how energy policies (e.g., carbon tax, targets, economy) fit together and what they can accomplish.
* *Hydro projects* – There was general support for smaller, run-of-the-river hydro projects in the Sahtu, but not for larger, river-damming projects. Attendees felt that people living in other regions should determine whether larger scale projects should go ahead in their regions, but that cultural and environmental impacts need to be considered for hydro sites and project areas. Larger scale projects could be pursued provided there are no costs to customers and ratepayers. It was noted that exporting power to other provinces could fund energy projects in smaller communities (e.g., Taltson expansion) and revenues from large scale projects should offset community energy costs.
  1. **Day 2: Climate Change Knowledge, Resilience and Adaptation**

**Session #4: Climate Change Impacts, Knowledge and Monitoring**

Session #4 opened with two brief presentations. The first presentation entitled “Climate Change Impacts and Knowledge” showed current and potential climate impacts in the region and explained the importance of gathering knowledge about these impacts to guide decision-making and support adaptation efforts. Two key sources of knowledge include scientific research and monitoring, and traditional and local knowledge. The second presentation entitled “Climate Change Monitoring and Assessments” outlined different approaches to monitoring and explained how risk and vulnerability assessments can be used as a tool for understanding the implications of climate change for planning purposes.

The breakout groups used the following questions to help initiate and support their discussions:

* Research & Monitoring - what are the gaps or priorities that communities are concerned about? How can government (Federal, GNWT, Regional) best work with researchers and communities to support research and monitoring projects and share results?
* Community-based monitoring - are communities interested in having more community-based monitoring activities? What kinds? What is required to make this happen?
* Risk / Vulnerability Assessments - what are the risk / vulnerability gaps and priorities that communities are concerned about?
* How should traditional and local knowledge be accessed and used?

The key themes and results from this session included:

* *Planning and community buy-in* – Many participants expressed concerns that the communities need to be much more involved in the identification, planning and completion of research and monitoring projects. Specific suggestions for improvement included:
  + Research and monitoring projects need to be useful to communities. Communities should be involved in the planning of projects so their priorities and concerns are addressed. It was suggested that communities may want to work together as a region to identify priorities; and,
  + Researchers need to work with the communities to make sure their projects are done in a respectful and appropriate manner. This includes understanding how to use Traditional Knowledge, how to build capacity in the community they are working in, making sure to explain the project and obtaining permission beforehand, and returning at the end to share and discuss the results.
* *Communication and awareness –* The need for better communication and dissemination of information was identified by many community representatives. This was seen as a concern for both the communities and the GNWT. Communities need more information of many aspects of climate change including current and future impacts, results of monitoring programs, knowledge of what can be done and ways to access funding. In turn, it was recognized that communities also need to have their interests outlined so they can let government and researchers know what they need and want.
* *Funding* – In addition to proper planning and community buy-in as described above, the participants strongly stressed the need for stable, long-term funding to be provided directly to communities to allow them to do research and monitoring work. One suggestion was to access funding from Health Canada’s Climate Change and Health Adaptation Program to support community-driven projects. There were questions about the availability of funding to help communities access traditional foods to address food security and Aboriginal diabetes concerns.
* *Research and monitoring priorities or gaps* – Various suggestions were made, including:
  + Conducting studies to determine the impacts of climate change on the following:
    - Traditional values – Camps, harvesting areas, burial grounds, etc.;
    - Aquatic ecosystems – Concerns were raised about water quality and contamination due to climate change impacts on the land, water temperature increases, changes in water levels, and the impact of climate change on wetlands and the wildlife that rely on wetlands; and,
    - Erosion and landslides resulting from thawing permafrost, as well as the release of stored contaminants from permafrost, into the environment.
  + Determining the potential impacts of invasive species on wildlife and people. This work should focus on:
    - Documenting the new species (animals and insects) that are moving into the Sahtu region, such as bats, birds, cougars, muskox, salmon and increasing numbers of grizzlies;
    - Assessing what the potential impacts may be for the species that people rely on for country food; and,
    - Assessing the potential for diseases or other health problems arising as a result of the presence of these new species.
  + Monitoring priorities include permafrost thaw, forest fire impacts, changes in water quality and quantity, the downstream effects of development, changes in wildlife migrations and the loss of cultural resources; and,
  + A lack of information about impacts occurring across the NWT was identified as a gap. Specific concerns included:
    - There needs to be a way to report the impacts that are being seen;
    - There is a gap in understanding how fast things are changing; and,
    - Baseline data is important and needs to be accessible to communities for it to be useful.
* *Community-based monitoring* – There was agreement that more community-based monitoring is needed. Specific suggestions for improvements include:
  + Experts should come to the communities to explain how monitoring should be done (transfer of knowledge);
  + There should be meetings with the communities to determine their concerns and priorities. Such meetings should include the Elders, local leadership, co-management boards and youth;
  + Stable, long-term funding is needed for monitoring programs and should be provided on a regional basis to address local priorities; and,
  + A local resource person should be hired to coordinate research activities with local people, monitor what research and studies are going on, and be able to report on research and studies to local municipal governments, renewable resource councils, hunter and trappers associations.
* *Risk and vulnerability assessments* – Several ideas were suggested including:
  + Regional and community permafrost assessments (for airstrips, roads and buildings); and,
  + Identification of changes in the water levels of rivers and lakes in the region used for navigation (Mackenzie, Bear, Keele) so that travellers can be advised.
* *Accessing and using traditional and local knowledge* – The use of traditional and local knowledge is a key concern. Traditional Knowledge (TK) must be respected and used appropriately. Elders need to know how their knowledge is being used. Guidelines and expectations should be outlined by communities and followed by government, researchers and scientists.

