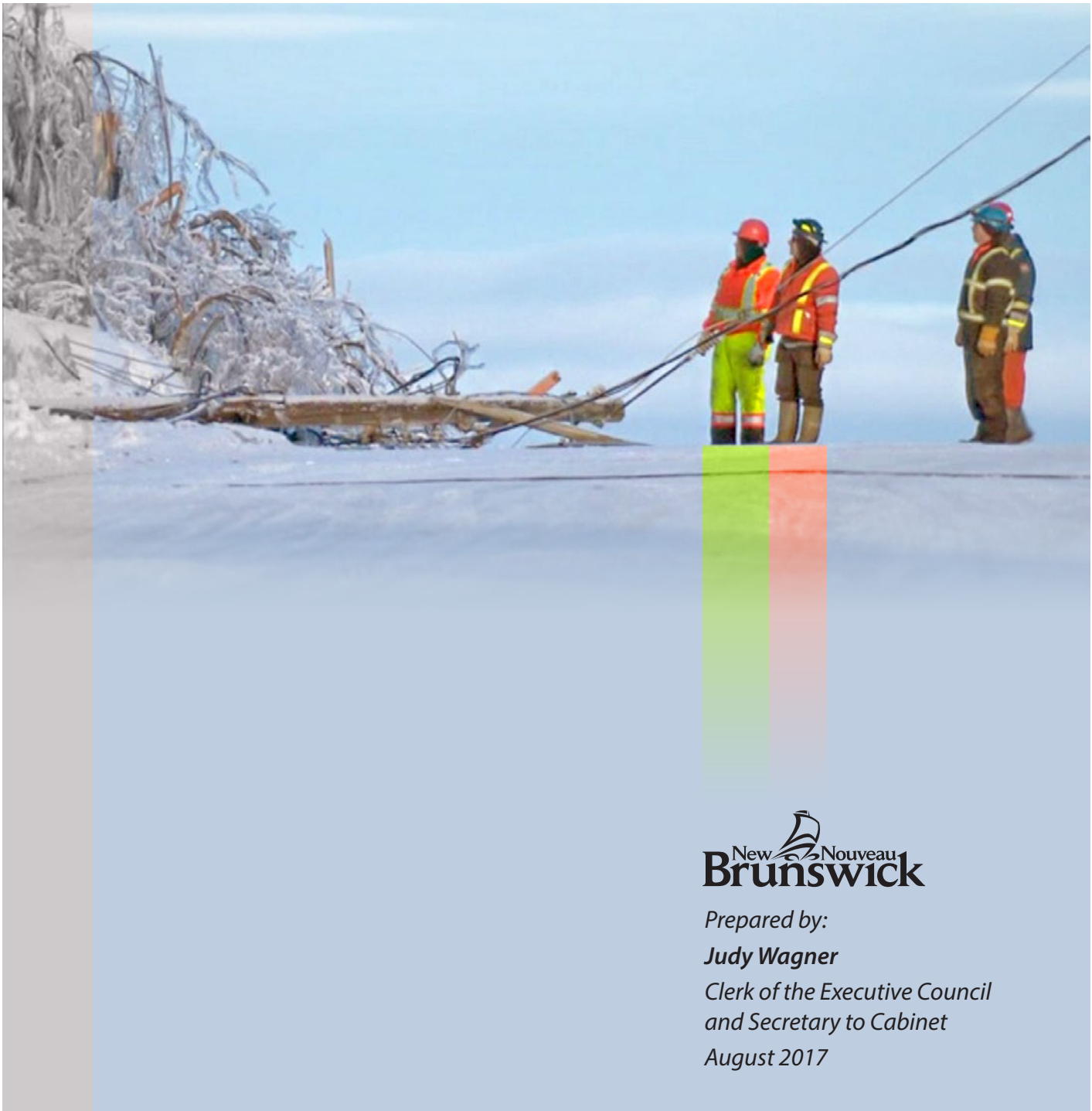


# Ice Storm Review

# 2017

New Brunswick - January 2017



New Brunswick  
Nouveau Brunswick

*Prepared by:*

**Judy Wagner**

*Clerk of the Executive Council  
and Secretary to Cabinet*

*August 2017*



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**New Brunswick – January 2017**

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*“There is only one thing more painful than learning from experience, and that is not learning from experience.”*

**Archibald MacLeish, 1892-1982**

*This report is dedicated to the people of eastern and northeastern New Brunswick who persevered through the ice storm of January 2017, and especially to the families and friends of those who lost their lives due to circumstances associated with the storm.*



## Forward

### *Review by the Clerk of the Executive Council*

In early February 2017, as the lights were beginning to come back on in northeastern New Brunswick, Premier Brian Gallant wrote a letter to me, as Clerk of the Executive Council and Secretary to Cabinet and head of the Public Service, to make the following request.

“I am pleased you have accepted my request to undertake a review of the event that occurred predominantly in eastern and northeastern New Brunswick as a result of the ice storm of January 24 and 25, 2017.

As you know, the power outages associated with this ice storm represent the highest number of outages – almost 60,000 customers, impacting over 130,000 New Brunswickers – during the winter season and, before everyone is reconnected, will have lasted for over two weeks.

Given the magnitude of the event, the serious impact on the lives of so many New Brunswickers, the complexity of the response efforts and the potential to determine what worked well as well as to apply learnings to bring future improvements, I am requesting that you conduct a holistic review of this event. Your overall mandate is to conduct a fact finding review ... and if applicable, to provide recommendations.”

It has been my privilege to take on this important task with a view to improving on the important emergency management services<sup>1</sup> required when New Brunswickers are faced with catastrophic circumstances.

### *Thanks to Contributors*

I want to sincerely thank all of those who participated in this review. Everyone obviously took the review process seriously, without complacency. Through our review, we observed that all are committed to improve their level of preparedness to future emergency situations.

It is important to note that many organizations and communities conducted their own reviews and, with permission, electronic versions of their reports have been made accessible alongside this report. A list of contributors, along with the process used to gather information for this review, can be found in [Appendix A – Review Methodology and Contributors](#).

### *Fundamental Conclusions*

Among the many things I have heard, observed and learned throughout the process of conducting this review, there are three conclusions that need to be stated at the outset to set the context for the report:

1. The response to a crisis of the magnitude of the New Brunswick ice storm of January 2017 is considerably more complex than any single citizen or responder can imagine. Having worked in government for close to 30 years, I myself was unaware of the number of organizations involved, the required level of planning, the interconnectedness of the processes, the challenges experienced and the intricacy of the decisions that must be taken.

Any person, in any place, time or circumstance, has a perspective and draws conclusions from their own vantage point. This makes it difficult to conceive of the myriad of circumstances being experienced by others. To the extent possible, and especially in retrospect, I would encourage tolerance, respect and acceptance that there may be reasons for decisions and actions taken to deal with circumstances of which we are not aware.

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<sup>1</sup> The term emergency services has been used throughout this report to refer to the “emergency management services” provided by NBEMO, municipal responders and other emergency service providers such as police, fire and ambulance.

2. There is virtually no one among those who participate in the response to a crisis – EMO staff, emergency responders, local, provincial and federal government politicians and public servants, NB Power and its staff, the Red Cross and its staff, the Canadian Forces and its staff, the media, and the large number of volunteers from the impacted communities and beyond – who does not have at heart the best interests of resolving the situation and helping those impacted.

It is clear that everyone does the best they can with the resources and information available to them. There is no lack of dedication and desire to be helpful, and no end to the generosity of New Brunswickers in the donation of their time, their efforts and in relation to monetary and material goods.

3. Finally, there is unanimous agreement that there is room for improvement in how the collective responds to emergencies. As stated by Pulitzer Prize recipient Archibald MacLeish and quoted above, “There is only one thing more painful than learning from experience, and that is not learning from experience.”

There is no question the people of New Brunswick lived through, and in many cases are still living through, a period of hardship associated with the January 2017 ice storm. They acknowledge that some things went well, some not so well. Many had insightful recommendations on what could be done to bring improvement. Similarly, upon reflection, all of the contributing organizations and responder groups are able to identify what they’d hope to repeat and what they’d hope not to repeat should they find themselves in an emergency situation.

There is evidence that lessons from previous emergency events contributed to the successes in responding this event. This review, along with the compendium of more narrowly focused after-incident reports, seeks to ensure we will do even better next time.

It is within the context of these three overarching conclusions that I present this report to Premier Brian Gallant and the people of New Brunswick.



# Introduction

## *Unprecedented Freezing Rain Storm and Its Impacts*

Between January 24 and 26, 2017, a snow and freezing rain storm moved across the Province of New Brunswick. The size of the impacted area was large; the storm crossed the entire province but delivered the heaviest blow to the east-northeast area of the province. The Environment Canada weather station in Bas-Caraquet recorded 30 mm of rain and another 8 cm of snow between January 24 and January 26, 2017.

The impact of the freezing rain was catastrophic. NB Power reports there was between 50 and 100 mm of ice build-up on trees and equipment in the Acadian Peninsula. Well beyond the normal inconveniences created by freezing rain in the winter months, the length of the storm and the resulting heavy build-up of ice led to significant infrastructure damage, most notably to trees and power infrastructure. The NB Power map below depicts the power outages as of January 27, 2017, showing the size of the area most significantly impacted.

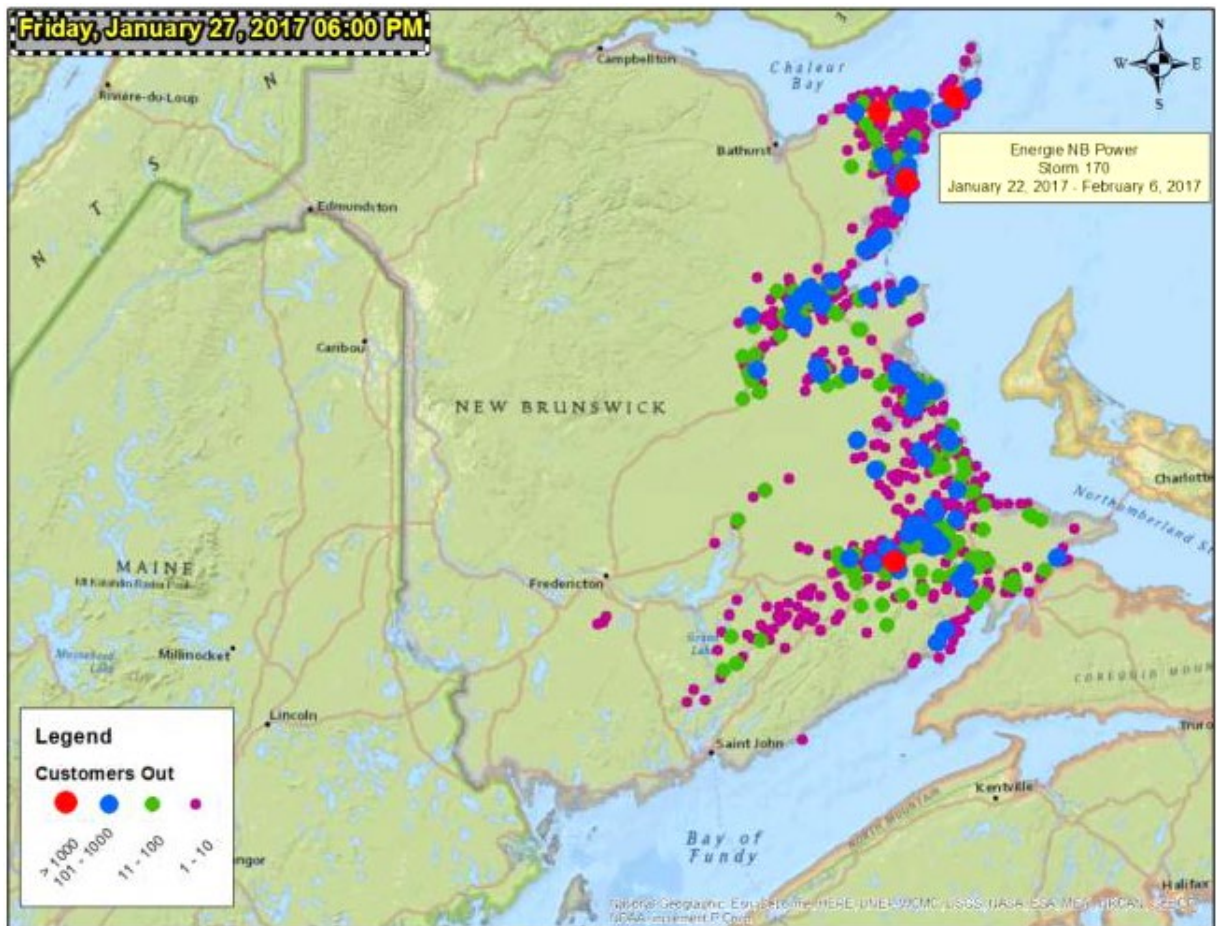


Figure 1 Map of power outages in eastern and northeastern New Brunswick as of Friday, January 27, 2017. (NB Power, 2017)

Beyond the slippery conditions and weather-related hazards encountered during the two-day storm, the resulting heavy ice conditions downed trees and power lines leading to impassable roads and power outages. At its peak, 133,000 customers (impacting almost 300,000 people) were without power. The final storm-related power outages were reconnected on February 6, 2017; 13 days after the storm began. The timeline relating to the power outages and reconnections is well outlined in NB Power's *Ice Storm 2017 – Lessons Learned* report ([Appendix F](#)).

The impacts of the event were moderated by a period of reasonably mild weather for the season. For the first few days after the storm, temperatures hovered between 0 and -3 degrees Celsius, conserving heat for a longer period than would have been the case if the weather had been more seasonal. After about a week,

temperatures started to dip as low as -15 degrees Celsius, creating more issues for those without heat. Most agreed that we were all “lucky” that the mild weather prevented the incident from being even more serious.

The number of casualties associated directly with the storm was low, but those that did occur were of significant concern. Two New Brunswickers lost their lives and about 49 others were hospitalized as a result of what is understood to be carbon monoxide poisoning. For this reason, the issue of carbon monoxide poisoning will be discussed in more detail later in the report.

A word frequently used to describe the weather event was “unprecedented.” To give some context to the unprecedented nature of the storm, the Canadian Standards Association requires NB Power to build infrastructure to withstand ice build-up of 12.5 mm of ice in our area. The most severe designs standards require power infrastructure to withstand 19 mm of ice. The ice build-up from this storm exceeded those maximums by four times! (NB Power, 2017, pp. 9-10)

## Climate Change and Storm Events

In less than seven years, the province has experienced several emergency weather events resulting in damage and the initiation of emergency services and, in many cases, a Disaster Financial Assistance (DFA) program.

- December 2010: [Charlotte and York Counties](#) experienced major flooding due to heavy rain, resulting in \$13.8 million in damages.
- December 2010: Two storm surges impacted the east and northeast coasts of the province.

The first, on December 6 and 7, centred around [Charlo and Eel River Bar First Nation](#) causing \$1.7 million in damage due to high winds, high tides and waves.

The second, two weeks later, caused over \$1.3 million in damage along the east coast from [Miramichi down to Port Elgin](#). Heavy surf affected the eastern seaboard of the province resulting in damaged homes, washed-out roads and power outages.



Figure 2 An Irving gas station was filled with flood waters in December 2010. Source: Jennifer Pritchett, Telegraph-Journal, December 15, 2011

- December 2013: A Christmas-time ice storm (December 21 to 23) pelted the southern area of the province with 24 to 36 hours of snow and freezing rain. The storm led to power outages to more than 80,000 NB Power customers in Charlotte, St. John, Kings, Queens, Sunbury and York Counties.
- July 2014: [Hurricane Arthur](#) passed over New Brunswick as a post tropical storm with heavy rain and winds that gusted as high as 100 km/hour. The storm caused road closures, infrastructure damage, washouts, localized flooding and fallen trees across the province. Widespread power outages, particularly in the Fredericton and Woodstock areas where winds were the worst, impacted about 140,000 NB Power customers. Total damages were estimated at \$12.5 million.
- December 2014: A [Nor'easter](#) bringing heavy snow and rain across several regions caused \$10.3 million in damage. Fifty-six roads across the province were impacted by flooding, washout or water over the road. These impacts were primarily concentrated in the Moncton region.



Figure 3 Trees and branches down in Fredericton, NB, July 6, 2014 (Twitter)

The messages from meteorologists and scientists who study climate change are clear; climate change has been and will continue to impact us in the form of extreme weather, including more extreme precipitation events, more rain in place of snow, more and longer heat waves and storm surges.

The following excerpt from federal government's publication, *Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation* (Warren & Lemmen, 2014) identify our country's conclusions on climate change and the need to adapt and mitigate anticipated impacts.

Over the past 5 years, our understanding of climate change impacts and adaptation in Canada has increased both as a result of new research and through practical experience. Key conclusions arising from this update to the 2008 assessment report 'From Impacts to Adaptation: Canada in a Changing Climate' include:

1. Canada's climate is changing, with observed changes in air temperature, precipitation, snow and ice cover and other indicators. Further changes in climate are inevitable.
2. Changes in climate are increasingly affecting Canada's natural environment, economic sectors and the health of Canadians.
3. Extreme weather events are a key concern for Canada and there is growing confidence that some types of extreme events will increase in frequency and/or intensity as the climate continues to warm.
4. Adaptation is accepted as a necessary response to climate change, complementing global measures to reduce greenhouse gas emissions. Adaptation enhances the social and economic resilience of Canadians to climate change impacts.
5. Adaptation is occurring with increasing frequency and enhanced engagement. Continued action will help to build capacity, address information needs and overcome challenges.
6. Adaptation can sometimes turn risks into opportunities and opportunities into benefits.
7. Collaboration and adaptive management are approaches that governments and industry are increasingly pursuing to advance adaptation.

Figure 4 Warren, F.J. and Lemmen, D.S., editors (2014): *Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation*; Government of Canada, Ottawa, p286.

The Conservation Council of New Brunswick, in its submission to this review (see [Appendix G](#)), echoes the federal government's conclusions and encourages planning for "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." (Conservation Council of New Brunswick, 2017)

The need to be proactive with respect to mitigation and adaptation efforts as it relates to climate change and associated extreme weather events has already been acknowledged by the Province in its [Climate Change Action Plan](#). The excerpt below identifies the recommendations most closely tied to emergency planning.

## Reduce climate-related hazards

Climate change is contributing to extreme and catastrophic weather events throughout much of Canada, including the likelihood of flooding, wildfire, drought, heat and wind.

Hazards and disaster risks have always been a concern; however climate change is driving the need to adapt to more intense and frequent events. Traditionally, responses to disasters have been reactive, but recent experiences have shown the benefit of investing in proactive and preventative measures.

Disaster risk reduction and adaptation efforts can complement one another to buffer society from climate-related impacts and better position communities to reduce and manage disaster impacts more broadly. Additionally, land-use planning is a powerful tool in helping to reduce the impacts of natural disasters, and can inform decisions about if and where to rebuild during disaster recovery.

*The provincial government will:*

- 93. Ensure provincial disaster financial assistance programs and insurance products are responsive to climate change.*
- 94. Consider future climate conditions when making decisions about replacing or repairing infrastructure following disasters (“build back better” or relocate).*
- 95. Continue to promote and support opportunities to share information amongst adaptation practitioners, the general public and emergency management officials with an aim to increase our collective resilience.*
- 96. Renew and expand its flood hazard data and mapping, and ensure that these predictive tools incorporate the anticipated effects of climate change in parallel with the development of a provincial statement of interest that addresses flood risk and climate.*
- 97. Examine the relationship between watershed condition, land use and peak flow events associated with extreme precipitation.*
- 98. Encourage the insurance industry to make flood insurance available to high-risk homeowners and promote awareness of available products.*

Figure 5 Excerpt from *Transitioning to a Low-Carbon Economy: New Brunswick’s Climate Change Action Plan*, Government of New Brunswick, 2017, p. 18-19

These efforts, along with education of the public with respect to the increasing risks and need for better preparedness, will demand increased vigilance as the risks increase.

**Recommendation 1** The Government of New Brunswick, in cooperation with appropriate partners, must continue its efforts as identified in [Transitioning to a Low-Carbon Economy: New Brunswick’s Climate Change Action Plan \(2017\)](#) as it relates to mitigation of and adaptation to risks associated with extreme weather events.

## **Learning Lessons to Aid in Adaptation**

Subsequent to major emergency events, it is common practise for responder organizations to conduct post-incident or after-action reviews (AAR). The purpose of these evaluations is not to point fingers or to lay blame but to identify systemic weaknesses that require improvement and successful approaches that bear repetition. As stated earlier, there is widespread acknowledgment that during emergency events, there will be things that go well and things that do not. The goal is to continue to draw on past experiences to improve responses to future events.

Both NB Power and the [New Brunswick Emergency Measures Organization \(NBEMO\)](#) have conducted after-action reports on previous weather-related emergency events. In their respective reports on the 2017 ice storm, references are made to improvements that have been made to emergency planning, protocols and organization. For example, the extreme weather events of 2013-14 highlighted New Brunswick’s vulnerability as one of the most heavily forested provinces in Canada, with outages in those events caused by tree contact with lines. Since those events, NB Power has increased budget and effort for tree trimming and cutting,

including stepping up customer communications to reinforce the need for vegetation management and notifications. This effort is beginning to demonstrate progress with fewer tree-related outages since 2014. Similarly, following storm events of 2013 and 2014, NB Power enhanced public information on generator safety on its website and through preparedness campaigns. NB Power has partnered with NBEMO to host a series of safety focused outreach efforts during fall Storm Preparedness Week each fall, including a media event, customer information sessions, refreshed web content, interactive social media campaign, and internal NB Power/NBEMO capacity building workshop to ensure alignment of efforts.

During the public meetings, questions were raised about the perceived lack of response to previous after-action reports – specifically the report titled *After Action Review of the Province of New Brunswick Preparedness Response and Recovery to the December 2013 Ice Storm* prepared for NBEMO.

In fact, the after-action review for the 2013 ice storm resulted in a plan with 22 action items of which 21 have been implemented. The one that was not – that volunteer firefighters be paid for their service during emergencies – was outside the direct purview of NBEMO to implement.

A good example of the types of improvements that are generated as a result of an after-action review can be found in relation to the December 2010 flooding event. There were 54 observations put forward for the consideration of NBEMO resulting in the following changes:

- a. the creation and staffing of six Regional Emergency Management Coordinator positions;
- b. preparation of Regional Emergency Plans;
- c. expansion of training offerings for municipal and LSD officials;
- d. establishment of a dedicated EMO Communications Officer;
- e. establishment of an EMO social media presence (Facebook, Twitter);
- f. expanded public preparedness campaigns focused on 72-hour preparedness;
- g. improvements to provincial emergency radio capability;
- h. additional persons trained to help/relieve EMO staff during sustained operations; and,
- i. improved procedures for recovery including the administration of the provincial DFA program.

It is clear that NBEMO takes seriously its responsibility to learn from and improve its preparedness and response processes from event to event. The public is not aware of these efforts as the after-action review and follow-up processes are conducted, for the most part, internally within the Department of Justice and Public Safety and NBEMO.

**Recommendation 2** NBEMO should make its after-action reports public on a proactive basis, and report annually on the actions taken in response to the after-action report recommendations.

Appended or linked to this report are a number of post-incident reports on the 2017 ice storm, completed by a variety of government and responder organizations. Each should be lauded for their continuous improvement efforts in preparing these reports and exhibiting their intention to make adjustments accordingly. And, it is apparent that the key responder agencies for recent events – NB Power and NBEMO – have made progress in their efforts to collaborate and communicate before, during and after events. However, it is clear that there is a siloed approach to after-action reports and follow-ups. While the Provincial Emergency Operations Centre (PEOC) and Regional Emergency Operations Centre (REOC) model offers a robust multi-partner response during events, challenges remain as it relates to offering a whole-of-government approach to emergency planning and after-action follow-up.

This is not to say that cross-departmental or cross-agency collaboration does not exist, simply that it does not happen in a deliberate way nor are there sufficient accountabilities in place to ensure that gaps are addressed. A read of the after-action report for Post-Tropical Storm Arthur shows a number of areas where cross-organizational collaboration will be required to affect change. The remaining action relating to volunteer firefighters has been stalled because it is complex and multi-organizational. And, many of the issues relating to the storm being discussed in this report appear to stem from organizational gaps between governments, departments and responder organizations. There is a Deputy Minister (DM) Security and Emergency Management Committee that has the following mandate:

To provide oversight of collaboration, planning, issue management and reporting relating to activities of provincial and municipal government, regional health authorities (RHAs), professional organizations, community partners, public safety, critical infrastructure owners/operators, and other authorities in preparing for a deliberate, accidental and natural events, and to coordinate on an executive level during security and emergency events. Efforts will focus on prevention, preparedness, response and recovery.

This committee has not been sufficiently active to the extent required to adequately address gaps nor accountability issues.

**Recommendation 3** The DM Security and Emergency Management Committee must reconvene, meet on a quarterly basis at minimum, and take a more active role in emergency services not only during an event, but also in relation to planning and post-event follow-up.

# Roles and Responsibilities – Before, During and After Emergencies

One of the fundamental conclusions raised in the forward to this document notes that the delivery of emergency services is incredibly complex. Add to this the fast pace at which activity occurs during an emergency and the critical nature of the decisions being taken, and it is obvious that pre-planning and the clarity of roles and responsibilities during the crisis are key factors in the success of the response effort. It is too late when an emergency hits to begin making plans and determining who should do what. This applies equally well to individuals, private sector businesses, public sector organizations, government at all levels and contributors from the non-profit sector.

*It is important and even essential to define precisely the power and responsibilities of each actor during an emergency situation. In the case that interests us, this concern has been raised many times on the part of our members from the municipalities and local service districts. The responsibility of each level must be defined precisely; municipal-LSD/ Regional Service Commission/ Department of Justice and Public Safety to avoid confusion.*

**CSR Péninsule acadienne, 2017 [translated from French]**

Throughout this report, the themes of planning, communication, coordination and the clarity of roles and responsibilities will repeat themselves, as they are at the root of successful emergency services.

## **New Brunswick Emergency Measures**

Emergency services in New Brunswick are, for the most part, delivered under the authority of the Minister of Justice and Public Safety as set out in the [Emergency Measures Act](#). This Act provides the basic framework that sets out the associated authorities and responsibilities.

The [New Brunswick Emergency Measures Organization \(NBEMO\)](#), managed by the Director of Emergency Measures, holds operational responsibility for planning and implementing emergency services. Thus, all emergency services are overseen and linked to NBEMO.

During emergencies, NBEMO convenes what is known as a [Provincial Emergency Operations Centre \(PEOC\)](#) in Fredericton and [Regional Emergency Operations Centres \(REOC\)](#) in the affected regions, as may be required. Emergency operations are run out of these centres, in coordination with municipal emergency operation centres.

*“Overall the provincial response was extremely well done. New Brunswick has a mature emergency management system that worked well during this event.”*

**James Bruce Security and Emergency Management Services, 2017**

As the body holding primary responsibility for emergency services, many of the perspectives and recommendations for improvement identified in this report implicate NBEMO in one way or another. This takes nothing away from a response that was, overall, professionally managed.

As stated in the section titled [Learning Lessons to Aid in Adaptation](#), NBEMO regularly conducts after-action reviews with respect to major incidents. An after-action review report was prepared and submitted to the Department of Justice and Public Safety, titled [Province of New Brunswick Preparedness, Response and Recovery – Winter 2017 Ice Storm](#) (James Bruce Security and Emergency Management Services, 2017) can be found as [Appendix E](#).

The observations of this technical review undertaken from the perspective of experts in the field of emergency management are acknowledged and accepted without modification. The recommendations of that report will be formally incorporated into this review to form a holistic set of recommendations to be monitored using a whole-of-government approach.

**Recommendation 4** The recommendations included in the [Province of New Brunswick Preparedness, Response and Recovery – Winter 2017 Ice Storm](#) report prepared on behalf of NBEMO will be read into this review, monitored and reported on to the DM Security and Emergency Management Committee.

### ***Local Governance and Emergency Planning***

New Brunswick's system of local government is created and given authority under the [Municipalities Act](#). New Brunswick, a province with a population of 747,000 people (Canada, 2016) – about the size of the City of Quebec – has 341 local government bodies: 95 [municipalities](#), eight [rural communities](#), one [regional municipality](#) and 237 [local service districts](#) (LSDs). While one can argue the pros and cons of change at the macro- and micro-levels, there would be few who would not agree that there are too many units and the governance system is too complicated.

For many years, New Brunswickers have been engaged in debate over the characteristics of its local government system, but only marginal changes have occurred since the frequently referenced 2008 report by Jean-Guy Finn titled, [Report of the Commissioner on the Future of Local Governance](#). The elements of this debate are well-outlined in this report and will not be repeated here.

There is little question that the unique features of New Brunswick's system of local government contribute to the complexities associated with emergency preparedness and service delivery.

To add to the complexity that exists as a result of the number and types of local government bodies, there are also interconnected emergency-related authorities and responsibilities at the provincial, regional, and local levels under various pieces of legislation. Consultations with the regional and local bodies have identified several roles that are either unclear or approached in an inconsistent manner.



## Regional Emergency Services and the Role of the Regional Service Commissions

In his 2008 report on local governance, Jean-Guy Finn described some of the challenges associated with accountability, transparency and service delivery associated with the multitude of local government administrations. Nine years later, the following excerpt from the Finn report (emphasis on emergency measures is added) aptly describes the current state:

Accountability and transparency have also become issues. With so many entities and agreements having been established to facilitate service delivery, each using different systems of representation, decision-making processes and cost-sharing mechanisms, it is difficult for local governments to be truly accountable to their citizens. It also leaves citizens wondering who is truly responsible for what services.

Communities, whether they have a local government or an advisory committee, have no formalized means to engage one another in meaningful dialogue to address issues that cross their administrative boundaries. Environmental matters such as the protection and management of water sources, strategies to address climate change, efforts to foster immigration and strategies to deal with the closure of a major employer are examples of situations requiring integrated and cooperative approaches. **Emergency measures and other public safety issues are other matters that often require responses that go well beyond the boundaries of one administrative unit.**

In terms of service provision, it is evident that more can and should be done on a regional basis to facilitate service sharing. Over the past year, the provincial government, through the Department of Local Government, has been called upon to serve as the facilitator for the establishment of various cost-sharing agreements for recreation facilities. This provincial intervention has occurred precisely because there is no recognized regional forum through which such agreements can be developed. Recreation is very much a local service and as such, local entities should be the organizations that make these agreements happen.

For many local governments in New Brunswick, both large and small, affordability and quality of services is a constant challenge. With no regional mechanism to facilitate cooperation, they miss opportunities for partnerships in recreation and in other service areas. Fire protection, policing services, recreation facilities, and water and wastewater systems maintenance are examples of where service and cost-sharing opportunities must be further explored. The **Union of Municipalities of New Brunswick**, in its submission to the commissioner, specifically emphasized the need to focus on the services of recreation and planning on a more formalized regional basis to address issues of cost-sharing and coordination.

... The lack of a consistent regional framework, combined with the large number of local entities, also makes the rational allocation of provincial funding more difficult to achieve. There is no opportunity for entities within a region to examine collectively their most pressing core infrastructure needs (e.g., road development and upgrading, transit linkages or water and wastewater system expansion) and to set priorities. Prioritization at the regional level would be helpful in the provincial allocation of funding for major infrastructure; otherwise, provincial decisions in these matters are more subject to parochialism with the end result being less-than-strategic funding allocation. A collective regional approach may also result in building a better case for much needed infrastructure.

Finn, 2008, p. 62

There have been, since 2013, 12 [Regional Service Commissions \(RSC\)](#) in place under the [Regional Service Delivery Act](#). In relation to emergency planning and service delivery, the [Regional Service Delivery Act](#) states, in section 5, that "A Commission shall provide its members with a forum to initiate cooperative action among its members, which shall include discussions with respect to the following: ... (b) the coordination and pooling of resources in planning for emergency situations, including cooperative action with respect to the development of mutual assistance agreements...".

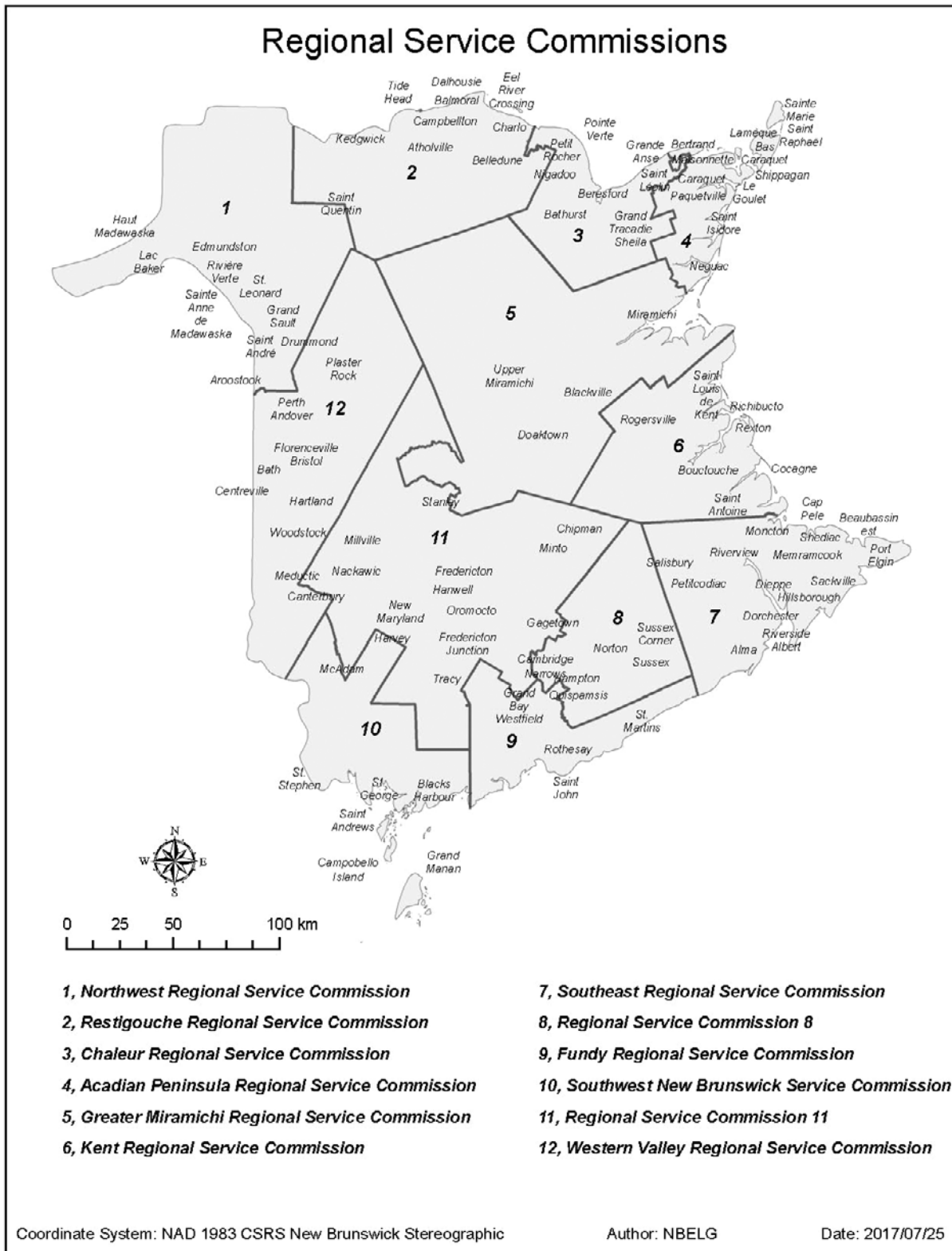


Figure 6 Map of Regional Service Commissions, Province of New Brunswick, July 2017

With the establishment of the commissions, steps have been taken towards addressing the gaps in regional planning identified by Finn. With a view to further improvement, a review of the Regional Service Commissions has been undertaken over the past year, raising emergency planning issues, among others. In the report titled, *Improving the Regional Service Commissions in New Brunswick Final Report*, it states, "One way or another, there exists a significant divergence between regions in how they approach emergency planning co-ordination, and it would seem that there should be some uniformity and consistency in approach. Strengthening the legislation to require the involvement of the RSC in more specific ways could clarify

this position. Alternatively, removing the obligation would achieve a level of clarity in the other direction.” (McKendy, 2017, p. 14)

In the after-action review conducted for NBEMO, recommendation #2 states that “where required, the development/enhancement of regional emergency management capability should be a government priority.” This is critical, particularly in light of the large number of government bodies and the number of people living outside of incorporated areas.

**Recommendation 5** NBEMO and the Department of Environment and Local Government should collaborate on a proposal to clearly articulate the role of Regional Services Commissions in the coordination of emergency planning and service delivery.

## Role of Municipalities, Regional Municipalities and Rural Communities

It is the *Emergency Measures Act* (not the *Municipalities Act*) that sets out the emergency-related roles and responsibilities of municipalities, regional municipalities and rural communities. Under section 9 of the Act, each municipality [where municipality includes cities, towns, villages, rural communities, and regional municipalities] is required to:

- establish and maintain a municipal emergency measures organization,
- appoint a director of the municipal emergency measures organization and prescribe his or her duties, which shall include the preparation and coordination of emergency measures plans for the municipality,
- appoint a committee consisting of members of its council to advise it on the development of emergency measures plans, and,
- prepare and approve emergency measures plans.

These local bodies are also permitted to pay the expenses of emergency planning committee members, to enter into agreements with and make payments to persons and organizations for the provision of services in the development and implementation of emergency measures plans, and to appropriate and expend money for those tasks they are required to perform.

Over the course of the review, it was clear that the local government bodies charged with these responsibilities struggle with this mandate for a variety of reasons:

- Persons that form the government (political and staff) do not have experience in emergency planning or service delivery;
- Persons at the municipal level are frequently untrained in emergency planning, preparation and implementation;
- Emergency planning is considered to be important, but never seems to become a priority (until an event occurs);
- Emergency plans are out-of-date or insufficient.

As a result, most municipalities in the impacted areas were not fully prepared for the impacts of these storms. In the absence of clear plans, emergency teams were required to plan in-the-moment, reducing the speed and sharpness of the response. The impacts of the lack of pre-planning will be discussed later in this review as it relates to the citizens’ experience and specific aspects of the emergency response.

The City of Miramichi was a notable example of a municipality successfully carrying out its required emergency roles and responsibilities, as a result of thorough and up-to-date planning, trained staff and effective implementation of the plan. The mayor took on responsibility for communications and counsellors took an active role in comforting and reassuring the people. The [City of Miramichi’s after-action review](#), which is appended to this report, describes its experience during the event. Miramichi could serve as a good model for other municipalities in this regard.

It should be noted that the rural community of Beaubassin, having learned lessons from the storm that hit the region in 2014, was very well prepared to deal with an emergency situation. Four of its community centres are equipped with propane generators, and the population is informed as to the location of the shelters.

