AMANB Resiliency Workshops, January-March 2017

in Salisbury, Bathurst, Fredericton, Edmundston, St. George, Miramichi, Saint-Antoine, Tracadie

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Executive Summary

Following up from successful resiliency training and awareness in recent years, the Association of Municipal Administrators of New Brunswick (AMANB) organised a series of resiliency workshops in partnership with the New Brunswick Emergency Measures Organisation (NB EMO) over the winter of 2017.

Facilitated by Eddie Oldfield, the workshops were condensed evenings of information sharing paired with a hands-on mapping exercise to bring local resiliency awareness to the fore. Held in 8 communities around the province and designed for regional collaboration, they drew participants from 17 municipalities, Regional Service Commissions, and a variety of community stakeholders.

Presentations given at the workshops and later distributed to all participants included an overview of the AMANB's training support over the previous three years, links to international efforts such as the Sendai Framework and Paris Agreement, and the current status of climate resiliency action and funding in Canada and in New Brunswick in particular. This introduction to the topic was followed by the New Brunswick Climate Change Secretariat's latest projections on the impact a changing climate is expected to have in this province.

Many sessions also received a presentation by a regional EMO co-ordinator on emergency management planning, with an overview of the new template prepared for the province and being promoted for use to all municipalities. The very first session was fortunate to have a representative from the Canadian Red Cross in the room to talk about the human impact of disasters, a theme which was brought forward by Spatial Quest in the remainder of the sessions.

There was a high level of engagement amongst participants at the workshops and many important points were raised and discussed. The key findings of the combined workshops reveal that there are four hazard areas that are of most concern to participants:

1. Hydrological (e.g. flooding, storm surge, ice jam, erosion)
2. Atmospheric (e.g. blizzard, ice storm, freezing rain, extreme weather)
3. Power and Water Outages
4. Material Spills / Accidents (e.g. along Trans Canada Highway, along rail lines, from local industry)

In addition to the hazards, participants identified vulnerabilities within their respective communities which focussed largely on the ability to respond during an emergency. Designated emergency shelters with heat and back-up power systems that the population knows about, alternate access roads if the main routes are inaccessible, cross-sector communication, particularly if one or more system ceases to function, and how to care for the vulnerable population such as the elderly all came to the fore.

A rapid-fire action planning discussion drew out the following goals, with suggested actions to address each goal:

- Effective communication
- Reduction of vulnerability
- Improved planning
- Improved capacity

Discussion during the workshops revealed that communities do not realise the scope and scale of their responsibilities until a disaster happens. The mapping exercise used during these workshops helped participants become more aware of what is at play during a disaster, how planning can minimise some of the challenges, and what gaps, and what help, exists to improve community resiliency.

The workshops were very well received and participants felt that they were much more aware of climate resiliency in the context of their specific regions afterward. 98% of those who filled out the workshop evaluation form said that the material presented in the workshops will help advance resiliency planning/projects in their community region.

Participant recommendations included expanding the workshop to be a full day event to allow participants to delve more deeply into the topic.

This project could not have happened without the leadership of the AMANB's Education Committee, the support of the New Brunswick Emergency Measures Organisation, the New Brunswick Climate Change Secretariat, the Canadian Red Cross, and the financial support of the New Brunswick Environmental Trust Fund.

Key Findings

Four hazard areas that are of most concern to participants:

1. Hydrological (e.g. flooding, storm surge, ice jam, erosion)
2. Atmospheric (e.g. blizzard, ice storm, freezing rain, extreme weather)
3. Power and Water Outages
4. Material Spills / Accidents (e.g. along Trans Canada Highway, along rail lines, from local industry)

Four goals emerged from the action planning rounds held at each workshop.

- Effective communication
- Reduction of vulnerability
- Improved planning
- Improved capacity

Overall, communities do not realise the scope and scale of their responsibilities until a disaster happens.

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Introduction

Located along coastal shorelines and river floodplains, a major portion of New Brunswick communities are at risk to rising sea levels, flooding, and climate change. The Association of Municipal Administrators of New Brunswick (AMANB), recognising that many member municipalities were facing climate threats, set resiliency training as a priority for its membership in 2014.

The approach taken from 2014-2016 involved the dual goal of training to get municipalities thinking and talking about the subject, and an exploratory process to better understand the level of readiness to react and adapt to a changing climate. To deliver the training, the AMANB partnered with Spatial Quest, a Fredericton-based company focussed on building healthier, more resilient, and smarter energy communities.