Some suggestions on how TK and local knowledge can be used to support climate change adaptation work were:

* + Researchers should spend time in the community where they are doing their research to develop an understanding of the community and associated values;
  + Elders see the changes occurring on the land and need to be heard. There should be interpretation provided for regional and community gatherings. The Dene language should be used in information materials;
  + Talking to Elders to help establish baseline information on how local conditions used to be and to compare the historical information with what is happening currently;
  + Elders should be appropriately recognized by researchers for sharing TK. Researchers often use TK in their projects but do not credit the Elders or recognize their contributions. Honorarium should be paid for people that are participating in Traditional Knowledge collection and studies;
  + Further research should be conducted into TK to document Dene terms and language. This can be used for health information materials and for various research projects; and,
  + The Sahtu Land Use Planning Board (SLUPB) should be involved in climate change work. The SLUPB has information (maps, interviews, etc.) that can be used to identify important areas and help protect the land, however funding is needed to do this work.

**Session #5: Climate Change Adaptation and Resilience**

Session #5 started with a brief presentation entitled “Adaptation and Resilience” that defined the concepts of adaptation and resilience, and explained how an adaptive management approach can be used to support planning and decision-making efforts when there is uncertainty about how the climate is changing. The presentation went on to outline four categories of climate resilience and adaptation action: ecosystem management; infrastructure and built environment; health and public safety; and culture and heritage.

The breakout groups used the following questions to help initiate and support their discussions:

* Ecosystems - What ecosystem components should be prioritized for vulnerability assessments?

* Infrastructure - What infrastructure do you think is most at risk due to climate change? Are new building standards an effective way to deal with this?
* Health and Safety – There are a number of climate-related health concerns including food security, air quality (smoke), new parasites, access to the land and hazards (floods, forest fires, etc.). Which of these are of most concern to your community and how should these be addressed?
* Culture and Heritage – What actions do you think are required to increase resiliency or address the impacts of climate change? Which projects should be prioritized in your community or region?
* Opportunities – What opportunities could climate change bring to this region?
* Barriers – What barriers are there to integrating adaptation planning into decision making and how could they be overcome? How should we pay for adaptation?
* In your community what are the priorities for resilience and adaptation projects? What timelines should these projects happen over?
* What are examples of successful collaborations in the community with other groups, agencies and businesses? What factors lead to this?

The key themes and results from this session included:

* *Access -* Climate change can isolate communities through changes in weather patterns which can cause flooding, forest fires, and short ice-road seasons which in turn drives up the cost of living and leaves communities vulnerable to the effects of climate change. All season road access would alleviate this concern.
* *Ecosystems* – Numerous ideas for vulnerability assessments for important ecosystem concerns were provided. These include:
  + Water – Impacts of changes in water quantity and quality;
  + Permafrost – Landslide vulnerability;
  + Invasive species – Insects and pests are being seen that haven’t been seen before; and,
  + Wildlife migration monitoring – Specific concerns raised included the impacts of climate change on caribou, doing a moose population study, seals are moving down the Mackenzie River, beavers are changing where they build dams due to changes in water levels.

