SECOND REPORT

OF THE

STANDING COMMITTEE

ON

CLIMATE CHANGE AND ENVIRONMENTAL STEWARDSHIP

First Session
Sixtieth Legislative Assembly
of the
Province of New Brunswick

March 31, 2022

MEMBERS OF THE COMMITTEE	
Ms. Bockus, Chair Mr. Cullins, Vice-Chair Hon. Mr. Crossman Hon. Mr. Holland Hon. Ms. Johnson Mr. Carr	Ms. Landry Mr. LeBlanc Mr. Mallet Ms. Mitton Ms. Conroy

March 31, 2022

To The Honourable
The Legislative Assembly of
The Province of New Brunswick

Mr. Speaker:

I have the pleasure to present herewith the Second Report of the Standing Committee on Climate Change and Environmental Stewardship.

The report is the result of your Committee's deliberations on the renewal of New Brunswick's Climate Change Action Plan.

On behalf of the Committee, I wish to thank those individuals and organizations who appeared before the Committee. In addition, I would like to express my appreciation to the members of the Committee for their contribution in carrying out our mandate.

Your Committee begs leave to make a further report.

Respectfully submitted,

Ms. Kathy Bockus, MLA
Chair

March 31, 2022

To The Honourable
The Legislative Assembly of
The Province of New Brunswick

Mr. Speaker:

Your Standing Committee on Climate Change and Environmental Stewardship begs leave to submit this, their Second Report of the session.

On November 30, 2021, the Committee met and agreed to invite subject matter experts and Indigenous representatives to share their expertise on climate change and any recommendations for actions to be included in a renewed Climate Change Action Plan for the Province. The Committee agreed to prepare a report to the House, following the presentations, setting out what it heard. The report does not include submissions and recommendations from the public that were sent directly to the Climate Change Secretariat.

On December 7, 2021, the Committee received a briefing from the Climate Change Secretariat regarding the process for renewing the Climate Change Action Plan.

On January 13, 14, 18, 19 and 20, and February 10, 2022, the Committee met and heard presentations, beginning with an update from the Climate Change Secretariat regarding implementation of the existing Climate Change Action Plan and the context in which a renewed plan will be developed. This was followed by presentations from invited subject matter experts, stakeholders, and Indigenous representatives.

The Committee met again on March 24, 2022, to consider the input received during the consultation process and to formulate a report to the House.

The Committee wishes to express its appreciation to the presenters who appeared before the Committee.

The following summarizes what the Committee heard, including the recommendations made to the Committee for actions to be included in a renewed Climate Change Action Plan.

OVERVIEW

New Brunswick's current Climate Change Action Plan, *Transitioning to a Low-Carbon Economy,* was released in December 2016. The *Climate Change Act* requires that the Climate Change Action Plan be reviewed every five years. The Climate Change Secretariat within the Department of Environment and Local Government initiated the review which will form the basis of a renewed Action Plan.

In its presentation to the Committee, the Climate Change Secretariat explained that the government has committed to completing 75% of the 118 actions in the existing plan by March 2022.

The Secretariat outlined the provincial, national and international context in which a renewed plan is being developed, including the global effort to limit warming to 1.5°C above pre-industrial levels, and federal policies aimed to reduce greenhouse gas (GHG) emissions to net-zero by 2050. Net-zero means reducing emissions to as close to zero as possible and offsetting any remaining emissions.

The Secretariat also outlined progress to date, and future opportunities and challenges, in two broad categories that will need to be addressed in the renewed plan: mitigation (reducing GHG emissions) and adaptation (preparing for a changing climate).

Mitigation

New Brunswick's target GHG emission reduction for 2030 is 10.7 Mt, which is 47% below 2005 levels. Its current 2050 target is 5 Mt. As of 2019, New Brunswick was emitting 12.4 Mt annually.

Pathways to meet the 2030 reduction target include: clean electricity and coal phase out, regulating emissions from large industry (Output-Based Pricing System), electric vehicles, energy efficiency, carbon neutral government, and landfill gas capture.

Pathways to achieve net-zero emissions by 2050 require transformative measures and new technologies. These include: biofuels, biogas and hydrogen production; carbon capture, utilization and storage; direct air capture; clean electricity production, such as small modular reactors (SMRs); and enhanced natural sequestration through forest and wetland management.