The training began with a multi-stakeholder workshop in the fall of 2014, followed by 18 webinars. In tandem with the training, AMANB assessed the level of resiliency awareness amongst its membership via a phone survey and in-depth interviews. Two clear areas of need emerged through this process: understanding the risk (having access to data), and investing in risk reduction / climate adaptation.

Based on the results of the 2014-2016 resiliency training effort, AMANB partnered with New Brunswick EMO co-ordinators to bring a more hands-on approach to understanding the risk. A series of regional workshops was designed to provide a condensed forum for dissemination of the latest climate resiliency information, paired with a mapping exercise to put local knowledge and climate awareness to work for risk reduction and climate adaptation action.

The remainder of this paper documents the details of this process, and the results of the project.

Presentations

Eddie Oldfield, Project Coordinator, AMANB
Member, Resilient Communities Working Group

At the start of each workshop, Mr. Oldfield gave an overview of the Sendai Framework for Disaster Risk Reduction (see http://www.unisdr.org/we/coordinate/sendai-framework), and noted that AMANB's resiliency efforts align well with addressing Sendai Priorities. He went through the Rural Disaster Resiliency Portal and the UN ISDR 10 Essentials for Disaster Risk Reduction - and gave a brief overview of where NB municipalities are for each Essential. Results of the 10 Essentials exercise conducted in 2014 demonstrated common areas for improvement among municipalities. He also shared what Sendai priorities these results refer to. It was noted that it would be good to periodically run the exercise using the 10 Essentials (every 2 or 3 years) for monitoring progress. Mr. Oldfield shared results of a telephone survey, outlined additional resources, and provided information on FCM Green Municipal Fund for climate risk assessment and adaptation. He noted that by 2020, NB will

phase in a requirement for communities to have an adaptation plan, including communities that are not municipalities but in high risk areas. DELG is working on rules that tie infrastructure funding to the existence of climate considerations in their plans. He explained why AMANB is doing this work, where members see the issues and want training. A final suggestion was made that participants look at resiliency outside of just emergency events for tonight's session, as well as to prepare for the next event.

Mr. Oldfield brought in the role that municipalities play in greenhouse gas emissions, where ~56% of GHG emissions in Atlantic Canada are due to municipalities. He also discussed the PCP program (Partners for Climate Protection) and status of the program in the province, and how champions can come from outside of municipalities, such as Bathurst Sustainable Development, but you still need municipal involvement for it to work. Municipalities, are increasingly interested to address climate adaptation and resiliency, as well as GHG emissions reduction.

Rob Capozi / Jeff Hoyt, NB Climate Change Secretariat

The presentation prepared by the NB Climate Change Secretariat described several challenges associated with climate change, the context and actions being taken by the province. Sea level rise is estimated to increase up to 1m (Daigle, 2012) by 2100. Sea level rise may also affect inland areas more than one might think, and the province is currently modelling potential impacts. Coastal adaptation tools and assessments have been developed and are becoming more available to help with community planning and emergency response planning. A key point of the presentation was considerations for where municipalities place infrastructure. There are tools to help inform where infrastructure should be placed based on expected climate changes.

The presentation highlighted ETF and the work that it does on the assessment side, and that a lot of the information developed in the past is available. The most recent scientific projections from OURANOS in Quebec, which the province is working with, were shared with participants. Climate in NB is going to be wetter, warmer, and stormier. Increased rain projections will mean more freezing rain for some regions. The trend is increasing heat and precipitation, but there is fluctuation around that trend so participants were warned to not expect NB to turn into Florida. This poses risks to health for example, and potential opportunities, particularly for agriculture. It was shared that even in the past 20 years, the province is seeing more warm climate species such as corn being grown along the Saint John River. We either move, or adapt. If we adapt, future costs could be less. Companies who depend on natural resources such as trees are already thinking of how to adapt, and there will be conditions that will force municipalities to address/adapt changing climate.

It was also shared that LIDAR will be done for the whole province over the next few years and that information will be provided to municipalities for their planning purposes. GeoNB erosion maps are currently available and participants were encouraged to look at those maps before making any land use decisions The province has started promoting coastal policies, but with climate change work there will be more opportunities for public education.

Municipalities were encouraged to contact Dr. Paul Arp at the University of New Brunswick as he has good modelling for water level projections, and that there is funding available to help with studies. Although many people don't want to move, some people are forced to accept that coastal erosion eventually creeps up on their property; it's important to share and promote the idea of keeping infrastructure away from water.