Another good example was the coordination of the emergency response in the regional municipality of Tracadie. In July 2014, the regional municipality of Grand Tracadie–Sheila (since renamed as Tracadie) was formed through municipal restructuring of the former Town of Tracadie–Sheila, eighteen local service districts (LSDs) and portions of two other LSDs. This large amalgamation contributed to the ability of this region to offer better communication and coordination of services for those within its boundaries.

**Recommendation 6** Municipalities of all sizes must make their responsibilities associated with emergency planning a higher priority to ensure that emergency plans are current and that staff responsible for the implementation of plans are emergency-ready.

The Francophone Municipalities Association has recommended that amendments be made to the [Emergency Measures Act](#) to clarify the role of municipal bodies as it relates to implementation of emergency measures plans during an emergency, particularly in relation to the governance of and responsibilities vis-à-vis NBEMO.

*“However, even though municipal powers include emergency measures planning, responsibility for managing emergency responses is not expressly one of them and should be clarified in legislation. The legislative ambiguity implies that municipalities must prepare emergency measures plans, but the law is silent on implementation of these plans in an emergency situation.”*

**L’Association francophone des municipalités du Nouveau-Brunswick, 2017**  
[translated from French]

**Recommendation 7** NBEMO should, in discussion with the municipal associations, take steps to clarify, either through legislative change or guiding material, the relative roles and responsibilities of NBEMO and the municipalities as it relates to the “implementation” of emergency plans during an emergency.

## **Role of the Minister in Local Service Districts**

Those areas of the province that are outside of the boundaries of its [incorporated](#) areas are considered unincorporated areas. The unincorporated areas are organized into [local service districts](#) (LSDs). Per the [Municipalities Act](#), governance of the local service districts falls to the Minister of Environment and Local Government who is advised by Local Service District Advisory Committee.

It is the choice of many New Brunswickers to live outside of municipal boundaries. Although some progress has been made in the last decade to encourage the establishment of formal local governance either through municipalisation or the establishment of rural communities, the progress has been slow. In fact, as recently as May 15, 2017, a plebiscite was held in the Lamèque and Miscou Island areas of the Acadian Peninsula to determine interest in joining together into a larger rural community. Two-thirds of the voters (1,600 of 2,325) voted against the amalgamation of 10 local service districts with the Town of Lamèque and the Village of Sainte-Marie-Saint-Raphaël. In one of the regions hit hardest by the ice storm (Region 4-Acadian Peninsula RSC), there are 31 LSDs in addition to its 14 municipalities. Without question, the lack of formal government at the local level contributed to service gaps in responding to the storm.

In the *Emergency Measures Act*, there is no explicit authority or requirement for emergency planning outside of an incorporated area. NBEMO is responsible for the emergency planning and services in the province as a whole, and municipalities are responsible for planning within their boundaries. Regions, through the RSCs “may” engage in discussions regarding emergency planning, but are not required to do so. This leaves responsibility for local emergency planning in LSDs in a vacuum. This is well described in the following submission from the Association francophone des municipalités du Nouveau-Brunswick (AFMNB):

This legislative, regulatory, and administrative ambiguity has tangible and specific consequences in emergencies. In the response to the ice storm this past January, the legislative and regulatory difference between the municipalities and LSDs was striking.

The municipalities were not necessarily prepared for the scope of the crisis, and the response was definitely not perfect. However, since the municipalities are closer to their residents and have, among other things, emergency measures plans, staff, and the authority to incur expenses, they were nonetheless able to implement measures to assist residents affected by the power outages. In contrast, the LSDs had none of these resources. In addition, responsibility for the emergency response in their territory was unclear. In most cases, even though the municipalities had neither the responsibility nor the obligation to do so, they extended their services to the residents of neighbouring LSDs in order to support the population during the crisis.

In retrospect, it is apparent that the EMO and DELG were unfortunately not prepared for coordinating emergency operations in the LSDs and that they did not have the resources needed to do so. Furthermore, in emergency response situations, proximity and knowledge of the community and the terrain are critical aspects that are difficult for the EMO and DELG to replicate across the province for every LSD, even with regional coordinators and managers on site.

Association francophone des municipalités du Nouveau-Brunswick, 2017 [translated from French]

This gap was very clear in the discussions held as part of this review. Centrally, none of those who are in a position to contribute to local emergency planning believe that they clearly hold lead responsibility nor the capacity to deliver local emergency planning in the unincorporated areas.

Subsection 161(1) of the *Local Governance Act* (passed in May 2017 but not yet proclaimed at the time of this report) provides that the Minister of Environment and Local Government is required to provide “emergency measures services” in each local service district, subject to the *Emergency Measures Act* (subsection 161(8)). This will be the first time that emergency measures services are mentioned in legislation in relation to LSDs. This provides an opportune time to revisit and clarify the roles of the partners in delivering on the Minister’s obligation to provide this service in LSDs.

**Recommendation 8** NBEMO and the Department of Environment and Local Government should collaborate on a proposal to address the respective roles and responsibilities of the Department of Environment and Local Government, NBEMO, the regional service commissions and the LSD advisory committees as it relates to providing emergency services.

At the same time, citizens who choose not to participate in local government by virtue of living outside of municipal boundaries or by actively choosing not to participate in the implementation of a form of local government should understand the implications of their choice. Formal local government provides a framework for the delivery of services that are in place to serve the interests of its citizens. Local government provides organization. A lack of organization is, by definition, disorganization. In the instance of an emergency, better organization provides advantages such as:

- A mandatory emergency plan;
- Local government elected officials and staff to participate in the relief efforts;
- Accessible and, in best cases, pre-identified and equipped gathering places that can be used for shelters, warming, power, dissemination of information, food etc.;
- Networks of information gathering and dissemination;
- Lists – of volunteers, vulnerable persons and resources

**Recommendation 9** The Department of Environment and Local Government should continue its efforts to encourage local government organization across the province, and should include, in these efforts, information regarding the benefits of such organization as it relates to emergency planning and service delivery.

### **Accountability for Emergency Planning and Service Delivery**

The *Emergency Measures Act* makes it clear that the ultimate responsibility for emergency services belongs to the Minister of Justice and Public Safety, stating that “the Minister shall coordinate emergency measures plans within the Province and may delegate powers vested in him or her by or under this Act.” Both NBEMO and municipalities have requirements and authorities set out under the *Emergency Measures Act*. NBEMO is accountable directly to the Minister of Justice and Public Safety, while municipalities are accountable to their constituents and, in certain respects, to the minister through NBEMO.

The Government of New Brunswick follows what is referred to as a graduated response model for emergency response. As stated in the excerpt from the *NBEMO Regional Emergency Response Plan* (see Figure 7), a graduated response “allows for the use of only those resources, human and material, necessary to meet the requirements of that incident, and speaks to attempting to deal with an emergency at the lowest level practicable.” With this approach, each level, from the individual up to the federal government, has responsibility to provide assistance only when the previous level’s capacity to care for itself has been exceeded, up until its own capabilities are exhausted and help from the next level is sought.

#### **Graduated Response**

A graduated response allows for the control and coordination of resources assigned to deal with an emergency. It allows for the use of only those resources, human and material, necessary to meet the requirements of that incident, and speaks to attempting to deal with an emergency at the lowest level practicable. In keeping with this concept, the response at the regional level will be tailored to meet the circumstances of a given emergency.

#### **Levels of Responsibility**

The regional level of emergency management falls into a graduating system of increased responsibility, areas of influence and interest that are based on the different levels of government authority in the Province of New Brunswick as follows:

- a. **Individual** – Individuals are responsible for themselves and their immediate family and includes household and neighbourhood preparations such as the **72 Hour Emergency Preparedness Kits**.
- b. **Municipal/Local Authority Response** – Municipal-level resources managed by local mayors and councils, and local service managers.
- c. **Regional** – Regional-level resources coordinated by the NBEMO Regional Emergency Management Coordinators (REMC) and Regional Emergency Action Committees (REAC). This includes:
  1. Developing and implementing regional plans and procedures for an integrated regional response to emergencies.
  2. Assuming direction and control as authorized by the director of NBEMO:
    - a. Only when municipal or local authority does not exist;
    - b. Only when municipal or local authority requests and the Minister of Justice and Public Safety authorizes direct action;
    - c. Only when the event is of such magnitude that it is clearly beyond the capability of local authorities; and
    - d. Only when the action required in dealing with the emergency rests with the province or a department, e.g. large scale health or environmental emergency.
- d. **Provincial** – Government of New Brunswick resources managed by the Department of Justice and Public Safety and NBEMO.
- e. **National** – Government of Canada resources managed by Public Safety Canada.

Figure 7 Excerpt from NBEMO Regional Emergency Response Plan, Department of Justice and Public Safety, 2011

*“The centrality of local authorities can be translated into the definition of an architecture of public authorities by adapting the principle of subsidiarity. That principle consists in conferring powers at a higher level only to the extent that the lower level is not in a position to assume them: the role of the upper echelon is thus subsidiary to that of the lower level. Likewise, in defining a government architecture suited to disaster management, powers should be assigned at a higher level only to the extent that the local level, which is at the centre of interventions, does not have the capacity to handle them. This principle, applied in the field of civil security, means that the municipality is the primary responsible and must remain so in times of disaster. To that end, mechanisms will have to be put in place so that it remains operational and functional, even if it lacks all the necessary resources.”*

**Nicolet, Pour affronter l'imprévisible: les enseignements du verglas de 98 (facing the unpredictable: what can be learned from the '98 ice storm), 1999, p. 162 [translated from French]**

It is for this reason that municipalities and regional service commissions share in the responsibility to plan and delivery emergency services. And, it is for this reason that the lines of responsibility and accountability are so important.

Despite the legislative requirement for municipalities to maintain emergency measures plans, 23 municipalities have not submitted plans for review by NBEMO. Furthermore, many municipal leaders engaged during the consultation process admitted that their plans, while in place, were not up-to-date.

Given the findings of this review that: the capability and capacity of municipalities are lacking; and, the roles/ responsibilities of regional service commissions are vague as it relates to emergency preparedness, NBEMO seems best placed to facilitate and ensure that appropriate planning and preparedness efforts are occurring at the local level. However, while NBEMO has the authority to hold municipalities accountable for planning, their exercise of this authority remains discretionary under section 7 of the *Emergency Measures Act*, as follows (emphasis added):

“Subject to the approval of the Minister, the Emergency Measures Organization **may** do the following:  
a. review and approve, or require modification to provincial and municipal emergency measures plans; ...”

Given that ultimate responsibility for emergency response lies with the Minister of Justice and Public Safety, the minister and the agency responsible for emergency planning and service delivery must have not only ultimate responsibility for how well emergencies are handled, but must also have the authorities and tools to both enable and require compliance.

**Recommendation 10** The Department of Justice and Public Safety should prepare a proposal to government outlining the implications of making the review, modification and approval of provincial, regional and municipal emergency measures plans a mandatory responsibility of NBEMO. To ensure that plans are kept updated, this approval process should occur on a regular basis per best practises.

**Recommendation 11** Consideration should be given to using the Deputy Minister Security and Emergency Management Committee as a body to reinforce NBEMO's efforts to hold municipalities, departments of government and external stakeholders to account with respect to their legislated, delegated and/or contracted requirements in relation to emergency measures planning and implementation.

## Emergency Measures Training

If local governments are expected to hold responsibility for emergency management under the graduated response model, it is essential that a critical mass of people at the local level be trained in emergency preparedness and service delivery. To that end, NBEMO carries out an active training program across the province designed to enhance the capabilities of those at the local level.

*“To avoid travel and other related costs, municipalities and regional service commissions in northern New Brunswick have in recent months and years approached the EMO about having some of the training sessions given in their regions. To our knowledge, the EMO has never agreed to travel to provide training. One of the reasons given for not offering training in other locations is that the Fredericton training centre gives participants the opportunity to see an ideal emergency operations centre (EOC) so they can reproduce it locally. While this may justify the delivery of training in the provincial capital, it cannot be the argument put forward to justify the systematic centralization of all of the training sessions. What is more, in most emergencies, municipal teams will not be working in an ideal EOC, like the one at EMO headquarters.”*

**Association francophone des municipalités du Nouveau-Brunswick, 2017, p. 15**  
[translated from French]

In discussions with local government officials during the consultations for this review, it was clear that many felt that they did not have enough people with enough training to adequately carry out their responsibilities associated with planning or implementing emergency plans. Some felt that the training, which is often carried out in NBEMO’s Fredericton facility, is difficult for them to access because of the time required to be away from home and the associated costs of travel.

The NBEMO after-action review report describes well the view that NBEMO should review its training regime to determine how more training sessions can be offered in the regions where they will be more accessible. Training at the local/regional level would also help ensure that local responders are familiar with how best to employ the equipment and resources at its disposal. It should be added that NBEMO must also ensure that training is appropriately available in both official languages

It should be noted that the ice storm happened only eight months after a municipal election. As such, a number of new mayors/councillors had not yet received training with respect to emergency measures.

**Recommendation 12** NBEMO should revisit its training regime with a view to increasing its accessibility to local and regional officials. NBEMO and the Department of Environment and Local Government should take steps to ensure that orientation for new municipal mayors and councillors includes an emergency measures component.

## Emergency Measures Staff Resources

If NBEMO is expected to be accountable for better facilitation of local and regional planning and coordination, as well as for providing of a more accessible training regime, it will need to have the appropriate resources to carry out the work.

The NBEMO after-action review report identified the deficiency in the number of Regional Emergency Measures Coordinators, stating that “the Regional Emergency Management Coordinator (REMC) organization is grossly inadequate”. The report goes on to say that, “given the widespread impacts of the ice storm, the five REMCs who were available were barely adequate to manage the response and it is doubtful that they could have managed an event with greater impacts and/or longer duration.” This is a critical observation that requires immediate attention.



**Recommendation 13** NBEMO should action recommendation #4 from its after-action review to increase the number of Regional Emergency Management Coordinators (REMC) as soon as possible, not only to ensure operational capacity for future emergencies, but also to assist with more rigorous and standardized emergency planning.

The observation that the REMCs were unreasonably stretched during the ice storm response reinforces the need to assess the roles and responsibilities in relation to emergency management in LSDs. Clearer roles for the regional service commission staff and/or local service district managers may serve to lighten the load on REMCs during the implementation phase of an emergency response in LSDs.

### **Emergency Management Services Funding**

New Brunswickers both want and deserve to have an emergency measures regime that inspires confidence they are in good hands when disaster strikes. In order for that to happen, the system needs to be properly resourced with an adequate number of well-trained staff equipped with the necessary systems and equipment. While some of the enhancements suggested in this and the NBEMO reports can be accomplished within existing budgets, the addition of REMCs and an enhanced training regime can only be achieved with additional funding.

The current budget for the NB 911 Service Fund is just over \$9 million, which covers the cost of the NB 911 service, HAZMAT and NBEMO.

The NB 911 fee on all telephone bills has remained at \$0.53 since it was first established in 2005. The fee generates approximately \$5.2 million per year, which has helped to sustain the rising cost of emergency services. The money generated by the fee is placed into the NB 911 Service Fund and can only be used for “developing, establishing, operating and improving the NB 911 service; and ... paying for costs associated with administering the fund.” For every one cent increase in this fee, an additional \$110,000 could be raised and dedicated to supporting emergency management services.

**Recommendation 14** The Government of New Brunswick could increase the funding for emergency services to cover costs associated primarily with adding emergency resources at the regional level and the provision of better training for local and regional responders. Consideration should be given to increasing the NB 911 fee on telephone bills to supplement the NB 911 Service Fund.

# Emergency Services on First Nations

Emergency services on First Nations are delivered under a model that differs from the rest of the province. The federal government through Indigenous and Northern Affairs Canada (INAC), instead of NBEMO, is responsible for the four pillars of emergency services on First Nations: planning, preparedness, response and recovery. Thus, NBEMO does not have the same authority and responsibility on First Nations as exists for the remainder of the province and must partner with INAC to assess needs and respond to situations in First Nations communities.

Despite being part of a different emergency services regime, residents on First Nations appeared to have experiences and challenges that were very similar to those in other areas. Discussions with members of the First Nations leadership from the area identified the following:

- As in other areas, people expressed concerns about not knowing what to do or where to go for assistance. Leadership recognizes that there is a need for better emergency planning, using an all-hazards approach. It was also recognized that if proper planning is done, authorities would be in a better position to focus, during an emergency, on coordination and communications with the public.
- The identification of suitable places from which to offer service challenged First Nations leaders. As such, they acknowledge that as part of the planning exercise, there needs to be pre-identification of appropriate gathering places, equipped with generator power, serving multiple purposes – food, safety, communications, washrooms and showers.
- Emergency health and social services were of specific concern among leaders. Health Canada is in a position to play a role with First Nations communities, offering education and awareness on environmental health issues and safe behaviours.
- Individual preparedness also needs to be promoted among First Nations; as was reflected among the general population, warnings about being prepared to be autonomous for the first 72 hours are not being taken seriously nor acted upon (for more see [Self-Sufficiency of Individuals and Families](#)).
- Collaboration with neighboring communities was a key success factor in certain areas, although it is not formalized through agreements in all locations.
- It was noted that lack of funding, be it for human resources dedicated to emergency measures or security in general, and for infrastructure renewal, hinders communities' capacity to prepare. However, it was recognized that, as expensive and cumbersome as planning and capital investments can be, they are, in fact, sound investments as response and recovery can prove to be even more expensive.

**Recommendation 15** As the federal government makes investments in infrastructure, both on and off First Nations, consideration should be given to how these investments can be leveraged to improve emergency resiliency.

## ***Emergency Services Agreement between INAC and the Province of New Brunswick***

The involvement of the federal government in the delivery of emergency services in certain communities (i.e., First Nation communities) within the larger impacted region adds another dimension in the challenge to ensure smooth coordination and communications of the emergency response as a whole. While this did not result in any serious issues during the January 2017 event, it is apparent we need to more formally connect First Nations to NBEMO to avoid gaps in lines of communications and responsibilities.

At present, there is not a formal agreement in place between New Brunswick and INAC for the delivery of emergency services. PEI has developed such an agreement with the aim of ensuring that First Nations benefit from being part of a holistic provincial or regional coordination effort during an emergency. This type of agreement sets out clear roles and responsibilities and reporting requirements and provides an effective operational framework in case of emergency. Annual workshops for First Nations are also held to provide regular training and up-to-date information.

**Recommendation 16** It is recommended that GNB engage in a dialogue with First Nations communities and INAC to, at minimum, formalize communications in emergencies, and to discuss the feasibility of entering into a formal agreement for the integration of emergency services similar to the INAC agreement with PEI.

**Recommendation 17** It is recommended that discussions take place to ensure that there will be federal or First Nations representation at the [Provincial](#) and/or [Regional Emergency Operations Centres](#) to ensure appropriate coordination of emergency services with and for First Nations communities .

Worthy of note is the advantage afforded to First Nations in emergency situations: they know their people very well. By understanding their residents' capabilities they are able to mobilize volunteers quickly. And, by understanding the residents' needs, they are able to ensure that they are attended to as required. This allows for a more individualized level of care than is possible in areas outside First Nations. It is important to note, however, that this raises the expectation level of the residents for the quality of care, thus putting higher expectations on leadership.

Finally, as was the case with many of those who experienced the ice storm event, First Nations leaders note that this event served as a warning that now is the time to prepare. It is, therefore, important to keep the momentum going, take advantage of the heightened awareness and take action to put better plans and preparations in place.

# The Citizens' Perspectives – Living Through the 2017 Ice Storm

## **Solidarity and Generosity**

It is very important to emphasize the many examples of collaboration and solidarity that manifested themselves during the ice storm. All of these gestures, big and small, helped reduce the inconvenience caused by the situation. Stories of selflessness demonstrated throughout and the willingness of neighbours to help neighbours were mentioned at each of the public meetings as one of the most positive aspects of the event.

*“Personally, despite the drawbacks such as the loss of the freezer contents, the very low ambient temperature, it was nevertheless a profitable experience in some respects. We witnessed the beautiful outpouring of solidarity and generosity of our citizens, our personal resourcefulness, our ability to live with the essentials. In short, as a community, in many cases, we were able to demonstrate our resilience in the face of adversity. Overall, people fared well. Toward the middle of this episode, our leaders, both municipal and provincial, happily caught up with us.”*

**Resident of Caraquet [translated from French]**

There are many examples of sociable moments spent around a wood stove, of young people discovering board games and of shared potluck meals. People made the best of their misfortune by approaching it with good hearts, frequently sharing whatever resources they had available; generators, firewood, food or the warmth of their homes.

In most cases, solidarity also manifested itself between the municipalities and communities. Residents of unincorporated areas and First Nations relied on and benefited from services organized and operated by the nearby municipalities.

This outpouring of generosity was seen in the affected regions and across the rest of the province. Support also overflowed the boundaries of New Brunswick. Those in neighbouring provinces should be thanked for their concern, their monetary contributions to the disaster and their work alongside the NB Power crews, or service as Red Cross volunteers.

Those affected greatly appreciated the diligence and the energy deployed by the many stakeholders, including firefighters, volunteer firefighters, NB Power employees and volunteers. All acknowledged that several of them worked long hours in difficult conditions.

We have heard many thanks directed towards provincial and municipal politicians who have spared no effort to inform the population, clearly articulate the needs of their respective communities and their attendance.

During emergencies, social capital grows as new friendships are born, young people become more engaged in their communities and people develop an interest in volunteering. This social capital, community resilience, must be celebrated and nourished. On the other hand, it cannot be considered as a substitute for official emergency services.

*“It takes a systemic approach that clearly establishes the responsibility of each, not a system based on voluntary contributions, which gives rise to disparities”*

**Brief submitted by the Comité des 12 under the direction of Mr. Claude Snow [translated from French]**

## Self-Sufficiency of Individuals and Families

Some people were well prepared for the aftermath of the storm. Having minded the weather reports in the hours preceding the beginning of the storm, these people took measures to ensure they had flashlights, generators, working radios equipped with batteries, extra batteries and safe, alternate heating sources. Some prepared food in advance, anticipating power outages. Some took steps to move frozen food into the snow or another cold place to avoid spoilage by taking advantage of the winter temperatures. Ingenuity was displayed by those who used containers to collect water melting off of roofs and/or melted the snow to be able to use their toilets.

The fact that the weather was mild during the first days of the crisis was repeatedly mentioned as a positive factor, allowing people to stay longer in their homes and providing added time to organize emergency relief. This was an element that permitted a longer and more comfortable period of self-sufficiency than might otherwise have been the case.

The issue of the preparedness of individuals and families – the ability to care for themselves without assistance for the standard 72 hours following an emergency – was generally lacking. For many years, governments and emergency organizations at all levels have communicated the 72-hour preparedness message via print, publications, television and radio advertising and on social media. (Figure 8 below is an excerpt from the New Brunswick government’s publication intended to assist in 72-hour preparations, stating the oft-repeated message.)



### THIS IS YOUR GUIDE TO EMERGENCY PREPAREDNESS – Are you prepared?

If an emergency happens in your community, it may take emergency workers some time to reach you. You need to be prepared to take care of yourself and your family for a minimum of 72 hours.

This publication can show you how quick and easy it is to become better prepared to face a range of emergencies. Use this guide to create your own emergency plan. The checklists herein will help you to build a 72-hour emergency kit. These basic steps will help you to take care of yourself and your loved ones during an emergency.

Figure 8 Excerpt from *Are you Ready?*, Government of New Brunswick, p. 1

Repeatedly, at the public sessions, individuals noted that either they or others in the community were neither generally prepared for an emergency, nor did many take measures as a result of the specific warnings for this event. And many reported this to be the case, despite knowing the 72-hour rule of thumb.

*“Our research also showed that citizens also 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.”*

**Conservation Council of New Brunswick, 2017**

For a variety of reasons – lack of awareness, misunderstanding of the situation, reliance on others, absent-mindedness, immobility, complacency, shortage of money, or purely a sense of invincibility – many people do not take action to adequately prepare themselves for emergencies. According to a study titled [Emergency preparedness in Canada](#) (Statistics Canada, 2015, p. 8), fewer than half (47%) of Canadians live in households with an emergency supply kit containing items such as water, food, medicine, flashlights and cash. Some at the public sessions put forward that literacy may have a role to play, recommending that more guidance or simpler messages may improve communication.

The generally accepted stance on individual emergency preparedness is clear. Individuals do have their own role to play in ensuring that they are safe, comfortable and self-sustaining for a period of time. There is no promise that widespread emergency services can or will be provided instantaneously, and reasonable planning measures count on the citizens’ ability to self-sustain for a period of time. A number of the complaints that comprehensive door-to-door canvassing of individual homes started too late in the course of the event were based on unrealistic expectations that emergency services are in a position to undertake such individualized emergency services in the early stages of a mass emergency response.

**Recommendation 18** Citizens must take greater responsibility for the preparedness of themselves and their families, and not assume that institutional services (i.e., government or other relief organizations) will be in place as quickly as desired to maintain their safety and comfort.

As a result of experiences with other events, NB Power and NBEMO have collaborated on more rigorous campaigns to encourage preparedness and storm safety education. In fact, on December 29, 2016, less than one month prior to the ice storm event, NBEMO issued a [news release](#) to the media and public to raise awareness of the importance of 72-hour emergency preparedness. A quick search on the internet reveals that a considerable amount of guidance is readily available on how individuals can best prepare themselves to be self-sufficient and more comfortable in the event of an emergency – if one is proactive in looking for information.

On the other hand, a glance at some of the news reports in the days immediately preceding the storm show that reminders of 72-hour preparedness were not included in the stories warning of the impending storm. It is difficult to say whether such warnings would have prompted more people to take action to better prepare in the hours or days right before the storm.

**Recommendation 19** Governments and relief organizations should analyze the disconnect between, on one hand, the consistent communications on the 72-hour emergency preparedness message and, on the other hand, the inaction of citizens to follow this advice. This is recommended with a view to increasing the percentage of New Brunswickers who take concrete action to better equip themselves from a preparedness standpoint.

**Recommendation 20** Efforts to communicate messages about 72-hour preparedness must continue, and creative steps need to be taken to motivate people to action. Ideas that could be considered include: permanent reminders or lists (e.g., magnets, stickers) that can be displayed in the home, inclusion of reminders in storm forecasts and media reports, enhanced use of social media, inclusion of the material at community events, or programming for the sponsorship of emergency kits or kit materials.

**Recommendation 21** Societal behaviour changes, particularly those associated with social responsibility, are frequently most successful if we are able to influence our youth. More focus should be put on messages targeting the youth population, such as those that can accompany emergency preparation training and curriculum in school or in communities with resources such as those found on the Province of Quebec's S.O.S. SécurO website.



## ***Fear and Crime***

One of the most surprising and unfortunate learnings from this review was the extent to which fear existed among the area's residents about the potential for crimes against one's person and property.

Although the precise statistics for the number of thefts that occurred during the two weeks of the ice storm event are not available, the actual number is of little relevance to the primary point: fear of becoming a victim of crime altered the residents' behaviour during the storm's aftermath.

This fear impacted behaviour in three notable ways:

1. People were more inclined to use their generators in sheltered areas to avoid theft.

It became known among residents that generators were being stolen. It is unclear how common this was, but rumours circulated and people became more protective of their generators. This was the reason cited for operating generators close to the house or in garages with doors closed or partly closed. This then became an issue that contributed to carbon monoxide poisoning.

2. People were less inclined to open their doors to those who were doing door-to-door visits to check on residents' welfare.

It was reported that citizens who felt vulnerable were fearful to open their door to strangers. Ironically, the door-to-door visits were meant to serve, first and foremost, vulnerable residents. This fear may have resulted in important information not being conveyed or help not being administered. Given that carbon monoxide monitoring was also being administered during some of the door-to-door checks, the failure to open the door could have had serious consequences.

3. People were less inclined to leave their homes to seek shelter in a better equipped location.

At several of the consultation sessions, including local government sessions, public sessions and in responder organization discussions, the reluctance of people to leave their homes so they could be better served elsewhere was raised as an issue.

When all factors are taken together, this issue forms somewhat of a conundrum. On one hand, people are encouraged to be more self-sufficient. To the extent that they can take care of themselves and their families, they put less pressure on the services of government and their neighbours. On the other hand, when people are in jeopardy or their ability to be safely self-sufficient is in question, responders find it difficult to properly serve people who choose to remain in their own homes.

It is difficult to reconcile the widespread generosity and support that characterized the spirit of the area's residents during the outage period with the random criminal behaviour and resulting fear. As mentioned earlier in this report, the social capital and sense of community built up during this event needs to be nurtured to discourage negative behaviour and promote feelings of security.

Certainly the conundrum referred in the third point above must be addressed as an emergency planning element. Understanding the behaviour shifts caused by the fears described above should be helpful to those responsible for planning and implementation. Contingencies need to be considered to address these behaviours. Examples of such contingencies might include: guidance on how to best secure property such as generators; recognizable clothing or identification to legitimize official volunteers; and clear guidelines regarding the level of ongoing service that will offered to persons unwilling to leave their homes.

**Recommendation 22** NBEMO and associated responder organizations should have contingency plans to address behaviours resulting from fear of victimization that may contribute to the complexity of keeping the general population safe and comfortable.

As will be discussed under the heading [States of Emergency](#), the declaration of a state of emergency would be required to even consider the notion of forcing people from their homes. A decision such as this would have to be taken very seriously and would likely only be used in extreme situations given its impact on civil liberties. On the contrary, however, citizens’ expectations for individualized service – such as the delivery of food and comforts to one’s doorstep – cause significant strain to volunteers and responders and are unrealistic in all but the most critical circumstances. In instances of broad scale emergency service delivery, it is reasonable that the needs of the many are usually put ahead of the needs of the individual.

**Recommendation 23** Citizens’ expectations should not be raised with respect to governments’ and responder organizations’ abilities to ensure safety and security on a highly individualized basis.

**NB Power Services and Generator Power**

**NB Power**

Other than the misery of the inclement weather during the storm, the resulting slippery roads and significant tree damage, the “crisis” associated with the 2017 ice storm was caused by an extended power outage during the coldest part of the year. This has been the case for many of the emergency events in the last few years. Like NBEMO, NB Power follows the best practice of conducting after-incident reviews for major incidents. The review for the 2017 ice storm resulted in a report titled, *Ice Storm 2017; Lessons Learned*.

At the public sessions, people shared stories and asked questions about situations they had experienced or witnessed in relation to the power infrastructure and the restoration efforts. NB Power was questioned specifically on those issues that arose most frequently during the consultation process, as follows:

- Was the infrastructure in the northern region of the province neglected? Were poles too old or damaged by rot or salt? Did a lack of tree trimming efforts contribute to the problem?
- Were parked trucks – particularly parked groups of trucks – a sign of disorganization or lack of coordination?
- Why did NB Power trucks leave my area after connecting those on the other side of the street, when my power was still out?
- Why were the estimates for restoration so wrong in the early days of the event? What were the impacts of the incorrect estimates? Were time estimates inaccurate or unmet as a result of centralization efforts on the part of NB Power?

As a result of these questions, these topics were investigated, discussed in NB Power’s appended [report](#) and summarized in the following table:

| Key learning and observation   | Recommended Action   | Timeline      |
|--|--|---------------|
| Efforts to reach all customers with preparedness, restoration and safety information were not always effective for a variety of reasons. | Greater emphasis and outreach with pre-season preparedness and safety campaign in rural communities, coordinated with local leaders, first responders and NBEMO to ensure customers are informed and prepared prior to storm season. | November 2017 |



| Key learning and observation   | Recommended Action   | Timeline   |
|--|--|--|
| Customers concerned about NB Power's restoration priorities were left wondering why some are reconnected while others have to wait.  | Simplify customer restoration updates with greater emphasis on visuals and photographs that explain sequence of events to restore power.<br>Create simple handouts for field staff with visual explanations of a variety of circumstances that occur during extended power outages and the role of customers. (i.e.: repairing broken masts, unplugging major appliances in the home, disconnecting breakers.)   | November 2017  |
| Despite extraordinary efforts to reach customers with essential information via online, in-person and media channels, we could not reach all customers at all times.   | Consider working with NBEMO to create a dedicated emergency broadcast station to provide essential information to New Brunswickers in times of crisis.   | Timing to be determined in consultation with NBEMO   |
| Some customers were unsatisfied with the lack of certainty on estimated restoration times (ETRs), especially in Acadian Peninsula where targets were adjusted and delayed based on actual assessments.   | Review NB Power assessment process to provide more accurate estimated restoration times and better upfront data.<br>Ensure NB Power assessors are equipped with appropriate tools to conduct their work and communicate requirements.<br>As part of a utility-wide modernization project, NB Power expects to propose investments in advanced metering infrastructure, including smart meters, with the potential to help crews locate and diagnose outages more quickly during storm and other events. Advanced metering has the potential to communicate outage locations and customer status automatically in certain circumstances, without requiring the customer to report via the website or call centre. | November 2017<br>November 2017<br>Pending board and regulatory approval, rollout complete anticipated by end 2020 (~ 3 years implementation) |
| Leaving crews in the field for majority of effort created mistaken impression among some customers that restoration was not being coordinated effectively when in fact bringing services to crews allowed for a faster response and more efficient response. | Review how assessment efforts/ storm management and crew movements are communicated to customers to facilitate understanding of work flow.   | Ongoing (part of continuous improvement process)   |
| Despite being built to design standards that are able to withstand extreme winter weather and ice loading, some infrastructure was not able to withstand the intensity of this storm, particularly in northern coastal areas.                                | Work underway to review standards with CSA to determine alternative methods of building greater resilience into the grid in areas vulnerable to extreme weather impacts.<br>Implementation underway of engineering standards to guide decision-making on the application of specific design standards to storm-harden infrastructure in areas prone to more severe weather. This will result in reinforcing infrastructure in vulnerable areas, such as along the northeastern coastline.  | Improvements beginning in Fall 2017  |
| Coordination of storm response with partner agencies including NBEMO, Red Cross and Canadian Armed Forces was a complex effort given the historic impact of this mid-winter storm on customers and the grid.   | Review storm effort with a goal of clarifying roles and responsibilities with partner agencies to ensure efficient and effective response to future storms.  | Timing and actions to be determined in consultation with NBEMO and partner agencies.   |

**Recommendation 24** The actions identified by NB Power in the table included in this report will be read into this review, monitored and reported on to the DM Security and Emergency Management Committee.

NB Power acknowledges that their [protocols](#) for the order of restoration, the logistical tactics at play when trucks are seen to be sitting idle and the grid resiliency measures being undertaken on a regular basis, are not well understood by their customers. When the power is out, perceptions of inefficiency and disorganization, compounded by communications challenges that accompany power outages, create significant frustration that increases as comfort, safety and security decline.

Faced with an unprecedented situation, NB Power should be lauded for how well the large-scale effort was managed. Most people will not be aware of the level of preparation and the scale of the restoration effort as described in their report. A better understanding of the intricate system at work behind the scenes in responding to large-scale outages should contribute to a higher level of public confidence in the utility's capabilities.

The most frequently mentioned complaint about NB Power's power restoration effort related to the errors made in the first two or three days about how long it would take to restore power. Many people – local, provincial and federal government officials, first responder agencies and citizens – reported that they were making decisions based on the estimates. Responders were making decisions about whether or not to call in military assistance, regarding the establishment of emergency shelters, regarding the allocation of resources, etc. Citizens were making decisions about whether or not to relocate or whether or not to move their frozen food stores outside. Had responders and citizens known that the outage was going to last as long as it did, perhaps they would have made other decisions.

There were a few factors that contributed to the incorrect estimates. Continued freezing rain and fog delayed the ability to view the damage from the air. Icy and blocked roads delayed crews from getting in to the outlying areas. Damaged poles that were being held together by ice broke and fell once the ice melted, creating new outages and slowing restoration efforts.

NB Power has already, in its review, committed to making improvements with respect to its estimating procedures. In doing so, and in determining what messages they will relay to the public about the anticipated length of an outage, NB Power must be aware of the serious impact the estimates have on the decisions taken by responders and citizens in determining how they will react to the situation. This said, both citizens and other responder organizations relied heavily on the NB Power estimates, finding them very useful for both individual and response planning.

**Recommendation 25** In its messaging to the public about the anticipated length of power outages, NB Power should remain mindful of the fact that NBEMO, first responders and citizens are using the estimates to make decisions about what actions they will take in response to the outage. Providing estimates that set out worst-case scenarios should be considered when the estimates are being relied on to make decisions about both response requirements and personal safety.

When questioned about the impact that centralization efforts which have occurred over the years have had on NB Power's ability to respond to local crises like the January 2017 ice storm, NB Power was unequivocal that they are now much more nimble and able to respond faster to weather events due to improved systems and processes as follows:

- NB Power now has its entire system mapped in a Geographical Information System (GIS) and all trucks are equipped with mobile computers so that crews can easily reference and navigate around the system from anywhere in the province. So whether local or from other parts of the province, crews can efficiently work and restore the system.
- NB Power is part of the North Atlantic Mutual Assistance Group and Canadian Electricity Association which includes agreements with all of New Brunswick's neighbouring utilities and pre-established rates and requirements for contractors which provide quick access to significant numbers of vegetation, pole and line crews. As evidenced in this event, NB Power was able to bring to bear 380 crews within a very short period of time.
- The Centralized Energy Control Centre has been in place for over 30 years to manage permitry (lines) and switching associated with restoring the system.
- NB Power also has an Outage Management System, integrated with the GIS that provides a detailed view of the system from anywhere in the province right down to what customer is connected to what transformer.
- NB Power provides 24/7 on-call emergency response across the province.

Overall, NB Power sees centralization as a strength in the oversight of major events. With the systems they have in place, a centralized organization has an opportunity to view the restoration globally, more appropriately access and deploy additional resources where required and move existing resources as the event progresses. It is NB Power's position that such coordination efforts would be chaotic and inefficient if done from multiple locations around the province.

NB Power should be aware, however, that there are concerns being expressed about the condition of the infrastructure and the care being taken by NB Power to ensure continuity of service. For example, the appropriateness of the standards for maritime climate and salt-exposed equipment was questioned by someone

in Lamèque-Miscou. Similarly, questions were asked about the appropriateness of standards associated with the distance between poles, load on poles and proximity of poles to the roads. Others questioned details such as the extent of tree trimming and the age and condition of poles in remote areas. While some of this is addressed directly in NB Power's report (e.g., age and condition of poles), and further information can be found on the NB Power website (e.g., information regarding [tree trimming](#)), it is clear that NB Power needs to be mindful of the public's ongoing concerns in this regard. Where concerns are founded, NB Power must be vigilant to ensure that infrastructure is up-to-standard, and where concerns are unfounded, NB Power should correct misperceptions that could lead to deterioration of public confidence.

**Recommendation 26** To maintain public confidence with respect to the continuity and reliability of electrical power, NB Power should communicate:

- a. the work it is doing to build greater resiliency into the grid as climate change impacts our weather; and,
- b. the discussions taking place at the national level with respect to the standards required to ensure that power infrastructure can withstand increasingly frequent and damaging weather incidents, especially in vulnerable areas.

