



February 27, 2017

Ms. Judy Wagner
Clerk Executive Council
Chancery Place, P. O. Box 6000
Fredericton, NB, E3B 5H1, Canada

Sent via email: Judy.Wagner@gnb.ca

Re: Internal review of EMO and NB Power response to the February 2017 ice storm

Dear Ms. Wagner:

The Conservation Council of New Brunswick (CCNB) is actively researching the effects of extreme weather events and New Brunswick's capacity to adapt and respond. Last October, we released a report, with recommendations, based on an assessment of Fredericton's capacity to respond to events like Post-tropical storm Arthur. Several of the recommendations we made to the province, the city and to the Emergency Measures Organization (EMO) at that time are relevant to your inquiry into how EMO and NB Power responded to the recent ice storm affecting the Acadian Peninsula. The Appendix summarizes our recommendations. We also provide additional recommendations and note some of the most important recommendations from the Post-tropical storm Arthur study.

We know that with rising global mean surface temperatures the atmosphere holds more water. The ratio is that for every degree of global warming the atmosphere holds 7% more moisture. We have exceeded that threshold already and are on our way to even higher global temperatures further increasing atmospheric moisture. Today, we are experiencing, at home and globally, an increase in extreme precipitation-related events, resulting in increased risks to human health and safety, property, and the economy.

Our infrastructure and our capacity to respond to these events has not kept pace with the changes in our climate. We urge you to consider the following as you conduct your inquiry:

1. Individual extreme events need to be understood in the context of a rapidly changing climate. Scientists working on climate change adaptation increasingly urge a move from short-term emergency response to extreme events. Instead, we are being encouraged to move toward long-term risk reduction and preparedness. This change in focus opens the door to considering and planning for the long-term resiliency of New Brunswick communities and families. Solutions with the longer-term lens in focus encourage us to

integrate climate change mitigation and climate change adaptation approaches. An example of this change of perspective would be to ensure the inquiry considers changes to energy supply and strengthened transmission infrastructure standards.

It is critical in our view to consider the longer-term needs of the Acadian Peninsula in terms of the Province's climate action plan, including phasing out coal from the electricity system. We have an opportunity to develop a regional energy plan for the Acadian Peninsula that brings low to non-emitting sources (from wind, solar, hydro, biomass, if sustainably produced) of electricity and Smart Grid/micro-grid infrastructure into the system that also improves resiliency to extreme events. Priority for installation of new energy resilient technologies could be First Responder buildings like fire halls, city halls, and community centres used as warming centres.

The shift to energy resiliency would also involve job-creating retrofits of homes in the region (and throughout the province) to improve energy efficiency and to install renewable energy and other modern technologies. We understand that the need to explore options to electric baseboard heat in the province, but suggest that we take a holistic approach to ensure changes do not negatively affect the electricity system overall. Replacing electric baseboard with heat pumps, for example, can lead to peak demand issues for the utility because this technology is not as effective at very low temperatures. A system-based assessment of options would ensure a sustainable energy system for the North that situates solutions within our climate change mitigation, as well as adaptation objectives.

2. With respect to emergency response, Post-tropical storm Arthur and the ice storm demonstrate that 72-hour preparedness is not necessarily the appropriate goal. Our research suggested that we should be investing in helping households, business and the province achieve 7-day preparedness at minimum.
3. Our research also showed that citizens need to be educated about risk awareness and risk preparedness, including their own responsibilities for preparedness. Improved self-sufficiency can help achieve preparedness goals. We found with our study on Post-tropical storm Arthur that citizens exhibited low risk awareness and actively engaged in "event tourism" slowing down first responders and putting their families at risk. In the case of the ice storm, with temperatures outside below zero, people could have safely put food outside in sealed containers (even putting their freezers outside could have saved food loss). People also seem to have left their homes without draining water pipes so water would not freeze or burst once the electricity came back on.

4. Government assistance should be considered in the context of encouraging safety and preparedness. With extreme events set to increase, the province simply is not in a position, nor is the federal government, to provide open-ended financial payouts for extreme events. Think of the recent past in New Brunswick: Perth Andover, St. Andrews/St. Stephen, Fredericton, Acadian Peninsula. One in 100 year events are becoming 1 in 5, or 1 in 10-year, events. We need to actively engage the insurance industry in assisting governments and policy holders in managing risk and ensuring adequate coverage is available to manage extreme events.

The Conservation Council remains active in climate change research. We would be happy to talk to you about our work, our recommendations and our interest in ensuring New Brunswickers are safe as climate change increasingly affects our quality of life.

Sincerely,

A handwritten signature in blue ink that reads "Louise Comeau". The signature is written in a cursive style with a large initial 'L'.

Dr. Louise Comeau
Director, Climate Change and Energy Solutions

Encl. Power Point presentation of the results from assessment of Fredericton's capacity to adapt to Post-tropical storm Arthur

Appendix

Post-tropical storm Arthur provides important guidance to the City of Fredericton on how to minimize risks to citizens from climate-change induced extreme events

October 20, 2016

Last June, our team at the Conservation Council conducted a series of interviews, including with the mayor and city staff, to assess community capacity to adapt to climate change. We used the community's experience with post-tropical storm Arthur as a focal point for the study.