The province will require climate adaptation plans, but they will help with information and shared funding to develop the plans. The high risk communities and cities must have plans in place by 2020. Coastal communities are considered high risk. Regional Service Commissions will be responsible for Local Service Districts. Nova Scotia did something similar for Gas Tax. . Participants were encouraged to work through the provincial adaptation guides to help raise their awareness and prepare for their adaptation planning and working with their consultants in an informed way. There is funding to help with the adaptation plans, up to 50% of the costs.

In addition, through the National Disaster Mitigation Program, federal funding for flood mitigation may be tied to having an assessment done. Repairs are around 4x more expensive than prevention. We need to change the way we think about infrastructureIt was also shared that for the infrastructure vulnerability portion, Engineers Canada have developed a tool (PIEVC Protocol) that can be used and there are consultants in NB that can help with the process.

There was good awareness in the room that the 1 in 100 year flood concept could happen tomorrow. The language is changing toward 'extreme weather event'

The NB Climate Change Secretariat stressed that is not regulatory. They are facilitating, trying to get the right information at hand to help people make the right decisions.

Marc Belliveau, Red Cross

(presented in Salisbury; Information shared with all workshops' participants)

We tend to think about infrastructure and forget to think about the needs of the people. Marc Belliveau presented on how his focus is on the people in a disaster context. He offered to come in to communities and work directly with them on their resiliency planning. "Good communities will call for help. Great communities will call to say 'we got this'". There is a need to focus how the different partners can / do communicate with each other.

During the presentation there was a quick discussion / brainstorm on an *ice storm* scenario. What would they (municipalities) do? Plan and evaluate and work through the scenario. Bring in external stakeholders for the planning process. If the municipality has a contact list, fan out messages/communication through that system. Each municipality has an emergency reception centre that is identified. Enact EMO plan, consider regional EMO plan/lateral alliances. When reception centres are updated/re-built, back-up power should be built in. Red Cross will do inspection and write up of potential reception centres to assess suitability and what would need to be done to upgrade. Exercise the plan and make sure people in roles of responsibility are comfortable with those roles.

Participants were encouraged to download the "Be Ready" mobile app. Redcross.ca/ready getprepared.ca

Mike Leblanc, Regional Emergency Management Coordinator

Region 6 (Kent) & 7 (South East/Sud-est) – (REMCs in each region were invited)

Mr. Leblanc made a link from higher level policies down to the on the ground situation. He promoted the EMO plan template, which is user friendly for municipalities and regions to use. It provides a common playbook (green, yellow, red) of who to involve. Ideally a 4 year planning cycle, offset from municipal elections to give each council a chance to learn, test (table top) and revise plan during their mandate. Participants were encouraged to migrate current plans to new template as they come up for review to standardise and reduce confusion during regional responses, as everyone is used to seeing the information in the same format. There is increased adoption of the Incident Command System, and that communication is critical before an event as well as when an event happens. During an event, municipalities were encouraged to call and let REMC know how they are doing. LSDs must contact their Local Service Manager.

Participants were walked through how to use the template using an ice storm as an example, and then showed St. George's plan that was developed using the template. A few sections of the template include the Municipal Activation Timeline showing how it can be beneficial to know what to focus on at different stages of an emergency.

To develop, update or review a plan, a municipality may contact the REMC for guidance in using the provincial framework. A municipality may consult the REMC, look at what was done in other communities, and utilise additional tools e.g. the Rural Disaster Resiliency Portal which provides recommendations to improve resiliency to different types of hazards.

Mayors were reminded to follow the steps in the plan, and of their authority to declare an emergency within the boundaries of their municipalities, and to take that responsibility very seriously. LSDs fall under the province. Declaring a state of emergency can be useful to pass new laws, but it doesn't bring access to more money, and it increases the level of panic amongst the population. There may be a review on how states of emergencies are used in this province in the future due to what happened in the recent ice storm.

Aan example of a low cost exercise to practice the plan resonated well with participants. Set a date. Do door to door communication of what was coming and when and what to expect. On the day of exercise, people who wanted to participate did, they were to register at the designated evacuation centre, asked a few questions (would you have another place to go in a real situation, elderly people you know about, pets?), thanked, and given hot dogs and balloons. This simple exercise can be very effective at setting the pattern for what citizens do, and for raising awareness.

Discussion Highlights

General discussion followed the presentations. Questions/comments centered on the climate change projections and potential impacts, the adoption of the EMO framework, and adaptation planning.