### Off-Grid Generator Power

Often when power outages occur, facilities equipped with grid power can be found close by to use as shelters, provide fuel, house emergency workers and the like. But because the January 2017 power outage was so widespread at the outset, responders had to rely on facilities that had existing access to or could be supplied with off-grid generator power. It is not surprising, therefore, that the topic of home and commercial generators dominated much of the post-event discussion. Topics included:

- Sharing of generators among neighbours
- Access to generators to rent or purchase
- Stealing of generators
- Improper or dangerous generator use
- Carbon monoxide poisoning related to improper generator use
- Use of generators to maintain critical infrastructure
- Identification and/or grouping of critical infrastructure elements to take advantage of generators
- Funding of generators
- Adequacy of different sizes of generators
- Offers of generators from neighbouring jurisdictions that were not accepted
- Access to fuel
- Criteria for the distribution of generators

As would be expected, critical infrastructure is often equipped with generators to provide necessary power in the event that grid power is lost. Anecdotally, it appears also that more and more households and small business establishments are equipping themselves with either standby or portable generators. (NB Power offers advice on using [generators for emergency power purposes](#), as do a variety of independent generator manufacturers and retailers.) As a result, there were many residents of the affected area who were able to stay comfortably in their homes and were in a position to help family and neighbours.

From the discussion on the topic of generators, three broad conclusions can be drawn:

1. With the popularization of generators, there is an expectation that generators will be in place as part of emergency planning or be made available as part of the emergency response. Citizens had heard rumours that a neighbouring jurisdiction had offered loaner generators and were upset that this offer had not been accepted.
2. There do not appear to be protocols or criteria by any of the responder organizations for accessing, distributing, or facilitating the sharing of generators. Without protocols, responders were not in a position to take advantage of offers of generators, either in bulk or on an individual basis. This caused frustration for citizens who felt they could be of help by donating a generator and denied a potential recipient from the relief a generator might have been able to provide.
3. Citizens and local government bodies believe that strategic investment in and placement of generators will play a significant role in their future emergency resiliency. There were many discussions about the pre-

identification of locations for emergency coordination centres and shelters that would be equipped with generators as part of the planning and preparedness process. And, at the local government level, discussions went so far as to discuss how critical services—such as cash dispensers, fuel distribution, food and water sales—might be grouped strategically so that they could share generator power.

**Recommendation 27** Responder organizations and regional/local governments should, in their emergency plans, consider the strategic acquisition and location of generators to optimize spending while ensuring critical and social services can be maintained during emergencies.

**Recommendation 28** NBEMO and NB Power should work with regional and local planners to consider the feasibility of developing and including, as part of their emergency planning processes, protocols governing generator access, distribution and sharing during extended power outages.

**Recommendation 29** Governments at the federal, provincial and local levels should consider how funding could be made available over the coming years to assist in the acquisition of emergency generators, particularly as it relates to climate change adaption and local government infrastructure.

## Carbon Monoxide Poisoning

The truly tragic aspects associated with the January 2017 ice storm were the deaths and illnesses caused as a result of carbon monoxide poisoning. By the end, two deaths and 49 illnesses were attributed to the effects of carbon monoxide.

Carbon monoxide is a gas that causes illness and can lead to death. It has no smell, taste or colour. It is made whenever fuel (oil, coal, wood, gasoline, propane, natural gas) is burned. Furnaces, wood stoves, water heaters or boilers, and other fuel-based appliances can be sources of carbon monoxide if they are not installed correctly or if they malfunction. Other sources of carbon monoxide include: generators; charcoal grills; vehicle exhaust; cooking appliances; and, blocked chimney flues. These become a risk when they are used in unventilated areas. (Government of Canada, 2017)

During the ice storm, as early as January 25, 2017, [media releases](#) and news conference materials from the Province included messages with the following warning: “Never run generators or cook with an open flame, inside a home or the garage, as these activities create carbon monoxide which can become extremely dangerous. Never leave candles or lanterns unattended. Take a moment to test the batteries in your carbon monoxide detectors and smoke detectors.”

On January 27, 2017, when it became evident that residents were not following safe practices to avoid carbon monoxide poisoning, efforts were redoubled to avoid further illness and death. Information was shared at shelters, a public safety warning was issued through the broadcast system and door-to-door visits were ramped up to check on and carry messages to those with communications limitations (see Figure 9 below). Where equipment was available, those carrying out door-to-door visits were also equipped with portable carbon monoxide detectors so air conditions could be checked during the visit.

At the public sessions, as well as in discussions with responder groups, stories of dangerous use of generators and other fuel-based appliances made it clear that many individuals are not sufficiently informed on the matter. Sadly, fear of generator theft caused people to put their generators in places that were not well ventilated. For example, even when aware that the generator should not be in the house, people were locating them in a garage, but seriously limiting ventilation by closing or partially closing the garage door. Others, absentmindedly, placed generators near fresh air intakes or other locations where the fumes were able to enter the living space. Similarly, barbecues were used indoors or in poorly ventilated areas.

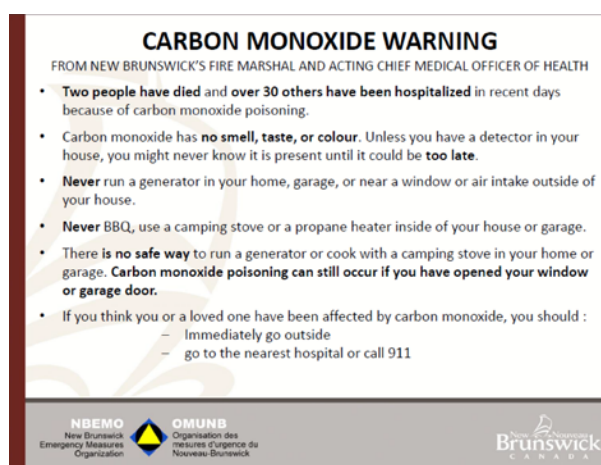


Figure 9 Carbon monoxide warning issued following reports of illness and death due to carbon monoxide, January 2017

Governments and other agencies have been working to enhance public awareness of the dangers of carbon monoxide and to promote the use of carbon monoxide detectors. Safety initiatives promoting smoke alarm use, such as New Brunswick's [Alarmed and Ready Campaign](#), are now including similar life-saving messaging for carbon monoxide detectors. The [Hawkins-Gignac Foundation for Carbon Monoxide Education](#) is active in advocating for more public education and legislation requiring the installation of detectors.

During the public sessions, people were asked for suggestions on how information about carbon monoxide poisoning could be better communicated so that people would take proper caution. Suggestions included the preparation and distribution of materials (e.g., posters, stickers, magnets) that could be kept in the home and referenced as required; and, the use of more visuals to aid in communication with those who may have more limited literacy skills.

**Recommendation 30** NBEMO and the Department of Health should collaborate on the production and distribution of emergency-based messaging that is both simple to understand and in a form that will encourage the retention of the material in the home for reference as required. This information should include messaging associated with the safe use of fuel-based appliances during power outages.

New Brunswick has adopted the 2010 National Building Code standards that require that carbon monoxide detectors be, in cases of new construction, installed in all buildings where regular sleeping accommodation is provided and the building contains a fuel-fired appliance, a solid-fuel fired appliance, (fireplace or wood stove) or an attached garage. This includes houses, apartments, condominiums, nursing homes, hospitals, and jails. New Brunswick does not have its own legislation requiring that carbon monoxide detectors be installed in existing buildings. Advocates like the Hawkins-Gignac Foundation have been lobbying New Brunswick and other jurisdictions to have legislation similar to that which exists in Ontario and the Yukon requiring the installation of detectors in all or certain situations.

**Recommendation 31** The Government of New Brunswick should, in collaboration with the private and non-profit sectors, identify ways to encourage the purchase and installation of carbon monoxide detectors through education and, where affordability is an issue, through rebate, donation or other form of cost-reduction.

**Recommendation 32** The Government of New Brunswick should study the impact and implications of making the installation of carbon monoxide detectors mandatory in existing buildings in a manner similar to that which is required for new construction under the National Building Code 2010.

## **Social Service Delivery**

The success of an emergency response, particularly from the citizens' perspective, is measured by many by the extent to which services were in place to provide for basic human needs such as food, shelter, heat, health, safety and security.

In its submission, the Conservation Council of New Brunswick laid out an important recommendation that is relevant in the present context:

*“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;*
- b. Citizens from displacement and emotional responses to personal and social loss, including wild places and trees; treasured possessions; and physical and economic security.”*

**Conservation Council of New Brunswick, 2017**

Moreover, during the crisis, many responders and volunteers were themselves affected by power outages. On top of working long hours while trying to take care of their families, some also witnessed distress and poverty situations and had to provide support to vulnerable people. Exhausted, they would have benefitted from being relieved by people able to take on their responsibilities. One cannot underestimate the aftermath effects of such events, which can linger long after the situation.

## Canadian Red Cross

The Department of Social Development has an agreement with the Canadian Red Cross (CRC), signed in 2011, to serve as an “official auxiliary to government”, providing “a framework for collaboration in the delivery of public humanitarian programs and services, more specifically: ... to [among other things] support emergency management agencies in the provision of emergency social services; ...” They are remunerated by the Province for this role according to terms of the agreement, including a flat annual fee and allowable expenses associated with the provision of emergency services.

*“We recommend that the province consider establishing a Post-Crisis Assistance Program for those who would have been impacted. Such a program should provide professional support, counselling and guidance services.”*

**Quote from Comité Des Douze Report, P.4 [translated from French]**

The services typically provided by the Red Cross, upon request, are as follows:

- When requested, establish a reception centre for registration & inquiry;
- Assists in reuniting families, and answer inquiries regarding the condition and whereabouts of missing persons (if applicable);
- Provide emergency lodging for homeless, and evacuated persons;
- Provide food and meals to those persons without food or the ability to properly prepare food;
- Provide clothing or emergency covering until regular sources of supply are available;
- Provide for the initial reception of evacuees arriving at reception centres; inform them of immediate emergency help; offer temporary care for unattended children and dependent elderly; assist with the temporary care of residents from special care facilities; provide or arrange for financial and/or material assistance; and
- Offer immediate and long-term emotional support to people with personal problems and needs created or aggravated by the emergency.

In general, the Red Cross feels it provided a good level of service during the ice storm. According to its *Donor Update: New Brunswick Ice Storm* (Canadian Red Cross, 2017), they participated in the response by supporting shelters, serving hot meals, providing volunteer service, registering requests for help and managing public donations.



Figure 10: Excerpt from Donor Update: New Brunswick Ice Storm (Canadian Red Cross, 2017)

The ice storm proved to be a test for the capacity of the Red Cross to deploy in northern parts of the province, as it was the first emergency situation in this region involving them in that capacity. As a result, the Red Cross acknowledges gaps in the following areas which it has committed to address:

- Growing its number of volunteers in the northern regions of the province;
- Paying particular attention to the linguistic needs in the affected areas; and,
- Participating more actively in the development of emergency plans for the northern parts of the province.

These observations match closely those shared by both residents and local government responders. There were two notable issues associated with Red Cross services that were raised on a number of occasions: confusion with respect to the roles and responsibilities vis-à-vis those of local government and volunteer groups; and, linguistic capacity.

### **Role of the Red Cross in Municipalities**

The Association francophone des municipalités du Nouveau-Brunswick (AFMNB) reflected the concern of its membership with respect to the apparent confusion in the roles and responsibilities of the Department of Social Development and the Red Cross, and the processes by which they are to collaborate with municipalities in emergency situations. According to the AFMNB, this had been an unaddressed concern preceding the ice storm crisis.

This confusion raises concern because:

- There is potential for duplication of effort (e.g., shelters across the street from each other);
- There is potential for gaps in service (i.e., municipal leadership not being aware that the Red Cross was providing service in their own municipality); and,
- There are services that the Red Cross is better suited to provide given its expertise in emergency social services, including volunteer coordination, training and security checks, as well as registration processes.

*“We were told by municipal stakeholders that there is confusion surrounding the roles and responsibilities of the Department of Social Development and the Canadian Red Cross Society. Some stakeholders reported having tried in the past, i.e., before the crisis, to engage with the Canadian Red Cross Society in order to gain a better understanding of its role and responsibilities in an emergency situation. This prior engagement and information sharing exercise is essential for the development of comprehensive and effective emergency plans. However, the steps taken by municipal stakeholders were in vain.*

*To avoid confusion, improve preparedness, and allow for a more coordinated response, the Department of Social Development and the Canadian Red Cross Society must be required to work with the municipalities on developing their emergency measures plans. This obligation must be included in the Emergency Measures Act and spelled out in the Department’s policies.”*

**L’Association francophone des municipalités du Nouveau-Brunswick, 2017 [translated from French]**

- Recommendation 33** The Department of Social Development, the Red Cross and NBEMO (as required) should collaborate with municipal associations, on behalf of municipalities, to:
- a. clarify their respective roles and responsibilities associated with the provision of emergency social services;
  - b. codify, either in law or policy, the need for and extent of participation between the Department of Social Development and Red Cross in municipal and regional planning effort; and,
  - c. ensure that Red Cross best practises are incorporated into the practises of emergency volunteer efforts organized at the community level without the support of the Red Cross.

## Linguistic Capability of the Red Cross

It was noted on several occasions, by citizens and organizations alike, that the Red Cross struggled with providing volunteers that could communicate in French. It was acknowledged that this situation was worse in the early days of the response and addressed to some extent during the crisis, as the Red Cross was able to mobilize a greater number of Francophone volunteers. Given the high concentration of Francophone New Brunswickers living in the impacted area, this was a significant issue that must be corrected.

*“In addition to insufficient resources, the language of the volunteers was also a major obstacle because many of them could not speak French.”*

Quote from RSC Péninsule acadienne report, p.4: [translated from French]

*“Initially, CRC deployed some volunteers who were English speaking only. Many of our existing bilingual or French speaking personnel were either personally impacted by the power outages or unavailable for other reasons. Within a few days, bilingual personnel were deployed from Quebec and other areas of Atlantic Canada to assist with client support and community liaison. A focus on increasing overall volunteer capacity with priority attention towards bilingual personnel is underway.”*

Bill Lawlor, Provincial Director for New Brunswick, Canadian Red Cross-Atlantic Provinces

The Government of New Brunswick does have an obligation to ensure that third party service providers provide programs and services in both official languages (*Official Languages Act*, section 30). Despite this obligation, the agreement between the Red Cross and the Department of Social Development does not contain provisions requiring the provision of services by the Red Cross to provide services in accordance with the *Official Languages Act*.

**Recommendation 34** The Department of Social Development should take steps to revise the 2011 Memorandum of Understanding with the Canadian Red Cross to ensure compliance with section 30 of the *Official Languages Act* when dealing directly with the public on behalf of the Government of New Brunswick.

## Warming Centres and Shelters

The first warming centre associated with the ice storm response was opened at the JK Irving Centre in Bouctouche at 10:00 a.m. on January 25, 2017. The number and type of warming/reception centres and shelters varied throughout the event, with the last reception centre closing once all power was restored on February 7, 2017. Figure 11 here depicts the number of centres in operation over the course of the two week event.

As can be seen in the graph, the number of shelters/warming centres peaked dramatically on January 31. This spike coincided with reports of dropping temperatures while 15,000 customers remained without power. Other than the spike seen on that day, there were, on average, about 40 centres open where one could warm up, get information, power electronic devices, get a meal and, if required, sleep.

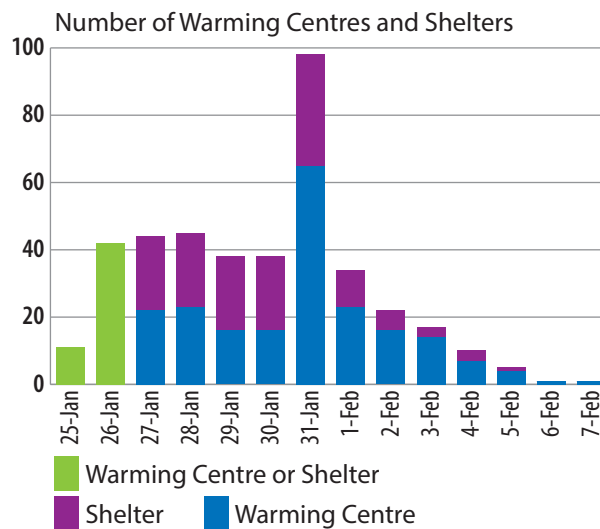


Figure 11 Graph depicting number of warming centres and shelters in place during the 2017 New Brunswick ice storm response.



It was reported that very few people actually sought overnight shelter at the centres; most obtained what they needed from the centres during the day and returned home to sleep. While the outside temperatures remained mild, houses remained warm enough to sleep in and, as stated earlier, some people refused to leave their homes for security reasons. Another reason overnight shelters were seldom used was because some people took refuge with friends and families who had power or other sources of heat.

People who availed themselves of the warming centres or shelters were generally satisfied with the services offered and the speed with which they were set up. They appreciated the efforts of those who volunteered to work at the centres and prepare food for distribution. Criticisms of the warming centres/shelters were few but included:

- In some places, only cold food was available. People said that they were disappointed because they were in need of a hot meal.
- People did not understand the difference between a “warming centre” and a “shelter” and what services could be expected at each.
- Lack of service in French was a source of frustration often mentioned.
- In some cases, emergency social services were not available readily at all centres and in sufficient number for vulnerable people (health or mental health issues, etc.).
- There were diverging opinions as to the number of warming centres/shelters that should be established: some thought there were too many, others felt they were too far from their community depending on the areas.

From residents, the most frequently expressed criticism regarding warming centres and shelters had to do with lack of information about where they were and what could be found at them for services. It should be noted, however, that the level of public awareness or information on these centres varied considerably by area. Where locations for warming centres/shelters were pre-identified and locations/services were well communicated, facilities were well-managed and well-attended. On the other end of the spectrum, residents in the local service districts were most inclined to feel ill-informed about the locations and felt that the locations were not easily accessible to them.

Many of the issues experienced and associated recommendations in relation to reception/warming centres are discussed in further detail in NBEMO’s after-action review report under the heading of “Reception/Warming Centres”.

All responder groups – NBEMO, regional planners, municipal leaders, First Nations leaders, and the Red Cross – agreed that better advance planning for the location and equipping of warming centres would go a long way towards improving service to citizens in future emergency events.

Better planning would:

- Allow for communication to citizens of locations and services that can be found at warming/reception centres and/or shelters in advance of a crisis.

Many residents reported that it was difficult to know where warming centres or shelters were located. Because communications were limited due to lack of power, information about the locations and services

**FOR ANCEL LANGILLE**, the New Brunswick ice storm of 2017 was a larger and more complex event than other winter storms he’s seen in Atlantic Canada or dealt with as a Disaster Management Lead.

As he drove toward the Acadian Peninsula, Langille’s expectation was to provide support for a short period until electricity was restored. But it soon became clear this wouldn’t be the case.

“The further north I went, the ice kept getting thicker, larger numbers of trees were bent over and in some areas, almost every power pole was broken. I’ve never seen anything like it,” recalls Langille.

He spent the next nine days working out of shelters for people whose homes amid sub-zero temperatures had no electricity or heat or in some cases no running water. Shelter clients ranged from young families to seniors and all were offered food, a warm place to sleep and perhaps most importantly, the compassionate support of Red Cross volunteers including Safety and Wellbeing Team members.

Many residents received cash cards from the Red Cross to help with replacing food lost during the power outages.

**Figure 12 Excerpt from Donor Update: New Brunswick Ice Storm, Canadian Red Cross, 2017**

offered were not easily relayed. If the sites would have been pre-identified and communicated to citizens as the “go-to” locations, people would have at least known where to go first.

- Ensure that centres have appropriate provisions and equipment, including generators.

During the ice storm event, the selection of sites for warming centres and shelters was made more difficult because the outage was so geographically large. As such, it became critical to find locations with generators or where generators could be set up. These locations were swapped out for better locations once power began being restored or once appropriate generators could be installed.

By identifying locations ahead of time, communities would be in a better position to ensure that the locations are equipped with portable or standby generators and have the necessary facilities and equipment to provide the services people are seeking at the centres (e.g., kitchen equipment and supplies to heat and serve hot food, showers and bathrooms, electrical outlets for powering electronics, and ample room for cots if the centre is to be used as a shelter).

- Reduce duplication and prevent gaps in service if centres can be strategically located.

It is important that care take place in the planning of pre-identified warming centres and shelters to ensure that the locations are strategically selected. Not only must they have the necessary space, facilities and equipment, but they must be accessible to serve as large a geographic area as possible. In an area like the Acadian Peninsula, with a multitude of municipalities, a rural community and many LSDs, it is not practical for there to be a centre established in each community because it spreads available resources too thin. If well planned however, resources can be optimized and made available to best serve the population and better coordinate support from the Canadian Red Cross, among others.

**Recommendation 35** The identification, equipping and communication of locations that will serve as warming/reception centres and/or shelters should be undertaken as a key component of local and regional emergency plans.

**Recommendation 36** Regional emergency plans should include consideration of how citizens who lack transportation or are trapped due to impassable roads might be transported from distant locations to warming/reception centres or shelters.

**Recommendation 37** The selection and equipping of locations for warming/reception centres and shelters should be undertaken strategically at the regional level to ensure that resources - especially, volunteers, equipment, and responder support—can be optimized both before and during emergencies.

**Recommendation 38** When communicating the locations of warming/reception centres and shelters, information should include details such as hours of operation, services to be offered, and even advice about securing one’s home if moving to a shelter.

Concern was raised in one location about the inability to get access to a public school building for use as a warming/reception centre or shelter. This conflicted with other reports that the ability to use a school was well-appreciated. This concern has already been shared with the Department of Education and Early Childhood Development who will take steps to ensure that school buildings will be made available for use in emergency situations.

## Vulnerable Populations

In almost all regions, special attention was given to ensuring the safety and care of vulnerable, elderly and persons with disabilities.

For example, the Department of Health keeps lists of people who require oxygen and responders were furnished with those lists to ensure that provision was made to keep the oxygen flowing. The Department of Social Development took steps to check on the welfare of their clients to ensure basic needs were being attended to. Door-to-door volunteers were taking note of persons who felt that they needed to be checked on again. Of course, in many cases, neighbours looked out for those in the community who were known to need some additional assistance.

Efforts to ensure that the more vulnerable got the attention required to sustain them through the crisis were most successful when communities had lists – formal or informal – of those in the community who may require extra assistance in an emergency. The identification of vulnerable persons was considerably more difficult in the local service districts where houses are far apart and the communities are less closely knit.

**Recommendation 39** Municipalities and regions should consider the feasibility of creating and maintaining a self-reported register of vulnerable persons who may want to be on record as possibly requiring assistance in times of emergency.

Concerns were raised in a couple of locations about processes involving Social Development clients and the interplay between the Department of Social Development and emergency responders. For example, it was reported that people living in public housing in or around Bas-Caraquet had to “fend for themselves for many days before help got to them.” In another instance, concerns were expressed about the department’s unwillingness to divulge personal information of clients due to privacy laws when responders felt the information would have assisted them in providing a better emergency response.

**Recommendation 40** The Department of Social Development should take steps to get permission from clients on a proactive basis to share their personal information with responders during emergencies for the purposes of assisting in providing emergency aid.

Because they were equipped with back-up generators and were prioritized by NB Power for reconnection, there was little-to-no displacement of hospital or nursing home residents in this particular event. Lack of back-up power was quite evident, however, in the displacement of special care home residents. Unsubstantiated claims of special care homes requiring family members to take over care of clients and of clients being taken to shelters without supervision caused many to question why special care homes are not required to be equipped with back-up power. Volunteers in the warming centres and shelters felt that they did not have the capacity or the capability to look after persons requiring specialized care. Similarly, families who were, in some cases, also struggling through the challenges associated with the outage, reported finding it difficult to care for family members who were displaced from a care facility.

**Recommendation 41** The Department of Social Development should revisit the requirements for emergency preparedness for special care homes and prepare a proposal for the consideration of government to phase-in requirements for back-up power generation or alternate arrangements in the event of extended power outages.

During the aftermath of the ice storm, food banks were finding themselves stretched as they attempted to provide food not only for their traditional clientele, but also for those who were finding themselves short of food as a result of the storm. The food banks, as well as warming centres, found themselves providing meals and food supplies for longer than they anticipated, perhaps as a result of a combination of factors such as income loss or loss of basic household stores. The Government of New Brunswick provided supplementary funding for food banks to help address the demand, and donations to the Red Cross helped provide for the replenishment of food stores. The following excerpt from a Government of New Brunswick [news release](#) issued on February 5, 2017 provides an example of the advice people were being given regarding food replacement. These measures, combined with Disaster Financial Assistance prepayments, appeared to ensure that access to food was successfully facilitated.

#### **“Food Replacement**

New Brunswickers who lost food as a result of the storm can still go to the warming centres for food. They can also receive assistance from their local food banks. The Canadian Red Cross is also offering some financial assistance for those who have lost food. New Brunswickers can register online at [redcross.ca/NBIceStorm](http://redcross.ca/NBIceStorm). Registration can also be completed by calling the Red Cross toll-free 1-888-893-1300 daily between 9 a.m. and 7 p.m. or in person at the regional reception centre/shelter at École L’Escale des Jeunes at 2930 Morais Street in Bas-Caraquet.

Warming shelters will continue to be available for those who are in need and looking for a warm meal.”

Government of New Brunswick, 2017

## Door-to-Door Visits

The power outage, accompanied by disruptions in telephone and cell coverage, made communications with residents of the affected area nearly impossible. (The challenges with communications will be discussed in more detail later in this report.) As a result, volunteers and responders began a process of going door-to-door to check on the welfare of residents. During these visits, needs were assessed and information was provided about available services. Once people began to fall ill from carbon monoxide poisoning, warnings about the associated dangers were shared door-to-door, and where equipped, carbon monoxide detectors were carried into homes to check for the presence of the gas.

Extensive door-to-door welfare checks are generally not considered a priority in the first few days of an emergency of this kind. Decisions to conduct door-to-door welfare checks need to be balanced against suitable, available resources and the safety of the persons conducting the visits. However, because of the carbon monoxide-related deaths and the quickly climbing number of illnesses, there was considerable pressure on politicians and the responders to increase the speed with which door-to-door visits were conducted. Additional government employees, politicians and political staff were asked by the province to contribute to the volunteer ranks to put additional bodies on the door-to-door task to hasten its progress.

In NBEMO's report, the risks associated with putting untrained volunteers on this task were identified, and a recommendation was made to ensure that all volunteers are screened and trained before putting them to work on an emergency response. By choosing government employees, such as select staff from the Department of Justice and Public Safety, rangers from the Department of Energy and Resource Development, and staff from the Premier's Office, alongside politicians, the risks associated with security checks and training were minimized. It is acknowledged, however, that a more coordinated approach with trained and screened volunteers would be preferable.



Figure 13 Members of the military go door to door in Lamèque, NB, 31 Jan 2017 (JTFA/Twitter)

The same concerns that caused the recruitment of additional volunteers also led to the pressure to call for the assistance of the Canadian Armed Forces. The military formally joined the response team on the afternoon of January 30, and began by conducting door-to-door wellness checks in Tracadie, Lamèque, Miscou and Shippagan. In total, 450 people, including provincial officials and volunteers were conducting the door-to-door assessments on the morning of January 31.

The door-to-door visits served the intended purpose of determining needs and disseminating information. In at least one case, a portable detector identified the presence of carbon monoxide, perhaps saving a family from illness or death. In addition, starting the evening of January 29, warming teams, comprised of local firefighters, started to visit homes, using equipment (see Figure 14) to warm-up affected homes.

Despite the fact that door-to-door visits were found to be useful in the response effort, concerns and recommendations for improvement were also expressed:

- It was noted that many of the volunteers did not have visible identification and some people were reluctant to open their doors to strangers. Identification that was easy to see and likely to be recognized as official may have served to reassure people of the legitimacy of their visit.
- It was noted that, when volunteers found a house unoccupied (or a door went unanswered), it may have been appropriate to leave a brochure or note indicating that the authorities had visited the home. This could serve as a notice to other volunteers that the residence had been checked. On the other hand, some people felt that this would have contributed to security concerns by marking the residence as unoccupied.

Recommendations pertaining to the door-to-door visits were made in the NBEMO after-action review report and are acknowledged herein as reasonable recommendations.

## Volunteers

As discussed earlier in this report, the ice storm highlighted unparalleled examples of solidarity and generosity. Hundreds of people volunteered to help their fellow citizens, contributing both their time and efforts to the emergency response in an official or unofficial capacity. Some examples include:

- 100 Canadian Red Cross volunteers worked across the region in warming centres and shelters, distributing food, registering families, providing counsel and support, distributing cash cards for food and offering other emergency assistance;
- Community members worked at warming centres/shelters serving meals and providing information;
- Neighbours welcomed neighbours and family members into their homes to share resources;
- Community members worked to clear debris on both public and private property;
- Food bank volunteers doubled their efforts to fill the increased demand for food;
- School personnel opened and monitored school facilities for use as warming centres;
- Government representatives and First Nations community leaders provided support, counsel and served food at warming centres and participated in door-to-door wellness checks;
- People prepared and donated food to warming centres;
- Volunteer firefighters worked long hours as the key responders in local service districts; and,
- Volunteers worked alongside staff to prepare and distribute information and conduct other administrative duties to assist the efforts.

The surge of volunteer help that often accompanies a crisis is a mixed blessing for the official emergency responders. While the adage says that “many hands make light work”, it is apparent that the task of coordinating volunteers is no small feat. Large numbers of spontaneous (i.e., untrained and uncoordinated) volunteers can detract from the smooth operation of an emergency response, and goodwill cannot always compensate for lack of training. It is key to recruit and train volunteers in specific aspects of emergency response, so that the work is made easier at all levels, for first responders, elected officials and NBEMO coordinators, while also avoiding incidents and liability problems.

**Recommendation 42** NBEMO should explore and employ best practices to make best use of spontaneous volunteers alongside the planned, trained volunteers in emergency response efforts. Consideration should be given to the types of tasks that are best suited to spontaneous volunteers and what constraints or limitations need to be put in place to optimize the safety of the volunteers and those they are serving.

As discussed in the NBEMO after-action review report, responder organizations like the Canadian Red Cross have policies in place that require volunteers to be trained and vetted through security checks. This is done to ensure the safety of those receiving aid. When these policies are not followed, there are risks of errors being made or vulnerable citizens being exposed to improper or criminal behaviour by aid workers. Given the large number of warming centres and shelters that were operated at the local level, but not supported by the Red Cross, it is likely that not all volunteers had proper training nor vetting. Fortunately, no allegations of serious errors or wrongdoing were reported to those conducting or contributing to this review.

Despite the many volunteers that served in some capacity during the event, organizers of local warming centres and shelters complained about the difficulty in securing enough volunteers. This was a challenge in this particular event because of its duration. Even when there were enough volunteers to operate the centres in the short term, the same people could not reasonably be expected to work all day, every day for two weeks straight.

Volunteer burnout was raised on more than one occasion. While people were generally happy to be of service, the long hours did seem to promote resentment that more community members were not contributing to the effort. Volunteer burnout also seemed to be a contributing factor to the resentment some municipal organizers felt towards the reliance that local service district residents had on municipal services. Municipal organizers lamented that their volunteer corps, drawn mostly from municipal residents, were working long, hard hours to provide services for both municipal and LSD residents, with little assistance from the latter. This resentment was most evident in the last couple of days of the event when the provincial government requested that the warming centres remain in operation to serve LSD residents even after the power had returned in the municipality itself.

**Recommendation 43** As part of the regional and municipal emergency planning and preparedness efforts, consideration should be given to establishing databases of volunteers, trained and security vetted as appropriate, who can be called upon in the event of emergency. These plans should ensure that LSD residents are among the volunteers to broaden the pool and to promote fairness.

The contradiction between the demand for more trained volunteer responders and the supply of citizens who are eager to help but are unwelcome due to their lack of preparation, training and security vetting suggests an opportunity for the consideration of a new approach to the development of a volunteer corps. The Canadian Red Cross, in discussions pursuant to this review, has already indicated the need to consider how they might expand their volunteer pool.

Given the provincial government's responsibility to oversee the general welfare of its citizens, especially in emergencies, thought has been given to how the dedication and volunteer spirit of the public service may be able to contribute to increasing the training volunteer pool. There are over 40,000 public servants living and working in all corners of the province, with varied backgrounds and language capabilities. A concerted effort to provide training to public servants following the quality control and coordination procedures of an organization like the Canadian Red Cross may have a significant impact on both the size and effectiveness of a volunteer pool for emergencies.

**Recommendation 44** The Government of New Brunswick should explore, with the Canadian Red Cross, the development and maintenance of a partnership to enhance, through awareness and training, the emergency volunteer capabilities of public servants across the province.

Like many other concerned New Brunswickers, local, provincial and federal politicians were eager to contribute in any way they could during the aftermath of the storm. Where the politicians were known to residents, they became trusted sources of information and assistance. Not only did their presence provide comfort, but the extra sets of hands were welcome. It should be acknowledged that elected representatives have a fiduciary or trust-based relationship with constituents that must be permitted to operate within an emergency scenario. Citizens must be assured that concerns brought to their government representatives will be forwarded and given due attention by government operations. The NBEMO after-action report did note, however, that unknowingly, requests from the politicians to address specific issues carried significant weight – likely more weight than intended. This created a situation whereby responders felt compelled to move those issues up the line of priority even if protocol would have dictated otherwise. Although this had marginal impact on the overall response, it does point to the fact that volunteers – Red Cross, government staff, politicians, community members – need to understand how the logistics of emergency response work, what their respective roles and responsibilities are, and how their skill sets can best contribute to a successful outcome.

**Recommendation 45** NBEMO and the DM Security and Emergency Management Committee should work together to bring a higher level of awareness to senior civil servants, politicians and political staff as it relates to the mechanics of large-scale emergency management and how each can best contribute to a successful emergency effort.

**Recommendation 46** During emergencies, a liaison position should be established to serve as conduit between government representatives and NBEMO to follow up on citizen concerns that are directed to government officials and politicians who are not in the NBEMO direct chain of command.

# Extraordinary Measures: To Call or Not to Call

When faced with an incident requiring emergency services, NBEMO follows a [graduated response](#) approach as described in section 1.6 of its [Regional Emergency Response Plan](#). (Department of Justice and Public Safety, 2011, pp. 11-12).

According to this protocol, responses to emergencies get escalated as the capabilities of each level of responsibility are exceeded. First and foremost, individuals are expected to respond to their immediate circumstances. If they are unable to handle the situation alone, assistance is sought from local government. When the capabilities of the local government are exceeded, assistance is sought from the region. If the scope exceeds the region's capabilities, provincial assistance is brought to bear. It is only once the Province's capabilities are exceeded that federal assistance is to be sought.

## Canadian Armed Forces

It is unlikely that there will ever be consensus on the issue of whether or not the assistance of the Canadian Armed Forces was necessary during the ice storm. Because there is not consensus on the necessity of their participation, there will also not be consensus on whether or not they joined the response effort at the right point in time.

There is a protocol in place by which a province can make a formal request for assistance from the Canadian Armed Forces when it feels such is assistance required. This step is typically taken when the province believes it no longer has the capacity to handle the situation with its own resources.

In the case of the ice storm event, NBEMO was of the opinion that it had the resources required to implement the response effort and were reluctant to request military assistance. On the other hand, local and provincial government politicians were feeling the anxiety of citizens and pressure to take action to address the growing number of carbon monoxide illnesses. It was agreed, in the end, to make a request to the Armed Forces and help was quickly deployed.



Figure 14: The Canadian Forces pumps heat into a home in the Acadian Peninsula. (Gabrielle Fahmy/CBC)

A total of 215 military personnel were deployed as part of an intervention to provide "Humanitarian Assistance to Disaster Relief (HADR)." They set up a headquarters in Lamèque and platoons were dispersed to Miscou Island, Ste-Marie-St-Raphaël and Tracadie. They focused primarily on assisting the civilian population (visiting homes, delivering bottled water and wood, circulating information pamphlets, clearing debris, etc.) The scope of their duties was limited by their commitment not to disrupt local economies by engaging in activity that falls within the domain of the private sector.

There is little question that the presence of the military gave comfort to most area residents and seemed to increase public confidence that the situation was under control.

NBEMO's opinion, which is supported by the consultant who prepared their after-action review, is that the assistance of the Canadian Armed Forces should be reserved for the direst of circumstances. Likened to the boy-who-called-wolf fable, NBEMO does not want to see the Province develop a reputation for calling in the Armed Forces unnecessarily.

## States of Emergency

The [Emergency Measures Act](#) provides the authority for the Minister of Justice and Public Safety to "declare a state of emergency at any time with respect to all or any area of the Province." Municipalities have the same authority as it relates to their own municipality.

Both during and after the ice storm incident, there were conflicting opinions about whether or not a state of emergency should have been declared by the minister for the region as a whole. Indeed, many people and the media questioned why the Province refrained from doing so.

An interesting contradiction that came to light as part of this debate surrounded the communications impact of a declaration of a state of emergency. On one hand, those advocating for a declaration felt that it would create a deeper understanding, particularly among those outside the region, of the seriousness of the situation. On the other hand, responders were seeing an appropriate level of concern being exhibited by those within the regions that might have been escalated to panic if a state of emergency was to be called. These are the types of factors that were considered in determining the necessity for a declaration.

Critical to the debate is an understanding of the reason for which states of emergency are called. A state of emergency does not, as many people seem to believe, provide for additional resources or financial support for the response or recovery efforts. Rather, it serves to provide the minister with extraordinary powers, as described in the following excerpt from the *Emergency Measures Act*:

### **Powers of Minister and municipality**

12 On a state of emergency being declared in respect to the Province or an area of the Province, or on a state of local emergency being declared in respect to a municipality or an area of a municipality, the Minister may, during the state of emergency, in respect of the Province or an area of the Province, or the municipality may, during the state of local emergency, in respect of the municipality or an area of the municipality, as the case may be, do everything necessary for the protection of property, the environment and the health or safety of persons therein, including

- a. to cause an emergency measures plan to be implemented;
- b. to acquire or utilize or cause the acquisition or utilization of any personal property by confiscation or by any means considered necessary;
- c. to authorize or require any person to render the aid that the person is competent to provide;
- d. to control or prohibit travel to or from any area or on any road, street or highway;
- e. to provide for the maintenance and restoration of essential facilities, the distribution of essential supplies and the maintenance and coordination of emergency medical, social and other essential services;
- f. to cause the evacuation of persons and the removal of livestock and personal property threatened by a disaster or emergency, and make arrangements for the adequate care and protection of them;
- g. to authorize any person properly identified as authorized by the Minister, by the Emergency Measures Organization or by the municipal emergency measures organization to enter into any building or on any land without warrant;
- h. to cause the demolition or removal of any building, structure, tree or crop if the demolition or removal is necessary or advisable for the purposes of reaching the scene of a disaster, of attempting to forestall its occurrence or of combatting its progress;
- i. to procure or fix prices for food, clothing, fuel, equipment, medical or other essential supplies and the use of property, services, resources or equipment; and
- j. to order the assistance, with or without remuneration, of persons needed to carry out the provisions mentioned in this section;

and in addition, the Minister may authorize or require a municipality to cause an emergency measures plan for the municipality, or any part of the municipality, to be implemented.