Adaptation

Impacts of climate change on New Brunswick include the effects of warmer temperatures, extreme precipitation, extreme weather, and rising sea levels.

The Secretariat outlined progress toward understanding and communicating climate risks and opportunities, as well as future opportunities and challenges, including raising awareness of projected impacts, conducting a provincial risk assessment and implementing adaptation measures.

Progress toward planning and taking action has included: adoption of adaptation plans by 50% of municipalities; resilience-building in several sectors; increasing focus on natural infrastructure and nature-based solutions; and incorporating climate change considerations into infrastructure decision-making.

Opportunities and challenges for planning and taking action include: moving from planning to implementation; broadening vulnerability assessments across all sectors; linking adaptation and community health and wellbeing; intersection of biodiversity, protected areas and climate adaptation; diversity, inclusion, and vulnerable populations; collaboration across all sectors; and nature-based solutions.

After hearing from the Climate Change Secretariat, the Committee heard from climate change adaptation specialists, non-governmental organizations (NGOs), electric and natural gas utilities,

energy consultants, business councils, municipal leaders, members of the agricultural and waste management sectors, and Indigenous representatives.

While presenters focused on different aspects of climate change, all communicated a sense of urgency and the need for clear and coordinated action.

The engagement process centred around five key themes:
1. Planning and Governance
2. Partnerships and Collaboration
3. Greenhouse Gas Emission Reduction
4. Adaptation
5. Education and Public Engagement

The following summarizes what the Committee heard. The actions that were recommended to the Committee are grouped under each theme.

RECOMMENDATIONS FROM PRESENTERS

Theme 1: Planning and Governance

Clear Strategies

Several presenters discussed the need for the Province to create a robust climate change strategy. They said while there are challenges to shifting established patterns of behaviour, the climate crisis presents an opportunity to embrace change and to grow the economy. They emphasized that the strategy should take all sectors into account, including energy, business, agriculture, and waste management. The strategy should also ensure that all members of society are addressed and included in action items, as some are more vulnerable to climate change than others.

The Committee heard that the adaptation component of the climate change strategy for the Province should be based on a provincial climate risk assessment, which would identify geographic areas at most risk of environmental damage and provide focus for adaptation and mitigation plans to protect people and infrastructure. The risk assessment would also result in the development of clear policies, such as prohibiting development or alternatively, allowing municipalities to ban development projects in high-risk areas, and protect coastal systems that provide natural buffers. Nova Scotia, Prince Edward Island and Newfoundland and Labrador have already undertaken similar initiatives and the federal government released its own adaptation strategy in January of 2022. The recommendations on this subject presented to the Committee are as follows:

1) Assemble appropriate planning and governing bodies to create an accountability framework. These could include:
   a) A climate change advisory council; and
   b) A stakeholder advisory committee.

2) Create a comprehensive climate change strategy that considers current assets and resources, economic growth opportunities, and inclusive practices for vulnerable populations. The strategy would also include:
    a) Performance metrics, including a GHG reduction commitment, an annual work plan, and a mandate to report on progress;
    b) Clear directives for electrification in the Province, as well as alternate heat and energy sources;
    c) Comprehensive renewable energy plans for specific sectors such as agriculture and waste management;
    d) The application of a climate lens, which considers impacts and emissions, to government spending and procurement; and
    e) Statements of public interest indicating which climate considerations are most important to New Brunswick residents.
3) Appoint a senior officer who would lead the development of a provincial or regional integrated risk assessment plan, in coordination with municipalities, consultants, the Climate Change Secretariat, and government departments. The risk assessment plan would:
    a) Prioritize natural infrastructure and conservation to lower risks and help hold carbon (e.g., 30% by 2030);
    b) Build on existing coastal and city vulnerability assessments; and
    c) Outline provincial adaptation strategies that are in line with the federal Climate Change Adaptation Plan.

Changes to Legislative and Regulatory Frameworks

Several presenters expressed the need to change legislation, policies, or regulations to ensure that a variety of power generation options can be pursued in New Brunswick with fewer obstacles. The Committee heard that one of the key challenges for energy utilities and communities at the present time is the inability to develop new (renewable) energy products due to caps on net-metering and embedded (local) generation in the *Local Governance Act* and the *Electricity Act*. The presenters suggested that amendments to these Acts would allow for a mechanism resembling a commercial agreement between supplier and user. This would remove some of the perceived economic risk of having a single agreement with NB Power, allow for the development of cleaner energy sources, and ultimately lead to more economic growth in the Province.

