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

AFTER ACTION REVIEW REPORT

30 June 2017

Final After Action Review Report

Presented to:

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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[1] 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

[1] 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.

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.[2] 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;

[2] 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.[3] 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.

[3] 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.

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 the 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**.

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.

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.

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.