In short, curfews can be imposed; property can be acquired, seized, removed or demolished as deemed necessary; people can be forced out of their homes; authorized people can enter into premises without permission; movement can be restricted; and, persons can be ordered to provide assistance with or without pay. These measures are meant to facilitate timely intervention, without going through the usual authorizations or negotiations. Since the *Emergency Measures Act* came into effect in 1973, the Minister of Justice and Public Safety has never exercised the authority to declare a state of emergency. Several have been called at the municipal level over the years.



These extraordinary measures have significant implications for the exercise of the power of the state over individual rights and liberties. It is for this reason that a decision of whether or not to declare a state of emergency should never be taken lightly, and should only be declared when it is critical that one or more of the measures set out in the legislation are required.

**Recommendation 47** Members of the general public need to better understand the implications of a declared state of emergency to avoid misunderstandings about its benefits and to be clear of the scope of authority held by the government and its agents should a state of emergency ever be required.

On January 27, leaders from five municipalities declared a local state of emergency: Tracadie, Shippagan, Le Goulet, Lamèque, and Ste-Marie-St-Raphael. In those areas where a local state of emergency was declared, none of the powers set out in the Act were actually used by the municipality. This was used as a method of communicating the serious nature of the emergency to residents, and to demonstrate the commitment of local officials to resolving the situation. However, it should also be noted that some municipalities have by-laws which require a declaration to authorize extraordinary expenditures. It must be emphasized that making a declaration of local emergency is not necessary to gain provincial assistance. By convention, the graduated response (local-regional-provincial-federal) is in place to ensure that the appropriate resources will be brought to bear in response to the requirements of an emergency event.

# Disaster Financial Assistance

On January 31, 2017, the provincial government announced the initiation of a [Disaster Financial Assistance \(DFA\) Program](#) for the 2017 ice storm. Disaster Financial Assistance is a program, usually cost-shared with the federal government that “provides assistance for eligible damages and losses that threaten the health and safety of individuals and municipalities.” (Government of New Brunswick, 2017)

On January 31, residents were told the following: “Residents can report damages related to the ice storm by calling 1-888-298-8555 to begin the application process. Application forms will also be available at warming centres/ shelters as well as online. The online link took people to a Service New Brunswick site where the application material was available. As noted in the NBEMO after-action review report, the program was announced very early in the event so as to give residents comfort that aid would be coming quickly. While this had the effect of getting the program up and running, those who were among the first to make enquiries or applications would have experienced some degree of disorganization in the administration of the program. As the recommendation in the NBEMO report states, there was a disconnect between the announcement and the readiness of administrators to provide satisfactory service to residents. Although the NBEMO report suggests that the announcement should have waited until the administration was ready, it is also worth noting that process improvements should be pursued that would enable the administration to ramp up more quickly to respond to citizen needs.

**Recommendation 47** NBEMO and Service New Brunswick should explore how the Disaster Financial Assistance administrative processes can be streamlined to enable the initiation of a program and response to citizens in need as quickly as possible.

Very shortly after the announcement of the DFA program, a webpage was dedicated to providing information relating to both the program and other forms of assistance that could be sought. Key elements of the program were identified as part of a [March 1, 2017 news release](#), issued as a reminder of the available assistance, as follows:

Here are examples of what can be claimed:

**Gasoline used for your generator** - You must submit the receipts. If you have no receipts, ask the gas station to provide you with a printed or written receipt with the word “paid” stamped on it. You must also submit a picture of your generator, clearly showing the brand name, **serial number** and the watt value.

**Cleaning of debris on your property** - such as broken trees or branches tree cutting posing a hazard to your home. You must submit pictures of damage before and after cleaning. If you do the cleaning yourself, keep a cleaning work registry. This means to enter the date, the name of the person who worked, the number of hours worked on that day and the description of the work carried out. Write down that information for each person and every day worked that was necessary to complete the cleaning. You will be reimbursed at a rate of \$ 10.65 for each hour worked. If you choose to use the services of a professional team, the cleaning bill will be refunded.

**Uninsurable losses or damages.** If you have major damage to your main residence, which prevents you from returning to your home for safety or hygiene reasons, you must first contact your insurance company to make a claim. If your insurer refuses to pay for damages, you may apply to the DFA program. Your situation will be assessed on a case-by-case basis. However, your insurer will have to complete the Appendix C to justify the refusal. The fact that you do not have home insurance does not make you automatically eligible for this Disaster Financial Assistance program. Not insuring your home is a choice, and does not make losses less insurable. If you were insured, damages might be covered, so it would be considered an insurable loss.

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Although DFA programs provide valuable assistance to citizens in need, they are always the subject of criticism. The criticisms are often the same and are largely inherent to the design of the program.

One of the basic principles of the longstanding program is that home/business owners have responsibility, first and foremost, to insure themselves against loss. As such, DFA is designed to provide assistance for losses that are not insurable. Home and business owners with insurance, are required to make claims for insurance coverage to their insurer before turning to DFA. If the insurer denies the claim, then it may be considered for DFA assistance. Insurance policy deductibles are also not eligible. There may be a combination of insurable and uninsurable loss. In this case the uninsurable portion of the claim would be considered for DFA assistance. What is frequently misunderstood, however, is that an “insurable” loss is not the same thing as an “insured” loss. “Insurable” means that the loss can be insured whether you purchased the insurance for that loss or not. “Insured” means that you have purchased insurance for that loss. Therefore, if something could have been insured but a home or business owner chose not to purchase the insurance, DFA cannot provide assistance for the loss. As might be expected, it is very disappointing to home/business owners who have suffered “insurable” losses to find that they are not eligible for DFA assistance for those losses.

The program covers eligible damages and losses that threaten the health and safety of individuals and communities, but does not cover any damages or losses for items for which insurance is available for purchase. An example of something that could be covered by the program are repairs to electrical panels. Note that food loss is considered an insurable loss. Residents should turn to their insurance providers to cover this cost.

Excerpt from [news release](#), Government of New Brunswick, January 31, 2017

Similar disappointment exists when certain expenses that people would like to see covered are not allowable.

One of the criticisms of the handling of the DFA program was that people were not advised early enough during the event that they should be retaining receipts and taking note of the time spent on disaster-related clean up. As noted in the March 1 messaging, certain types of receipts and work logs are required to submit compensation claims. The fact that people were not aware of the need to keep records in the event that compensation could be sought caused some frustration and angst.

**Recommendation 49** When it is anticipated that a DFA program is likely to be established, residents should be advised as early in the event as possible what types of records are likely to be required for the submission of a claim.

One of the positive features of the DFA is the ability for government to offer advance payments to speed recovery. Typically advance payments are issued for emergency repairs, when there is clear information that damages in excess of the amount advance occurred and that the advance would directly aid recovery for that person.

The deadline for the application for assistance under the DFA program was May 31, 2017. A total of 5,160 claims were made under the program, as follows:

| Type of Claim  | Number of Claims |
|--|------------------|
| Residential  | 5,104            |
| Business   | 19               |
| Non-profit   | 9                |
| Municipal government   | 19               |
| Provincial government (including Ambulance New Brunswick and Vitalité) | 9                |
| Total  | 5,160            |

As of August 8, 2017, 3,585 of the 5,104 claims have been processed.

The Government of New Brunswick has made the decision to waive deductibles for all residential DFA claims providing another element of relief for homeowners. In addition, residents were pointed to other supplementary programs such as the Canadian Red Cross (see [Donor Report](#)), the Department of Social Development and food banks for further assistance as required.

The total cost of the DFA program is expected to be \$6,728,277, of which 67% will be borne by the Province of New Brunswick and 33% by the Government of Canada. This compares to the total estimated cost of Post-Tropical Storm Arthur that was estimated at \$14 million.

# Communications

Based on many conversations, reports and analyses, it was easy to come to the conclusion that, at a high level, the two biggest challenges in carrying out this emergency response – and perhaps most emergency responses – are coordination and communications. Many of the coordination challenges are set out in the NBEMO after-action review report or discussed previously in this report.

The communications challenges took on many forms that will be touched on below. Other challenges and associated recommendations have been included in the NBEMO report and are acknowledged herein.

## ***Communications Infrastructure in the Region***

Simply put, the typical communications infrastructure was not available. Without power, televisions, electric radios and Wi-Fi could not be accessed. Where poles were down, land-line telephones were out of service because of damaged telephone wires. Cell phone service was available but required power to recharge batteries, and segments of the population still do not have or use cell phones. As such, one could not rely on traditional forms of mass communication.

## ***Battery-Operated Radio***

Common wisdom and regular reminders tell us that every household should have a battery-operated radio and working batteries available in case of emergency. The extent to which people had radios and were able to access information via battery-operated radio is unclear, but it could be said that there was no overwhelming evidence that critical information was shared via radio to a large part of the population. On the contrary, the comment heard most in relation to radio was that people could not find a station that was broadcasting the information needed. The notable exception to this was in the City of Miramichi where an arrangement had been made with a local radio station to transmit emergency-related information on a regular schedule.

Local radio stations can play a crucial role in the transmission of information to the population in a crisis situation. But to be successful, several elements have to be in place:

- The broadcasting station must have power.
- The broadcasting station must have local broadcasters present and willing to broadcast live throughout the emergency rather than switching to pre-programmed content or remotely controlled from another region in the country.
- Citizens have to know that the information is available and to what station they should tune-in.
- Citizens have to have radios and batteries.

This will not be the first time that an after-action review has recommended a more dedicated effort to enhance radio broadcast to address needs during emergencies. The 2013 NBEMO after-action review report raised the issue saying “that NBEMO and municipal officials could not use the local radio stations for public messaging. Most of the radio stations are remotely controlled from as far away as Toronto.” Recommendation #9 stated that “the ability to access local radio stations during an emergency be implemented as soon as possible”. (p.9)

In February 2015, the after-action review following Post-Tropical Storm Arthur reiterated similar observations. “After hours and on weekends however, most radio stations are typically unattended and content is either pre-programmed or remotely controlled. This was certainly the case during Arthur. Efforts to reach station managers were largely unsuccessful. Since Arthur, CBC has committed to taking a more active role when there is an emergency after hours and on weekends.” (p.7)

This led to two recommendations in the 2015 report:

- 3.1 It is recommended that NBEMO work collaboratively with broadcasters to enable public alerts to go direct to broadcast when stations are unattended or when lives are at immediate risk.
- 3.2 It is recommended that NBEMO and ECO renew their relationships with major broadcasters to ensure that they can be engaged to assist officials to inform and advise the public in emergency situations.

Excerpt from 2015 After-Action Review

NB Power came to the same conclusion in their *Lessons Learned* report, stating that “despite extraordinary efforts to reach customers with essential information via online, in-person and media channels, we could not reach all customers at all times” and recommending that they will “consider working with NBEMO to create a dedicated emergency broadcast station to provide essential information to New Brunswickers in times of crisis.”

This is also in line with a recommendation made in the report following the 1998 Ice storm in Québec:

*“Across the civil security system, the role of the radio and its operating constraints must be recognized from the outset. Agreements should be concluded between municipalities and local radio stations so that, in the event of a disaster, municipalities can broadcast the necessary safety messages. At a fixed time, local radio stations could relay information about developments and safety measures. Provisions should also be made for the possibility of broadcasting information transmitted by the national media to disaster victims on local radio stations.”*

**Nicolet, 1999, p.442 [translated from French]**

**Recommendation 50** The DM Security and Emergency Management Committee should pursue, as a priority, the establishment of a recognizable and reliable emergency radio broadcast program for use as a primary source of information dissemination during emergencies.

## **Sentinel**

In its *Ice Storm Event Report*, the City of Miramichi reported on its use of the Sentinel Emergency Management Program, which proved to be an important tool in ensuring the success of the City’s response to the ice storm.

*“Once activated, the Sentinel Emergency Management Program has the ability to store all significant event related to any emergency in a timely fashion.” (...)*  
*Using the latest technical advancements in text messaging, bulk email, phone broadcasting and social media, Sentinel Alerts provides the capability to reach a large number of individuals within minutes. This program should be applied to all emergencies and is presently being underutilized. There is a clear need to maximize Sentinel for all emergencies.”*

**City of Miramichi, 2017, pp. 7-8**

**Recommendation 51** NBEMO should continue to promote the use of Sentinel or other such warning systems, in the emergency planning phases, and partner with municipalities which will choose to use such systems to encourage self-registry by citizens.

## News Media

Traditional media – newspapers, television, websites, radio -- in New Brunswick and across the world, thoroughly covered the story of the ice storm. In New Brunswick, the media helped by readily sharing key messages both within the impacted region and around the province. Those who were able to use cell signals to get news from the web were able to keep well informed through traditional sources.

## Social Media

Social media sources such as Facebook, Twitter and Instagram proved to be very effective for informing the population. The authorities made good use of social media and were able to pass along critical information quickly and effectively. For example, information about shelters and warnings about carbon monoxide were shared, and NB Power offered regular updates on the progress on their reconnection efforts. Again, this communications source served only that segment of the population that had a usable device and was familiar with the use of social media. However, those who were using it indicated that it was their main source of information.

## News Conferences

The Premier and responder organizations held daily news conferences to convey key information and concern with respect to the difficult circumstances citizens were facing. Citizens were reassured that providing relief to them was the authorities' top priority and that a multi-faceted approach was being taken to reduce their suffering. The news conferences were well-received.

As is commonly the case, representatives from each of the main responder organizations—government, NBEMO and NB Power—were made available to respond to media questions. As mentioned in the NBEMO after-action review, the choice to have the key regional NBEMO responder available at the press conference detracted from his focus on the coordination effort. While it is important that NBEMO have a spokesperson at such press conferences, a knowledgeable person who is not in the response chain of command would serve the same purpose with less disruption.



Figure 15: News conference held in Lamèque on January 30, 2017

## Trunk Radio Communications

The Department of Transportation and Infrastructure's New Brunswick Trunk Mobile Radio (NBTMR) Team in Fredericton was called on Saturday, January 28 around 10:00 a.m. and asked to provide available radio support and training materials in both official languages, to be deployed in the Acadian Peninsula later that day. Equipment and staff were immediately gathered and a command centre was set up in Caraquet around 5:00 p.m. that day. The NBTMR Team remained on site until February 5 when the Emergency Operations Centre (EOC) was closed to emergency operations.

At the peak of the event over 100 radios were deployed to the field with a total of 150 complete radio sets onsite.

As the ice storm incident was the first emergency response for the NBTMR Team, it is considered a success. Onsite training was provided in both official languages. Many lessons were learned by the team and operational recommendations have been submitted, mostly to improve internal processes. The Canadian Armed Forces were lent a number of these radios and they were lauded by their platoons, to the point where it is being recommended that the Army acquire the same type of radios, to allow for better collaboration with the Maritime provinces which are all using the same system.

## ***Clear and Simple Communications***

During the public sessions, citizens emphasized the need to use clear and simple language in any of the communications used to convey important messages to the public. For example, some felt that the carbon monoxide alert message that was broadcast on television contained too much text and may have been difficult for some to understand. To help with understanding among those with limited reading skills, recommendations were made to include more visuals and less text in written materials.

## ***Advance Communications***

As mentioned earlier in both Recommendations 18 and 28, information that is unlikely to change much over time, should be assembled and distributed to residents as material intended to be kept in the home for reference. This could include information such as warnings about carbon monoxide, emergency best practises, suggested content for 72-hour self-sufficiency kit, emergency contact information, and local information drawn from a local emergency plan. Again, this content should be in simple, plain language and be aided by the use of visuals.

*“We have one for waste, why not one for emergencies?”*

**Kent RSC and NBEMO, 2017**



# Summary

Although it has been used in many different contexts, Winston Churchill's statement "Never let a good crisis go to waste", resonates in the aftermath of any crisis, be it a natural disaster, a tragic accident, a war, a stock market crash or an extended power outage. Crisis shakes us out of our complacency, threatens our sense of security and tests our spirit.

There have been lessons learned as a result of the 2017 New Brunswick ice storm:

- We recognize the symptoms of climate change that will continue to deliver storms and other challenges against which we must grow more resilient;
- We acknowledge our society's tremendous reliance on electricity to sustain our daily lives;
- We realize that we, as individuals, must heed the warnings and make the effort to ready ourselves with supplies for self-sufficiency for a period of time until help can be mobilized;
- We note the high degree of complexity associated with emergency response and the requirement for good communication, cooperation and tolerance in order that operations run smoothly;
- We understand why emergency planning is so critical at all levels: individual, local, regional and provincial;
- We recognize the advantages of formal local government structures in helping to organize and represent its residents at the community level;
- We appreciate the importance of communication networks and see the negative impacts when those networks are not available to us;
- We know we can rely on our friends and neighbours to band together to offer support; and,
- We have learned many lessons about the strengths and weaknesses of our emergency services network that can be applied to improve our response when we are challenged by a crisis in the future.

These lessons and our current state of heightened awareness of our vulnerabilities cannot be wasted. Individual citizens, communities, governments and volunteer organizations cannot procrastinate efforts to enhance our emergency preparedness lest we regret our failure to act in the midst of our next crisis.

A complete list of the recommendations from this report, along with those from the after-action report prepared on behalf of NBEMO and by NB Power can be found below:

## ***Summary of Ice Storm Review 2017 Recommendations***

**Recommendation 1** The Government of New Brunswick, in cooperation with appropriate partners, must continue its efforts as identified in [Transitioning to a Low-Carbon Economy: New Brunswick's Climate Change Action Plan \(2017\)](#) as it relates to mitigation and adaptation to risks associated with extreme weather events.

**Recommendation 2** NBEMO should make its after-action reports public on a proactive basis, and report annually on the actions taken in response to the after-action report recommendations.

**Recommendation 3** The Deputy Minister Security and Emergency Management Committee must reconvene, meet on a quarterly basis at minimum, and take a more active role in emergency services not only during an event, but also in relation to planning and post-event follow-up.

**Recommendation 4** The recommendations included in the [Province of New Brunswick Preparedness, Response and Recovery – Winter 2017 Ice Storm](#) report prepared on behalf of NBEMO will be read into this review, monitored and reported on to the Deputy Minister Security and Emergency Management Committee.

**Recommendation 5** NBEMO and the Department of Environment and Local Government should collaborate on a proposal to clearly articulate the role of Regional Services Commissions in the coordination of emergency planning and service delivery.

**Recommendation 6** Municipalities of all sizes must make their responsibilities associated with emergency planning a higher priority to ensure that emergency plans are current and that staff responsible for the implementation of plans are emergency-ready.

**Recommendation 7** NBEMO should, in discussion with the municipal associations, take steps to clarify, either through legislative change or guiding material, the relative roles and responsibilities of NBEMO and the municipalities as it relates to the “implementation” of emergency plans during an emergency.

**Recommendation 8** NBEMO and the Department of Environment and Local Government should collaborate on a proposal to address the respective roles and responsibilities of the Department of Environment and Local Government, NBEMO, the regional service commissions and the LSD advisory committees as it relates to the provision of emergency services.

**Recommendation 9** The Department of Environment and Local Government should continue its efforts to encourage the formation of local government organization across the province, and should include, in these efforts, information regarding the benefits of such organization as it relates to emergency planning and service delivery.

**Recommendation 10** The Department of Justice and Public Safety should prepare a proposal to government outlining the implications of making the review, modification and approval of provincial, regional and municipal emergency measures plans a mandatory responsibility of NBEMO. To ensure that plans are kept updated, this approval process should occur on a regular basis per best practises.

**Recommendation 11** Consideration should be given to using the Deputy Minister Security and Emergency Management Committee as a body to reinforce NBEMO’s efforts to hold municipalities, departments of government and external stakeholders to account with respect to their legislated, delegated and/or contracted requirements in relation to emergency measures planning and implementation.

**Recommendation 12** NBEMO should revisit its training regime with a view to increasing its accessibility to local and regional officials. NBEMO and the Department of Environment and Local Government should take steps to ensure that orientation for new municipal mayors and councillors includes an emergency measures component.

**Recommendation 13** NBEMO should action recommendation #4 from its after-action review to increase the number of Regional Emergency Management Coordinators (REMC) as soon as possible, not only to ensure operational capacity for future emergencies, but also to assist with more rigorous and standardized emergency planning.

**Recommendation 14** The Government of New Brunswick should increase the funding for emergency services to cover costs associated primarily with adding emergency resources at the regional level and the provision of better training for local and regional responders. Consideration should be given to increasing the NB 911 fee on telephone bills to supplement the NB 911 Service Fund.

**Recommendation 15** As the federal government makes investments in infrastructure, both on and off reserve, consideration should be given to how these investments can be leveraged to improve emergency resiliency.

**Recommendation 16** It is recommended that GNB engage in a dialogue with First Nations communities and INAC to, at minimum, formalize communications in emergencies, and to discuss the feasibility of entering into a formal agreement for the integration of emergency services similar to the INAC agreement with PEI.

**Recommendation 17** It is recommended that discussions take place to ensure that there will be federal or First Nations representation at the [Provincial](#) and/or [Regional Emergency Operations Centres](#) to ensure appropriate coordination of emergency services with and for First Nations communities .

**Recommendation 18** Citizens must take greater responsibility for the preparedness of themselves and their families, and not assume that institutional services (i.e., government or other relief organization) will be in place as quickly as desired to maintain their safety and comfort.

**Recommendation 19** Governments and relief organizations should analyze the disconnect between, on one hand, the consistent communications on the 72-hour emergency preparedness message and, on the other hand, the inaction of citizens to heed this advice. This is recommended with a view to increasing the percentage of New Brunswickers who take concrete action to better equip themselves from a preparedness standpoint.

**Recommendation 20** Efforts to communicate messages about 72-hour preparedness must continue, and creative steps need to be taken to motivate people to action. Ideas that could be considered include: permanent reminders or lists (e.g., magnets, stickers) that can be displayed in the home, inclusion of reminders in storm forecasts and media reports, enhanced use of social media, inclusion of the material at community events, or programming for the sponsorship of emergency kits or part of kits.

**Recommendation 21** Societal behaviour changes, particularly those associated with social responsibility, are frequently most successful if we are able to influence our youth. More focus should be put on messages targeting the youth population, such as those that can accompany emergency preparation training and curriculum in school or in communities with resources such as those found on the Province of Quebec's S.O.S. SécurO website designed.

**Recommendation 22** NBEMO and associated responder organizations should have contingency plans to address behaviours resulting from fear of victimization that may contribute to the complexity of keeping the general population safe and comfortable.

**Recommendation 23** Citizens' expectations should not be raised with respect to governments' and responder organizations' abilities to ensure safety and security on a highly individualized basis.

**Recommendation 24** The actions identified by NB Power in the table included in this report will be read into this review, monitored and reported on to the Deputy Minister Security and Emergency Management Committee.

**Recommendation 25** In its messaging to the public about the anticipated length of power outages, NB Power should remain cognizant of the fact that NB EMO, first responders and are using the estimates to make decisions about what actions they will take in response to the outage. The provision of estimates that set out worst-case scenarios should be considered when the estimates are being relied on to make decisions about both response requirements and personal safety.

**Recommendation 26** To maintain public confidence with respect to the continuity and reliability of electrical power, NB Power should communicate:

- a) the work it is doing to build greater resiliency into the grid as climate change impacts our weather; and,
- b) the discussions taking place at the national level with respect to the standards required to ensure that power infrastructure can withstand increasingly frequent and damaging weather incidents, especially in vulnerable areas.

**Recommendation 27** Responder organizations and regional/local governments should, in their emergency plans, consider the strategic acquisition and location of generators to optimize spending while ensuring critical and social services can be maintained during emergencies.

**Recommendation 28** NBEMO and NB Power should work with regional and local planners to consider the feasibility of developing and including, as part of their emergency planning processes, protocols governing generator access, distribution and sharing during extended power outages.

**Recommendation 29** Governments at the federal, provincial and local levels should consider how funding could be made available over the coming years to assist in the acquisition of emergency generators, particularly as it relates to climate change adaption and local government infrastructure.

**Recommendation 30** NBEMO and the Department of Health should collaborate on the production and distribution of emergency-based messaging that is both simple to understand and in a form that will encourage the retention of the material in the home for reference as required. This information should include messaging associated with the safe use of fuel-based appliances during power outages.

**Recommendation 31** The Government of New Brunswick should, in collaboration with the private and non-profit sectors, identify ways to encourage the purchase and installation of carbon monoxide detectors through education and, where affordability is an issue, through rebate, donation or other form of cost-reduction.

**Recommendation 32** The Government of New Brunswick should study the impact and implications of making the installation of carbon monoxide detectors mandatory in existing buildings in a manner similar to that which is required for new construction under the National Building Code 2010.

**Recommendation 33** The Department of Social Development, the Red Cross and NBEMO (as required) should collaborate with municipal associations, on behalf of municipalities, to:

- a) clarify their respective roles and responsibilities associated with the provision of emergency social services;
- b) codify, either in law or policy, the need for and extent of participation between the Department of Social Development and Red Cross in municipal and regional planning effort; and,
- c) ensure that Red Cross best practises are incorporated into the practises of emergency volunteer efforts organized at the community level without the support of the Red Cross.

**Recommendation 34** The Department of Social Development should take steps to revise the 2011 Memorandum of Understanding with the Canadian Red Cross to ensure compliance with section 30 of the *Official Languages Act* when dealing directly with the public on behalf of the Government of New Brunswick.

**Recommendation 35** The identification, equipping and communication of locations that will serve as warming/reception centres and/or shelters should be undertaken as a key component of local and regional emergency plans.

**Recommendation 36** Regional emergency plans should include consideration of how citizens who lack transportation or are trapped due to impassable roads might be transported from distant locations to warming/reception centres or shelters.

**Recommendation 37** The selection and equipping of locations for warming/reception centres and shelters should be undertaken strategically at the regional level to ensure that resources—especially, volunteers, equipment, and responder support—can be optimized both before and during emergencies.

**Recommendation 38** When communicating the locations of warming/reception centres and shelters, information should include details such as hours of operation, services to be offered, and even advice about securing one's home if moving to a shelter.

**Recommendation 39** Municipalities and regions should consider the feasibility of creating and maintaining a self-reported register of vulnerable persons who may want to be on record as possibly requiring assistance in times of emergency.

**Recommendation 40** The Department of Social Development should take steps to get permission from clients on a proactive basis to share their personal information with responders during emergencies for the purposes of assisting in providing emergency aid.

**Recommendation 41** The Department of Social Development should revisit the requirements for emergency preparedness for special care homes and prepare a proposal for the consideration of government to phase-in requirements for back-up power generation or alternate arrangements in the event of extended power outages.

**Recommendation 42** NBEMO should explore and employ best practices to make best use of spontaneous volunteers alongside the planned, trained volunteers in emergency response efforts. Consideration should be given to the types of tasks that are best suited to spontaneous volunteers and what constraints or limitations need to be put in place to optimize the safety of the volunteers and those they are serving.

**Recommendation 43** As part of the regional and municipal emergency planning and preparedness efforts, consideration should be given to establishing databases of volunteers, trained and security vetted as appropriate, who can be called upon in the event of emergency. These plans should ensure that LSD residents are among the volunteers to broaden the pool and to promote fairness.

**Recommendation 44** The Government of New Brunswick should explore, with the Canadian Red Cross, the development and maintenance of a partnership to enhance, through awareness and training, the emergency volunteer capabilities of public servants across the province.

**Recommendation 45** NBEMO and the Deputy Minister Security and Emergency Management Committee should work together to bring a higher level of awareness to senior civil servants, politicians and political staff as it relates to the mechanics of large-scale emergency management and how each can best contribute to a successful emergency effort.

**Recommendation 46** During emergencies, a liaison position should be established to serve as conduit between government representatives and NBEMO to follow up on the citizen concerns that are directed to government officials and politicians who are not in the NBEMO direct chain of command.

**Recommendation 47** Members of the general public need to better understand the implications of a declared state of emergency to avoid misunderstandings about its benefits and to be clear of the scope of authority held by the government and its agents should a state of emergency ever be required.

**Recommendation 48** NBEMO and Service New Brunswick should explore how the Disaster Financial Assistance administrative processes can be streamlined to enable the initiation of a program and response to citizens in need as quickly as possible.

**Recommendation 49** When it is anticipated that a DFA program is likely to be established, residents should be advised as early in the event as possible what types of records are likely to be required for the submission of a claim.

**Recommendation 50** The Deputy Minister Security and Emergency Management Committee should pursue, as a priority, the establishment of a recognizable and reliable emergency radio broadcast program for use as a primary source of information dissemination during emergencies.

**Recommendation 51** NBEMO should continue to promote the use of Sentinel or other such warning systems, in the emergency planning phases, and partner with municipalities which will choose to use such systems to encourage self-registry by citizens.

**ANNEX A - SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS**

The observations and recommendations from the After Action Review are summarised in the following table. In the interest of brevity, **strengths** are not included in the table. Recommended priority for corrective/mitigating actions has been assigned according to the following time lines:

- Priority One - Critical deficiencies within six months; and**
- Priority Two - Deficiencies as time and resources allow.**

| <b>PARA. REF.</b> | <b>REF. #</b>       | <b>OBSERVATION</b>  | <b>RECOMMENDATION</b>  | <b>CLASSIFICATION</b>  | <b>MITIGATION PRIORITY</b> |
|-------------------|---------------------|---|--|--|----------------------------|
| <b>2.2</b>        | <b>PREPAREDNESS</b> |   |  |  |                            |
|                   | #1                  | Special care facilities, with the odd exception, are not prepared for a severe weather event. They are lacking fundamentals, such as an emergency management plan, backup power, and a business continuity plan. As a result, some special care facility clients were either sent home or to hospitals. These actions jeopardized client safety.  | The Province of New Brunswick establish emergency management standards for special care facilities and ensure compliance.  | <b>Critical Deficiency</b><br>The root cause is governance.                  | <b>One</b>                 |
|                   | #2                  | The small towns, villages, and local service districts (LSD) have limited resources to develop and maintain an emergency management program. Most of the smaller municipalities cannot engage in emergency response operations without outside assistance. To maximize resources, a regional emergency management framework should be considered. | Planning and preparedness in the areas not severely impacted should also be assessed as soon as possible. Where required, the development/enhancement of regional emergency management capability should be a government priority. | <b>Critical Deficiency</b><br>The root cause is planning at the local level. | <b>One</b>                 |

| <b>PARA. REF.</b> | <b>REF. #</b>         | <b>OBSERVATION</b>   | <b>RECOMMENDATION</b>  | <b>CLASSIFICATION</b>  | <b>MITIGATION PRIORITY</b> |
|-------------------|-----------------------|--|--|--|----------------------------|
|                   | #3                    | Key members of the New Brunswick Emergency Measures Organization (NB EMO) staff were absent during this operation for administrative reasons. This necessitated employing less experienced people in key roles.  | For prolonged operations: personnel should be recalled, if practical; leave cancelled; and administrative functions such as courses postponed. A policy should be put in place to compensate employees for out of pocket expenses for cancelled activities. A Deputy Director NB EMO should be appointed as an immediate priority. | <b>Deficiency</b><br>The root cause is governance.   | <b>Two</b>                 |
|                   | #4                    | The Regional Emergency Management Coordinator (REMC) organization is grossly inadequate. Currently there are six REMCs. Four have been assigned two regions, one has three regions, and one has one region. It became apparent during the ice storm that additional resources are required. During the storm one of the REMCs was not available. Given the widespread impacts of the storm, the five available REMCs were barely adequate to manage the response and it is doubtful that they could have managed an event with greater impacts and/or longer duration. | The REMC staffing levels should be reviewed, rationalized, and adjusted as required to ensure an operational capability. A minimum of 12 REMCs is recommended.   | <b>Critical Deficiency</b><br>The root cause is resources. Planning may have been a contributing factor. | <b>One</b>                 |
| <b>2.3</b>        | <b>PLANNING</b><br>#7 | With very few exceptions, rural municipality and LSD emergency management plans and procedures were either grossly inadequate or nonexistent. To establish the necessary emergency management capability, local resources are required to be fully integrated into a regional emergency management   | Where lacking, emergency management plans should be developed at the municipal level. In under resourced areas, a regional emergency management organization and plan should be developed as a priority. The planning process should be led by the REMCs. There will also be a   | <b>Critical Deficiency</b><br>The root cause is planning. Governance may be a contributing factor.       | <b>One</b>                 |

| PARA. REF. | REF. # | OBSERVATION   | RECOMMENDATION   | CLASSIFICATION   | MITIGATION PRIORITY |
|------------|--------|---|--|--|---------------------|
|            | #8     | organization with a common plan.<br><br>There are not enough formally trained emergency management personnel outside of NB's larger cities. A number of mayors identified the need for the Emergency Operations Centre Course and the Elected Official's Orientation to be delivered locally.   | requirement for emergency management training.<br><br>The Emergency Operations Centre Course and the Elected Official's Orientation should be conducted at the municipal/regional level. A training needs analysis should be conducted to determine if there are any additional gaps in training. To support local training adequate resources will have to be provided. | <b>Deficiency</b><br>The root cause is governance. Resources may be a contributing factor. | <b>Two</b>          |
|            | #9     | In some cases the Regional Emergency Operations Centres (REOC) are inadequate. One REMC reported that his REOC was too small and lacked the required telecommunications systems.  | A needs analysis should be conducted and all REOCs be equipped as required.  | <b>Deficiency</b><br>The root cause is planning. Resources may be a contributing factor.   | <b>Two</b>          |
|            | #10    | SD reported that the province does not have an emergency social services plan. The responsibility for the delivery of emergency social services has been contracted to the Red Cross. This approach may be acceptable with the right oversight by SD. However, the current construct is problematic. SD did not know that the Red Cross did not have an emergency social services plan for the Acadian Peninsula, and Red Cross plans are not routinely exercised. Although SD contracted the Red Cross, they retain overall responsibility for emergency social services. Without SD participation/management oversight, there is no quality assurance and control, which could needlessly put | SD should conduct a review of their approach to the delivery of emergency social services as soon as possible. SD should conduct an audit of their contract with the Red Cross to ensure that the required performance measurements are in place and monitored. A formal exercise program should be included in the plan.  | <b>Critical Deficiency</b><br>The root cause is planning.                                  | <b>One</b>          |



| PARA. REF. | REF. #          | OBSERVATION  | RECOMMENDATION   | CLASSIFICATION   | MITIGATION PRIORITY |
|------------|-----------------|--|--|--|---------------------|
|            | #11             | vulnerable people at risk.<br>Although fuel was available in all areas of the province during the response to the ice storm, access to fuel was a problem. Response teams and at least one REMC were required to dedicate much of their time searching for gas and refuelling their vehicles. Their time would have been more effectively used carrying out other response actions.                                  | Response agencies should develop province-wide business continuity/emergency refuelling plans as a priority. Contracts should be pursued with gas companies to refuel emergency vehicles on site daily.  | <b>Deficiency</b><br>The root cause is planning.           | <b>Two</b>          |
| <b>2.4</b> | <b>TRAINING</b> |  |  |  |                     |
|            | #12             | After years of promoting the 72 Hour Preparedness Program, the population was still, in general, grossly under prepared for the ice storm and any other severe weather events.   | Detailed research should be conducted to determine the barriers to public emergency preparedness. Based on the research, strategies to promote public preparedness by citizens, households, and businesses should be developed. Research might also consider why warnings, such as those regarding carbon monoxide poisoning, were not heeded.     | <b>Critical Deficiency</b><br>The root cause is education. | <b>One</b>          |
|            | #13             | The overall performance of REMCs varied considerably based on previous experience and training. Some REMCs reverted to a first response role rather than operational approach to the response effort. In addition, reports and operational notes from REMC members varied in structure, clarity, use of jargon, and effectiveness. Mass distribution lists created confusion on who had the lead for an issue and on | REMC training needs analysis should be conducted to identify gaps and/or weaknesses in members' training. The roles and responsibilities of REOC members should be reviewed, documented, and communicated during training. It is also recommended that the standard EOC log and report forms be used across the emergency management organization. | <b>Deficiency</b><br>The root cause is training.           | <b>Two</b>          |

| PARA. REF. | REF. #            | OBSERVATION  | RECOMMENDATION  | CLASSIFICATION   | MITIGATION PRIORITY |
|------------|-------------------|--|---|--|---------------------|
| 2.5        | OPERATIONS<br>#14 | <p>many occasions responders at all levels not responsible for an issue jumped into the discussion without merit, causing delays in resolutions.</p> <p>Senior political officials were rightly present in the Acadian Peninsula until power was restored. Their presence was appreciated and reassured the public that government was committed to their welfare. However, their presence also had unintended consequences. A number of people tried to jump the queue for assistance by approaching the senior political officials directly. These requests diverted emergency managers from priority tasks to research the issues and respond to the requests. The same questions were asked of different people within the emergency management organization. This caused a great deal of churn and forced people to work at cross purposes.</p> | <p>Political officials should continue to show a strong presence during emergencies. However, all requests for support services should be referred to local government officials and/or the REMC. A best practice would be for all elected officials to have a business card with essential local emergency contact information that can be provided to anyone approaching them for emergency services.</p> | <p><b>Critical Deficiency</b><br/>The root cause is training. Governance is a contributing factor.</p> | <p><b>One</b></p>   |
|            | #15               | <p>In response to ANB refuelling requirements, a REMC spent time travelling around to identify service stations with gasoline and power. His time could have been better spent managing and coordinating at the operational level. The information could have been obtained from the PEOC.</p>   | <p>All REMCs should review and follow their concept of operations and plans. It is also recommended that the Director NB EMO emphasize that the role of the REMC is to manage and coordinate at the operational level. Tactical actions by the REMC should be by exception when life safety may be an issue. When possible and required, such actions should be tasked to tactical responders.</p>          | <p><b>Deficiency</b><br/>The root cause is planning. Governance may be a contributing factor.</p>      | <p><b>Two</b></p>   |

| PARA. REF. | REF. # | OBSERVATION   | RECOMMENDATION  | CLASSIFICATION   | MITIGATION PRIORITY |
|------------|--------|---|---|--|---------------------|
|            | #16    | Five municipalities declared a state of local emergency and some authorities wanted a provincial state of emergency declared. There was very little understanding that the purpose of a state of local emergency is to provide extraordinary powers, if required for the emergency response. It was argued that a provincial state of emergency would have reassured the public that the government was dealing with the emergency. However, invoking extraordinary powers may increase angst with some people. People may feel that if any order of government needs extraordinary powers that the situation is worse than reported. Responsible authorities should understand the powers and limitations of the act and use it accordingly. | The intent and powers of a declaration of a state of emergency should be included in elected official's training. | <b>Minor Deficiency</b><br>The root cause is education.                                | <b>Two</b>          |
|            | #17    | A public contact number for the PEOC is well published and was used extensively by residents seeking information and often immediate assistance. Staff triaged calls very well. However, the staff and the NB EMO could be liable in the event of actual or perceived mistakes. Answering public calls in the PEOC also has the potential to compromise classified/sensitive  | All public calls should be directed to a call centre, outside of the PEOC, for triage by trained operators.       | <b>Deficiency</b><br>The root cause is governance. Resources is a contributing factor. | <b>Two</b>          |

| PARA. REF. | REF. # | OBSERVATION  | RECOMMENDATION   | CLASSIFICATION  | MITIGATION PRIORITY |
|------------|--------|--|--|---|---------------------|
|            |        | information.   |  |   |                     |
|            | #20    | An Incident Command Post (ICP) was established in the Acadian Peninsula. The ICP reported directly to the PEOC and, and in consultation with the REOC representation, separated their tasks. This process appeared to work well; however, the lines of communication and command were initially misunderstood by various agencies and some NB EMO employees.                               | An ICP deployment plan should be developed as a priority. The plan should include an ICP concept of operations, organizational structure, and roles and responsibilities. Emergency management training should include the deployment of ICPs. | <b>Deficiency</b><br>The root cause is planning.  | <b>Two</b>          |
|            | #24    | Many neighbouring towns donated and transported food to the impacted areas. However, there was no tracking of dates and times of arrival or control of the distribution of the food/supplies in order to prevent contamination and/or poisoning.   | Emergency food distribution centers should be established in strategic locations with quality control measures in place that are consistent with Canada's food safety guidelines.  | <b>Deficiency</b><br>The root cause is planning.  | <b>Two</b>          |
|            | #28    | The PEOC Executive Summary Brief ensured situational awareness throughout government. Stakeholders acknowledged the importance of the daily brief, but commented that they did not have the opportunity to confirm departmental information. This resulted in stakeholder executives seeking clarification on key information, and sometimes caused confusion on the content of the brief. | Time permitting, representatives of all of the organizations mentioned in the brief should be given an opportunity to review relevant information in the brief for accuracy.   | <b>Deficiency</b><br>The root cause is governance. Planning and training may be contributing factors. | <b>Two</b>          |

| PARA. REF. | REF. # | OBSERVATION  | RECOMMENDATION   | CLASSIFICATION  | MITIGATION PRIORITY |
|------------|--------|--|--|---|---------------------|
|            | #29    | The Red Cross dispatched a senior representative to the REOC in Moncton as a first step in activating their response. The Red Cross representative would have been much more effective if he/she was positioned in the PEOC.   | When the PEOC is activated, a Red Cross representative should be physically located in the PEOC and remain there throughout the response to the incident.  | <b>Deficiency</b><br>The root cause is planning. Governance may be a contributing factor. | <b>Two</b>          |
|            | #30    | Government employee volunteers were deployed to the Acadian Peninsula to conduct door-to-door welfare checks. However, the volunteers: were not registered by NB EMO for insurance coverage; lacked warm clothing and appropriate footwear; were not screened for past criminal behaviour; and did not receive training. | All volunteers should be registered, screened for past criminal behaviour, and checked to ensure they have appropriate clothing and training before being deployed. NB EMO could develop an “auxiliary” volunteer group from within the public service. NB EMO should train and register each volunteer, and exercise the group yearly.  | <b>Deficiency</b><br>The root cause is planning. Governance is a contributing factor.     | <b>Two</b>          |
|            | #31    | It was reported during the public consultation sessions that a large number of people were scared of the people who were conducting the door-to-door welfare checks without visible identification.  | All “door knockers” should wear highly visible identification such as NB EMO vests or uniforms.  | <b>Minor Deficiency</b><br>The root cause is planning.                                    | <b>Two</b>          |
|            | #32    | The Red Cross is under contract with the Province of New Brunswick for Shelter and Reception Centre Management. In most areas of NB, these centres are pre-selected and detailed plans for their use have been developed. In the northern region, the plan was not completed and not based on a needs analysis.          | The plan for shelters and reception centres in the northern region should be completed by the Red Cross. It is also recommended that the NB EMO and SD review and assess the Red Cross provincial plan for shelters and reception centres for any deficiencies. The plan should be disseminated to the relevant government departments and stakeholders, updated as required, and exercised. | <b>Deficiency</b><br>The root cause is planning.  | <b>Two</b>          |