Presenters also highlighted the need to apply appropriate economic instruments to new energy projects at both the provincial and regional levels, and to do so within a predictable regulatory environment that would attract private investment and incite investor confidence. The recommendations on this subject presented to the Committee are as follows:

4) Amend sections 72 and 73 of the *Electricity Act* (as well as the provincial energy policy) to allow for a mix of public-, private-, and community-owned power generation options to meet the growing demand for electricity.
5) Amend the *Local Governance Act* to enable municipalities to accrue revenues from clean energy production and capitalize on new projects year over year.
6) Amend other relevant legislation, policies, and frameworks to:
    a) Set new targets for energy efficiency;
    b) Set new targets for renewables;

c) Incorporate regional plans and goals;
d) Prepare for federal clean electricity standards and the phase-out of fossil fuel power;
e) Increase the cap on net-metering and allow virtual net-metering for municipalities;
f) Increase the total cap on renewable power procurement;
g) Ensure NB Power's Power Purchase Agreement model is feasible for those proposing renewable energy projects;
h) Allow individual electricity generation units to be connected to the electricity distribution network (embedded generation); and
i) Deliver renewables under the Locally Owned Renewable Energy Projects that are Small Scale Program (LORESS).

7) Create a central economic development agency.
8) Modify LORESS, which is currently regulated under the *Electricity from Renewable Resources Regulation*, so that it includes three tiers: under 3MW, 3MW to 10MW, and over 10MW.
9) Create a Community Feed-In Tariff program or a community-based Power Purchase Agreement.
10) Within the agricultural sector, mandate the adoption of Beneficial Management Practices, which include conservation cropping and cover crop systems; enhanced forage production models; improved nitrogen efficiency; preservation and enhancement of carbon rich landscapes; and on-farm renewable energy models.

Appropriate Funding Mechanisms

The Committee heard that appropriate funding mechanisms will be essential to the success of New Brunswick's renewed Climate Change Action Plan. If the Province is to meet targets, actions should be quick, organized, and sustainable, with both short- and long-term benefits. Funding entities should support projects with various timelines and be rigorous in the selection process so that the right projects are chosen at the right time.

Some presenters expressed that the Climate Change Fund established under the *Climate Change Act* could be more efficient and effective. At present, they said most funds are directed to government departments to carry out climate-related projects rather than disbursed at the community level. They suggested that there are opportunities for the funds to be directed more strategically toward projects that will have greater impact. The recommendations on this subject presented to the Committee are as follows:

11) Create or revise a funding mechanism that supports multi-year projects, with a focus on supporting pilot projects that have already proven to be successful.
12) Amend the *Local Governance Act* to support efficiency financing to bridge the gap between federal funding models and provincial billing systems.
13) Review the funding structure of the Climate Change Fund to ensure that the awarding of funds aligns with the overall climate strategy for the Province. The distribution of funds should focus on:
    a) Mitigation and adaptation programs to secure deep retrofits to transportation and infrastructure;
    b) Municipal projects that are in the development stage (funding to hire consultants and to investigate new projects); and
    c) Support for businesses to improve energy efficiency and reduce carbon footprints; hire and train climate or energy managers; and provide funds for research and development.

14) Create an interdepartmental team to vet and prioritize clean energy economic development opportunities already underway through Opportunities New Brunswick.
15) Rebalance public investments and tax incentives to mobilize private investment in future-ready projects and companies.

Theme 2: Partnerships and Collaboration

A key topic that arose during the consultation process was the need for more coordination and collaboration toward common climate change objectives within the Province and across the Atlantic region. This includes coordinated efforts to integrate climate change solutions into all projects undertaken and funded by the Province, and increased collaboration within government departments, with industry, small business, NGOs, municipalities, and Indigenous communities. Presenters said that collaboration will lead to less duplication of efforts, promote knowledge-sharing and help address the urgent need to build capacity in order to meet the Province's and the region's climate change objectives. The recommendations on this subject presented to the Committee are as follows:

16) At the regional level:
    a) Commit to interjurisdictional collaboration across Atlantic Canada on broad climate change issues that have a direct impact on citizens and the economy (e.g., the Chignecto Isthmus); and
    b) Create a regulatory modernization task force for Atlantic Canada consisting of representatives from all four provincial governments, the Government of Canada, the region's energy utilities and NGOs. The task force would:
        i) Focus specifically on regulatory clarity, efficiency, and transparency, as well as regional regulatory alignment; and
        ii) Be mandated to explore the opportunity to facilitate greater integration of the region's electricity markets and systems operation.
17) At the provincial level:
    a) Embed climate risks (and resilience benefits) throughout government decision-making;
    b) Add new capacity and expertise in government departments to work on clean growth opportunities and sectoral strategies for the low carbon economy; and
    c) Develop safety measures to protect the most vulnerable.
18) At the local government level:
    a) Provide support for Community Energy Planning (CEP) Coordinators; and
    b) Establish a program to train energy managers and technical advisors.
19) With Indigenous communities:
    a) Embrace the belief that good decision-making considers outcomes now and for seven generations to come;
    b) Provide support for a province-wide Indigenous Knowledge Study, and incorporate this knowledge and Two-Eyed Seeing in the Environmental Impact Assessment process;
    c) Ensure there is Indigenous representation on the Climate Change Advisory Committee and Indigenous engagement with other working groups; and
    d) When the land of Indigenous communities is lost to the effects of climate change, ensure additional lands are made available.

Theme 3: GHG Reduction Strategies

Reducing GHG emissions is central to combatting climate change. The Committee heard from the Climate Change Secretariat that New Brunswick is leading the country in emissions reduction (38% below 2005 levels) and is on track to meet or exceed its 2020 target (total output of 14.8 Mt). However, to meet the federal 2030 and 2050 targets, New Brunswick's leaders will need to better understand all sources of GHG emissions so they can create clear strategies to reduce them. Having a clear plan of action will also help ensure the Province manages the transition, positioning itself to take advantage of new opportunities presented by decarbonization and other forms of GHG reduction.

The presenters acknowledged that while achieving net-zero emissions by 2050 may seem daunting due to the sheer scope and scale of the task, it is possible by focusing on:

- Setting clear and measurable targets with appropriate timelines;
- Implementing "quick fixes" that have immediate or short-term impact;
- Embracing the transition phase; and
- Investing in innovative solutions to GHG reduction.

Clear and Measurable Targets

The Committee heard that there is a need to set clear targets with timelines that reflect current federal and global policy. It was suggested that the 2030 target should be a reduction of 60% below 2005 emission levels, with progressively higher targets every 5 years after 2030 leading to a target of net-zero emissions in 2050. The methods to achieve these goals should be included in the Province's climate change strategy, outlined in the Planning and Governance section of this report.

Several presenters said that while the Belledune generating station is an important resource for NB Power, particularly for meeting baseload generation needs, its use of coal presents a problem as the federal GHG reduction strategy is clear that coal must be phased out by 2030. While renewable energy sources and new technologies may eventually be able to cover these needs, during the transition phase, Belledune remains a key resource and for this reason, presenters stressed that there is an urgent need to investigate alternative fuels. Presenters noted that the window of time for the research phase is 18 to 24 months, with conversion of the facility taking approximately 2 to 5 years. The recommendations on this subject presented to the Committee are as follows:

20) Using the federal GHG reduction strategy as a guideline, set clear and measurable targets for emission reductions and offsets, with the goal of transitioning to net-zero by 2050.
21) Steadily increase the stringency of carbon pricing and regulations across the economy.
22) Recognizing the urgency of phasing out coal by 2030, immediately undertake research into alternative sources of power for the Belledune generating station.

Solutions with Immediate or Short-term Impact

The Committee heard that New Brunswick would benefit from enhanced energy education, awareness, and literacy efforts to ensure that New Brunswick residents, who are the primary energy users of the Province, understand the transformation that needs to take place in the region's energy sector in order to reduce GHG emissions. As this report discusses in greater detail in the Education and Public Engagement section, information programs help ensure that people are able to make informed and effective short-term and longer-term energy decisions. In addition to public education and awareness, the Committee heard that the appropriate infrastructure, such as charging stations for electric vehicles, should be in place so that making more energy efficient choices is easy.