Community capacity is the ability to get things done. A community capacity assessment measures – qualitatively and quantitatively – a community's social, natural, economic, and human capital and explores how these assets can be deployed to respond to threats like climate change or to create opportunities. The community capacity model can be used to help a community deal with any range of issues, including, but not limited to, climate change. Our research focused on the social side of community capacity and how the community's social capital is being deployed to adapt to climate change.

Through 14 interviews and a survey of 120 Fredericton residents, the Conservation Council found that while first responders from the City, NB Power and EMO believe they were prepared for post-tropical storm Arthur, everyone agreed the storm was unusual from a wind, tree fall, power outage, and risk of fire point of view. So, while flooding risks were managed well given previous actions and investments by the City, post-tropical storm Arthur brought with it many lessons that first responders continue to react to, particularly in areas relating to communications.

Adaptive management clearly is a commitment of city officials, NB Power and the Fredericton EMO. Naturally, we did find opportunities for improvement, including the potential to expand linkages to key stakeholders like local merchants, community non-profits, religious groups, and school and neighbourhood groups trusted by Fredericton residents. One concern consistently raised in interviews related to the public's low levels of risk awareness and preparedness for extreme events like post-tropical storm Arthur, including treating the event like a "spectator sport" and lacking sensitivity to the dangers of downed power lines. Our research also shows a low level of climate change literacy. There is a need for expanded efforts to educate the public about climate change risks and adaptation, including the need for extended emergency preparedness.

Another area we believe requires ongoing attention is the issue of food security. Food supplies were quickly drawn down during Arthur and large food outlets lacked generators. While generators have been the response of choice for large businesses and householders, there remains an ongoing need to develop strategies to enhance food security, including ensuring households continue to stock up on non-perishable food items capable of feeding a family of four for up to a week.

Fredericton residents we surveyed rated power outages as their second highest area of climate change concern (changes to forests and forest fires ranked first). Residents we surveyed also feel

that having a city plan to respond to extreme events like Arthur is extremely important, followed by installing renewable energy.

Finally, while more than 30% of the Fredericton residents we surveyed said they did not know their neighbours well enough to ask a favour (a key social capital metric), respondents also reported (68%) that they trusted the people in their neighbourhood. Combined with the high level of trust in local businesses and community and religious groups, we believe Fredericton has a strong sense of community that can be nurtured as a resource for responding to extreme events like post-tropical storm Arthur.

Our recommendations below are based on our findings. The Conservation Council has also prepared a Power Point presentation of our research results. We include it with this letter and would be happy to present the results to you as our contribution to the Imagine Fredericton process.

Recommendations

1. Take advantage of the social capital assets at the City's disposal to:
 - a. Ensure insurance, financial institutions, small businesses (Downtown Fredericton), telecommunications firms, and churches are represented on Fredericton's Emergency Management Organization (EMO) committee; and
 - b. Continue to expand efforts to ensure youth, seniors, the poor, and the ill are reached during extreme events.
2. Ensure the EMO committee receives regular briefings on climate change with the goal of increasing understanding of community climate change-related impacts and risks that must be managed and minimized.
3. Adapt the emergency preparedness mindset to move beyond the "event" to prepare for and reduce the impacts of recurring (chronic) and intensifying extreme events.
4. Plan for climate change adaptation and emergency preparedness on a Greater Fredericton basis:
 - As demonstrated with post-tropical storm Arthur and as the City of Fredericton showed in its provision of potable water and charging stations to citizens outside city boundaries.
5. Prepare for both the physical and mental health effects associated with climate change induced extreme events, including for:
 - a. First responders who work long hours and may witness extreme suffering; and
 - b. Citizens from displacement and emotional responses to personal and social loss, including wild places and trees; treasured possessions; and physical and economic security.
6. Change rules and practices so that:
 - a. Disaster relief policies reduce exposure to chronic flood risks; and
 - b. Bylaws/zoning enforcement reduces exposure to flood plains.

7. Significantly increase outreach and education to citizens on:
 - The causes of, and solutions to, “human-caused” climate change.
8. Increase citizen/business outreach and education regarding risk awareness and requirements for longer-term preparedness to:
 - Highlight the need for some self-reliance; generators are not enough;
 - Emphasize need for battery/wind up radios to ensure communications capacity during power outages;
 - Enhance safety around downed power lines; and
 - Increase food security.
9. Break down barriers to “not my jurisdiction” mindset. Example is food security is “provincial jurisdiction”:
 - Food security is everyone’s business
 - Community gardens will not be enough
 - Local food supply and increased education about food requirements needed for longer-term emergency preparedness are required
 - This issue likely needs its own multi-stakeholder process to explore options, build relationships
10. Nurture Fredericton’s greatest assets: Perceived trust and the strong belief by people interviewed that this community is:
 - “Caring, friendly, safe, clean, green, well-managed, has good infrastructure, with a strong history and culture.”

The City may also wish to consider working with the University of Waterloo’s Intact Centre on Climate Adaptation to pilot the Home Adaptation Assessment Program (HAAP). This program helps homeowners identify, install and maintain cost effective measures to reduce their risk of basement flooding. A pilot is currently under way in Burlington, Ontario pilot and the Conservation Council would like to see such a program in New Brunswick as part of our expanding effort to slow and adapt to climate change.