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| PARA. REF. | REF. # | OBSERVATION   | RECOMMENDATION   | CLASSIFICATION                         | MITIGATION PRIORITY |
|------------|--------|---|--|--|---------------------|
|            | #33    | A number of ad hoc warming and reception centres were opened without any coordination with NB EMO at the municipal and regional levels because there were no identified centres in the impacted area. The ad hoc centres did not have standardized operating times and opening hours were not widely distributed. A number of people seeking support arrived at closed centres and had no idea where they could access services. This caused stress and confusion in the communities. | The Red Cross, in consultation with the REMC and municipal/LSDs, should identify strategically located facilities that could be used as reception and warming centres. A database with facility descriptions should be developed. Note: Facility descriptions may already exist in Red Cross plans. Completion of the northern plan for shelters and reception centres and dissemination of the existing plans may be all that is required.  | <b>Deficiency</b><br>The root cause is | <b>Two</b>          |
|            | #34    | The authority to establish and open a reception centre (warming centre or charging station) and the standard operating requirements were not clearly understood or effective.   | The roles and responsibilities of the relevant government departments associated with establishing and supporting reception centers should be clarified, clearly understood, and documented. NB EMO and SD should review and assess the Red Cross provincial plan for shelters and reception centres. If additional protocols are required, they should be developed and added to the plan. The plan should be disseminated to all relevant government departments and stakeholders, updated as required, and exercised. | <b>Deficiency</b><br>The root cause is | <b>Two</b>          |

| <b>PARA. REF.</b> | <b>REF. #</b>   | <b>OBSERVATION</b>  | <b>RECOMMENDATION</b>   | <b>CLASSIFICATION</b>   | <b>MITIGATION PRIORITY</b> |
|-------------------|-----------------|---|---|---|----------------------------|
|                   | #35             | Some reception centres were only accepting people from the immediate city/town, not outlying areas. In some cases this resulted in difficulty finding places to take people who had left their homes.   | SD should issue a policy/guidance that requires all reception centres to accept any victim regardless of where they live. Only when a centre is full should people be directed to another location.   | <b>Deficiency</b><br>The root cause is governance.  | <b>Two</b>                 |
|                   | #37             | There was a public perception that the military should be involved and their deployment went a long way to reassure the public. There was a correct feeling in the Premier's Office that the military presence would improve public confidence in the response operations. However, emergency managers determined there was no requirement for military support. Furthermore, even following a military reconnaissance, there were no planned tasks for them when they arrived on site. The REOCs and NB Power were unaware that they were coming and had no idea how they should be employed. In the end, the presence of the military was appreciated, but was unnecessary. | Elected officials and the emergency management network should be educated on the use of military resources. The military may not be advantageously employed during emergencies for the following reasons: they are not available due to deployments or higher priority tasks; they are not suitable for a wide range of tasks; they need considerable mobilization time; and by doctrine are considered "the force of last resort." | <b>Deficiency</b><br>The root cause is governance.<br>A contributing factor may be education. | <b>Two</b>                 |
| <b>2.6</b>        | <b>RECOVERY</b> |   |   |   |                            |
|                   | #38             | The government announced the recovery plan prior to staff being prepared to issue financial instructions and train local staff on processing Disaster Financial Assistance claims for the emergency. The wrong compensation forms were issued to the public, which resulted in an estimated   | The Recovery Team should formally indicate to the government when they are ready to launch a provincial recovery operation, including the administration of financial relief claims. The official announcement of the disaster assistance should include a start date for claim processing. The development of event  | <b>Deficiency</b><br>The root cause is governance.  | <b>Two</b>                 |

| PARA. REF. | REF. #                                   | OBSERVATION  | RECOMMENDATION  | CLASSIFICATION  | MITIGATION PRIORITY |
|------------|--|--|---|---|---------------------|
|            |  | 70 percent increase in staff effort to administer claims.  | specific compensation forms, based on the provincial Threat, Risk and Vulnerability Analysis, that could be more quickly prepared should also be considered.  |   |                     |
| <b>2.7</b> | <b>ROLES AND RESPONSIBILITIES</b><br>#39 | A disconnect exists between municipal officials who deal with emergency situations in their own areas, and the LSD representatives who act on behalf of the Province. The disconnect is, in part, due to a lack of knowledge of the benefits of the inter-agency team approach.  | Tabletop (or study) exercises should be conducted with a scenario involving municipal and LSD resources along with the REMC so that each party learns what the others have to offer, and to better understand roles and responsibilities.   | <b>Deficiency</b><br>The root cause is training.                                      | <b>Two</b>          |
| <b>2.8</b> | <b>PUBLIC COMMUNICATIONS</b><br>#40      | The Premier delivered effective media conferences throughout the event. However, there were problems with the collection of information for the conferences as well as the actual presentations. At least three members of the Premier's team were asking the same questions of different people. This diverted emergency managers from their primary tasks. During the media conferences, specialists were in attendance, but were not invited to speak. In all cases people were diverted from their primary duties for extended periods of time for no benefit. | An information collection matrix should be developed to support the Premier's media conferences. The matrix should identify the type and depth of the information required, identify the person/organization to provide it, and the delivery time. If specialists are required to support a news conference, they should not be frontline workers, but senior personnel. Consideration should be given to asking the specialists to speak within their area of expertise. | <b>Deficiency</b><br>The root cause is planning. Governance is a contributing factor. | <b>Two</b>          |



| PARA. REF. | REF. # | OBSERVATION   | RECOMMENDATION   | CLASSIFICATION  | MITIGATION PRIORITY |
|------------|--------|---|--|---|---------------------|
|            | #41    | The Communications Wing of the Executive Council Office tasked the Communications Director assigned to NB EMO to support the Premier's news conferences. This assignment took his efforts away from his normal tasks, and he did not have time to produce emergency public information for NB EMO. This forced NB EMO staff to produce the required product, which diverted them from their primary duties. | When the PEOC is activated, the assigned Communications Director should be accountable only to the NB EMO Director for the development and distribution of emergency public information. It is also recommended that the Executive Council Office communications staff support the Premier's news conferences, and minimize their demands on the Communications Director assigned to NB EMO. The requirement to coordinate the public messaging within government and with other stakeholders does not change. | <b>Deficiency</b><br>The root cause is planning. Governance is a contributing factor. | <b>Two</b>          |
|            | #42    | There was concern with the messaging released in French. "Proper French" was used, not the local dialect spoken by the residents of the Acadian Peninsula. There was also a problem with the technical level of the messaging. As a result, a lack of understanding of the releases existed.  | Emergency public information in both official languages should be crafted to be understood by the target audiences. This includes ensuring that messaging is issued in the local dialect. There is also a need to ensure that the technical level of information conveyed is appropriate.  | <b>Deficiency</b><br>The root cause is planning.                                      | <b>Two</b>          |
|            | #45    | Despite an early and aggressive communication plan to warn residents about the dangers of carbon monoxide, two residents died and 49 were   | The Fire Marshal should conduct an aggressive communication and education program about the dangers of carbon monoxide poisoning.  | No classification required.   | <b>Two</b>          |

| <b>PARA. REF.</b> | <b>REF. #</b> | <b>OBSERVATION</b>   | <b>RECOMMENDATION</b>  | <b>CLASSIFICATION</b>                  | <b>MITIGATION PRIORITY</b> |
|-------------------|---------------|--|--|--|----------------------------|
|                   |               | hospitalized due to carbon monoxide poisoning. Several officials noted that residents did not understand the danger of the cumulative effect of carbon monoxide and in some cases ignored all warnings.  | Consideration could be given to a discount/rebate program for residents to purchase approved carbon monoxide detectors.  |  |                            |
|                   | #46           | At the request of local authorities, NB Power changed its response priority from power restoration to road clearance to open roads to ensure public safety. The change in priority, the reason, and its impact on restoration was announced. However, in some cases the change was unfairly reported as a failure by NB Power to meet their restoration priorities. This led to unnecessary frustration and confusion in the impacted areas.   | NB Power and the Government of NB should monitor the media and take immediate action to correct misinformation.  | <b>Deficiency</b><br>The root cause is | <b>Two</b>                 |
|                   | #47           | There is a perception that NB Power was consistently inaccurate regarding damage and power restoration. It was expressed that NB Power over promised and under delivered, resulting in a loss of confidence in the utility and the GNB. This was unfair, as the information provided by NB Power was accurate, based on the information available at the time. The changes in damage assessment were forced on NB Power by changing circumstances and were unavoidable. Changes to the damage assessment and restoration | During severe power outages, while the full extent of the damage is being determined, NB Power should consider a policy of under promising and over delivering. The acquisition of modern power utility damage assessment software should be a priority. | <b>Deficiency</b><br>The root cause is | <b>Two</b>                 |

| PARA. REF. | REF. #                                   | OBSERVATION   | RECOMMENDATION   | CLASSIFICATION                         | MITIGATION PRIORITY |
|------------|--|---|--|--|---------------------|
|            |  | schedule caused frustration and anger for many people who stayed in their homes without heat. This was especially frustrating for NB EMO during the first 48-72 hours, because their initial response plan was based on an estimated five day recovery period. It was found that there was no indication that NB Power's damage assessments were faulty or deliberately misleading. |  |  |                     |
|            | #49                                      | In many cases people were not aware of, nor did they know the location of, the reception/warming centers. Due to the power outage, communication and public announcements had limitations.  | NB EMO should consider developing brochures or educational material with information on designated reception and warming centres that residents can keep with their emergency preparedness kits. | <b>Deficiency</b><br>The root cause is | <b>Two</b>          |
| <b>2.9</b> | <b>TELECOMMUNICATIONS AND FACILITIES</b> |   |  |  |                     |
|            | #50                                      | The use of cellular phones remains the principle method to pass information. On several occasions REOC members were in blackout areas due to the failure of cellular services.  | Satellite phones should be used to provide redundancy for field communications.  | <b>Deficiency</b><br>The root cause is | <b>Two</b>          |
|            | #51                                      | The NB EMO offices and the PEOC are located in the basement floor of a very old building in the St. John River flood plain, which has flooded in the past. The potential for complete loss of this facility has been reported in the past. Although the PEOC was judged to be effective, the location of the centre remains a major concern.  | The NB EMO should be relocated as soon as possible.  | <b>Deficiency</b><br>The root cause is | <b>Two</b>          |
|            | 54                                       | During the peak of this emergency, the demand for connectivity strained and   | NB EMO should include "use of mobile communication devices" or "staying  | <b>Deficiency</b><br>The root cause is | <b>Two</b>          |

| <b>PARA. REF.</b> | <b>REF. #</b> | <b>OBSERVATION</b>  | <b>RECOMMENDATION</b>  | <b>CLASSIFICATION</b>                                | <b>MITIGATION PRIORITY</b> |
|-------------------|---------------|---|--|--|----------------------------|
|                   |               | <p>sometimes overwhelmed commercial mobile communication systems that were not built to handle such high demand. Residents were sending videos/pictures or viewing social media when others were trying to check on relatives/friends. Communication partners expect this, and have developed guidance on how to use a mobile phone during an emergency. There is a requirement for NB to develop similar material.</p> | <p>connected "guidance" educational material during their annual emergency management media campaign. Similar messaging should be included with public information issued during an emergency.</p> | <p>planning. Education is a contributing factor.</p> |                            |

## NB Power recommendations

| Key learning and observation   | Recommended Action   | Timeline  |
|--|--|---|
| Efforts to reach all customers with preparedness, restoration and safety information were not always effective for a variety of reasons.   | Greater emphasis and outreach with pre-season preparedness and safety campaign in rural communities, coordinated with local leaders, first responders and NB EMO to ensure customers are informed and prepared prior to storm season.  | November 2017   |
| Customers concerned about NB Power's restoration priorities were left wondering why some are reconnected while others have to wait.  | Simplify customer restoration updates with greater emphasis on visuals and photographs that explain sequence of events to restore power.<br>Create simple handouts for field staff with visual explanations of a variety of circumstances that occur during extended power outages and the role of customers. (ie: repairing broken masts, unplugging major appliances in the home, disconnecting breakers.)   | November 2017   |
| Despite extraordinary efforts to reach customers with essential information via online, in-person and media channels, we could not reach all customers at all times.   | Consider working with NB EMO to create a dedicated emergency broadcast station to provide essential information to New Brunswickers in times of crisis.  | Timing to be determined in consultation with NB EMO   |
| Some customers were unsatisfied with the lack of certainty on estimated restoration times (ETRs), especially in Acadian Peninsula where targets were adjusted and delayed based on actual assessments.   | Review NB Power assessment process to provide more accurate estimated restoration times and better upfront data.   | November 2017   |
|  | Ensure NB Power assessors are equipped with appropriate tools to conduct their work and communicate requirements.<br>As part of a utility-wide modernization project, NB Power expects to propose investments in advanced metering infrastructure, including smart meters, with the potential to help crews locate and diagnose outages more quickly during storm and other events. Advanced metering has the potential to communicate outage locations and customer status automatically in certain circumstances, without requiring the customer to report via the website or call centre. | November 2017<br><br>Pending board and regulatory approval, rollout complete anticipated by end 2020 (~ 3 years implementation) |
| Leaving crews in the field for majority of effort created mistaken impression among some customers that restoration was not being coordinated effectively when in fact bringing services to crews allowed for a faster response and more efficient response. | Review how assessment efforts/ storm management and crew movements are communicated to customers to facilitate understanding of work flow.   | Ongoing (part of continuous improvement process)  |
| Despite being built to design standards that are able to withstand extreme winter weather and ice loading, some infrastructure was not able to withstand the intensity of this storm, particularly in northern coastal areas.                                | Work underway to review standards with CSA to determine alternative methods of building greater resilience into the grid in areas vulnerable to extreme weather impacts.<br>Implementation underway of Engineering Standards to guide decision-making on the application of specific design standards to storm-harden infrastructure in areas prone to more severe weather. This will result in reinforcing infrastructure in vulnerable areas, such as along the northeastern coastline.  | Improvements beginning in Fall 2017   |
| Coordination of storm response with partner agencies including NB EMO, Red Cross and Canadian Armed Forces was a complex effort given the historic impact of this mid-winter storm on customers and the grid.  | Review storm effort with a goal of clarifying roles and responsibilities with partner agencies to ensure efficient and effective response to future storms.  | Timing and actions to be determined in consultation with NB EMO and partner agencies.   |

# Appendix A – Review Methodology and Contributors

Input for this review was sought from a variety of sources through in-person meetings, telephone discussions and written submissions.

Both NB Power and NBEMO conducted their own after-action assessments and submitted reports as part of the overall review process. Their assessment reports both informed the Clerk's review and have been included as part of the Clerk's final report.

## Public Meetings and Submissions

Public meetings were conducted in five areas most affected by the storm. The meetings were held from April 2 to April 6, 2017 in Tracadie, Richibucto, Miramichi, Lamèque and Bas-Caraquet

NB Power and NBEMO started each public meeting with presentations of key facts associated with the ice storm. Following the presentations, round table discussions were held using a "World Café" format. This facilitation style allowed every participant to speak, share their experiences and express their opinions. At their tables, participants were invited to gather in small groups and reflect on three questions:

1. What went well during the ice storm?
2. What did not go well?
3. What can be improved – recommendations?

The public was also invited to submit written commentary by mail or email to designated addresses. Several submissions have either been appended to this report or provided via web link.

## Local Government and Regional Officials

During the same time period as the public meetings, meetings were also held with local government officials and staff, as well as with representatives from the regional service commissions. These meetings were held in Richibucto, Miramichi and Tracadie. Several local governments and RSCs followed up these meetings with written submissions.

## First Nations Leadership

On May 31, 2017, a meeting was hosted by Chief Ginnish of Eel Ground First Nation (Natoaganeg). This meeting was attended by a number of representatives from the Mi'kmaq First Nations which were especially affected by the ice storm. Representatives from Aboriginal Affairs Secretariat, Indigenous and Northern Affairs Canada (INAC), Health Canada and Mi'gmawe'l Tplu'taqunn Inc. also participated in this meeting.

## Responder Organizations

In addition to receiving their after-action review reports, meetings were held with NB Power and Department of Justice and Public Safety/NBEMO leadership.

Meetings were also held with representatives from the government departments who played roles in the emergency response, as follows:

- Department of Environment and Local Government
- Department of Social Development
- Department of Health
- Department of Transportation and Infrastructure
- Department of Education and Early Childhood Development

A meeting was held with the leadership of the New Brunswick branch of the Canadian Red Cross.

A representative from the Canadian Armed Forces was interviewed by telephone.

Supplementary material or information was also sought from responder organizations during the preparation of this report.

### **Literature Review**

Information was gathered from a number of sources, including previous after-action reviews. A number of these sources are cited in the Bibliography in Appendix B.

## Appendix B – Bibliography

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# Appendix C – Glossary of Terms

| Term   | Definition   |
|--|--|
| <a href="#">New Brunswick Emergency Measures Organization</a> (EMO or NBEMO) | New Brunswick Emergency Measures Organization (NBEMO) is the provincial lead agency for emergency management. NBEMO works to reduce loss of life and injuries to persons and damage to property and the environment, and ensure that officials, stakeholders and the public have the information, assistance and training needed to adequately prepare for emergencies and disasters.  |
| Regional Service Commissions (RSC)   | 12 service delivery bodies throughout NB that provide solid waste management and land use planning services, encourage voluntary service arrangements among interested communities, and act as regional forums for collaboration among communities on regional issues.   |
| After-action reviews (AAR)   | As a method of continuous improvement, an After Action Review is a deliberate and detailed review of operations conducted during an event. The intent of an AAR is to capture lessons learned from the event by reporting on strengths, weaknesses, and capability gaps. An AAR typically includes observations, deficiency classifications, and , where pertinent, recommendations.   |
| Municipality   | Incorporated area (city, town, village, rural community, or regional municipality) with elected mayors/councils and subject to the <i>Municipalities Act</i> and other legislation.  |
| Local service district   | Unincorporated rural area with services provided through the Minister of Environment and Local Government via Local Service Managers of the department under the <i>Municipalities Act</i> . LSDs do not have elected officials.   |
| Incorporated area  | Municipalities, rural communities, and regional municipalities   |
| Provincial Emergency Operations Centre (PEOC)                                | The Provincial Emergency Operations Centre (PEOC) is located at the Victoria Health Centre, 65 Brunswick Street, Fredericton. This facility contains the necessary working accommodations and communications systems to enable effective coordination of a “whole of government” response to an emergency. The operational components of the PEOC include the Director EMO, communications staff, operations staff, administrative support staff, the Provincial Emergency Action Committee, an assessment staff from the Office of the Provincial Security Advisor, logistics staff, and Planning staff members. The PEOC is prepared to operate on a 24 hour basis for extended periods as required. |
| Regional Emergency Operations Centre (REOC)                                  | Regional Emergency Operations Centres (REOCs) are located throughout the province in each of the 12 Local Government Regions. When the response of a local authority is exceeded, REOCs are activated to coordinate support with additional resources and mutual aid arrangements. Direction within REOCs is assigned to NBEMO Regional Emergency Management Coordinators, who chair the Regional Emergency Action Committees (REACs) comprised of representatives of regional departments involved in the response. The REAC composition can be adjusted to cater to the specific requirements of an event, and can include federal or other agency representatives as necessary.                     |
| NB 911 service   | Defined under the <a href="#">Emergency 911 Act</a> as a province-wide system for the coordination of emergency services and for the reporting of emergencies to emergency service providers through a public safety answering point.  |

# Appendix D – Mandate from Premier Brian Gallant



February 3, 2017

Ms. Judy Wagner  
Clerk of the Executive Council and Secretary to Cabinet  
Executive Council Office  
P.O. Box 6000  
Fredericton, NB E3B 5H1

Dear Ms. Wagner:

**Subject: Letter of Appointment and Mandate  
Internal Review – New Brunswick Ice Storm of January/February 2017**

I am pleased you have accepted my request to undertake a review of the event that occurred predominantly in eastern and northeastern New Brunswick as a result of the ice storm of January 24 and 25, 2017.

As you know, the power outages associated with this ice storm represent the highest number of outages – almost 60,000 customers, impacting over 130,000 New Brunswickers – during the winter season and, before everyone is reconnected, will have lasted for over two weeks.

Given the magnitude of the event, the serious impact on the lives of so many New Brunswickers, the complexity of the response efforts, and the potential to determine what worked well as well as to apply learnings to bring future improvements, I am requesting that you conduct a holistic review of this event. Your overall mandate is to conduct a fact finding review into the following areas and if applicable, to provide recommendations:

1. The state of readiness to mitigate the impacts of weather-related events generally, and specifically those associated with freezing rain.
2. The state of readiness in relation to emergency response at the provincial and local levels, and by NB Power and other communications suppliers: Were there vulnerabilities that should have been addressed before the storm? To what extent were learnings from previous events incorporated into the readiness planning?

Office of the Premier / Cabinet du premier ministre

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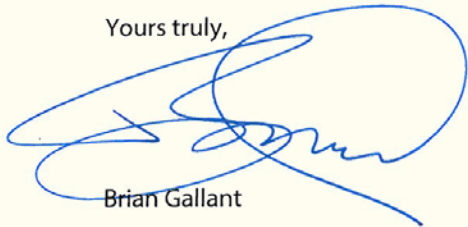
3. The effectiveness of early risk assessments and decision-making processes, and the impact that those had on longer term response success.
4. The effectiveness of the manner in which the response was coordinated and managed: Were roles and responsibilities clear and properly executed? Did pre-existing plans and procedures get executed and have the intended effect? What will be the process to bring improvement in this regard?
5. The extent to which responders were prepared to do their work efficiently: Did responders have access to the necessary information, equipment and tools? Were responders properly trained to effectively carry out their work?
6. The effectiveness of the outreach to the affected New Brunswickers: Were vulnerable populations attended to appropriately? To what extent were efforts to reduce the anxiety and maximize the comfort of impacted residents successful? What more could have been done?
7. The effectiveness of volunteer and government programs to appropriately address the needs of impacted individuals: What programming gaps, if any, existed? Are there areas that residents felt could have been addressed that were not? Have residents been able to access the Disaster Financial Assistance program with ease? Has the Disaster Financial Assistance program provided appropriate relief? Where can improvements be made?
8. The effectiveness of communications:
  - a) Operational communications: Were there any impediments to operational communications, with respect to either equipment or information-sharing processes?
  - b) Media and public communications: How did the media communications unfold? What role did social media play? Did critical messages get through to the public in a timely manner? Is there room for improvement?
9. The extent of secondary impacts on the affected communities: What were the medium and long term impacts on the infrastructure, economy, educational programs, health care system, etc. associated with the storm? Have there been unanticipated impacts? How can or will these be mitigated?
10. The treatment of responders and volunteers during and after the event: Were employees and volunteers treated properly and with due respect by their respective employers and those in receipt of services?

Both the New Brunswick Emergency Measures Organization and the New Brunswick Power Corporation have indicated that they intend to conduct their own internal reviews of this event. It is expected that you will draw on these reviews as part of your broader review. In addition, in conducting this review, you will have access to any relevant written materials over which the Province has control.

In addition, it would be expected that you will include, as part of your review, input from, among others, impacted residents, community leaders, elected officials and volunteer organizations. Please coordinate this outreach with my office. Chief of Staff Jordan O'Brien will be the primary point of contact in the Premier's Office for this review.

You will be required to present a report with recommendations no later than July 31, 2017.

Yours truly,

A handwritten signature in blue ink, appearing to read "Brian Gallant", is written over the typed name. The signature is fluid and cursive, with a large loop at the end.

Brian Gallant

# Appendix E – Province of New Brunswick Preparedness, Response and Recovery – Winter 2017 Ice Storm

**PROVINCE OF NEW BRUNSWICK  
PREPAREDNESS, RESPONSE AND RECOVERY  
WINTER 2017 ICE STORM**

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**AFTER ACTION REVIEW REPORT**

30 June 2017

Final After Action Review Report

Presented to:

Mr. Mike Comeau  
Deputy Minister  
New Brunswick Department of Justice and Public Safety

Prepared by:

Jim Bruce  
James Bruce Security and Emergency Management Services  
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## EXECUTIVE SUMMARY

During the period 24 January - 6 February 2017, New Brunswick (NB) experienced an ice storm which resulted in a catastrophic loss of electrical power throughout central, south-central, eastern, and north-eastern NB including the Acadian Peninsula. This caused unprecedented power outages of more than 130,000 NB Power customers, or about 286,000 people. Kent County, Miramichi, and the Acadian Peninsula areas were the hardest hit. Power failures of this magnitude and duration were unprecedented, requiring NB Power to request mutual assistance from partner service providers in neighbouring jurisdictions. New Brunswick Emergency Measures Organization (NB EMO) co-ordinated the response operations with local authorities to provide resources and assistance as required for the protection of lives and property, in accordance with their mandate. To assess the effectiveness of current plans and procedures, and in keeping with the Department of Justice and Public Safety (JPS) Continuous Improvement Program, JPS contracted Jim Bruce Security and Emergency Management Services to conduct a review of the preparedness for and the response to the impacts from the storm to determine what went well and what areas may need to be enhanced prior to any future occurrence.

Overall the provincial response was extremely well done. New Brunswick has a mature emergency management system that worked well during this event. Although there were two deaths and approximately 49<sup>1</sup> illnesses from carbon monoxide poisoning, it is assessed that this was a direct result of the lack of public preparedness, not from inaction by the government. Although the risk of carbon monoxide poisoning is well known, people executed very dangerous behaviour, such as using generators and open flame heat sources in unvented areas. This dangerous behaviour continued even after the deaths were known and a comprehensive information campaign, including door-to-door welfare visits, was conducted.

Details of the review methodology and resultant findings are contained in the report. The significant findings are summarized below:

All required victim support services were provided in a timely manner.

Special care facilities, with the odd exception, are not prepared for a severe weather event. They are lacking fundamentals, such as an emergency management plan, backup power, and a business continuity plan.

The Regional Emergency Management Coordinator (REMC) organization is grossly inadequate. Currently there are six REMCs. Given the widespread impacts of the ice storm, the five REMCs who were available were barely adequate to manage the response. It is doubtful that they could manage an event with greater impacts and/or longer duration. With very few exceptions, rural municipalities and local service districts (LSDs) in the impacted area were not prepared for the ice storm and other emergencies. Emergency management plans and procedures were either grossly inadequate or nonexistent. Mayors and local officials understand and accept their emergency management mandate, but because of the conflicting demands for resources, have not maintained their emergency management program to an acceptable level. Given their resource levels this is not expected to change without an investment by the province. Currently, 23 municipalities throughout the province have not submitted emergency management plans for

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<sup>1</sup> The Department of Health reported 49 people were hospitalized due to carbon monoxide poisoning, while NB EMO reported 45 victims. The Department of Health statistics will be used throughout this report.

**Unclassified - For Official Use Only**

PROVINCE OF NEW BRUNSWICK  
WINTER 2017 ICE STORM

AFTER ACTION REVIEW  
FINAL AFTER ACTION REVIEW REPORT - 30 JUNE 2017

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review by REMC. Therefore, the situation is not expected to be much different in other rural areas in the province.

It must be stressed that the people in NB EMO and the municipalities/LSDs, including many volunteers and private sector organizations worked hard to ensure the safety of the population without power in very cold weather. Everyone involved in the response should be commended for their efforts.



## 1 INTRODUCTION

During the period 24 January - 6 February 2017, New Brunswick (NB) experienced an ice storm which resulted in a catastrophic loss of electrical power throughout central, south-central, eastern, and north-eastern NB including the Acadian Peninsula. This caused unprecedented power outages of more than 130,000 NB Power customers, or about 286,000 people. Kent County, Miramichi (Northumberland County) and the Acadian Peninsula (Gloucester County) areas were the hardest hit.<sup>2</sup> Power failures of this magnitude and duration were unprecedented, and required NB Power to request mutual assistance from partner service providers in neighbouring jurisdictions. New Brunswick Emergency Measures Organization (NB EMO) co-ordinated the response operations with local authorities to provide resources and assistance as required for the protection of lives and property, in accordance with their mandate.

In accordance with the Department of Justice and Public Safety's (JPS) policy on continuous improvement in security and emergency management, the JPS contracted James Bruce Security and Emergency Management Services to conduct an After Action Review (AAR) of the provincial, regional, and local preparedness, response and recovery to the ice storm. The intent of the AAR is to capture lessons learned from the event to further enhance public safety in the province.

### 1.1 AIM

The aim of this document is to report on the strengths, weaknesses and gaps in NB's provincial, regional, and local preparedness, response, and recovery to the ice storm that occurred between 24 January and 6 February 2017. This report includes observations, deficiency classifications and where pertinent, recommendations.

### 1.2 SCOPE

The review concentrated on preparedness, response and recovery actions in central, south-central, and eastern NB, and most predominantly north-eastern NB including the Acadian Peninsula.

### 1.3 TERMS OF REFERENCE

The Terms of Reference were designed to ensure a comprehensive review of all aspects of NB's preparedness, response, and recovery to the ice storm at the provincial, regional, and local levels. The AAR Team was specifically tasked to look at:

- Plans and procedures;
- Electronic and physical documentation from JPS and other government departments produced during the event;
- Preparedness of all levels of government and appropriate stakeholders;
  - An assessment of processes, plans and outcomes including, but not limited to: actions during the warning phase; actions during the response phase; and actions during the recovery phase;

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<sup>2</sup> Impacted Counties included Albert, Gloucester, Northumberland, Kent, Westmorland, and Kings County and surrounding areas. Power outages were reported in additional counties, but were restored relatively quickly.

- Interagency coordination including:
  - New Brunswick Emergency Measures Organization;
  - Deputy Ministers Committee on Security and Emergency Management;
  - Critical infrastructure owners/operators (e.g., NB Power);
  - First responders including 911 services;
  - Municipalities;
  - Non-governmental organizations (NGOs) and volunteer organizations; and
- Public messaging.

#### **1.4 METHODOLOGY**

A list of key actors/stakeholders and issues related to the event was generated in consultation with the JPS. Focus group sessions/town hall meetings were conducted with government, community leaders, critical infrastructure owner/operators, first responders, and the public. Individual feedback sessions were conducted with select stakeholders. Interviews were conducted in person or by telephone. The feedback from all sessions was analysed to identify gaps, weaknesses, and strengths in the preparedness, response, and recovery capabilities at the provincial, regional, and local [municipal and local service district (LSD)] levels. Key actors and stakeholders included representatives from: provincial government departments; first responder organizations (police, fire, and ambulance); municipal government; LSDs; non-government organizations; the private sector; and the public.

Representatives from the following departments, municipalities/communities, and non-government organizations were interviewed:

##### **Provincial Departments/Organizations**

- Ambulance New Brunswick (ANB)
- 911 Call-Taking Service
- New Brunswick Emergency Measures Organization (NB EMO)
- Department of Justice and Public Safety (JPS)
- Department of Health (DH)
- Department of Social Development (SD)
- Department of Environment and Local Government
- Department of Energy and Resource Development
- Executive Council Office
- Office of the Premier

##### **Municipalities/Communities**

- Kent County
- Miramichi (Northumberland County)
- Acadian Peninsula (Gloucester County)
- Local Service Districts Advisory Committee

##### **Federal Organizations**

- Public Safety Canada
- Royal Canadian Mounted Police

### **Non-Government Organizations**

- Canadian Red Cross
- Bell-Aliant

In addition to the interviews, emergency responder AARs, documentation and materials associated with provincial preparedness and response, and communications releases were audited in detail.

### **1.5 CLASSIFICATION OF DEFICIENCIES AND STRENGTHS**

For this report the deficiencies/strengths are classified as follows:

**Critical Deficiency** is a serious lack of an operational capability that could cause mission failure and/or lead to unnecessary deaths or serious injuries.

**Deficiency** is a weakness in a capability that could adversely affect operations.

**Minor Deficiency** is an operational weakness, which if corrected, could improve efficiency.

**Strength** is considered a “best practice.”

Where possible, the root causes of deficiencies are identified. Experience and research has shown that the root cause of a deficiency can normally be attributed to the following:

**Governance.** This classification includes, but is not limited to, problems with the emergency organization structure, decision making framework, policies, authoritative direction and control.

**Planning.** This classification includes, but is not limited to, problems with the emergency organization, communications, operational and logistic support, compatibility of plans and procedures, and inter-operability with other organizations.

**Training/Education.** This classification includes individual and collective training deficiencies at all levels of the emergency organization that limit the efficiency or prevent the accomplishment of a role, function or task. It also includes education deficiencies within the emergency organization and the general public.

**Resources.** This classification includes any deficiencies in resources (facilities, human, equipment, and material) required to perform a role, function or task.

### **1.6 DEFINITIONS**

The following definitions apply to this document:

**Effectiveness** is the production of a desired, decided and decisive result in the management of the response to the ice storm event.

**Executive (Strategic) Level** refers to the executive management teams within the Government of New Brunswick.

**Local Service Districts (LSDs)** are communities that have no local governance and come under the jurisdiction of the Province.

**Municipal Level** refers to the management teams within the affected municipalities and in the Local Service Districts.

**Operational Level** refers to the management teams within the provincial departments, as well as at the federal and municipal level, responsible for providing resources and/or coordinating response actions.

**Preparedness** is a continuous cycle of planning, training and validating all facets of the emergency organization, resources, training, emergency plans and procedures. The intent is to ensure a timely and effective response to emergencies of any type, anywhere within the province.

**Recovery** is the final phase of an emergency response. During recovery, an organization is in transition from emergency to normal operations, with the aim to return to an optimal state. Recovery includes, but is not limited to: psychosocial support; restoration of services; rebuilding/replacing the facilities; and environmental cleanup.

**Response** is the application of the correct resources at the right time to prevent/reduce the impacts of the winter ice storm event.

## 2 FINDINGS

### 2.1 GENERAL

The ice storm that impacted NB between 24 and 26 January 2017 caused unprecedented damage to the power grid and led to a catastrophic loss of power lasting until 6 February 2017. In this situation, the province's vulnerable populations (e.g., the elderly and the sick) were at risk of hypothermia, with the risk accelerating over time due to the prolonged power outage. There were also risks of fire, carbon monoxide poisoning, and food poisoning. Unfortunately, there were two deaths and numerous hospitalizations attributed to carbon monoxide poisoning. NB's emergency response to the situation caused by the ice storm encompassed operating reception/warming centres, public messaging and the provision of general support to allow people to remain in their homes. The AAR was conducted within that context.

During this emergency and time of need, NB communities came together and provided assistance, supplies, and resources to ensure everyone's safety to the best of their ability. This display of community spirit, working together, and looking out for one another by New Brunswickers is to be commended. In addition, the Provincial Emergency Operations Centre (PEOC) team is well trained and responded to all needs efficiently and effectively throughout the response.

Despite the catastrophic loss of power, people in the impacted communities were very grateful for the dedication and tireless work of the NB Power employees who worked to restore the power to the communities. NB Power should be commended for their success in restoring power considering the damages incurred to their infrastructure.

The findings of this AAR are presented as observations and recommendations under the headings:

- Preparedness;
- Planning;
- Training;
- Operations;
- Recovery;
- Roles and Responsibilities;
- Public Communications; and
- Telecommunications and Facilities.