The presenters emphasized that immediate and short-term goals should have scope beyond the reduction of GHG emissions. Targets should also be set for increased use of proven low-emission or renewable energy sources, the purchase of electric vehicles, and the adoption of the most recent building codes. The Committee heard that creating incentive programs will be an important part of reaching these goals. The recommendations on this subject presented to the Committee are as follows:

23) Information and Public Awareness:
    a) Review the Select Committee on Climate Change's report *New Brunswickers' Response to Climate Change* to see if recommendations relating to electricity that were not included in the original Climate Change Action Plan should be adopted in the renewed Plan.
    b) Conduct a public education and awareness campaign that identifies how individual choices regarding energy consumption can benefit the environment.
24) Power Generation, Transmission and Distribution:
    a) Support and grow the smart grid innovation ecosystem and enable near real-time access to information related to the provincial demand for electricity.
    b) Ensure that incentives for rooftop solar and net-metering do not exclude third parties (e.g. renewable energy cooperatives).
    c) Require, in the *Community Planning Act*, that all land use plans and zoning bylaws in New Brunswick include minimum and better energy efficiency standards.
    d) Require municipalities to use the permitting process to ensure, incentivize, and track building energy performance.
    e) Provide municipalities (and municipal utilities) explicit authority to establish an efficiency financing program or create a provincial program to offer low cost loans for efficiency retrofits.
    f) Manage winter peak demand aggressively.
25) Electric Vehicles:
    a) Ensure that electric vehicle incentives are clearly communicated to the public.
    b) Explore options for an incentive program aimed at getting high-emitting older vehicles off the road.
    c) Work with municipalities to develop anti-idling programs or policies.
    d) Implement an emissions-based vehicle registration fee; use revenues to reinvest in zero-emission vehicle supports.

e) Undertake strategic planning for public transportation at the regional and intercity levels to create a variety of travel options aimed at reducing GHG emissions.
f) Continue to build infrastructure to ensure that electric vehicle charging stations are as simple and easy to use as gas stations.

26) Buildings:
a) Update the Green Building Policy and adopt the most recent National Energy Code for Buildings.
b) Ensure that government works with industry to provide mandatory up-to-date National Building Code training to all builders, renovators and building officials.
c) Create an incentive program for builders to build high performance homes.
d) Regulate net-zero and retrofit codes, as well as carbon disclosure and performance requirements.
e) Create a net-zero loan program for builders to cover additional construction costs associated with energy efficient homes.
f) Increase the promotion of heat pumps for residential use.

Embracing the Transition Phase

The Committee heard that public buy-in will help ensure the success of the transformational projects required to transition to a low-carbon future. The transition phase will affect a wide variety of industries and sectors – agriculture, waste management, and energy utilities as well as small- and medium-sized businesses. The Province should apply a competitive economic lens to policy making and government investment decisions during the transition to a low-carbon economy, so that cost competitiveness, taxes, investment incentives, and other supports are comparable to other jurisdictions in Canada and internationally. The Committee heard that there is also a need to collaborate with the other Atlantic provinces and the Government of Canada to develop transitional support programs that are geared specifically to the issues and challenges facing this region.

The economic and public reliance on refined petroleum products will not shift overnight. It will be a transition over time. Atlantic Canada's oil and gas sector continues to innovate and reduce its carbon footprint, with the introduction of low-carbon transportation and sustainable fuels, including low-emission hydrogen. Also, the Committee heard that clean heating sources like natural gas and wood pellets are safe, reliable, and affordable. These, and other mid-term energy options can serve as bridges between the reliance on fossil fuels and the development of larger-scale innovations that are only now in the exploration stage.

The recommendations on this subject presented to the Committee are as follows:

27) Create transitional support programs to ensure that there are incentives for businesses that wish to reduce emissions and invest in clean technologies, such as alternative energy generation, transportation solutions, and automation.
28) Within the agricultural sector, create a new agency to address the needs of farmers as they transition to better GHG reduction practices.
29) Amend the *Gas Distribution Act* and the *Energy and Utilities Board Act* to encourage investments in renewable gaseous energy and other gas innovations.
30) Ensure that the management of the energy efficiency program for the Province is independent rather than focused solely on electricity.

31) Create a renewable heat strategy for the Province which would include:
    a) A renewable heat incentive;
    b) GHG reduction performance-based program for oil and natural gas elimination;
    c) Equity with other technologies on capital supports;
    d) Equity on Industrial Decarbonization Studies;
    e) Acceleration in sector bioheat procurement; and
    f) District energy system feasibility studies.