* *Infrastructure* – All types of infrastructure are at risk from climate change. Participants made several suggestions:
  + Key concerns include roads, airports and water facilities. Winter road access is being impacted, so we need to build bridges over water crossings;
  + Need to use new design and construction methods that take into account current (and future) northern conditions. Need better building codes and standards; and,
  + Use thermosyphon technology to protect existing buildings and infrastructure.
* *Health and safety* – Several priority areas were identified for further work:
  + Air quality – Hotter and drier weather is creating more dust which causes lung and respiratory issues;
  + Food security – Need more local food production (gardens, greenhouses). Need more funding to support local efforts;
  + Extreme weather;
  + Safety concerns about getting cut off due to lack of road access, low water, or smoke;
  + Travelling on the land is becoming more dangerous due to weaker ice. There are traditional knowledge solutions that could be provided to people; and,
  + Insect-borne diseases – Specific concerns include the Zika virus, West Nile, lime disease and anthrax.
* *Culture and heritage* – Suggested actions to address climate change impacts on culture and heritage include:
  + Move cabins to protect them from risks (eroding banks, ice-break-up, rising water levels);
  + Protect traditional way of life – Maintain trails, harvesting areas, re-establish trails after forest fires, encourage knowledge of traditional ways; and,
  + Make sure grave sites aren’t lost due to permafrost thawing.
* *Opportunities* – Though the impacts of climate change are largely negative, a few potential opportunities arising from climate change may include:
  + Being forced to make better use of local resources;
  + Longer growing seasons and increased local food production;
  + More employment – Forest fighting, local food production;
  + Harvest new species – E.g., salmon (if the quality is good);
  + Warmer temperatures – Less use of heating fuel; and,
  + Tourism – There was recognition that more tourism may be possible but could also be accompanied by negative environmental impacts.
* *Barriers* – Barriers that could prevent or hinder efforts to adapt to climate change include:
  + Need for more engagement and education so community members can understand what resilience and adaptation to climate change means. More community-based projects would help in this regard;
  + Information from research studies and monitoring programs needs to get to decision-makers; and,
  + Lack of funding and lack of capacity – Communities need the resources to determine what they want to protect and to develop their own adaptation plans.
* *Priorities* – There was a general consensus among participants that key adaptation priorities for the region include:
  + Provision of stable, long-term funding to develop capacity, identify priorities and develop and implement plans and projects;
  + Need to have a person in the communities to help keep track of research and monitoring work and liaise with local decision-makers;
  + Need to address food security – Better access to country food and increased local food production; and,
  + Need to address alien and invasive species to better understand what is happening and what the impacts may be to the local species that people rely on.

1. **CONCLUSIONS / NEXT STEPS**

During the two-day workshop, the four key themes throughout were:

* The need for stronger partnerships and collaborations on energy projects, and resilience and adaptation efforts;
* The need for increased, targeted funding for energy projects, climate monitoring and climate change adaptation;
* The need for stronger communication by governments on energy solutions, climate change impacts and adaptation; and
* The need for traditional and local knowledge to be used appropriately to strengthen projects and decisions in the NWT.

Workshop participants clearly expressed interest in being more involved in the planning, decision-making and implementation of projects and initiatives. It was also noted that the high cost of energy and living was a crucial concern amongst participants.

All of these concerns suggest a necessity for improved collaboration between different levels of government (federal, territorial, Aboriginal, local), researchers and academics, and other key organizations (such as Arctic Energy Alliance, NWT Association of Communities, Ecology North).

At the end of the workshop, GNWT representatives thanked the participants for their time and generosity in sharing their knowledge and ideas. Participants were advised that the workshop results would be captured in a summary report that would be distributed to all participants.

Looking forward, the GNWT and its federal partners (INAC and Health Canada) will use the workshop results to help inform their respective initiatives, which include:

* NWT Energy Strategy (GNWT);
* NWT Climate Change Strategic Framework (GNWT);
* Northern Adaptation Strategy (INAC); and,
* Climate Change and Health Adaptation Program (Health Canada).

**APPENDIX A: WORKSHOP AGENDA**

#### NWT CLIMATE CHANGE STRATEGIC FRAMEWORK & NWT ENERGY STRATEGY

NORMAN WELLS INVITATIONAL WORKSHOP

Legion Hall, November 15 & 16, 2016

**Day 1 – NOVEMBER 15**

ENERGY: HOW DO WE ADAPT AND MITIGATE OUR ENERGY USAGE?

#### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**8:30 – 9:00 Doors open – Coffee and conversation**

**9:00 – 9:30** Opening Comments

Review of Workshop Agenda

**9:30 – 10:15** Setting the Stage: Opening Presentations on Climate Change and Energy

**10:15 – 10:30 Break**

**10:30 – 11:00** Presentations:Introduction to Energy in the NWT

Renewable and Alternative Energy

**11:00 – Noon** Group Work #1: Supporting Renewable and Alternative Energy Development

Participants will discuss and identify renewable and alternative energy solutions.

**Noon – 1:00 Lunch on site**

**1:15 – 1:30** Presentation: Energy Efficiency and Conservation

**1:30 – 2:30** Group Work #2: Improving Energy Efficiency and Conservation

Participants will discuss these initiatives and additional initiatives they would like to see.