The major observations and recommendations are summarized in Annex A.

## 2.2 PREPAREDNESS

### Observation # 1

Special care facilities, with the odd exception, are not prepared for a severe weather event. They are lacking fundamentals, such as an emergency management plan, backup power, and a business continuity plan. As a result, some special care facility clients were either sent home or to hospitals. These actions jeopardized client safety. Hospitals did not have the capacity to house these people, and in at least one case a client was sent to an elderly next-of-kin's home. The next-of-kin was not informed that their loved one was being sent to them. Furthermore, they were sent to a home without power and to a family person without the ability to provide for the client's needs. With the privilege of earning money for providing special care, the owner/operators of special care facilities have a responsibility to ensure client safety. This is a **critical deficiency**. The root cause is **governance**.

### Recommendation # 1

It is recommended that the Province of New Brunswick establish emergency management standards for special care facilities and ensure compliance.

### Observation # 2

The small towns, villages, and LSDs have limited resources to develop and maintain an emergency management program. Furthermore, most of the smaller municipalities cannot engage in emergency response operations without outside assistance. In the impacted areas, mayors and local officials understand and accept their emergency management mandate, but because of the conflicting demands for resources, have not maintained their emergency management program to an acceptable level.<sup>3</sup> Given their resource levels this is not expected to change without an investment by the province. To maximize resources, the regional emergency management framework should be enhanced as quickly as possible. Research has shown, when a resource analysis and inventory are completed, most small municipalities have more resources and capabilities than they realized. This is a **critical deficiency**. The root cause is **planning** at the local level.

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<sup>3</sup> The level of planning and preparedness in rural areas of the province not impact as severely as the Acadian Peninsula was not assessed in this AAR.

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**Recommendation # 2**

It is recommended that the planning and preparedness in the areas not severely impacted also be assessed as soon as possible. Where required, the development/enhancement of regional emergency management capability should be a government priority.

**Observation # 3**

Key members of the New Brunswick Emergency Measures Organization (NB EMO) staff were absent during this operation for administrative reasons (planned leave and course/conference), although the Director NB EMO and Operations Manager were quickly recalled. This necessitated employing less experienced people in key roles. Overall this is a **deficiency**. The root cause is **governance**.

**Recommendation # 3**

It is recommended that, for prolonged operations: personnel should be recalled, if practical; leave cancelled; and administrative functions such as courses postponed. A policy should be put in place to compensate employees for out of pocket expenses for cancelled activities. It is also recommended that a Deputy Director NB EMO be appointed as an immediate priority. This position can be appointed from existing staff. A policy should be developed that states that during the absence of the Director NB EMO, the Deputy Director assumes the authority and the responsibility of the Director.

**Observation # 4**

The Regional Emergency Management Coordinator (REMC) organization is grossly inadequate. Currently there are six REMCs. Four have been assigned two regions, one is responsible for three regions, and one has one region. It became apparent during the ice storm that additional resources are required. For example, the REMC for the Acadian Peninsula in particular has too large an area for one person to manage. During the response to the ice storm one of the REMCs was not available. Given the widespread impacts of the ice storm, the five REMCs who were available were barely adequate to manage the response and it is doubtful that they could have managed an event with greater impacts and/or longer duration.

A REMC from an unaffected region was redeployed to the Acadian Peninsula and to run the Incident Command Post (ICP). The ICP was deployed to execute separate functions not managed by the REMC, and therefore did not provide any relief to the REMCs already working in the area. Even with deployment of the REMC from Edmundston to the Acadian Peninsula, the REMCs were forced to work unacceptably long hours without adequate rest. This could have had serious impacts on their performance, including decision making. This is a **critical deficiency**. The root cause is **resources**. **Planning** may have been a contributing factor.

**Recommendation # 4**

It is recommended that the REMC staffing levels be reviewed, rationalized, and adjusted as required to ensure an operational capability. A minimum of 12 REMCs is recommended.

**Observation # 5**

The NB Power “grid” constitutes a vital component of the provincial critical infrastructure. Severe weather is the single leading cause of power outages in Canada. Climate change is expected to alter patterns of precipitation, and more intense precipitation events, especially in the winter and spring, will become more frequent. NB Power currently works closely with the Canadian Electricity Association’s Climate Adaptation Working Group and the NB Climate Change Secretariat regarding changes in weather, adaptation plans, and strategies. This is a **strength**.

**Recommendation # 5**

No recommendation required.

**Observation # 6**

Coordination between NB EMO and NB Power commenced before the ice storm. Good precautionary measures were taken by NB Power before the storm impacted the province. Working closely with weather forecasters, NB EMO officials, and NB Power field managers, NB Power ensured that internal and external power crews were pre-positioned in accordance with existing emergency response protocols. Fifty crews were in location prior to the storm impacting the region. This is a best practice and is a **strength**.

**Recommendation # 6**

No recommendation required.

**2.3 PLANNING**

**Observation # 7**

With very few exceptions, rural municipality and LSD emergency management plans and procedures were either grossly inadequate or nonexistent. Further, a number of municipalities reported a disconnect with responders and provincial agencies, and there seemed to be a disconnect among the province, municipalities, LSD representatives, and other service agencies insofar as who is responsible for the various components of an emergency response, and who is expected to provide funding. In most cases the communities lack the capacity to develop an effective emergency management capability on their own. To establish the necessary emergency management capability, local resources are required to be fully integrated into a regional emergency management organization with a common plan. This is a **critical deficiency**. The root cause is **planning**. **Governance** may be a contributing factor.

**Recommendation # 7**

It is recommended that, where lacking, emergency management plans be developed at the municipal level that are consistent and interoperable with provincial plans. In under resourced areas, it is recommended that a regional emergency management organization and plan be enhanced as a priority. The planning process should be led by the REMCs. There will also be a requirement for emergency management training.

*Editorial Note:*

*Discussions are reportedly underway to form an emergency management committee of representatives from the Acadian Peninsula. The REMC should be included in this. The mandate of the committee should be to identify and standardize emergency management roles and responsibilities.*

**Observation # 8**

There are not enough formally trained emergency management personnel outside of NB's larger cities. During the public review sessions, in sidebars, a number of mayors identified the need for the Emergency Operations Centre Course and the Elected Official's Orientation to be delivered locally. The three reasons given for this requirement were: the need for the training to be based on local capabilities; sending personnel to centralized training is cost prohibitive for small communities; and the emergency managers hold key appointments in their municipalities and should not be out of the area for more than a day or two. This is a **deficiency**. The root cause is **governance**. **Resources** may be a contributing factor.

**Recommendation # 8**

It is recommended that the Emergency Operations Centre Course and the Elected Official's Orientation be conducted at the municipal/regional level. In addition, a training needs analysis should be conducted to determine if there are any additional gaps in training. To support local training adequate resources will have to be provided

**Observation # 9**

In some cases the Regional Emergency Operations Centres (REOC) are inadequate. One REMC reported that his REOC was too small and lacked the required telecommunications systems. The number of landlines was inadequate, there was no speaker phone, and contact lists and computer workstations were not available. Overall, the inadequacy of some REOCs is a **deficiency**. The root cause is **planning**. **Resources** may be a contributing factor.

**Recommendation # 9**

It is recommended that a needs analysis be conducted and all REOCs be equipped as required.

**Observation # 10**

The Department of Social Development (SD) reported that the province does not have an emergency social services plan. The responsibility for the delivery of emergency social services has been contracted to the Red Cross. This approach may be acceptable with the right oversight by SD. However, the current construct is problematic. For example, SD did not know that the Red Cross did not have an emergency social services plan for the Acadian Peninsula, and Red Cross plans are not routinely exercised. This is one of the reasons that so many ad hoc warming and reception centres were established in the area. Although SD contracted Red Cross to provide emergency social services, they retain overall responsibility for these services. Without SD's management oversight there is no quality assurance and control, which could needlessly put vulnerable people at risk. This is a **critical deficiency**. The root cause is **planning**.



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**Recommendation # 10**

It is recommended that SD conduct a review of their approach to the delivery of emergency social services as soon as possible. SD should conduct an audit of their contract with the Red Cross to ensure that the required performance measurements are in place and monitored. A formal exercise program should be included in the plan.

**Observation # 11**

Although fuel was available in all areas of the province and service stations were resupplied within one to four hours during the response to the ice storm, access to fuel was a problem for responding agencies. Response teams and at least one REMC were required to dedicate much of their time searching for gas and refuelling their vehicles. Their time would have been more effectively used carrying out other response actions. For example, ANB did not have a plan for emergency refuelling. They had an informal agreement for emergency refuelling with the Department of Transportation and Infrastructure (DTI). However, when the arrangements were made the ambulances were diesel and have since been replaced with gasoline vehicles. The lack of access to fuel could have endangered patients. This is a **deficiency**. The root cause is **planning**.

**Recommendation # 11**

It is recommended that response agencies develop province-wide business continuity/emergency refuelling plans as a priority. Contracts should be pursued with gas companies to refuel emergency vehicles on site daily. A good model for such arrangements is NB Power. They have contracts with fuel delivery companies to fuel their vehicles in the work area each night.

**2.4 TRAINING**

**Observation # 12**

The foundation of effective emergency management and resiliency programs is public preparedness. There is a requirement to improve public preparedness in NB. After years of promoting the 72 Hour Preparedness Program, the population was still, in general, grossly under prepared for the ice storm and any other severe weather events. The lack of public preparedness led to very dangerous behaviour, such as using generators and open flame heat sources (e.g., BBQs) in unvented areas, and resulted in two deaths and approximately 49 illnesses from carbon monoxide poisoning. This is a **critical deficiency**. The root cause is **education**.

**Recommendation # 12**

It is recommended that detailed research be conducted to determine the barriers to public emergency preparedness. Based on the research, strategies to promote public preparedness by citizens, households, and businesses should be developed. Research might also consider why warnings, such as those regarding carbon monoxide poisoning, were not heeded.

### Observation # 13

The overall performance of REMCs varied considerably based on previous experience and training. Some REMCs reverted to a first response role rather than operational approach to the response effort. Instead of taking on a role of coordination, some REMC members became involved with direct action tasks/activities, such as sourcing resources and identifying/operating reception and warming centres. In addition, reports and operational notes from REMC members varied in structure, clarity, use of jargon, and effectiveness. Reports were often void of critical information and required considerable effort to close out an issue or problem. In one instance, the tone of a report was both confrontational and inappropriate. Mass distribution lists created confusion on who had the lead for an issue and on many occasions responders at all levels not responsible for an issue jumped into the discussion without merit, causing delays in resolutions. REOC reports should aim for crisp, precise text, using plain English or French, and should always avoid using jargon or unknown abbreviations. Distribution lists should only include those from whom actions are expected. This is a **deficiency**. The root cause is **training**.

### Recommendation # 13

It is recommended that a REMC training needs analysis be conducted to identify gaps and/or weaknesses in members' training. The roles and responsibilities of REOC members should be reviewed, documented, and communicated during training. It is also recommended that the standard EOC log and report forms be used across the emergency management organization.

## 2.5 OPERATIONS

### 2.5.1 General

#### Observation # 14

Senior political officials were rightly present in the Acadian Peninsula until the power was restored. Their presence in the impacted region was greatly appreciated and reassured the public that government was committed to their welfare. However, their presence also had unintended consequences. A number of people tried to jump the queue for restoration and/or support services by approaching the political officials directly. These requests diverted emergency managers from priority tasks at the REOC and the PEOC to research the issues and respond to the requests. On a number of occasions the same questions were asked of at least three different people within the emergency management organization. This caused a great deal of churn and forced people to work at cross purposes. For example, a Minister responding to a request intervened with NB EMO to obtain a generator for a small water distribution plant supplying less than 100 homes. A generator was provided, but power could not be restored. The real emergency management function in this case was supplying potable water to residents, which was happening. This is a **critical deficiency**. The root cause is **training**. **Governance** is a contributing factor.

#### Recommendation # 14

It is recommended that the political officials continue to show a strong presence during emergencies. However, all requests for support services should be referred to local government officials and/or the REMC. A best practice would be for all elected officials to have a business card with essential local emergency contact information that can be provided to anyone approaching them for emergency services.

#### **Observation # 15**

In response to ANB refuelling requirements, a REMC spent a great deal of time travelling around his region to identify service stations with gasoline and power. His time could have been better spent managing and coordinating at the operational level. The Critical Infrastructure Section supporting the PEOC could have ascertained fuel availability by consulting with the critical infrastructure owners/operators. This is a **deficiency**. The root cause is **planning**. **Governance** may be a contributing factor.

#### **Recommendation # 15**

It is recommended that all REMCs review and follow their concept of operations and plans. It is also recommended that the Director NB EMO emphasize that the role of the REMC is to manage and coordinate at the operational level. Tactical actions such as searching for gasoline and other resources by the REMC should be by exception when life safety may be an issue. When possible and required, such actions should be tasked to tactical responders.

#### **Observation # 16**

Five municipalities declared a state of local emergency and some authorities wanted a provincial state of emergency declared. At least one mayor did not understand how such a declaration would help his municipality. He was under the impression that a state of local emergency would benefit his town with federal funds and resources. There was very little understanding that the purpose of a state of local emergency is to provide extraordinary powers, if required for the emergency response. It was argued that a provincial state of emergency would have reassured the public that the government was dealing with the emergency. However, invoking extraordinary powers may increase angst with some people. People may feel that if any order of government needs extraordinary powers that the situation is worse than reported. Responsible authorities should understand the powers and limitations of the act and use it accordingly. This is a **minor deficiency**. The root cause is **education**.

#### **Recommendation # 16**

It is recommended that the intent and powers of a declaration of a state of emergency be included in elected official's training.

#### **Observation # 17**

A public contact number for the PEOC is well published and was used extensively by residents seeking information and often immediate assistance. The Administration Officer, with assistance from other government organizations (the Director NB EMO Administrative Assistant) was responsible for triaging calls and directing inquiries to the appropriate subject matter expert, as well as managing the administrative needs of the PEOC. Despite not being trained to triage calls, the staff managed very well. Calls that should have gone to 911 and 811 were immediately identified and transferred. These efforts can be applauded but could leave the staff and the NB EMO liable in the event of actual or perceived mistakes. Furthermore, answering public calls in the PEOC has the potential to compromise classified/sensitive information. This is a **deficiency**. The root cause is **governance**. **Resources** is a contributing factor.

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**Recommendation # 17**

It is recommended that all public calls be directed to a call centre, outside of the PEOC, for triage by trained operators.

**Observation # 18**

The most critical components of an EOC are the individuals who staff the center. The NB EMO staff is well trained and responded to all needs efficiently and effectively throughout the response. The full-time staff was augmented by provincial employees who were well integrated into the team based on their skills and abilities. Changeover from day to night shifts was seamless and no issues were mishandled or lost. This is a **strength**.

**Recommendation # 18**

No recommendation required.

**Observation # 19**

A review of the PEOC working log was conducted in order to understand the effectiveness of record keeping, incident tracking, and PEOC actions. Records were maintained in a common email inbox and printed hourly as a standing procedure for safe keeping. The majority of communication was by email, and despite at times overwhelming staff, key points were effectively extracted from these communications and used for decision making and during the production of reports and briefings. PEOC staff were very effective in moving non-operational information from operational logs. On several occasions, rumour based reports were quickly dealt with and discredited. Overall, information management by the PEOC staff is a **strength**.

**Recommendation # 19**

It is recommended that, to further enhance information management and communication for the PEOC, NB EMO should consider the use of a web-based portal with a chat capability to manage real-time briefings and track current issues. This would provide a platform to provide up-to-date information to stakeholders and remove non-operational discussions to chat rooms.

**Observation # 20**

The Director NB EMO established an Incident Command Post (ICP) in the Acadian Peninsula to assist in the command and control of operations in the severely damaged area. The ICP reported directly to the PEOC, and in consultation with the REOC representation, separated their tasks. This process appeared to work well; however, the lines of communication and command were initially misunderstood by various agencies and some NB EMO employees. This is a **deficiency**. The root cause is **planning**.

**Recommendation # 20**

It is recommended that an ICP deployment plan be developed as a priority. The plan should include an ICP concept of operations, organizational structure, and roles and responsibilities. Emergency management training should include the deployment of ICPs.

**Observation # 21**

The Department of Health (DH) worked with the Critical Infrastructure Section and NB Power Liaison to ensure that health system priorities for power restoration were recognized and included in the restoration plan. This ensured that throughout the response and recovery, in addition to major facilities, the need to restore power to ambulance services support facilities, physician's office, and Extra-Mural Program offices was recognized. This is a **strength**.

**Recommendation # 21**

No recommendation required.

**Observation # 22**

One hundred Red Cross volunteers and 28 staff were involved in the response to the ice storm. Recognizing the need for bilingual staff and volunteers in the northern region, the Red Cross obtained volunteers and staff from the Red Cross in Quebec. This group easily assimilated into the response effort, and the Red Cross is to be commended for this effort. This is a **strength**.

**Recommendation # 22**

No recommendation required.

**Observation # 23**

With the exception of the Red Cross, there were incidents of unilingual English speaking responders working in predominantly French speaking areas. Although the assistance was greatly appreciated, problems and confusion did exist when describing the situation and giving direction in French. In the spirit of the *Official Languages Act* bilingual personnel were deployed to the area as soon as the requirement was identified. For example, the military called out a reserve platoon (30 soldiers) of Francophones to facilitate communications. Other organizations did the same thing. This is a **strength**.

**Recommendation # 23**

It is recommended that, when allocating resources, language requirements continue to be a consideration.

**Observation # 24**

There was a concern with food contamination. Many neighbouring towns donated and transported food to the impacted areas. However, there was no tracking of dates and times of arrival or control of the distribution of the food and supplies in order to prevent contamination and/or poisoning. The Red Cross, for example, would not participate in the distribution due to the lack of controls. This is a **deficiency**. The root cause is **planning**.

**Recommendation # 24**

It is recommended that emergency food distribution centers be established in strategic locations with quality control measures in place that are consistent with Canada's food safety guidelines.

### 2.5.2 Operational Coordination

#### Observation # 25

Although the Department of Health's EOC was not activated, the Director, Emergency Preparedness and Response Branch and her Deputy worked out of the PEOC to gather information and anticipate public health needs. The Director and Deputy Director provided an exceptional proactive and effective response; continued to reassess both needs and resources throughout the response; and liaised effectively with external healthcare partners. This is a **strength**.

#### Recommendation # 25

No recommendation required.

#### Observation # 26

The New Brunswick Critical Infrastructure Working Group is a province-wide initiative that identifies and assesses key provincial facilities, networks, and systems. It provided a forum for discussing priorities, sharing resources, updating partners, and recommending solutions to critical issues. The roles and responsibilities of this working group are well understood by both government leaders and partners. This is a **strength**.

#### Recommendation # 26

No recommendation required.

#### Observation # 27

The Office of the Provincial Security Advisor conducts threat/impact analysis for the PEOC. This includes assessments of possible or actual impacts on critical infrastructure. This worked very well during the response to the ice storm. During this emergency, several CI partners reported to the PEOC and established a liaison staff. Others were very satisfied with the scheduled CI telephone conferences and the passage of key information via formal briefs and notes. This is a **strength**.

#### Recommendation # 27

No recommendation required.

#### Observation # 28

A PEOC Executive Summary Brief was presented to the Deputy Minister (DM) Security and Emergency Management Committee daily, which was then passed to senior political officials. This is an excellent way to ensure situational awareness throughout government. Several stakeholders acknowledged the importance of the daily Executive Summary Brief, but commented that they did not have the opportunity to confirm departmental information prior to the brief being released. This resulted in stakeholder executives seeking clarification on key information, and in some instances caused confusion on the content of the brief. This is a **deficiency**. The root cause is **governance**. **Planning** and **training** may be contributing factors.

**Recommendation # 28**

It is recommended that, time permitting, representatives of all of the organizations mentioned in the brief be given an opportunity to review relevant information in the brief for accuracy.

**Observation # 29**

The Red Cross dispatched a senior representative to the REOC in Moncton as a first step in activating their response. The Red Cross representative would have been much more effective if he/she was positioned in the PEOC. This is a **deficiency**. The root cause is **planning**. **Governance** may be a contributing factor.

**Recommendation # 29**

It is recommended that, when the PEOC is activated, a Red Cross representative be physically located in the PEOC and remain there throughout the response to the incident.

**2.5.3 Volunteers****Observation # 30**

Government employee volunteers and political party members were mobilized by political officials and deployed to the Acadian Peninsula to conduct door-to-door welfare checks. However, established protocols for employing volunteers were not followed. The volunteers: were not registered by NB EMO for insurance coverage; lacked warm clothing and appropriate footwear; were not screened for past criminal behaviour; and did not receive training. Most of the volunteers that did not have appropriate clothing did not return for a second day and did not inform the REMC that they would not be back and therefore could not be accounted for. To protect the public and the volunteers it is essential that the established protocols for the employment of volunteers be followed. This is a **deficiency**. The root cause is **planning**. **Governance** is a contributing factor.

**Recommendation # 30**

It is recommended that all volunteers be registered, screened for past criminal behaviour, and checked to ensure they have appropriate clothing and training before being deployed. To support operations requiring a large volunteer force, the NB EMO could develop an “auxiliary” volunteer group from within the public service. It is recommended to train and register each volunteer and exercise this group yearly.

**Observation # 31**

It was reported during the public consultation sessions that a large number of people were scared of the people who were conducting the door-to-door welfare checks without visible identification. This is a **minor deficiency**. The root cause is **planning**.

**Recommendation # 31**

It is recommended that all “door knockers” wear highly visible identification such as NB EMO vests or uniforms.

#### 2.5.4 Reception/Warming Centres

##### Observation # 32

The Red Cross is under contract with the Province of New Brunswick for Shelter and Reception Centre Management. In most areas of NB, these centres are pre-selected and detailed plans for their use have been developed. In the northern region, the plan was not completed and not based on a needs analysis. This is a **deficiency**. The root cause is **planning**.

##### Recommendation # 32

It is recommended that the plan for shelters and reception centres in the northern region be completed by the Red Cross. It is also recommended that the NB EMO review and assess the Red Cross provincial plan for shelters and reception centres for any deficiencies. SD should also be involved in the review. The plan should be disseminated to the relevant government departments and stakeholders, updated as required, and exercised.

##### *Editorial Note:*

*The Red Cross has noted the need to complete the plan for the northern region and has started the necessary work.*

##### Observation # 33

More than 45 warming centres or shelters were opened with Red Cross teams managing the centres in the most affected areas such as Shippagan, Caraquet, and Bas-Caraquet. The Red Cross provided cots, blankets, and personal supplies, and coordinated over 2000 meals. However, a number of ad hoc warming and reception centres were also opened without any coordination with NB EMO at the municipal and regional levels. This happened because there were no identified centres in the impacted area, which may have been due to the incomplete Red Cross shelter/reception centre plan for the northern region. The ad hoc centres did not have standardized operating times and opening hours were not widely distributed. As a result, a number of people seeking support arrived at closed centres and had no idea where they could access services. This caused stress and confusion in the communities. This is a **deficiency**. The root cause is **planning**.

##### Recommendation # 33

It is recommended that the Red Cross, in consultation with the REMC and municipal/local service districts, identify strategically located facilities that could be used as reception and warming centres. A database should be developed, as a priority, that contains facility descriptions. The facility description should include, but not be limited to, the number of people it can accommodate, number of toilets, number of showers, kitchen facilities, and availability of backup power.

##### *Editorial Note:*

*Facility descriptions may already be contained in the existing Red Cross shelter/reception centre plans for NB, but were lacking in the northern region due to the incomplete shelter/reception centre plan for the area. Completing and disseminating the plan for the northern region, as well as the existing plans for the rest of the province, may be all that is necessary.*



**Observation # 34**

The authority to establish and open a reception centre (warming centre or charging station) and the standard operating requirements (e.g., fire inspection, certification, security, hours of operation, amenities, staff manning, and procedures) were not clearly understood or effective. Supplies arrived piecemeal and did not appear to be well coordinated. Decisions to assign NB Power representatives and DH resource teams to reception centers were made during the emergency, not pre-planned as part of overall reception center protocols. At the peak of the ice storm emergency, 48 centers were established, with some established by well-meaning elected officials and residents. The locations and contact numbers of various reception centers were not well known or readily available by government departments. The lack of protocols regarding reception centres is a **deficiency**. The root cause is **planning**.

**Recommendation # 34**

It is recommended that, even though reception centres are a Red Cross function, the roles and responsibilities of the relevant government departments associated with establishing and supporting reception centers be clarified, clearly understood, and documented. It is also recommended that NB EMO review and assess the Red Cross provincial plan for shelters and reception centres. SD should also be involved in the review. If additional protocols for reception centres are required, either for the establishment or management of centres, they should be developed and added to the plan. The plan should be disseminated to all relevant government departments and stakeholders, updated as required, and exercised.

**Observation # 35**

It was reported that some reception centres were only accepting people from the immediate city/town, not outlying areas. In some cases this resulted in difficulty finding places to take people who had left their homes. This is a **deficiency**. The root cause is **governance**.

**Recommendation # 35**

It is recommended that SD issue a policy/guidance that requires all reception centres to accept any victim regardless of where they live. Only when a centre is full should people be directed to another location.

**2.5.5 Military Deployment**

**Observation # 36**

To facilitate coordination, the military deployed a command and control element at the municipal and regional levels. A platoon headquarters was positioned with municipal/community authorities, and the Initial Response Unit headquarters was established at the regional level in Bas-Caraquet. This worked very well and is considered a best practice. This is a **strength**.

**Recommendation # 36**

No recommendation required.

**Observation # 37**

There was a public perception that the military should be involved and their deployment went a long way to reassure the public. There was a correct feeling by political officials that the military presence would improve public confidence in the response operations. However, throughout the response emergency managers determined there was no requirement for military support. Furthermore, even following a military reconnaissance, there were no planned tasks for them when they arrived on site. The REOCs and NB Power were unaware that they were coming and had no idea how they should be employed. The Military Engineers assigned to assist with the power restoration efforts could not be employed in that role for safety reasons. After a discussion, the soldiers were tasked to conduct the door-to-door welfare checks. However, the NB EMO was in the process of sending enforcement personnel from the JPS for this task. In the end, the presence of the military was appreciated, but was unnecessary. This is a **deficiency**. The root cause is **governance**. A contributing factor may be **education**.

**Recommendation # 37**

It is recommended that elected officials and the emergency management network be educated on the use of military resources. The military may not be advantageously employed during emergencies for the following reasons: they are not available due to deployments or higher priority tasks; they are not suitable for a wide range of tasks; they need considerable mobilization time; and by doctrine are considered “the force of last resort.”

**2.6 RECOVERY**

**Observation # 38**

The Recovery Team prepared a briefing note for government on the potential support for impacted residents that could be approved, as well as a recommended course of action. However, the government announced the recovery plan prior to staff being prepared to issue financial instructions and train local staff on processing Disaster Financial Assistance claims for the emergency. As a result, flood damage compensation forms were issued to the public, which resulted in an estimated 70 percent increase in staff effort to administer claims. The use of the wrong forms required staff to contact each claimant to gather pertinent information. This is a **deficiency**. The root cause is **governance**.

**Recommendation # 38**

It is recommended that the Recovery Team formally indicate to the government when they are ready to launch a provincial recovery operation, including the administration of financial relief claims. The official announcement of the disaster assistance should include a start date for claim processing. The development of event specific compensation forms, based on the provincial Threat, Risk and Vulnerability Analysis, that could be more quickly prepared should also be considered.

## 2.7 ROLES AND RESPONSIBILITIES

### Observation # 39

A disconnect exists between municipal officials who deal with emergency situations in their own areas, and the LSD representatives who act on behalf of the Province. In some locations the relationship has diminished to the point that a municipal official “reportedly” said he would not to support or cooperate with the LSD representatives. Despite everyone’s good intentions, the disconnect is in part due to a lack of knowledge of the benefits of the inter-agency team approach. This is a **deficiency**. The root cause is **training**.

### Recommendation # 39

It is recommended that tabletop (or study) exercises be conducted with a scenario involving municipal and LSD resources along with the REMC so that each party learns what the others have to offer, and to better understand roles and responsibilities.

## 2.8 PUBLIC COMMUNICATIONS

### Observation # 40

The Premier delivered very effective media conferences throughout the response and recovery to the ice storm. However, there were problems with the collection of information for the conferences by his support team as well as the actual presentations. During the information collection phase, at least three members of the Premier's support team were asking the same basic questions of different people. It was also noticed that frontline workers were in attendance during the daily media conferences. This forced people to work at cross purposes, and diverted emergency managers from their primary tasks. This is a **deficiency**. The root cause is **planning**. **Governance** is a contributing factor.

### Recommendation # 40

It is recommended that an information collection matrix be developed to support the Premier’s media conferences. The matrix should identify the type and depth of the information required, identify the person/organization tasked to provide it, and the delivery time. A basic matrix can be developed before emergencies and refined to address current circumstances. If specialists are required to support a news conference, they should not be frontline workers, but senior personnel from departmental headquarters. Consideration should be given to asking the specialists to speak within their area of expertise. For example, the Chief Medical Officer of Health and/or the Fire Marshal could have been called on to address the carbon monoxide threat.

### Observation # 41

The Communications Wing of the Executive Council Office tasked the Communications Director assigned to NB EMO to support the Premier's news conferences. In this role he was required to gather information, draft the Premier's speeches and other related duties. This assignment took his efforts away from his normal tasks, and as a result he did not have time to produce emergency public information for NB EMO. This forced NB EMO staff to produce the required product, which diverted them from their primary duties. This is a **deficiency**. The root cause is **planning**. **Governance** is a contributing factor.

### Recommendation # 41

It is recommended that when the PEOC is activated, the assigned Communications Director be accountable only to the NB EMO Director for the development and distribution of emergency public information. It is also recommended that the Executive Council Office communications staff support the Premier's news conferences, and minimize their demands on the Communications Director assigned to NB EMO. The requirement to coordinate the public messaging within government and with other stakeholders does not change.

**Observation # 42**

During all of the public consultation sessions it was noted that all public messaging was delivered in both official languages. However, there was concern with the messaging released in French. The French used, referred to by some as "proper French", was not the local dialect spoken and was therefore unfamiliar to many residents of the Acadian Peninsula. There was also a problem with the technical level of the information given. As a result, a lack of understanding of the releases existed. An example given at the public sessions was that the French terms for odorless and tasteless in emergency information about carbon monoxide were not understood. The technical level of the information conveying the dangers of carbon monoxide and how downed power lines can transfer electricity across frozen ground also led to confusion. This is a **deficiency**. The root cause is **planning**.

**Recommendation # 42**

It is recommended that all emergency public information in both official languages be crafted to be understood by the target audiences. This includes ensuring that messaging is issued in the local dialect so that it is easily understood by the people the information is intended to reach. There is also a need to ensure that the technical level of information conveyed is appropriate.

**Observation # 43**

Throughout this event all available information mediums were used to keep the public informed. Emergency public information was distributed using: the National Public Alerting System; broadcast media; social media; briefings and written material at reception and warming centres; and distribution of written and verbal information during door-to-door welfare visits. It was noted, however, that there was a lack of battery powered radios in people's homes, which limited the effectiveness of broadcast media for emergency information. Overall, the distribution of public information during the event is a **strength**.

**Recommendation # 43**

It is recommended that, to overcome the lack of battery powered radios in homes, people should be educated, before emergencies, to listen to car radios at scheduled times for emergency information.

**Observation # 44**

Throughout the ice storm, NB EMO made excellent use of social media to pass emergency public information including: initial weather warnings; advice on 72-hours preparedness; food safety; and frequent updates on the location and operating hours of warming/reception centres and emergency shelters. Regular updates also included warnings about carbon monoxide poisoning, rising water levels and possible flooding, medical assistance available from Tele-Care 811, and warnings about downed power lines and trees in contact with power lines. Requests to check on neighbours were also passed on social media. Important public information was posted/tweeted regularly. Key messages from NB Power and the province were re-tweeted/posted as well. NB EMO's social media platforms were good sources of public information throughout the event. This is a **strength**.

**Recommendation # 44**

No recommendation required.

**Observation # 45**

Despite an early and aggressive communication plan to warn residents about the dangers of carbon monoxide, two residents died and 49 were hospitalized due to carbon monoxide poisoning. Several officials noted that residents did not understand the danger of the cumulative effect of carbon monoxide and in some cases ignored all warnings. No classification required.

**Recommendation # 45**

It is recommended that the Fire Marshal conduct an aggressive communication and education program about the dangers of carbon monoxide poisoning. Consideration could be given to a discount/rebate program for residents to purchase approved carbon monoxide detectors.

**Observation # 46**

At the request of local authorities, NB Power changed its response priority from power restoration to road clearance. This was a priority task to open roads for emergency and work vehicles to ensure public safety. Although the change in priority, the reason for it, and its impact on restoration was announced during media conferences, the change was not emphasised by the media. In some cases the change in priority was unfairly reported as a failure by NB Power to meet their restoration priorities. This led to unnecessary frustration and confusion in the impacted areas. This is a **deficiency**. The root cause is **governance**.

**Recommendation # 46**

It is recommended that NB Power and the Government of NB (GNB) monitor the media and take immediate action to correct misinformation.

**Observation # 47**

There is a perception that NB Power communications were consistently inaccurate with regards to the extent of the damage and when the power would be restored. A number of victims expressed the belief that NB Power over promised and under delivered, resulting in a loss of confidence in the utility and the government. This perception was unfair, as the information provided by NB Power was accurate, based on the information available at the time of release. The changes in damage assessment were forced on NB Power by changing circumstances and were unavoidable. For example, a damage assessment quickly and dramatically changed when thawing ice allowed broken poles to fall. Before this happened, it was impossible to identify broken/weakened poles under the thick ice. Changes to the damage assessment and restoration schedule resulted in disappointment, frustration, and anger for many people who stayed in their homes without heat when they otherwise would have relocated. This was especially frustrating for NB EMO during the first 48 to 72 hours, because their initial response plan was based on NB Power's estimated five day recovery period. During the review of the documentation and interviews there was no indication that NB Power's damage assessments were faulty or deliberately misleading. This is a **deficiency**. The root cause is **governance**.

**Recommendation # 47**

It is recommended that, during severe power outages, while the full extent of the damage is being determined, NB Power consider a policy of under promising and over delivering. The acquisition of modern power utility damage assessment software should be a priority.

**Observation # 48**

The NB Power public communication plan included NB Power representatives being stationed at reception centers to brief the public. In addition, information flyers were distributed as part of the door-to-door welfare check campaign, as well as posted at local businesses (e.g., Tim Horton's). This was well received by the public and helped maintain confidence in NB Power and the government. This is a **strength**.

**Recommendation # 48**

It is recommended that this practice continue during severe power outages, resources permitting.

**Observation # 49**

In many cases people were not aware of, nor did they know the location of, the reception/warming centers. Due to the power outage, communication and public announcements had limitations. This is a **deficiency**. The root cause is **planning**.

**Recommendation # 49**

It is recommended that NB EMO consider developing brochures or other educational material with information on designated reception/warming centres so that residents can keep this information on hand with their emergency preparedness kits.

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## **2.9 TELECOMMUNICATIONS AND FACILITIES**

### **Observation # 50**

A critical component of an EOC is the communication system that supports the staff. The use of cellular phones remains the principle method to pass information. On several occasions REOC members were in blackout areas due to the failure of cellular services. This is a **deficiency**. The root cause is **resources**.

### **Recommendation # 50**

It is recommended that satellite phones be used to provide redundancy for field communications.

### **Observation # 51**

The NB EMO offices and the PEOC are located in the basement floor of a very old building in the St. John River flood plain, which has flooded in the past. The potential for complete loss of this facility has been reported in the past. Although the PEOC was judged to be effective, the location of the centre remains a major concern. This is a **deficiency**. The root cause is **resources**.

### **Recommendation # 51**

It is recommended that the NB EMO be relocated as soon as possible.

### **Observation # 52**

On arrival in the impacted area the military were issued Trunk Mobile Radios. This was the only way that military operations could be coordinated with the civilian officials. This is a **strength**.

### **Recommendation # 52**

No recommendation required.

### **Observation # 53**

No 911 Public Safety Answering Points (PSAP) were out of service during this event. The Miramichi PSAS operated on backup power for a period of time. In fact, ANB is confident that no calls for assistance were missed during this event. This is a **strength**.

### **Recommendation # 53**

No recommendation required.

**Observation # 54**

During the peak of this emergency, the demand for connectivity strained and sometimes overwhelmed commercial mobile communication systems that were not built to handle such high demand. Residents were sending videos/pictures or viewing social media when others were trying to check-up on relatives and friends. Communication partners expect this to occur, and in cooperation with national working groups, have developed doctrine and guidance on how to use a mobile phone during an emergency. There is a requirement for NB to develop similar material. This is a **deficiency**. The root cause is **planning**. **Education** is a contributing factor.

**Recommendation # 54**

It is recommended that NB EMO include “use of mobile communication devices” or “staying connected guidance” educational material during their annual emergency management media campaign. Similar messaging should be included with public information issued during an emergency.



### 3 CONCLUSION

The unprecedented and catastrophic power outage resulting from the winter 2017 ice storm presented significant challenges for NB's emergency responders, particularly in municipalities and LSDs outside of the major cities. Between 24 January and 6 February 2017, power outages affected more than 250,000 people and there were two deaths as well as numerous hospitalizations due to carbon monoxide poisoning. Even in this situation, the response was a success and everyone involved in the operation should be commended for their efforts. However, there were significant lessons learned regarding the emergency management capability of rural municipalities and LSDs to prepare for and respond to a major emergency event. It is apparent that significant support in emergency management and preparedness is still required for these communities, and there remains the need to develop and validate regional emergency management plans as soon as possible. There is also a critical need to enhance the REMC program.

The observations and recommendations contained in this report should not detract from the excellent work of the responders.