Investing in Innovative Solutions

The Committee heard that the 26th United Nations Climate Change Conference of the Parties (COP26, held in Glasgow in 2021) culminated with commitments to achieve net-zero emissions by 2050 from countries representing 90% of the global GDP. This means global demand will be shifting as countries and consumers seek out cleaner energy products and services. The presenters said these shifts will only become more pronounced in the future and now is the time for early investment as many large-scale companies are pivoting to meet these global targets. The Committee heard that New Brunswick has the advantage of having energy infrastructure and logistical connections already in place. The presenters suggested that with strategic investments now, the Province could attract international investment.

Regarding the Province's own GHG reduction targets, particularly for 2050, the Committee heard that there is a need for the Province to invest in new technologies. There were differing opinions about small modular reactors among presenters. Some argued that SMRs should be integral to the climate change strategy for the Province, and others said that they are a new technology whose risks and benefits require further study. Overall, the Committee heard that New Brunswick will need to investigate alternate sources of energy to meet its longer-term objectives, but any new technologies adopted must prove to be safe, reliable, affordable and clean. The recommendations on this subject presented to the Committee are as follows:

32) Work closely with the Climate Change Secretariat to identify new technologies and investigate potential companies for partnership.
33) Continue to investigate alternative fuel sources like green hydrogen and biofuels.
34) Continue to investigate SMRs for New Brunswick, while taking many perspectives of this new technology into account.
35) Investigate opportunities to use biomass in New Brunswick, rather than exporting it.
36) Investigate innovations in various sectors, including agriculture and waste management, to see how new technologies or methods of practice can contribute to a circular economy that derives energy from renewable sources.
37) Endorse the Port of Belledune as a Green Energy Hub.
38) In addition to the new recommendations, one presenter also recommended that the government continue to implement the following from the original Action Plan:
    a) Action 42 – The provincial government will support the uptake of increased renewables for both electricity generation and residential/business heating in New Brunswick, through financial incentives, policy and legislation.

b) Action 43 – The provincial government will investigate and remove existing barriers to achieving greater implementation of renewable power generation, distributed energy generation, and net metering.
c) Action 44 – The provincial government will review the outcomes of the small-scale community renewable energy program upon completion and expand or modify the program accordingly.

Theme 4: Adaptation Strategies

The Committee heard that due to the irreversibility of climate change, adaptation measures are crucial components of the renewed Action Plan for the Province. While 29 of the 118 actions listed in the original plan focused on adaptation components, the Committee heard that only 30% of funding was directed to adaptation measures, and more focus should be placed in this area moving forward. The presenters suggested that in order to coordinate adaptation efforts for the Province, a clear strategy must be formed, appropriate leadership must be in place, and collaboration between municipal, regional, and Indigenous communities must occur. While regional collaboration is important, the Committee also heard that the next iteration of the plan should reflect New Brunswick's unique socio-economic and environmental attributes.

The Committee received a great deal of input regarding what should be included in the adaptation strategy for the Province. Many presenters focused on the need for a flood prevention plan for the Province, with river flooding posing an immediate risk to many communities. Other presenters emphasized the need to focus adaptation efforts in coastal areas, due to the projected sea level rise and consequent increases in erosion and storm activity. Among these, some stressed the need to implement a system of natural infrastructure development that works with elements already present in nature. The recommendations on this subject presented to the Committee are as follows:

39) Create a chief resiliency officer position that would report to the Premier or Minister of Environment and Climate Change. This position would coordinate efforts and document progress.
40) Create a task force between the Department of Natural Resources and Energy Development, the Department of Environment and Local Government, and Opportunities New Brunswick to ensure environmental decisions coordinate with economic development.
41) Consult with municipal, regional, and Indigenous leaders to identify key risks and priority areas for adaptation in the Province with the goal of creating a New Brunswick Adaptation Strategy, which should align with the federal adaptation strategy. The New Brunswick Adaptation Strategy would:
    a) Invest in modelling or analysis to understand the Province's competitive advantages to inform supports, mitigation strategies and sectoral opportunities;
    b) Consider the role natural systems (e.g., dunes, wetlands, and forests) play in adaptation and in risk-reduction to communities and prioritize protection and restoration;
    c) Include a definition of natural infrastructure;
    d) Review land management practices with the goal of flood prevention;
    e) Include a comprehensive review of the Province's dyke system, taking the age and efficacy of the existing system into account;
    f) Ensure that flood risk maps are up to date and accessible to the public;
    g) Ensure that appropriate funding mechanisms are in place for priority projects;
    h) Include a commitment to report publicly on successes and challenges;

i) Build social capital and strong institutions to respond to crises; and
j) Identify specific measures to respond to flood threats, which include launching home and business flood protection programs and developing and distributing municipal flood protection guidelines.