It was noted that among municipalities there are different leads / responsible persons for EMO, resiliency planning and taking action on climate change (e.g. Administrators or Councils; Regional Service Commissions; the Province). Participants also indicated that EMO planning is mandated to region, in addition to each municipality having their own plan, and that RSCs can provide support if municipalities push for it. They are not a level of governance but can support their member municipalities in completing their plans. In some regions, the RSC is helping to standardise the plans amongst their member communities. For each municipality, there is no standard for who leads the EMO team/plan. The RSC can recommend, but it's up to each municipality to build their own plan. Some RSCs review the plan every year. The Mayors can mandate the RSCs – e.g. a suggestion came up for RSCs to provide coordination and support to municipalities and LSDs.

Resiliency is more than just the EMO plan, but having an effective plan is an important part of resiliency. Discussed various real events and how response went and whether issues were addressed. Discussion around EMO plans/generators/quick fixes during a winter emergency emerged. Concern emerged about ensuring citizens of LSDs are also taken care of. Who is responsible and when do those in charge start worrying about LSDs and how do they go about it.

Point raised about the need to share lessons from past disasters / to help the Province prepare for future extreme weather events. Right now, the only cross-sector sharing for resiliency that we are aware of are these AMANB sessions. It was noted there used to be a roundtable on emergency management. May be time to revive it after the current storm, as there will be interest for the next 6-8 months.

The amount of information required to run a newly formed municipality is sometimes overwhelming. While the province does a good job helping a newly incorporated municipality understand how to run meetings, set up by-laws, etc., there is not much on the magnitude of their responsibilities such as taking care of their citizens in an emergency, or planning for resiliency. It's difficult for small municipalities to prepare the plans, however funding from NB ETF can help, and there is a pool of NGOs and consultants who can help. In addition, AMANB shared it was holding an asset management session where FCM talked about asset management and their new climate change programs. AMA will take that information and see where we can go to help our municipalities move forward.

Dept. of Health is hoping communities will get more involved in helping their citizens be more prepared, e.g. promote 72-hour kit, plan for heat-events / have an alert system, create vulnerable person registries, protect vulnerable populations/reduce risk, and being proactive in planning heating centers and emergency shelters. West Nile came up as a question. Dept. of Health shared that cities seem more vulnerable to that disease than rural areas. Remains to be seen if it will become a problem in Canada due to changing climate.

Information about Fredericton seniors and vulnerable person registry was shared. Mr. Oldfield shared that some communities are setting up their own vulnerable persons registries, and some participants indicated an interest to develop theirs.

Table-Top Exercise Results

Participants gathered around maps of their respective communities and Mr. Oldfield gave overview of exercise. He suggested that the tables see themselves as consultative committees for their communities. The exercise enables participants to apply resiliency planning principles using the maps. Throughout the exercise participants used maps to denote hazards, vulnerabilities, and resiliency measures. 90 Participants, representing 17 municipalities, participated in this exercise.

Participants denote hazards, vulnerabilities, resiliency measures, emergency routes, and community engagement on maps during a table top exercise in Fredericton.

See a snapshot of the maps from the exercise in the Appendix.

In addition to a guide/legend the exercise relies on local knowledge and creativity. The groups were receptive to this style of exercise, there was good discussion around the tables. Participants discussed various real events and how response went and whether issues were addressed. Mr. Oldfield shared information as the exercise went along, such as emergency shelters/warming centres need to be assessed for suitability before they can be used. Discussion went from flood zone to flooding in general that's increasing due to heavy precipitation combined with community design and changes in forestry practices. Some communities are surveying their citizens to learn who's flooding now who may never have flooded before. Standard flood maps don't capture that information.

Mr. Oldfield shared that all of the data used for the maps is available on GeoNB and from the federal govt. Mr. Oldfield's prompting of items to look for helped participants further their mapping.

Hazards: Each community identified and discussed hazards of concern, and ranked them in terms of probability and consequence. To the extent possible, hazards of most concern were then marked on a large map. The **Hazard areas of most concern**, across all workshops, were:

5. Hydrological (e.g. flooding, storm surge, ice jam, erosion)
6. Atmospheric (e.g. blizzard, ice storm, freezing rain, extreme weather)
7. Power and Water Outages
8. Material Spills / Accidents (e.g. along Trans Canada Highway, along rail lines, from local industry)