**ANNEX A - SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS**

The observations and recommendations from the After Action Review are summarised in the following table. In the interest of brevity, **strengths** are not included in the table. Recommended priority for corrective/mitigating actions has been assigned according to the following time lines:

**Priority One - Critical deficiencies within six months; and  
Priority Two - Deficiencies as time and resources allow.**

| <b>PARA. REF.</b> | <b>REF. #</b>       | <b>OBSERVATION</b>  | <b>RECOMMENDATION</b>  | <b>CLASSIFICATION</b>  | <b>MITIGATION PRIORITY</b> |
|-------------------|---------------------|---|--|--|----------------------------|
| <b>2.2</b>        | <b>PREPAREDNESS</b> |   |  |  |                            |
|                   | #1                  | Special care facilities, with the odd exception, are not prepared for a severe weather event. They are lacking fundamentals, such as an emergency management plan, backup power, and a business continuity plan. As a result, some special care facility clients were either sent home or to hospitals. These actions jeopardized client safety.  | The Province of New Brunswick establish emergency management standards for special care facilities and ensure compliance.  | <b>Critical Deficiency</b><br>The root cause is governance.                  | <b>One</b>                 |
|                   | #2                  | The small towns, villages, and local service districts (LSD) have limited resources to develop and maintain an emergency management program. Most of the smaller municipalities cannot engage in emergency response operations without outside assistance. To maximize resources, a regional emergency management framework should be considered. | Planning and preparedness in the areas not severely impacted should also be assessed as soon as possible. Where required, the development/enhancement of regional emergency management capability should be a government priority. | <b>Critical Deficiency</b><br>The root cause is planning at the local level. | <b>One</b>                 |

| <b>PARA. REF.</b> | <b>REF. #</b>   | <b>OBSERVATION</b>   | <b>RECOMMENDATION</b>  | <b>CLASSIFICATION</b>  | <b>MITIGATION PRIORITY</b> |
|-------------------|-----------------|--|--|--|----------------------------|
|                   | #3              | Key members of the New Brunswick Emergency Measures Organization (NB EMO) staff were absent during this operation for administrative reasons. This necessitated employing less experienced people in key roles.  | For prolonged operations: personnel should be recalled, if practical; leave cancelled; and administrative functions such as courses postponed. A policy should be put in place to compensate employees for out of pocket expenses for cancelled activities. A Deputy Director NB EMO should be appointed as an immediate priority. | <b>Deficiency</b><br>The root cause is governance.   | <b>Two</b>                 |
|                   | #4              | The Regional Emergency Management Coordinator (REMC) organization is grossly inadequate. Currently there are six REMCs. Four have been assigned two regions, one has three regions, and one has one region. It became apparent during the ice storm that additional resources are required. During the storm one of the REMCs was not available. Given the widespread impacts of the storm, the five available REMCs were barely adequate to manage the response and it is doubtful that they could have managed an event with greater impacts and/or longer duration. | The REMC staffing levels should be reviewed, rationalized, and adjusted as required to ensure an operational capability. A minimum of 12 REMCs is recommended.   | <b>Critical Deficiency</b><br>The root cause is resources. Planning may have been a contributing factor. | <b>One</b>                 |
| <b>2.3</b>        | <b>PLANNING</b> |  |  |  |                            |
|                   | #7              | With very few exceptions, rural municipality and LSD emergency management plans and procedures were either grossly inadequate or nonexistent. To establish the necessary emergency management capability, local resources are required to be fully integrated into a regional emergency management   | Where lacking, emergency management plans should be developed at the municipal level. In under resourced areas, a regional emergency management organization and plan should be developed as a priority. The planning process should be led by the REMCs. There will also be a   | <b>Critical Deficiency</b><br>The root cause is planning. Governance may be a contributing factor.       | <b>One</b>                 |

| PARA. REF. | REF. # | OBSERVATION   | RECOMMENDATION   | CLASSIFICATION   | MITIGATION PRIORITY |
|------------|--------|---|--|--|---------------------|
|            | #8     | organization with a common plan.<br><br>There are not enough formally trained emergency management personnel outside of NB's larger cities. A number of mayors identified the need for the Emergency Operations Centre Course and the Elected Official's Orientation to be delivered locally.   | requirement for emergency management training.<br><br>The Emergency Operations Centre Course and the Elected Official's Orientation should be conducted at the municipal/regional level. A training needs analysis should be conducted to determine if there are any additional gaps in training. To support local training adequate resources will have to be provided. | <b>Deficiency</b><br>The root cause is governance. Resources may be a contributing factor. | <b>Two</b>          |
|            | #9     | In some cases the Regional Emergency Operations Centres (REOC) are inadequate. One REMC reported that his REOC was too small and lacked the required telecommunications systems.  | A needs analysis should be conducted and all REOCs be equipped as required.  | <b>Deficiency</b><br>The root cause is planning. Resources may be a contributing factor.   | <b>Two</b>          |
|            | #10    | SD reported that the province does not have an emergency social services plan. The responsibility for the delivery of emergency social services has been contracted to the Red Cross. This approach may be acceptable with the right oversight by SD. However, the current construct is problematic. SD did not know that the Red Cross did not have an emergency social services plan for the Acadian Peninsula, and Red Cross plans are not routinely exercised. Although SD contracted the Red Cross, they retain overall responsibility for emergency social services. Without SD participation/management oversight, there is no quality assurance and control, which could needlessly put | SD should conduct a review of their approach to the delivery of emergency social services as soon as possible. SD should conduct an audit of their contract with the Red Cross to ensure that the required performance measurements are in place and monitored. A formal exercise program should be included in the plan.  | <b>Critical Deficiency</b><br>The root cause is planning.                                  | <b>One</b>          |

| PARA. REF. | REF. #          | OBSERVATION  | RECOMMENDATION   | CLASSIFICATION   | MITIGATION PRIORITY |
|------------|-----------------|--|--|--|---------------------|
|            | #11             | vulnerable people at risk.<br>Although fuel was available in all areas of the province during the response to the ice storm, access to fuel was a problem. Response teams and at least one REMC were required to dedicate much of their time searching for gas and refuelling their vehicles. Their time would have been more effectively used carrying out other response actions.                                  | Response agencies should develop province-wide business continuity/emergency refuelling plans as a priority. Contracts should be pursued with gas companies to refuel emergency vehicles on site daily.  | <b>Deficiency</b><br>The root cause is planning.           | <b>Two</b>          |
| <b>2.4</b> | <b>TRAINING</b> |  |  |  |                     |
|            | #12             | After years of promoting the 72 Hour Preparedness Program, the population was still, in general, grossly under prepared for the ice storm and any other severe weather events.   | Detailed research should be conducted to determine the barriers to public emergency preparedness. Based on the research, strategies to promote public preparedness by citizens, households, and businesses should be developed. Research might also consider why warnings, such as those regarding carbon monoxide poisoning, were not heeded.     | <b>Critical Deficiency</b><br>The root cause is education. | <b>One</b>          |
|            | #13             | The overall performance of REMCs varied considerably based on previous experience and training. Some REMCs reverted to a first response role rather than operational approach to the response effort. In addition, reports and operational notes from REMC members varied in structure, clarity, use of jargon, and effectiveness. Mass distribution lists created confusion on who had the lead for an issue and on | REMC training needs analysis should be conducted to identify gaps and/or weaknesses in members' training. The roles and responsibilities of REOC members should be reviewed, documented, and communicated during training. It is also recommended that the standard EOC log and report forms be used across the emergency management organization. | <b>Deficiency</b><br>The root cause is training.           | <b>Two</b>          |

| PARA. REF. | REF. # | OBSERVATION  | RECOMMENDATION  | CLASSIFICATION   | MITIGATION PRIORITY |
|------------|--------|--|---|--|---------------------|
| 2.5        | #14    | <p>many occasions responders at all levels not responsible for an issue jumped into the discussion without merit, causing delays in resolutions.</p> <p>Senior political officials were rightly present in the Acadian Peninsula until power was restored. Their presence was appreciated and reassured the public that government was committed to their welfare. However, their presence also had unintended consequences. A number of people tried to jump the queue for assistance by approaching the senior political officials directly. These requests diverted emergency managers from priority tasks to research the issues and respond to the requests. The same questions were asked of different people within the emergency management organization. This caused a great deal of churn and forced people to work at cross purposes.</p> | <p>Political officials should continue to show a strong presence during emergencies. However, all requests for support services should be referred to local government officials and/or the REMC. A best practice would be for all elected officials to have a business card with essential local emergency contact information that can be provided to anyone approaching them for emergency services.</p> | <p><b>Critical Deficiency</b><br/>The root cause is training. Governance is a contributing factor.</p> | <p><b>One</b></p>   |
|            | #15    | <p>In response to ANB refuelling requirements, a REMC spent time travelling around to identify service stations with gasoline and power. His time could have been better spent managing and coordinating at the operational level. The information could have been obtained from the PEOC.</p>   | <p>All REMCs should review and follow their concept of operations and plans. It is also recommended that the Director NB EMO emphasize that the role of the REMC is to manage and coordinate at the operational level. Tactical actions by the REMC should be by exception when life safety may be an issue. When possible and required, such actions should be tasked to tactical responders.</p>          | <p><b>Deficiency</b><br/>The root cause is planning. Governance may be a contributing factor.</p>      | <p><b>Two</b></p>   |

| PARA. REF. | REF. # | OBSERVATION  | RECOMMENDATION   | CLASSIFICATION   | MITIGATION PRIORITY |
|------------|--------|--|--|--|---------------------|
|            | #16    | <p>Five municipalities declared a state of local emergency and some authorities wanted a provincial state of emergency declared. There was very little understanding that the purpose of a state of local emergency is to provide extraordinary powers, if required for the emergency response. It was argued that a provincial state of emergency would have reassured the public that the government was dealing with the emergency. However, invoking extraordinary powers may increase angst with some people. People may feel that if any order of government needs extraordinary powers that the situation is worse than reported. Responsible authorities should understand the powers and limitations of the act and use it accordingly.</p> | <p>The intent and powers of a declaration of a state of emergency should be included in elected official's training.</p> | <p><b>Minor Deficiency</b><br/>The root cause is education.</p>                                | <p><b>Two</b></p>   |
|            | #17    | <p>A public contact number for the PEOC is well published and was used extensively by residents seeking information and often immediate assistance. Staff triaged calls very well. However, the staff and the NB EMO could be liable in the event of actual or perceived mistakes. Answering public calls in the PEOC also has the potential to compromise classified/sensitive</p>  | <p>All public calls should be directed to a call centre, outside of the PEOC, for triage by trained operators.</p>       | <p><b>Deficiency</b><br/>The root cause is governance. Resources is a contributing factor.</p> | <p><b>Two</b></p>   |

| PARA. REF. | REF. # | OBSERVATION  | RECOMMENDATION   | CLASSIFICATION  | MITIGATION PRIORITY |
|------------|--------|--|--|---|---------------------|
|            |        | information.   |  |   |                     |
|            | #20    | An Incident Command Post (ICP) was established in the Acadian Peninsula. The ICP reported directly to the PEOC and, and in consultation with the REOC representation, separated their tasks. This process appeared to work well; however, the lines of communication and command were initially misunderstood by various agencies and some NB EMO employees.                               | An ICP deployment plan should be developed as a priority. The plan should include an ICP concept of operations, organizational structure, and roles and responsibilities. Emergency management training should include the deployment of ICPs. | <b>Deficiency</b><br>The root cause is planning.  | <b>Two</b>          |
|            | #24    | Many neighbouring towns donated and transported food to the impacted areas. However, there was no tracking of dates and times of arrival or control of the distribution of the food/supplies in order to prevent contamination and/or poisoning.   | Emergency food distribution centers should be established in strategic locations with quality control measures in place that are consistent with Canada's food safety guidelines.  | <b>Deficiency</b><br>The root cause is planning.  | <b>Two</b>          |
|            | #28    | The PEOC Executive Summary Brief ensured situational awareness throughout government. Stakeholders acknowledged the importance of the daily brief, but commented that they did not have the opportunity to confirm departmental information. This resulted in stakeholder executives seeking clarification on key information, and sometimes caused confusion on the content of the brief. | Time permitting, representatives of all of the organizations mentioned in the brief should be given an opportunity to review relevant information in the brief for accuracy.   | <b>Deficiency</b><br>The root cause is governance. Planning and training may be contributing factors. | <b>Two</b>          |



| PARA. REF. | REF. # | OBSERVATION  | RECOMMENDATION   | CLASSIFICATION  | MITIGATION PRIORITY |
|------------|--------|--|--|---|---------------------|
|            | #29    | The Red Cross dispatched a senior representative to the REOC in Moncton as a first step in activating their response. The Red Cross representative would have been much more effective if he/she was positioned in the PEOC.   | When the PEOC is activated, a Red Cross representative should be physically located in the PEOC and remain there throughout the response to the incident.  | <b>Deficiency</b><br>The root cause is planning. Governance may be a contributing factor. | <b>Two</b>          |
|            | #30    | Government employee volunteers were deployed to the Acadian Peninsula to conduct door-to-door welfare checks. However, the volunteers: were not registered by NB EMO for insurance coverage; lacked warm clothing and appropriate footwear; were not screened for past criminal behaviour; and did not receive training. | All volunteers should be registered, screened for past criminal behaviour, and checked to ensure they have appropriate clothing and training before being deployed. NB EMO could develop an "auxiliary" volunteer group from within the public service. NB EMO should train and register each volunteer, and exercise the group yearly.  | <b>Deficiency</b><br>The root cause is planning. Governance is a contributing factor.     | <b>Two</b>          |
|            | #31    | It was reported during the public consultation sessions that a large number of people were scared of the people who were conducting the door-to-door welfare checks without visible identification.  | All "door knockers" should wear highly visible identification such as NB EMO vests or uniforms.  | <b>Minor Deficiency</b><br>The root cause is planning.                                    | <b>Two</b>          |
|            | #32    | The Red Cross is under contract with the Province of New Brunswick for Shelter and Reception Centre Management. In most areas of NB, these centres are pre-selected and detailed plans for their use have been developed. In the northern region, the plan was not completed and not based on a needs analysis.          | The plan for shelters and reception centres in the northern region should be completed by the Red Cross. It is also recommended that the NB EMO and SD review and assess the Red Cross provincial plan for shelters and reception centres for any deficiencies. The plan should be disseminated to the relevant government departments and stakeholders, updated as required, and exercised. | <b>Deficiency</b><br>The root cause is planning.  | <b>Two</b>          |

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| PARA. REF. | REF. # | OBSERVATION   | RECOMMENDATION   | CLASSIFICATION                         | MITIGATION PRIORITY |
|------------|--------|---|--|--|---------------------|
|            | #33    | A number of ad hoc warming and reception centres were opened without any coordination with NB EMO at the municipal and regional levels because there were no identified centres in the impacted area. The ad hoc centres did not have standardized operating times and opening hours were not widely distributed. A number of people seeking support arrived at closed centres and had no idea where they could access services. This caused stress and confusion in the communities. | The Red Cross, in consultation with the REMC and municipal/LSDs, should identify strategically located facilities that could be used as reception and warming centres. A database with facility descriptions should be developed. Note: Facility descriptions may already exist in Red Cross plans. Completion of the northern plan for shelters and reception centres and dissemination of the existing plans may be all that is required.  | <b>Deficiency</b><br>The root cause is | <b>Two</b>          |
|            | #34    | The authority to establish and open a reception centre (warming centre or charging station) and the standard operating requirements were not clearly understood or effective.   | The roles and responsibilities of the relevant government departments associated with establishing and supporting reception centers should be clarified, clearly understood, and documented. NB EMO and SD should review and assess the Red Cross provincial plan for shelters and reception centres. If additional protocols are required, they should be developed and added to the plan. The plan should be disseminated to all relevant government departments and stakeholders, updated as required, and exercised. | <b>Deficiency</b><br>The root cause is | <b>Two</b>          |

| <b>PARA. REF.</b> | <b>REF. #</b>   | <b>OBSERVATION</b>  | <b>RECOMMENDATION</b>   | <b>CLASSIFICATION</b>   | <b>MITIGATION PRIORITY</b> |
|-------------------|-----------------|---|---|---|----------------------------|
|                   | #35             | Some reception centres were only accepting people from the immediate city/town, not outlying areas. In some cases this resulted in difficulty finding places to take people who had left their homes.   | SD should issue a policy/guidance that requires all reception centres to accept any victim regardless of where they live. Only when a centre is full should people be directed to another location.   | <b>Deficiency</b><br>The root cause is governance.  | <b>Two</b>                 |
|                   | #37             | There was a public perception that the military should be involved and their deployment went a long way to reassure the public. There was a correct feeling in the Premier's Office that the military presence would improve public confidence in the response operations. However, emergency managers determined there was no requirement for military support. Furthermore, even following a military reconnaissance, there were no planned tasks for them when they arrived on site. The REOCs and NB Power were unaware that they were coming and had no idea how they should be employed. In the end, the presence of the military was appreciated, but was unnecessary. | Elected officials and the emergency management network should be educated on the use of military resources. The military may not be advantageously employed during emergencies for the following reasons: they are not available due to deployments or higher priority tasks; they are not suitable for a wide range of tasks; they need considerable mobilization time; and by doctrine are considered "the force of last resort." | <b>Deficiency</b><br>The root cause is governance.<br>A contributing factor may be education. | <b>Two</b>                 |
| <b>2.6</b>        | <b>RECOVERY</b> |   |   |   |                            |
|                   | #38             | The government announced the recovery plan prior to staff being prepared to issue financial instructions and train local staff on processing Disaster Financial Assistance claims for the emergency. The wrong compensation forms were issued to the public, which resulted in an estimated   | The Recovery Team should formally indicate to the government when they are ready to launch a provincial recovery operation, including the administration of financial relief claims. The official announcement of the disaster assistance should include a start date for claim processing. The development of event  | <b>Deficiency</b><br>The root cause is governance.  | <b>Two</b>                 |

| PARA. REF.                            | REF. # | OBSERVATION  | RECOMMENDATION  | CLASSIFICATION  | MITIGATION PRIORITY |
|---------------------------------------|--------|--|---|---|---------------------|
| 2.7                                   |        | 70 percent increase in staff effort to administer claims.  | specific compensation forms, based on the provincial Threat, Risk and Vulnerability Analysis, that could be more quickly prepared should also be considered.  |   |                     |
| <b>2.7 ROLES AND RESPONSIBILITIES</b> |        |  |   |   |                     |
|                                       | #39    | A disconnect exists between municipal officials who deal with emergency situations in their own areas, and the LSD representatives who act on behalf of the Province. The disconnect is, in part, due to a lack of knowledge of the benefits of the inter-agency team approach.  | Tabletop (or study) exercises should be conducted with a scenario involving municipal and LSD resources along with the REMC so that each party learns what the others have to offer, and to better understand roles and responsibilities.   | <b>Deficiency</b><br>The root cause is training.                                      | <b>Two</b>          |
| <b>2.8 PUBLIC COMMUNICATIONS</b>      |        |  |   |   |                     |
|                                       | #40    | The Premier delivered effective media conferences throughout the event. However, there were problems with the collection of information for the conferences as well as the actual presentations. At least three members of the Premier's team were asking the same questions of different people. This diverted emergency managers from their primary tasks. During the media conferences, specialists were in attendance, but were not invited to speak. In all cases people were diverted from their primary duties for extended periods of time for no benefit. | An information collection matrix should be developed to support the Premier's media conferences. The matrix should identify the type and depth of the information required, identify the person/organization to provide it, and the delivery time. If specialists are required to support a news conference, they should not be frontline workers, but senior personnel. Consideration should be given to asking the specialists to speak within their area of expertise. | <b>Deficiency</b><br>The root cause is planning. Governance is a contributing factor. | <b>Two</b>          |

| PARA. REF. | REF. # | OBSERVATION   | RECOMMENDATION   | CLASSIFICATION  | MITIGATION PRIORITY |
|------------|--------|---|--|---|---------------------|
|            | #41    | The Communications Wing of the Executive Council Office tasked the Communications Director assigned to NB EMO to support the Premier's news conferences. This assignment took his efforts away from his normal tasks, and he did not have time to produce emergency public information for NB EMO. This forced NB EMO staff to produce the required product, which diverted them from their primary duties. | When the PEOC is activated, the assigned Communications Director should be accountable only to the NB EMO Director for the development and distribution of emergency public information. It is also recommended that the Executive Council Office communications staff support the Premier's news conferences, and minimize their demands on the Communications Director assigned to NB EMO. The requirement to coordinate the public messaging within government and with other stakeholders does not change. | <b>Deficiency</b><br>The root cause is planning. Governance is a contributing factor. | <b>Two</b>          |
|            | #42    | There was concern with the messaging released in French. "Proper French" was used, not the local dialect spoken by the residents of the Acadian Peninsula. There was also a problem with the technical level of the messaging. As a result, a lack of understanding of the releases existed.  | Emergency public information in both official languages should be crafted to be understood by the target audiences. This includes ensuring that messaging is issued in the local dialect. There is also a need to ensure that the technical level of information conveyed is appropriate.  | <b>Deficiency</b><br>The root cause is planning.                                      | <b>Two</b>          |
|            | #45    | Despite an early and aggressive communication plan to warn residents about the dangers of carbon monoxide, two residents died and 49 were   | The Fire Marshal should conduct an aggressive communication and education program about the dangers of carbon monoxide poisoning.  | No classification required.   | <b>Two</b>          |

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| PARA. REF. | REF. # | OBSERVATION  | RECOMMENDATION   | CLASSIFICATION                                     | MITIGATION PRIORITY |
|------------|--------|--|--|--|---------------------|
|            |        | hospitalized due to carbon monoxide poisoning. Several officials noted that residents did not understand the danger of the cumulative effect of carbon monoxide and in some cases ignored all warnings.  | Consideration could be given to a discount/rebate program for residents to purchase approved carbon monoxide detectors.  |  |                     |
|            | #46    | At the request of local authorities, NB Power changed its response priority from power restoration to road clearance to open roads to ensure public safety. The change in priority, the reason, and its impact on restoration was announced. However, in some cases the change was unfairly reported as a failure by NB Power to meet their restoration priorities. This led to unnecessary frustration and confusion in the impacted areas.   | NB Power and the Government of NB should monitor the media and take immediate action to correct misinformation.  | <b>Deficiency</b><br>The root cause is governance. | <b>Two</b>          |
|            | #47    | There is a perception that NB Power was consistently inaccurate regarding damage and power restoration. It was expressed that NB Power over promised and under delivered, resulting in a loss of confidence in the utility and the GNB. This was unfair, as the information provided by NB Power was accurate, based on the information available at the time. The changes in damage assessment were forced on NB Power by changing circumstances and were unavoidable. Changes to the damage assessment and restoration | During severe power outages, while the full extent of the damage is being determined, NB Power should consider a policy of under promising and over delivering. The acquisition of modern power utility damage assessment software should be a priority. | <b>Deficiency</b><br>The root cause is governance. | <b>Two</b>          |

| PARA. REF. | REF. #                                   | OBSERVATION   | RECOMMENDATION   | CLASSIFICATION                                    | MITIGATION PRIORITY |
|------------|--|---|--|---|---------------------|
|            |  | schedule caused frustration and anger for many people who stayed in their homes without heat. This was especially frustrating for NB EMO during the first 48-72 hours, because their initial response plan was based on an estimated five day recovery period. It was found that there was no indication that NB Power's damage assessments were faulty or deliberately misleading. |  |   |                     |
|            | #49                                      | In many cases people were not aware of, nor did they know the location of, the reception/warming centers. Due to the power outage, communication and public announcements had limitations.  | NB EMO should consider developing brochures or educational material with information on designated reception and warming centres that residents can keep with their emergency preparedness kits. | <b>Deficiency</b><br>The root cause is planning.  | <b>Two</b>          |
| <b>2.9</b> | <b>TELECOMMUNICATIONS AND FACILITIES</b> |   |  |   |                     |
|            | #50                                      | The use of cellular phones remains the principle method to pass information. On several occasions REOC members were in blackout areas due to the failure of cellular services.  | Satellite phones should be used to provide redundancy for field communications.  | <b>Deficiency</b><br>The root cause is resources. | <b>Two</b>          |
|            | #51                                      | The NB EMO offices and the PEOC are located in the basement floor of a very old building in the St. John River flood plain, which has flooded in the past. The potential for complete loss of this facility has been reported in the past. Although the PEOC was judged to be effective, the location of the centre remains a major concern.  | The NB EMO should be relocated as soon as possible.  | <b>Deficiency</b><br>The root cause is resources. | <b>Two</b>          |
|            | 54                                       | During the peak of this emergency, the demand for connectivity strained and   | NB EMO should include "use of mobile communication devices" or "staying  | <b>Deficiency</b><br>The root cause is            | <b>Two</b>          |

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PROVINCE OF NEW BRUNSWICK  
WINTER 2017 ICE STORM

AFTER ACTION REVIEW  
FINAL AFTER ACTION REVIEW REPORT - 30 JUNE 2017

| PARA. REF. | REF. # | OBSERVATION   | RECOMMENDATION   | CLASSIFICATION                                       | MITIGATION PRIORITY |
|------------|--------|---|--|--|---------------------|
|            |        | <p>sometimes overwhelmed commercial mobile communication systems that were not built to handle such high demand. Residents were sending videos/pictures or viewing social media when others were trying to check on relatives/friends. Communication partners expect this, and have developed guidance on how to use a mobile phone during an emergency. There is a requirement for NB to develop similar material.</p> | <p>connected "guidance" educational material during their annual emergency management media campaign. Similar messaging should be included with public information issued during an emergency.</p> | <p>planning. Education is a contributing factor.</p> |                     |



# Appendix F – NB Power – Ice Storm 2017; Lessons Learned



**Énergie NB Power**

## Ice Storm 2017

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Lessons Learned

# Ice Storm 2017 Lessons Learned

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## Message from CEO

Dear Ms. Wagner,

I respectfully submit our review of NB Power's efforts to restore power during and after the most challenging weather event in NB Power's history.

Between January 24 and February 5, 2017, our employees and contractors restored electricity to thousands of New Brunswickers in southern and northeastern New Brunswick. The impact of this storm required a whole system response, including support from neighbouring utilities and cooperation from partner agencies and government.

Throughout this challenging time, we were reminded once again that New Brunswick is a province of caring and generous neighbours, leaders and helpers who look after one another in difficult times.

Our efforts to reconnect customers were supported by crews from utilities throughout the region. Contractors, provincial government departments working through the New Brunswick Emergency Measures Organization, the Canadian Armed Forces the Red Cross ensured our customers were warm, sheltered and fed while utility crews safely cleared roads from downed lines, rebuilt kilometres of lines and reset hundreds of poles damaged by heavy ice and high winds.

Under the caring, capable leadership of our Premier Brian Gallant, New Brunswickers were calm and secure while our crews focused on what they do best – restoring electricity to customers.

We applied lessons learned from previous years' storms to ensure our service to customers was rapid, effective and safe. I am confident that our restoration effort in 2017 was faster, more coordinated and better communicated thanks to learnings from previous events and our quick response to emergent issues.

During this storm, we also found opportunities to improve service to customers that are identified in this review. This includes improvements in customer communications, storm management and estimated times of restoration, grid resilience, customer safety and coordination with partner agencies.

As we always do, we will apply these improvements to future storm events to ensure New Brunswickers receive the quality of service they expect from NB Power.

Thank you,

A handwritten signature in blue ink, appearing to read 'Gaëtan Thomas', is positioned above the printed name.

Gaëtan Thomas, CEO

## **NB Power Mandate and Scope of Review**

As a public utility, NB Power's legislated mandate is to provide safe, reliable electricity to New Brunswickers at low and stable rates. In the event of extended power outages, the utility's primary role is to provide for timely and safe restoration of electricity guided by a set of protocols that provide instructions to affected utility divisions to ensure a coordinated and efficient response.

This review is limited to NB Power's performance in its primary purpose of safely restoring electricity to customers during the ice storm of 2017 and its aftermath. The review of the restoration response is focussed on the following key questions.

1. What did we learn from past storms that we used during this storm or continued to do during this storm (things that work well)?
2. How did we improve our restoration efforts as compared to other past storms (i.e. Post-Tropical Storm Arthur)?
3. What actions do we need to consider to further improve our efforts for future significant events?

This review includes input from a variety of sources including:

- March 2017 internal survey examining storm preparations, response and follow up
  - major areas included communications, operations, logistics and supply chain, environment, contact centre, safety and external relations
- Interviews with NB Power executive team members
- Customer feedback via email/phone/nbpower.com
- Participation in five public meetings in affected communities, which were sponsored by the Government of New Brunswick's Executive Council Office

## **Summary of Event**

Between January 24 and 26 2017, prolonged freezing rain caused significant ice buildup on trees and utility infrastructure, resulting in widespread power outages throughout central, southeastern and northeastern New Brunswick. Miramichi, Kent County and the Acadian Peninsula regions were the hardest hit, experiencing multi-day outages and frigid temperatures. The last storm-related customer outage was restored at approximately 6:30 pm on Sunday, February 5.

This winter storm prompted the largest restoration effort in NB Power history, supported by a coordinated emergency response from the New Brunswick Emergency Measures Organization (NB EMO), the Canadian Red Cross and the Canadian Armed Forces. All available NB Power resources were dedicated to storm response. At peak, 380 tree, pole and line crews conducted damage assessment, made repairs to infrastructure, cleared blocked roads and restored power. A logistics team took care of crew lodging, meals and other items. Customer outreach teams including staff and senior leadership visited warming centres to update customers on restoration efforts and assisted Armed Forces members with door-to-door visits.

Storm-related customer outages peaked at approximately 133,000 on Wednesday, January 25. Heavy ice buildup on lines, poles and cross-arms caused more than 600 poles to collapse, primarily in the Acadian Peninsula. In Miramichi, the majority of outages were caused by heavy snow and ice on trees and utility infrastructure. In Kent County, the majority of outages were caused by ice-laden trees making contact with lines. Nearly 200,000 customers spread across a huge area of our province lost power during the storm.

NB Power and the Government of New Brunswick worked together to ensure that a fact-based, proactive, consistent and coordinated public communication approach was maintained throughout the event.

Premier Brian Gallant and NB Power President and CEO Gaëtan Thomas participated in daily media briefings in affected communities, with the majority carried live on CBC and Radio-Canada online. Public alerts were posted daily on the Government of New Brunswick newswire, with updates provided on [nbpower.com](http://nbpower.com), via social channels and to a dedicated outage restoration email list that included internal and external stakeholders. Additionally, NB EMO and NB Power personnel conducted dozens of daily media interviews and proactively circulated social media messaging and safety-related paid media ads on a variety of channels as part of the emergency response.

NB Power staff worked closely with NB EMO as members of the Provincial Emergency Action Committee to ensure efforts to support customers without power were aligned and managed consistently.

NB Power leadership mobilized to ensure staff presence at 23 community-based warming centres to ensure information was shared directly with customers who could not access the internet or traditional broadcast and print media.

The Canadian Armed Forces provided 222 members and 34 vehicles, NB EMO and the Red Cross coordinated support for warming centres and shelters, providing food, water, firewood and door-to-door checks on residents.

During the storm, four communities declared States of Local Emergency: Saint Marie-Saint Raphael, Le Goulet, Lameque, Tracadie-Sheila.

Unfortunately, suspected carbon monoxide poisoning caused the deaths of two people and hospitalization/treatment of up to 45 others due to unsafe use of generators and other alternative heating devices.

## Review Areas of Focus

### Customer Communications

NB Power communicates year round with customers about emergency preparedness and safety using a variety of methods and channels including paid ads across broadcast, online and print platforms, face-to-face events and using social media including @NB\_Power and @Energie\_NB on Twitter, which have more than 16,800 active followers combined and Facebook, with 13,500 followers. This effort ramps up in November of each year, when we conduct public information campaigns across multiple channels as part of our annual Storm Preparedness Week.

#### Actions prior to event

In November 2016, NB Power launched a multi-week safety-focused 'Be Prepared for Winter Storm Outages' advertising campaign that circulated online and on local radio stations throughout New Brunswick. The campaign highlighted the importance of having an emergency plan and emergency kit at home, safe use of generators and provided information on how to remain safe during weather-related outages.

In the days leading up to the January 2017 storm, NB Power shared essential storm preparation information across all customer channels (online, social media, local media outlets, customer information centre) and via our stakeholder email list prior to the storm's arrival. NB Power also provided frequent updates about the worsening weather, potential impacts of ice on power lines and utility infrastructure, and information about NB Power outage restoration priorities.

In addition, the team coordinated with communications staff at NB EMO and secured additional help from NB Power staff with communications experience from other areas of the utility to ensure a 24/7 response would be available in the event of an extended outage.

#### Actions during event

Throughout the storm event, NB Power used the same coordinated, multi-channel approach to communications that ensured a consistent message from NB Power regarding the utility response. This approach also allowed customers to circulate reliable and accurate information through their personal conversations and networks, and on their own channels including municipal Facebook sites, and Twitter accounts throughout the duration of the event. This helped ensure accurate media coverage and improve general understanding of the scope of the event and the scale of the response.

Understanding that customers affected by power outages are often offline, NB Power used all available means to reach customers with safety and restoration updates.

- Media relations, executive and field teams provided more than 150 interviews to journalists in French and English between January 24 and February 5, focusing on news outlets that reported directly to the most affected areas. NB Power CEO Gaëtan Thomas participated in daily media briefings with Premier Brian Gallant and NB EMO in affected areas.

- Our website saw a dramatic increase in traffic with no interruption or issues with service. Between January 25 and February 5 NB Power’s outage page had 1.3 million visits with an average of 111,000 visits per day. Daily visits peaked on January 25 at more than 400,000.
- Customer outreach team staffed all warming centres with printed packets of bilingual information to share with customers without access to restoration updates via online or other means. These updates were also shared with door-knocker teams to ensure customers visited at home received relevant information.
- Customer outreach was performed by the Customer Care team to contact customers to provide updates on estimated times of restoration and thank them for their patience.
- Regular and targeted communication to municipalities and Local Service Districts in the affected areas on completed restoration efforts.
- Ads were purchased on radio and on ‘Tims TV’ in Tim Horton’s outlets throughout Miramichi, Kent County and the Acadian Peninsula to share emergency safety and restoration information.
- Essential safety and restoration information was updated at minimum twice daily and shared across all customer channels (online, social media, local media outlets, customer information centre, internal employees) and via our stakeholder email list.

**Actions after event**

After the last customer was connected on February 5, NB Power immediately launched two information campaigns to thank customers for their kindness to crews during the restoration effort and to advise customers that some bills would be estimated as a result of damage to meters. Two storm warnings immediately followed the outages, and emergency storm preparedness information was shared across all channels for each forecast event.

**Lessons learned from previous events**

NB Power developed a coordinated, comprehensive approach to sharing emergency public information during the ice storm of 2013 that was refined and improved to include alignment with partner agencies following post-Tropical Storm Arthur in 2014. Our annual preparedness campaigns, along with enhancements to NB Power’s online outage map and outage information centre also followed these events, including improved information on safe installation and use of generators, tree cleanup near downed lines and emergency preparedness at home.

**Storm Management and Estimated Times of Restoration (ETRs)**

During unplanned outages, NB Power’s goal is to restore electricity as safely and quickly as possible for customers. While crews and operators locate and repair the outage, NB Power provides customers with an estimate of when they can expect electricity to be restored. NB Power doesn’t immediately know when customers lose power. The utility relies on customer outage reports to the website or call centre, and based on those reports dispatches crews to locate, assess and repair the outage. In some simple cases, crews can restore power sooner than estimated. However during severe weather events, the cause of the outage may be difficult to locate or access or the cause may be related to several problems,

so repairs and reconnections can take longer. During major storms, crews must wait until roads are safe before travelling to affected areas to assess damage and begin repairs.

In responding to these events, NB Power relies on the services of 12 operating centres that are strategically located in various parts of the province. These operating centres are responsible for planning, maintaining and repairing utility infrastructure in their respective areas, with support provided as needed from other relevant NB Power divisions.

#### **Actions prior to event**

On Monday January 23, NB Power anticipated the need for crews based on weather forecasts. Contracted crews were secured and moved to areas expected to be affected by incoming weather. Sixty contractor crews were secured and dispatched to Woodstock, St. Stephen, Fredericton and Tracadie on Tuesday, January 24. NB Power secured additional crews on Wednesday, January 25 in Miramichi, Tracadie, Bouctouche and Moncton, and opened eight local command centres to ensure community-based assessment and response capacity. These local command centres were located in Bouctouche, Miramichi, Tracadie, Fredericton, St. Stephen, Woodstock, Moncton and Sussex.

#### **Actions during event**

The ice storm hit first on Tuesday, January 24 in southern New Brunswick, becoming stronger with more freezing rain, ice pellets and stronger winds as it swung east and north during the next 72 hours.

Crews in the south spent January 24 and 25 assessing damage and making repairs as the storm moved, attempting to assess damage in northern areas where possible as roads were mostly impassable and the storm was continuing.

According to NB Power protocol during extreme weather events, on January 24 NB Power activated 'storm mode' on its website, turning off auto-generated ETRs and sharing a bilingual message that crews would begin assessing damage as soon as it was safe to do so. On Wednesday, customers were provided with broad estimates of when power would be restored to provide a general idea of crew progress in affected communities. These ETRs were updated again in the days that followed, with most of the targets met or exceeded in southern New Brunswick where assessments and repairs were completed.

The morning of Wednesday January 25, NB Power declared a Level 3 Emergency and formally activated its Emergency Storm Response Protocol, which included activating the Executive Emergency Response plan to ensure clear communication about storm impacts and direction from NB Power leadership.

By Thursday, January 26, significant amounts of freezing rain and ice pellets were continuing in northern New Brunswick with the storm continuing late into the evening. Despite progress on restoring power to customers, more outages were occurring due to the ongoing poor weather. This includes two transmission outages affecting customers in the southeast. Crews were focused on restoring customers in the south where the storm had mostly passed, and assessing ongoing damage in the north where possible as the roads were unsafe and the storm was ongoing. However, extreme poor weather



grounded many crews and prevented air patrols of damaged transmission lines as the helicopter was unable to fly due to safety concerns.

On Friday, January 27, active assessment and restoration was underway by more than 300 crews in eight regions, with a cross-functional team dispatched to Tracadie to handle logistical support, and extra agents added to our customers information centre to handle additional call volumes.

In addition, senior leaders including members of the executive team, the CEO, and bilingual customer outreach staff moved to affected areas to work directly with customers in warming centres and local municipal leaders, providing face-to-face restoration information for those without internet, radio or television, and reassurance that the storm response was being managed effectively.

Based on experience with previous storms, knowledge of the grid and available crews, NB Power set and communicated broad restoration targets for the Acadian Peninsula prior to completing full assessments that included percentages of customers that could expect to be restored by a certain date. Once crews were able to safely access affected communities, specifically in northern coastal areas, the extent of the damage was apparent and restoration targets were immediately adjusted and communicated publicly.

Through the weekend, crew numbers increased to 344, with 190 crews focused on Miramichi and the Acadian Peninsula. As crews finished work in the south, they were relocated to northern communities to join efforts to assess damage and restore power.

Crews were working in very challenging conditions, having to 'cut their way' into roads and streets due to many downed lines and poles. Crews were diverted from restoration efforts to clear more than two dozen roads in peninsula communities to allow emergency vehicles and local traffic to move

Damage assessments revealed hundreds of broken poles and other damaged infrastructure, including cross-arms, transformers, switches and downed wires. Additionally, new outages were caused by utility equipment collapsing under the weight of heavy ice days after the storm passed.

Assessments revealed heavy ice buildup on trees, poles and lines of between 50-100 millimetres – four times beyond Canadian Standards Association design requirements.

In Kent County, fallen trees and extreme conditions in the woods and on rural roads continued to slow restoration progress.

While the initial storm event had ended, ongoing poor weather hampered crew progress, as high winds, whiteouts and freezing temperatures slowed and sometimes prevented crews from making repairs throughout the weekend and early in the week.

By Monday, January 30, improving weather and working conditions allowed crews to reconnect large sections of line. Crews numbers peaked at 380, with the vast majority focused on the Acadian Peninsula, restoring power, clearing roads and driveways made impassable by fallen poles, wires and other debris.