Theme 5: Education and Public Engagement

The Committee heard that the path toward climate resiliency will only be successful if New Brunswickers make behavioral changes like reducing energy consumption. Presenters went on to describe this as a fundamental culture shift. This shift begins with educating the Province's youngest energy consumers, is infused into post-secondary education programs, and is carried out through public engagement and awareness initiatives. It was suggested that people often do not understand the link between their own actions and climate change solutions. It was recommended that government engage the public early and often to communicate the urgency of the climate crisis.

One of the barriers to education and public engagement identified by presenters is the current level of data transparency. At present, the Committee heard that there is a lack of standardized climate data collection, which leads to a duplication of efforts among various research groups, government organizations and community groups. By developing and promoting a central point of climate knowledge for the general public to access, the Province will ensure that individuals have greater literacy around climate change impacts, risk, resiliency and adaptation. The recommendations on this subject presented to the Committee are as follows:

42) Create a Centre of Excellence or, at least, a full-time position to provide climate change information to students and teachers in the public school system.
43) Make changes to public school curricula to increase students' climate change literacy.
44) Engage with post-secondary students and community groups to gather statements of public interest.
45) Include students and youth in advisory bodies.
46) Explore the possibility of engaging youth through a new group akin to a "NB Youth Climate Corps."
47) Increase consumer education of the benefits of high-performance homes through increased social media and other advertising media.
48) Collaborate with and continue to fund environmental non-governmental organizations (ENGOs), big and small, in pursuing climate action.
49) Support capacity-building initiatives and education (NGOs and Department of Education) through investment.
50) Engage in less performative consultation and instead, foster more participatory engagement with stakeholders.
51) Create or increase the capacity of existing data facilitators to provide accurate and up-to-date climate information.
52) Ensure that Climate Change Action Plan studies are publicly available.
53) Update and maintain regionally scaled climate projections (flood hazard maps, sea level rise maps, temperature, precipitation projections, etc.).
54) Ensure that information is easy to access and available in multiple formats to ensure accessibility.
55) Create a data-driven system that tracks decarbonization goals and outcomes by sector and energy use.

56) Equip citizens and business enterprises with the ability to track their carbon footprint and decarbonization efforts.
57) Establish a provincial database, standard process, or web portal for capturing community energy and GHG emissions data annually. Ensure hourly electricity emissions associated with generation are available.
58) Consult the expertise and resources from the Science and Engineering Research Support Center (SERSC).

CONCLUSION

The Committee wishes again to express its thanks to all those who provided input and recommendations on the renewal of New Brunswick's Climate Change Action Plan. The Committee recommends that the government consider the information outlined in this report as it develops a renewed Climate Change Action Plan for the Province.

APPENDIX:
PRESENTERS

Agricultural Alliance of New Brunswick

Association francophone des municipalités du Nouveau-Brunswick

Atlantica Centre for Energy

Belledune Port Authority

CLIMAtlantic Inc.

Canadian Home Builders Association New Brunswick

Canadian Institute for Climate Choices

Cities of New Brunswick Association

Conservation Council of New Brunswick

Dunsky Energy + Climate Advisors

Economic Council of New Brunswick

Edmundston Energy

Eel River Bar First Nation

Intact Centre on Climate Adaptation

Liberty Utilities

Mi'gmawe'l Tplu'taqnn Incorporated

National Farmers Union in New Brunswick

NB Power

New Brunswick Business Council

New Brunswick Environmental Network

Nature NB

Pabineau First Nation

Perth-Andover Electric Light Commission

QUEST Canada

Saint John Energy

Southeast Regional Service Commission

Town of Sackville

Union of the Municipalities of New Brunswick

VALORES Research Institute

Wolastoqey Nation in New Brunswick

Wood Pellet Association of Canada