Municipality	Atmospheric	Hydrological	Forest Fire	Contamination Pollution	Material Spills / rail accidents	Geological Hazards	Power / Water outages	Food Shortages	Geological
Sussex		High	Low	High	High rail	Moderate	Moderate		
Salisbury	High Other: air route / accidents	High		High (industry / fertilizer plant)	High TCH, rail		High		
Petitcodiac	Moderate	High	High	Moderate	High	Moderate	High		
Dalhousie		High (flooding and storm surge)	High				High		
BAthurst		High (flooding, storm surge, erosion)			High TCH, Rail				
Charlo		High (storm surge, erosion)			High		High		
Perth-Andover	High (blizzards, extreme weather)	High	High	Moderate	Moderate		High		
Moncton	High	High		Moderate	High		Moderate		
Hanwell	High		High				High	High	
Fredericton	High heat events	High							
Edmundston	High	Moderate	Moderate	High	High	Moderate	High	Moderate	Moderate
Baker Brook	High	High	High	High	High		High	High	High

				(local mill)					
St. Hilaire	High	High (ice jam, erosion)	High	High			High		Moderate
Shippagan	High	High		High	Moderate	Structural	High	Moderate	High
Tracadie Sheila	High	Moderate	Moderate	Moderate	High		High		
Bas-Caraquet	High		High				High		
St. Isidore	Moderate		High	High	High (plante Shell, Plante d'asphalte		Moderate	Moderate	
Other communities	High Blizzards, ice storm, freezing rain, extreme weather	High	Moderate to High Forest and grass fires		Moderate to High (e.g. fuel storage tank, oil tanks, old industrial waste lagoons	Structural	Moderate		moderate
Total Highs: Small / Rural (of 14)	**9**	**10**	**9**	**6**	**8**		**11**	**1**	**2**
Total Highs: Urban (of 4)	**3**	**3**		**1**	**3**		**1**	**1**	
Total	**12**	**13**	**9**	**7**	**11**		**12**	**2**	**2**

In addition to hazards described above, participants also highlighted the following on the maps:

Vulnerabilities:

To the extent possible, participants identified potential vulnerabilities from the hazards of most concern. These were identified on the map using red stickers and red markers. Vulnerabilities are specific to each community, however some common vulnerabilities emerged. Depending on the hazard, the following vulnerabilities were identified:

- **No Back-Up for Warming Centers:** Many community buildings that were big enough to be used as warming centres had no back-up power. Some communities were not able to use designated emergency shelters or had no designated warming centers. The City of Miramichi noted that during the first day of the recent ice storm, there was no heat in emergency shelters and alternate temporary locations were identified. The designated shelters would be assets if they had generators installed. For emergency shelters, it was noted that even with generators, you need fuel for generators and that supply can be compromised.

- Participants identified **flood risk zones** along river banks, coastal areas, and in-land, with many having recently experienced flood related issues or needing to advance flood risk reduction measures. While some communities are actively reducing flood risk through improved land use planning/development, other communities have emerging flood risk concerns. Several communities identified **undersized culverts** on provincial roads, which if overcome would sever access roads and pose risks to residents/businesses. The same communities indicated that while the issues have been identified to the Province, there was no response / no plan to upgrade the culverts. In one case, the culvert on a provincial highway, if blown, could sever a route that services 10000 people in the South. It was also notes Flood zones identified in GeoNB 2008 model are not accurate in the North West since data was collected after water receeded – participants identified flood risk areas that flooded in 2008 and could flood again. Participants were very interested for updated LIDAR.

- **Buildings:** Municipal buildings, City/Town Halls, a fire hall, police and fire stations, nursing homes, and provincial EMO Operations Center; centre d'opération local; Grocery Stores, daycare, library, schools, touristic buildings/locations, a camp site, a farm and poultry facilities, residential buildings / neighborhoods, various industrial facilities, as well as the location of at least one planned government facility in a flood zone.

- **Infrastructure:** water treatment plants, lagoons, Lift stations, reservoir/water storage tanks, oil/gas/diesel storage tanks, electrical infrastructure, various bridges, the approach/ramp to a bridge, Réseau d`aqueduct et égout, freshwater pipe near Acadia beach (drinking water intake can be submerged and the pressure can break the pipe), a Dam, cellular towers/network, a quai, CN rail, Route 2, Fibre optic. (Edmundston).

- **Neighborhoods:** Participants identified a few downtown centers with both commercial and residential buildings; a few flood-prone neighborhoods (residential) that can be isolated by flooding of access road; and a few vulnerable neighborhoods in vicinity of TCH, rail, or light industry.

- **Elderly population:** Many communities identified seniors as a vulnerable population / identified Seniors' Residences, nursing homes or special care homes.