Despite this, NB Power continued to meet or exceed targets as the restoration effort continued, and customers were kept up to date on progress until the final customer was restored on February 5.

#### **Actions after the event**

Several utility crews remained in affected areas in the week following the storm, cleaning up debris, securing infrastructure and ensuring necessary environmental checks were complete.

#### **Lessons learned from previous events**

NB Power's online outage map and storm centre was created with enhanced functionality and more customer-facing features following post-tropical Storm Arthur in 2014.

To speed the storm management and restoration process, NB Power applied a number of lessons learned from previous events. Following the ice storm of 2013, NB Power created a cross-functional logistics team that is trained and ready to deploy to handle crew lodging, meals, laundry, billing and invoices and other necessities, allowing field operations supervisors to focus on restoring power. Other time-saving learnings from previous events include fueling trucks centrally or in the field, delivering meals to crews, streamlining permitting process and having dedicated 'bird dog' assessment teams to locate outages and determine first-pass repair requirements. With every event, NB Power teams find more logistical efficiencies to allow for greater focus on power restoration in the field.

This focus on accommodating crews in the field during what would under other circumstances be meal time, travel time or rest breaks, supervisory or other services, caused some customers to believe NB Power was not coordinating efforts efficiently to restore power. In fact, bringing services to crews in the field allowed for a faster response and more efficient restoration effort. Crews reported gaining up to four additional hours of productivity per day as a result of this approach.

In addition, NB Power has much improved coordination and cooperation with NB EMO resulting from learnings from previous storm events. This includes efforts to streamline inter-agency communication in a number of areas including but not limited to; identifying and supporting vulnerable or priority customers, ensuring safe access to roads and infrastructure and sharing essential restoration information with first responders and other relevant parties.

Finally, as part of a utility-wide modernization project, NB Power expects to propose investments in advanced metering infrastructure, including smart meters, with the potential to help crews locate and diagnose outages more quickly during storm and other events. Advanced metering has the potential to communicate outage locations and customer status automatically in certain circumstances, without requiring the customer to report via the website or call centre.

#### **Grid Resilience during Extreme Weather Events**

Grid infrastructure in New Brunswick is built to Canadian Standards Association (CSA) design specification for our winter climate. The CSA standard classifies the entire Province of New Brunswick as a 'heavy loading' zone, requiring NB Power to design infrastructure for a minimum of 12.5 mm of radial ice. The CSA's most rigorous rating of 'severe' requires a utility to design for a minimum of 19 mm. As

mentioned in the previous section, extreme ice loading from the January 2017 event on the Acadian Peninsula caused buildup of between 50 and 100 millimetres on trees and equipment.

In recent years, storms throughout North America have intensified – bringing more damaging winds and precipitation – with greater effects on infrastructure including the power grid. We are working with our colleagues in the Canadian Electricity Association, the Canadian Standards Association, the New Brunswick Energy and Utilities Board and other organizations to ensure our industry can adapt and mitigate to manage the impacts of these extreme weather events.

#### **Actions prior to event**

Throughout New Brunswick, power poles in NB Power’s distribution system are inspected every two to five years and transmission poles are air patrolled twice annually and ground patrolled every four to eight years. All power poles are built to last approximately 55-60 years once installed in the ground. Annually, NB Power installs between 6,000 and 8,000 poles in all parts of the province, along with routine preventative maintenance and capital investments to ensure resiliency of the system.

As a member of the Northeast Power Coordinating Council, NB Power is responsible for reliable operation of the Maritimes Area with oversight over transmission lines and interconnections serving the United States, Quebec, Prince Edward Island and Nova Scotia. As such, NB Power is bound by industry-wide reliability standards overseen by regulators to ensure a robust and resilient power grid in all parts of the province, with equal rigour applied to all geographic locations and communities.

#### **Actions during the event**

NB Power crews worked quickly and safely to replace all damaged equipment to facilitate immediate restoration of service to customers. NB Power infrastructure damage during this event was limited to 614 broken poles, 189 replaced transformers and 52 kilometres of wires replaced, mostly in the extreme northeast of the province, where ice buildup was heaviest and winds strongest. Outages in Miramichi were caused mostly by heavy snow and ice on trees and infrastructure while Kent County experienced outages due to heavy ice on trees making contact with lines, mostly located outside NB Power right of ways.

#### **Actions after the event**

NB Power conducted an internal audit of a sample (169) of the damaged equipment, which revealed heavy ice and strong winds as the cause of breakage with very little pre-existing signs of deterioration of poles or crossarms. This result was validated by a random check of poles by a Nova Scotia Power storm restoration expert.

#### **Lessons learned from previous events**

Extreme weather events of 2013-2014 highlighted New Brunswick’s vulnerability as one of the most heavily forested provinces in Canada, with outages in those events caused by tree contact with lines. Since those events, NB Power has increased budget and effort for tree trimming and cutting, including

stepping up customer communications to reinforce the need for vegetation management and notifications. This effort is beginning to demonstrate progress with fewer tree-related outages since 2014.

## **Customer Safety**

### **Actions prior to event**

NB Power maintains a robust year-round public safety campaign on multiple channels on a variety of subjects. In the fall and winter, the focus shifts to ensuring customer safety before, during and after power outages at home and work. This includes safety tips about staying clear of downed lines, the importance of having an emergency plan at home with an emergency kit along with how to buy, install and use a generator safely.

### **Actions during event**

During the January ice storm, safety information was shared across all customer channels, using online, phone, face-to-face, media and paid advertisements. Safety messages were shared at every opportunity to ensure broad understanding of the need to stay clear of utility infrastructure on the ground, to properly install and ventilate generators and to stay away from downed trees that may be in contact with lines that are energized. These safety messages were shared by all NB Power staff at every opportunity including the CEO, media relations, customer outreach, field operations and safety teams in the field.

Field crews were in close contact with communications at all times, allowing for hourly turnaround on sharing safety-related information publicly. For example, when customers began salvaging chemically-treated power poles for their own use, NB Power quickly shared advice that they should not be burned as firewood for safety reasons. This information was communicated widely on a variety of channels including social media, news media and on the NB EMO's public advisory.

During the ice storm, no customer safety incidents occurred related to contact with energized equipment. Unfortunately despite best efforts, safety incidents occurred due to carbon monoxide poisoning related to improper use of generators and barbeques.

### **Actions after event**

NB Power continued sharing safety related information through all customer-facing channels and platforms. Weather forecasts during the week of February 5 called for two more potentially damaging storm events, and NB Power used all available channels to share safety information and ensure customers were aware of the possibility for more extreme weather. This included safety-focused radio advertisements and a public alert produced cooperatively with NB EMO.

**Learnings from previous events**

Following storm events of 2013 and 2014, NB Power enhanced public information on generator safety on its website and through preparedness campaigns. In 2014 and 2015, NB Power partnered with NB EMO to host a series of safety focused outreach efforts during our fall Storm Preparedness Week, including a media event, customer information sessions, refreshed web content, interactive social media campaign, and internal NBP/NB EMO capacity building workshop to ensure alignment of efforts.

## Action Items

| Key learning and observation   | Recommended Action   | Timeline   |
|--|--|--|
| Efforts to reach all customers with preparedness restoration and safety information were not always effective for a variety of reasons.  | Greater emphasis and outreach with pre-season preparedness and safety campaign in rural communities, coordinated with local leaders, first responders and NB EMO to ensure customers are informed and prepared prior to storm season.  | November 2017  |
| Customers concerned about NB Power's restoration priorities were left wondering why some are reconnected while others have to wait.  | Simplify customer restoration updates with greater emphasis on visuals and photographs that explain sequence of events to restore power.<br><br>Create simple handouts for field staff with visual explanations of a variety of circumstances that occur during extended power outages and the role of customers. (ie: repairing broken masts, unplugging major appliances in the home, disconnecting breakers.)   | November 2017  |
| Despite extraordinary efforts to reach customers with essential information via online, in-person and media channels, we could not reach all customers at all times.                                   | Consider working with NB EMO to create a dedicated emergency broadcast station to provide essential information to New Brunswickers in times of crisis   | Timing to be determined in consultation with NB EMO  |
| Some customers were unsatisfied with the lack of certainty on estimated restoration times (ETRs), especially in Acadian Peninsula where targets were adjusted and delayed based on actual assessments. | Review NB Power assessment process to provide more accurate estimated restoration times and better upfront data.<br><br>Ensure NB Power assessors are equipped with appropriate tools to conduct their work and communicate requirements.<br><br>As part of a utility-wide modernization project, NB Power expects to propose investments in advanced metering infrastructure, including smart meters, with the potential to help crews locate and diagnose outages more quickly during storm and other events. Advanced metering has the potential to communicate outage locations and customer status automatically in certain circumstances, without requiring the customer to report via the website or call centre. | November 2017<br><br>November 2017<br><br>Pending board and regulatory approval, rollout complete anticipated by end 2020 (~ 3 years implementation) |

| <b>Key learning and observation</b>  | <b>Recommended Action</b>   | <b>Timeline</b>   |
|--|---|---|
| Leaving crews in the field for majority of effort created mistaken impression among some customers that restoration was not being coordinated effectively when in fact bringing services to crews allowed for a faster response and more efficient response. | Review how assessment efforts/ storm management and crew movements are communicated to customers to facilitate understanding of work flow.  | Ongoing (part of continuous improvement process)                                      |
| Despite being built to design standards able to withstand extreme winter weather and ice loading, some infrastructure was not able to withstand the intensity of this storm, particularly in northern coastal areas.   | Work underway to review standards with CSA to determine alternative methods of building greater resilience into the grid in areas vulnerable to extreme weather impacts.<br><br>Implementation underway of Engineering Standards to guide decision-making on the application of specific design standards to storm-harden infrastructure in areas prone to more severe weather. This will result in reinforcing infrastructure in vulnerable areas, such as along the northeastern coastline. | Improvements beginning in Fall 2017   |
| Coordination of storm response with partner agencies including NB EMO, Red Cross and Canadian Armed Forces was a complex effort given the historic impact of this mid-winter storm on customers and the grid.  | Review storm effort with a goal of clarifying roles and responsibilities with partner agencies to ensure efficient and effective response to future storms.   | Timing and actions to be determined in consultation with NB EMO and partner agencies. |

## APPENDIX A

### Timeline: NB Power actions during Ice storm 2017

Weekend January 20-22, 2017

- Weather reports began circulating within NB Power senior staff and meteorologists calling for a low pressure system bringing snow, rain and ice pellets to New Brunswick the following Tuesday and Wednesday. This prompts internal discussions to ensure adequate resources are secured ahead of the storm's arrival.

Monday, January 23, 2017

- Approximately 10:30 am, Storm Management Group notifies support staff and executive team of plans to stage 60 contractor crews in various areas and open the Storm Room starting early the next morning (January 24). The North Atlantic Mutual Assistance Group advises a United States utility is looking for 175 line crews and 75 tree crews and NB Power advised we have no crews available for assistance as we are preparing for impending storm.

Tuesday, January 24, 2017

- Storm begins to impact the southwest in the afternoon with messy weather escalating in the Fredericton and Sussex areas around 5:00 pm.
- Contractor crews staged to Woodstock, St. Stephen and Fredericton before noon. Additional crews sent to Tracadie by 4:30 pm.
- NB Power Communication group shares storm preparedness information on Twitter, with local media outlets and to the NB Power Customer Information Centre. Tweets about crew numbers are retweeted 35 times.
- NB EMO activates Provincial Emergency Operations Centre to Level 1 (Enhanced Monitoring), to monitor a "Winter Storm" weather event affecting all regions in New Brunswick.
- Most schools in southern NB cancelled due to weather.

Wednesday, January 25, 2017

- The storm travels from southwest to southeast before moving toward Northeast beginning to impact the Acadian Peninsula early January 25.
- By 10:30 a.m. outages totaled 1249 leaving more than 133,000 customers without power. NB Power declares Level 3 Emergency and activates Emergency Storm Response Protocol.
- Additional crews are hired for Miramichi, Tracadie, Sussex, Bouctouche and Moncton. Contractor and NB Power crews total 206 in northeastern and southeastern NB. NB Power opens 8 local command centres in affected communities.
- NB EMO Operations team are actively monitoring event. Provincial Emergency Action Committee Level 2 (Partial Activation) Provincial Emergency Action Committee members asked



to report to the Provincial Emergency Operations Centre. Active communications underway between NB Power, Justice and Public Safety/NB EMO and leadership.

- Corporate Communications circulates storm-related information updates on Twitter, to local media outlets and to the NB Power customer information centre. Storm-related information updates are also provided to NB EMO for public circulation.
- Broad restoration targets for customers affected by outages are set as follows:
  - Approximately 90 per cent of customers expected to have power restored by end of day January 25 in Rothesay, Bathurst, Eel River, St. Stephen, and Woodstock.
  - Approximately 50 per cent of customers restored by the end of day January 26 in Sussex, Shediac, Bouctouche, Sackville, Miramichi.
  - Approximately 95 per cent of customers restored by end of day January 26 in Fredericton.

Thursday, January 26, 2017

- Significant amounts of freezing rain and ice pellets still falling in northern New Brunswick. The storm continues in the Bathurst area until approximately 10 pm.
- By 9:10 am outage incidents are 1977 impacting 85,845 customers as the worst of the storm hit including two transmission outages that affected a large number of customers in the Southeast. Despite progress in restoring, more outages are occurring due to ongoing weather.
- Crews mostly restoring/reconnecting in south where storm has passed and assessing damage in the north where possible as roads were too dangerous to travel and storm was ongoing. Damage assessment hampered by ongoing poor weather conditions. Helicopter grounded from line patrols due to dangerous winds and freezing rain/ice pellets.
- Proactive communications ongoing, coordination through NB Power, NB EMO, GNB communications and executive leadership team on critical issues continuing through daily meetings throughout storm event.

Friday, January 27, 2017

- Active assessment and restoration underway by more than 300 crews in 8 regions. Additional support is dispatched to handle logistical support with extra agents added to customer information centre to handle additional call volumes.
- As of 2:10 pm, 2389 outages are spread across the province affecting 57,904 customers.
- Crews are assessing damage in the Miramichi Region and in the Acadian Peninsula given the significant impact of the storm there.
- Assessments reveal heavy build-up of ice on trees, poles and our lines between 50 and 100 millimetres on some equipment – beyond CSA design requirements by a factor of four.
- All substations and transmission lines affected by storm are restored with exception of lines feeding Shippagan and Lameque substations due to an off-road machine getting stuck in frozen peat bog.
- Power is restored to hospitals in Tracadie and Caraquet and other critical infrastructures such as gas stations and grocery stores.

- Generator moved to the Inkerman Community Centre to serve as a regional reception centre.
- Broad restoration targets for end of day are set as follows:
  - Moncton, Bouctouche, Sackville, Shediac, Sussex: 99 per cent restored
  - Miramichi: 85 per cent restored
  - Tracadie: 65 per cent restored

#### Saturday, January 28, 2017

- Crew numbers increase to 344 with 190 crews in the Acadian Peninsula and Miramichi areas.
- All transmission lines repaired and Shippagan and Lameque substations restored as well as Lameque hospital.
- As of 1:10 pm, 2,374 outages are spread across the province affecting approximately 43,000 customers.
- Crews working in some very challenging conditions, including removing trees and debris from lines and roads, and high winds along the Northumberland shore. Crews having to 'cut their way' into roads due to downed lines and poles.
- Equipment and logistical support is moved to Tracadie to support restoration efforts.
- Restoration progress for regions continues to fluctuate due to continuing outages related to ice build-up on equipment and ongoing damage assessments that reveal greater damage to infrastructure than previously understood.

#### Sunday, January 29, 2017

- Crew numbers increase to 360 with 244 focused on Miramichi/Kent/Acadian Peninsula.
- At 11:10 am, 2083 outages, affecting 32,154 customers.
- Damage assessments reveal approximately 350 broken poles and other damaged infrastructure, including cross arms, transformers, switches and downed wires.
- New outages due to the weight of the ice load also continue to be reported including outages affecting largely the Acadian Peninsula. In Kent County, fallen trees and extreme conditions in the woods and on rural roads continue to impact progress.
- Canadian Armed Forces personnel deployed to Acadian Peninsula to assist with storm effort
- Ice has coated many pieces of critical system infrastructure so thickly that crews been forced to significantly increase their workload to better address each individual outage – thus adding more time to each job.
- Broad restoration times are set as follows:
  - Acadian Peninsula: 60 per cent restored by end of day January 30.
  - Miramichi: 85 per cent by end of day January 29.
  - Kent County: 85 per cent by end of day January 29.

Monday, January 30, 2017

- Crew numbers are 380, with 143 serving the Acadian Peninsula.
- Approximately 21,000 customers are without power provincially, with about 15,000 in the Acadian Peninsula.
- Improving weather, working conditions and efforts to connect large sections of line are improving restoration efforts as crews continue to make good progress.
- Drawing on our close working relationship with Nova Scotia Power, a storm expert with disaster restoration experience supports restoration efforts in Tracadie.

Tuesday, January 31, 2017

- At 7:30 am approximately 14,200 customers are without power, the majority of those in the hardest hit area of the Acadian Peninsula.
- Crews total 380 with the vast majority of efforts focused in the Acadian Peninsula. As crews finish one area, they move to the next outage and continue working to repair and restore power.
- We continue to make good progress clearing roads and driveways made impassable by downed poles and wires and other debris. Our road-clearing teams have ensured safe passage for fire and emergency vehicles on 22 formerly blocked roads throughout the peninsula. They are also increasing safe access to travel routes for residents and regular traffic in areas affected by the storm.
- Broad restoration target set at 70 per cent of customers restored in the Acadian Peninsula by Tuesday evening

Wednesday, February 1, 2017

At 7:30 am, approximately 8,000 customers without power.

- Crews total 380, with growing numbers focusing on the Acadian Peninsula as other areas are reconnected.
- Broad restoration targets are set as follows for Wednesday evening:
  - 75 per cent of customers restored in the Acadian Peninsula,
  - 98 per cent in Miramichi
  - 93 per cent restored in the Kent County areas.

In Moncton, less than one per cent of customers affected by the storm remain without power. These are customers who have damage to their masts that must be repaired before we can reconnect, or remote or seasonal properties.

Thursday, February 2, 2017

- At 8:30 a.m., fewer than 5,000 customers remain without power, mostly in Acadian Peninsula.
- Crews total 365 on the ground in affected areas (some vegetation crews relieved as they were no longer required).
- Broad restoration targets are set as follows for Thursday evening:
  - Up to 85 per cent of customers restored in the Acadian Peninsula
  - 99 per cent of customers in Miramichi and Kent County

Friday, February 3, 2017

- At 4:00 pm 2759 customers without power in the Acadian Peninsula.
- Crews total 314.
- Restoration target set at 90 per cent of customers in the Acadian Peninsula restored by Friday evening and the vast majority of customers by the end of the weekend.

Saturday, February 4, 2017

- At 10:00 am, approximately 1400 customers were still without power with 303 crews on the ground
- Target set for 99 per cent restored by end of the weekend.

Sunday, February 5, 2017

- At 11:00 am, fewer than 300 customers were without power as a result of the storm.
- Achieved 99 per cent restored target Saturday night.
- Last storm-affected customer reconnected at approximately 6:30 pm.

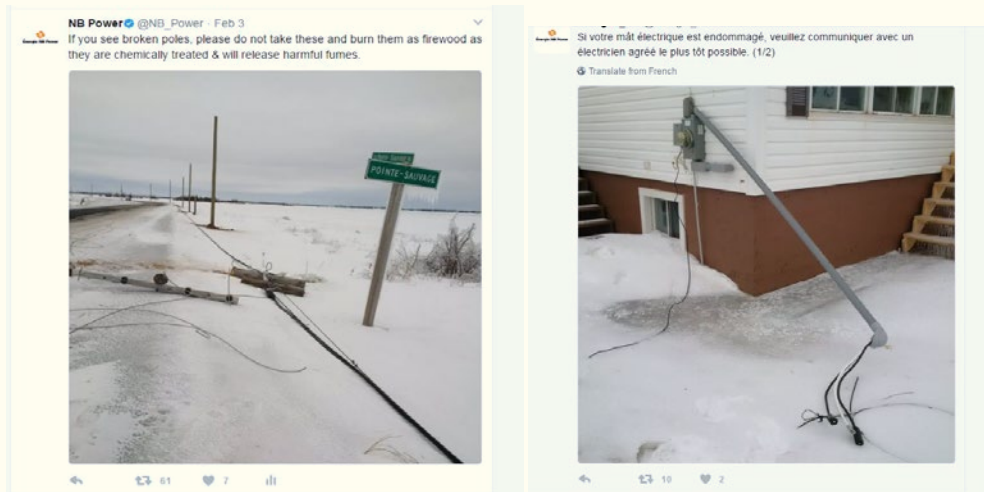
## APPENDIX B

### Communications Case Study: Social Media during #Ice Storm 2017

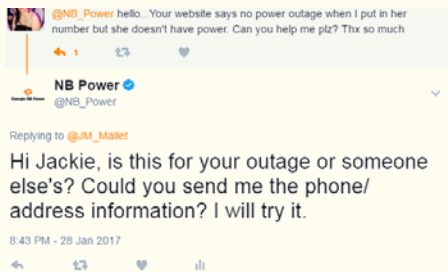
From the time the storm hit and customers began to lose power on January 24, until the final customers were restored on February 5, there were approximately 8,800 mentions of NB Power and the ice storm on Twitter, with an average of approximately 600 a day at the height of the storm. These are both direct (tagging the NB\_Power or Energie\_NB handles) and indirect mentions through hashtags and search terms. We had substantial reach through sharing of our updates through retweets. While we did interact with customers on an individual basis, the greatest social engagement during this period came through retweets to get important updates shared through communities (60 per cent of total engagement.)

#### How we engaged

Shared key updates through our Twitter account including, safety and preparedness information, estimated restoration times, press conference updates, safety messages including the photos below starting on Monday, January 23.



Twitter was also used for fielding and escalating customer issues/concerns around restoration times, safety issues and other help (those with failing generators as an example.)



When dealing with these customer issues, social media managers used empathetic, helpful tone when talking with customers to let them know we were there for them and to be careful to not escalate or worsen the feelings of the situation as many were understandably frustrated.

Photos from the ground in affected areas were also updated to our Flickr page and shared individually on our Twitter account to help paint the picture of the damage and progress in areas hardest hit by the storm. This was helpful for showing the complexity of the work required to be completed in order to get everyone back online.



### End of the storm

As the final customers were being restored, we shared a guide of important resources on our NB Power blog that included details about warming centres, safety notices as well as the financial assistance programs in place through the Red Cross and the Government of New Brunswick on our blog. Once all customers were restored, we updated this post to include information regarding billing that may be affected as a result of the storm damage. We had 266 link clicks to this blog post through shares on social media and website traffic.

Once all customers were restored we prepared targeted bilingual Facebook ads that linked to another blog post with a thank you message from our President and CEO Gaëtan Thomas. This was shared with the communities who were affected most by the ice storm. We understood the unique and difficult circumstances our customers went through during this storm and its aftermath and wanted to let them know we appreciated their support and patience and the kind gestures they showed to our line crews on a daily basis. This Facebook ad was shared 141 times, received 25 comments (positive overall sentiment) and 739 reactions (likes) from customers in the targeted areas (Moncton, Kent County and Acadian Peninsula.)

# Appendix G – Letter from Conservation Council of New Brunswick



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](mailto: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.

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.

# Appendix H – City of Miramichi Ice Storm Event Report

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**January 24, 2017**

**Ice Storm Weather Event Report**



## **City of Miramichi January 24, 2017 Ice Storm Weather Event Report**

### **Event Overview**

During the overnight and morning hours of January 23<sup>rd</sup> /24<sup>th</sup>, 2017 the eastern and north-eastern portions of the Province, including the City of Miramichi, received prolonged amounts of freezing rain. The extreme weather event was responsible for downed trees and power lines that led to massive power outages. At its peak on January 24<sup>th</sup> more than 130,000 customers were affected by power outages. NB Power termed it as the worst winter event in the utility's history with more than 245 power crews from NB Power, other jurisdictions, and contracted crews working to restore power.

As a result of this weather event, senior personnel for the City of Miramichi met at Miramichi Police Headquarters shortly after 5:30 AM on January 24<sup>th</sup> and established an Emergency Operations Command Centre structure to begin the process of assessing the impact that the storm had on our City. In order to assist with this assessment, all of the Public Works staff, 10 Police vehicles and Fire Department apparatus were deployed for response to calls and were also tasked with calling in anything that they observed such as downed power lines, downed trees etc.

All emergency and non-emergency calls, including incidents observed by City staff, were channelled through the Police Communications Centre so that everything could be well-documented and all calls could be assigned based on priority. The 'Sentinel Emergency Management' program was also brought on-line with the assistance of IT, so that all significant events and tasks could be tracked in the Sentinel computer program.

Once daylight broke it became very evident that the 'Ice Storm Weather Event' was one of the worst to impact the City with widespread damage and power outages being noted throughout the City. Trees and tree branches were observed to be broken and laying across hydro-wires and roadways throughout the entire City which resulted in immediate high-call volumes for the Public Works, Fire and Police Departments. At one point during the afternoon of January 24<sup>th</sup> over 8,400 customers in the City were without power.

It should be noted that careful consideration and detailed discussions were held on whether to declare a local state of emergency for the City of Miramichi. If conditions had not

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been manageable by City staff and the number of power outages had not continued to improve on day # 2 (January 25<sup>th</sup>) then in all likelihood the state of emergency would have been enacted.

The following priorities were identified and implemented as actionable items throughout the course of the event. All of these items played a major role in the success of how this event was managed by the City and these should all continue to be followed in the future:

- Communications coordinator to ensure the media and the public were well informed of all important and timely information (Mayor Lordon)
- Establishment of warming shelter at Golden Hawk Rec Centre
- Establishment of warming shelter at Goodie Shop which was relocated to the Linton Rec Center (once power was restored)
- Supplying of food (including preparation) and water to the warming shelters
- Supplying of cots and blankets from the Red Cross for the warming shelters
- Obtaining large portable generators to maintain the operation of all City water wells and pumping stations
- Maintaining liaison with NB Power (The NB Power 'outages map' proved to be very beneficial in our planning and decision making process)
- Maintaining liaison with Ambulance NB, and Various Provincial Government Departments
- Removal of trees and debris from roadways by Public Works
- Regular briefing sessions between Council and Department Directors
- Free bus service offered to transport citizens to the warming shelters
- Regular fuelling of portable generators at well sites, Golden Hawk Rec Center, Station 1 Fire Department, and Police Headquarters
- Conservation of water until full power was restored to the well sites
- Closing of Recreational facilities while warming shelters were in full use
- Establishment of 2 dumpsters (north and south side of City) for disposal of spoiled food items
- Removal of trees and debris placed at curb side by homeowners

It is also worthy to note that there had been an outpouring of food donations for the warming shelters from various volunteer organizations, businesses and, citizens.

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### **Recommendations on a 'Go-Forward' Basis**

Based on recent weather events it is apparent that our Province, and in particular our region, will continue to be faced with weather events that are not considered the norm and therefore making these related emergencies more common place in the coming years.

Senior staff has identified some best practices and recommendations on a 'go-forward' basis that will enhance and better equip the City when we are faced with severe weather events or some other type of emergency that may result in widespread loss of power outages to the community.

#### **❖ Back-up Power Supply**

In order to maintain critical infrastructure during prolonged power outages it is imperative that the City maintain back-up power in order to keep services running at adequate levels. With this being said the following has been identified:

- 1) **Miratech Building:** Funding was approved in the 2017 Capital budget for the installation of a permanent generator transfer switch at the Miratech Building so that the large portable generator owned by the City can be used to supply power to the EMO City/Regional Emergency Operations Center located on the second floor as well as Station 2 Fire Department and Public Works. This connection will greatly enhance the operational level for all of these departments as the current generator only supplies limited lighting to them. The new generator set-up will also have the ability to provide heating throughout the building.
  
- 2) **Portable Generators for Water Systems and Well Sites:** The Department of Public Works maintains the operations for four (4) separate water wells along with water treatment systems in Chatham and Newcastle. During the ice storm event large generators were rented from the private sector and placed at each location in order to maintain services as a system failure at any of these sites would be critical.

The current 2017 budget includes a back-up power system for the Chatham water system. Plans have been made to move the current generator located at the Miratech Building to the Newcastle water system site once the larger generator is put in place at

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the Miratech Building during this calendar year. This generator will have the ability to maintain the Newcastle water treatment plant at an adequate level.

In looking ahead the present generator at the police headquarters, if replaced, can be used by Public Works to provide power to one of the well locations and consideration should be given in a future capital budget to purchase a backup generator for a second well site. The recommendation for the remaining two wells would be to continue to rent them from the private sector as the wells require much larger generators which would be available when they are required.

- 3) **Police Headquarters:** During the ice storm event the police station operated on the back-up generator for almost a 25 hour non-stop period. This has been the longest time frame that police headquarters has ever operated on back-up power. It was discovered that only 1 of the 2 heating boilers at police headquarters can operate on the present back-up generator due to its capacity. Although it was not extremely cold, the building cooled off overnight and it became uncomfortable for staff the following day due to the lack of heat. This certainly would have been very problematic had the power not been restored to the building when it was. Consideration should be given in a future Capital Budget to replace the current generator with a larger one in order to make the building, which also houses the Communication Centre as well as the EMO back-up Centre, capable of being self-sufficient for a longer period of time. The present generator, which is still in excellent condition, could be utilized by Public Works to run some of the critical infrastructure.
- 4) **Warming Shelters (East & West Sides):** A portable generator was installed at the Golden Hawk Recreation Center by Public Works. The generator had the ability to provide some lighting in the building but would not have been sufficient to provide heat if the power had been off for a prolonged period. The alternative to this issue would be increasing the capacity of the generator to be used at this facility to run heating units. The Golden Hawk Recreation Center did prove to be very beneficial as a warming shelter due to its location, shower facilities, and abundance of room.

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The second warming shelter located at the Lindon Recreation Center does not have the ability to be connected to a generator, which resulted in the upstairs of the Goodie Shop being utilized on the first day. Given the logistics and costs that would be associated to making the Lindon Recreation Center generator-ready, it would be more realistic for the City to bus people from the Lindon Recreation Center to the Golden Hawk Recreation Center in the event of any power outage to the Lindon Recreation Center.

#### ❖ **Warming Shelter Operations**

The two established warming shelters were very well received and utilized by a number of citizens from both our City and the outside neighbouring regions. The supplying of food, especially hot meals, at the shelters was certainly an added comfort for all citizens and was greatly appreciated.

The setting- up and managing of the two (2) separate warming centers for an event of this duration was something new for the City of Miramichi and the Recreation Department. Although things ran very smoothly, the Recreation staff has made suggestions that will assist in the future set up of warming shelters on a 'go-forward' basis:

- Develop a list of items required for Day 1, 2, 3 etc. and include suggested menu items for various scenarios that would include 50, 100, 150, 200 persons.
- Purchase some bottled water in advance if a severe weather warning is issued that could potentially call for the opening of a City shelter. The water could be used for other events if not required.
- Purchase of napkins, disposable cups, disposable plates, plastic cutlery, disposable gloves etc. that could be stored in plastic totes until required.
- Purchase of BBQ tools, slow cookers, toasters, electric frying pan, and power bars that could be stored in plastic totes until required.
- Develop prepared registration sheets for people entering the warming shelter in the event calls are received trying to locate someone.
- Identification cards for Recreation staff so that they are easily identifiable to people visiting a shelter.
- Temporary signage for the front of the designated warming shelters to make them easily identifiable (can be stored with other items).

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- Coordination of the community groups wishing to donate food to assist in meal planning and management.
- Wifi at designated warming shelters.
- Pet issues to be visited, as not all were friendly.

#### ❖ **Fuel Access**

During portions of the first day of the event only two gas stations had power and could supply fuel. For a brief time during the afternoon, both stations lost power, making fuel unavailable at any commercial station in the City. Arrangements were quickly made by the Director of Public Works to obtain diesel fuel from a private contractor for some of the City trucks.

During the course of the first several days, fuel was in very high demand at the service stations that had power. Citizens were concerned as to whether enough fuel would be available for their vehicles, as well as gas-powered generators, which were being utilized by a high number of citizens.

It has been confirmed that the Provincial Department of Transportation and Infrastructure will be maintaining a supply of fuel, both diesel and gasoline, at their Kelly Road garage location for use during emergencies.

In order to help alleviate the concerns, it is suggested that the City have a formal agreement with DTI to access some of the emergency fuel in the event of a situation where our regular fuel supply may not be available during an emergency. Consideration should also be given in having some type of provisions written into the next fuel tender that is issued by the City that would address fuel access during times of an emergency.

#### ❖ **Enhancement of Sentinel Emergency Management Program**

Once activated, the Sentinel Emergency Management Program has the ability to log all significant events related to any emergency in a timely fashion. The log includes the time and date of the event as well as the description and ongoing status. This program proved very beneficial in the logging of events as they were reported by both the public and staff.

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Sentinel has the ability to store all contact information and available asset management for both the City and the private sector in the event additional equipment resources are required.

Using the latest technical advancements in text messaging, bulk email, phone broadcasting and social media, Sentinel Alerts provides the capability to reach a large number of individuals within minutes. This program should be applied to all emergencies and is presently being underutilized. There is a clear need to maximize Sentinel for all emergencies.

To ensure the program is used to its fullest there is an immediate need to identify a City staff member to be trained so that they are able to populate the contact information and assets when required thus ensuring the information is current and accurate. The duties for this task should be assigned to a current employee who would be available to access the Sentinel program during an emergency situation. This staff member would work in conjunction with an IT staff member when an Emergency Operations Center is activated.

It is also recommended that a media blitz be jointly coordinated between the City IT Department and the Miramichi Police Force to have users sign up for Sentinel Emergency Alerts.

### **Conclusion**

In closing, it is worthy to note that the City of Miramichi has never experienced a winter weather event emergency of this magnitude. The Mayor, Council and City staff responded in a very responsible and timely manner and worked diligently to ensure that the safety and well-being of its citizens were the number-one priority throughout the 7 day event, which officially concluded at 6:00 PM on January 31<sup>st</sup>. The incidents of neighbours-helping-neighbours was very evident during this ordeal and certainly showed the strength of our community.

It is also important to note that during the entire event the City did not have any loss of life or serious injuries that were attributed to the weather event. There is no doubt that the hands-on experience gained by City Council and City staff is highly valuable, and will only help to prepare everyone for any future emergency event.

Paul Fiander, Chief of Police/EMO Coordinator

**\*Information contained in this report was also supplied by the City Manager, Senior Management Directors/Staff and IT that were directly involved in this event**

# Appendix I – Canadian Red Cross Donor Update New Brunswick Ice Storm



DONOR UPDATE

## **New Brunswick Ice Storm**

# Your support was critical during the New Brunswick Ice Storm Response



**IN LATE JANUARY 2017**, a massive ice storm in New Brunswick brought down hundreds of utility poles, leaving more than 133,000 homes and businesses without electricity or heat, in some cases for up to two weeks.

Hundreds of people sought warmth at shelters or reception centres managed or supported by the Canadian Red Cross, which also worked with many other organizations to provide hot meals and other aid.

"When I arrived on February 2nd, in the hardest hit area – the Acadian Peninsula – some 3,500 still were without power," said long-time Red Cross disaster volunteer Guy LePage.

Working with the New Brunswick government and municipalities, the Red Cross registered almost 8,400 impacted residents and provided emergency financial assistance to almost 2,250 households.

Thanks to generous donors like you, the Red Cross helped hundreds cope with expenses such as replacing spoiled food, repairing damage to homes and other extraordinary costs. We also assisted local food banks whose resources were quickly depleted.

## RED CROSS RESPONSE TO DATE

|  |  |   |   |  |
|--|--|---|---|--|
|  <p><b>4</b><br/>Red Cross supported municipal shelters</p> |  <p><b>2,115</b><br/>Hot meals served at shelters</p> |  <p><b>8,764</b><br/>Volunteer hours</p> |  <p><b>8,391</b><br/>People registered requesting help</p> |  <p><b>\$350K</b><br/>Generously donated by Canadians</p> |
|--|--|---|---|--|

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## Red Cross response: Ancel's story

**FOR ANCEL LANGILLE**, the New Brunswick ice storm of 2017 was a larger and more complex event than other winter storms he's seen in Atlantic Canada or dealt with as a Disaster Management Lead.

As he drove toward the Acadian Peninsula, Langille's expectation was to provide support for a short period until electricity was restored. But it soon became clear this wouldn't be the case.

"The further north I went, the ice kept getting thicker, larger numbers of trees were bent over and in some areas, almost every power pole was broken. I've never seen anything like it," recalls Langille.

He spent the next nine days working out of shelters for people whose homes amid sub-zero temperatures had no electricity or heat or in some cases no running water. Shelter clients ranged from young families to seniors and all were offered food, a warm place to sleep and perhaps most importantly, the compassionate support of Red Cross volunteers including Safety and Wellbeing Team members.

Many residents received cash cards from the Red Cross to help with replacing food lost during the power outages.

However, power restoration did not mean the end of the Red Cross response. Even today, volunteers are being recruited to ensure the Red Cross and communities impacted by this event are better prepared.

"We are building a foundation that will allow for a quicker, more local response," says Marc Belliveau, Manager, Disaster Management, for the Canadian Red Cross in New Brunswick.

The generosity of donors like you meant that people affected by the Ice Storm received the help they needed. It also means they will be better prepared the next time disaster strikes.

**Thank you for your compassion and your generosity.**



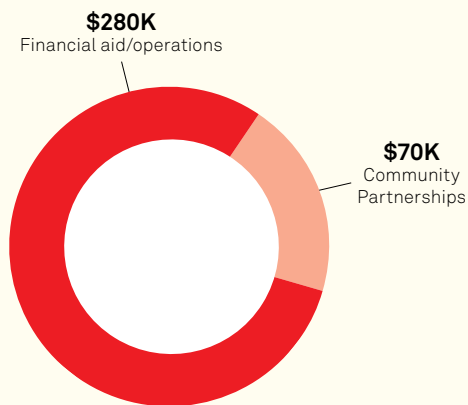
**"The further north I went, the ice just kept getting thicker and thicker. The trees were bent over and the power poles were broken. I've never seen anything like it. This was our Fort Mac."**





### YOUR DONATIONS AT WORK

The Canadian Red Cross would like to thank the generous individuals and businesses that donated just over \$350,000 to assist those heavily impacted by the New Brunswick Ice Storm 2017. Here is how your donations were allocated:



#### Financial aid/Operations

Direct Financial aid to assist individuals and families with extraordinary expenses, replacing lost food and other essentials, repairing storm damage to homes, and related Red Cross activities supporting beneficiaries.

#### Community partnerships

Food banks – Assistance with replenishing food loss in the power outages and to help with increased demand in services as a direct result of the ice storm.

**Fundraising costs:** The fundraising cost related to this emergency appeal will not exceed five percent. These costs can include donation processing fees; credit card and bank fees; service fees for call centres and digital platforms; and, ongoing communications and reporting to donors.