**2:30 – 2:45 Break**

**2:45 – 3:00** Presentation: Electricity – Long Term Vision

**3:00 – 4:00** Group Work #3: Developing a Long Term Vision for Energy in the NWT

Participants will discuss a long-term energy vision for the NWT.

**4:00 – 4:15** Day 1 Wrap-up

**4:15 – 5:00** Guided Tour for Participants (optional)

**7:00 – 9:00** Information Session – Open to the Public

#### NWT CLIMATE CHANGE STRATEGIC FRAMEWORK & NWT ENERGY STRATEGY

NORMAN WELLS INVITATIONAL WORKSHOP

Legion Hall, November 15 & 16, 2016

**Day 2 – NOVEMBER 16**

CLIMATE CHANGE: KNOWLEDGE, RESILIENCE AND ADAPTATION

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**8:30 – 9:00** Doors open – Coffee and conversation

**9:00 – 9:15** Re-cap of Day 1 and Review of Day 2 Agenda

**9:15 – 9:30** Presentation:Climate Change Impacts and Knowledge

Climate Change Monitoring and Risk/Vulnerability Assessments

**9:40 – 10:30** Group Work #4:Climate Change Knowledge and Monitoring - Research Priorities and Projects

Participants will identify knowledge and research gaps and priorities, as well as discuss monitoring programs and risk/vulnerability assessments.

**10:30 – 10:45 Break**

**10:45 – Noon** Group Work #4 (continued)

**Noon – 1:00 Lunch on site**

**1:10 – 1:30** Presentation:Climate Change Adaptation and Resilience

**1:30 – 3:00** Group Work #5: Climate Change Adaptation and Resilience

Participants discuss how to plan and prioritize resilience and adaptation projects in the areas of ecosystem management; built environment and infrastructure; health and safety; and culture and heritage.

**3:00 – 3:15 Break**

**3:15 – 3:45** Energy and Climate Change Wrap-up

**APPENDIX B: LIST OF PARTICIPANTS**

|  |  |
| --- | --- |
| **Name** | **Organization** |
| John Carr | Arctic Energy Alliance |
| Alvin Orlias | Behdzi Ahda First Nation |
| Hughie Frederic | Délįne |
| Leon Modeste | Délįne |
| Russell Kenny | Délįne Renewable Resources Council |
| Chloe Dragon-Smith | Ecology North |
| Ben Linaker | Environment and Natural Resources |
| Jennie Vandermeer | Environment and Natural Resources |
| Rob Marshall | Environment and Natural Resources |
| Natalie Labossiere | Facilitator |
| Jimmy Caesar | Fort Good Hope Renewable Resources Council |
| Michel Lafferty | Fort Good Hope Renewable Resources Council |
| Dyanne Doctor | Fort Norman Metis Land Corporation |
| Lindsay Norwegian | Fort Norman Metis Land Corporation |
| Louis Dumulon | Health Canada |
| Marrissa White | Health Canada |
| Lindsay Holland | Imperial Oil Resources |
| Andy Short | Industry, Tourism and Investment |
| Jedon McFarlane | Mackenzie Mountain School |
| Sydney Pope | Mackenzie Mountain School |
| John MacDonald | Member of the public |
| Brad Brodziak | Municipal and Community Affairs |
| Peter Spilchak | Norman Wells Chamber of Commerce |
| Margaret McDonald | Norman Wells Land Corporation |
| Sean Rorison | Norman Wells Land Corporation |
| Bruce Leblue | Norman Wells Renewable Resources Council |
| Mike Ocko | Northwest Territories Power Corporation |
| Pam Coulter | Northwest Territories Power Corporation |
| John Vandenberg | Public Works and Services |
| Peter Lennie-Misgeld | Public Works and Services |
| Remi Gervais | Public Works and Services |
| Rob Sexton | Public Works and Services |
| Scott Paszkiesicz | Sahtu Land Use Planning Board |
| Ceilidh Stubbs | Sahtu Renewable Resources Board |
| Frederick Andrew | Sahtu Renewable Resources Board |
| Michael Neyelle | Sahtu Renewable Resources Board |
| Dakota Erutse | Sahtu Secretariat Incorporated |
| Cecile MacCauley | Tulita Band Council |
| Russell Etchinelle | Tulita Band Council |
| David Menacho | Tulita Land Corporation |
| Isidore Manuel | Tulita Land Corporation |
| Lyle Etchinelle | Tulita Land Corporation |
| Gordon Yakeleya | Tulita Renewable Resource Council |
| Marcel Grandjambe | Yomoga Land Corporation |
| Roger Boniface | Yomoga Land Corporation |
| Jenny Cuthbertson |  |