- **Medical:** Some communities identified health facilities as vulnerable to certain hazards. These included several hospitals, clinics, and a medical centre.

- **Access Roads:** While many communities have primary and secondary access roads, there were concerns over flooding and train derailments which can cut off access/evacuation routes, for emergency services, or for essential supplies to reach a few communities. Several communities had only one access route, also vulnerable to flooding or train derailments. Alternatives in some coastal communities were limited to using local boats. Given these vulnerabilities, concern was also expressed on the time for emergency services / evacuation of senior residents, provision of food/supplies. It was noted a sea level highway/corridor that connects the South East is vulnerable to flooding. In a couple of communities,

concern centered on the closure (planned / un-planned) of bridges, affecting access routes. For example, sustained shutdown on Centennial bridge (in Miramichi) in near future will affect traffic on King George Highway from one bridge to the other, which will cause problems for emergency vehicles, gridlock, access to hospitals, and additional vulnerability of one lane bridge going to Fredericton. Need alternate traffic plan.

- Regional **communications** could be severed in some areas which have few towers. Issues of cross sector non-communication, gaps, were raised.

- Some regions noted we are **overdue for a forest fire**.

- Communities don't realize scope / scale until it (a disaster) happens.

Assets for resilience:

After identifying community facilities (blue dots), some were converted to green dots (assets) and others to red (vulnerable to a hazard), or both. The assets identified by participants included:

- **Mutual agreements** in place

- Some communities have existing **shelters** and some are planning new emergency shelters (using existing buildings). These include schools, churches, arenas, curling ring, fire halls, town halls, community centers, with back-up generators, or industrial buildings as optional emergency shelters and other municipal facilities are also considered assets. It was noted Red Cross offered to provide assistance in assessing any building being considered as an emergency shelter to offer recommendations.

- Some communities have implemented an **alerting system**, e.g. Sentinel system, and municipalities are encouraging people in the community to register to receive notifications.

- Communities who were able to identify / have established both **primary *and* secondary emergency routes/arteries, as well as modes of transport**

- Municipal EOCs which have a map of their communities, plasticised, on the wall in the EOC.

- Municipal buildings, community and recreational centres, hospitals and fire stations, homes with wood heating, and the 72 hour kit, contact trees and local inventories, were also considered assets.

- Restoration efforts are part of ensuring resiliency immediately after an event and for the long term

- In at least one community, prevailing winds taken into account when **planning industrial zones.**

Adaptation/Resiliency improvements:

After identifying hazards of concern and potential vulnerabilities, participants also identified areas where improvements could be made. This includes:

- There was interest among the municipalities to adopt **risk-based land use** / planning principles. The RSC identified an interest in identifying best practices (e.g. risk based land use planning), available tools/resources, and municipal approaches / policy instruments that could help to advance resiliency efforts. Comment that land use planning outside of municipalities needs to be better planned. Sprawl makes response challenging. Unincorporated areas aren't as well regulated in terms of building in risky areas. It was also noted that unincorporated areas aren't as well regulated in terms of building in risky areas. There is a need for more **building inspection** in outlying areas. Using the maps, participants identified areas where development should be discouraged, as well as areas to encourage development and build back better (areas that are not vulnerable to known hazards and are accessible).

- Communities shared an interest in **flood risk reduction**. By-laws should be put in place that regulates things such as if building in a flood plain, no electrical can be installed below the flood level; or, no occupancy on first level (noted this still puts people at risk), of using waivers, of using mobile trailers, planning campgrounds/recreational uses to double as flood attenuation; and to relocate buildings after a flood outside of the flood area if possible. It was also noted how difficult it can be to discourage development in flood prone areas. Several communities are revising flood zone limits within city limits). Developper une voie de contournement (St.Hilaire). Made improvements to water system to keep it functioning during future floods.

- Participants identified **generators** as common need/improvement in communities – e.g. pour la pompe à l'eau, chauffage auxiliare, mobile, transfer switch / propane; Centre de revitaillement au Foyer Elizabeth; Génératrice à haute capacité; Co-procurement of generators; etc.

- Participants denoted possible **infrastructure improvements** (e.g. culverts, roads, bridges, lift stations, water systems, protective structures)

- Participants identified **erosion control for protection of water treatment facilities** from floods, river ice jams, and storm surges;

- Need **buy-in from Council** to support staff with future planning; Need **financial support** to upgrade infrastructure and systems.

- **Culvert upgrades** (on provincial highways, CN rail line);

- Designated **emergency shelters** and back-up power (including generators based on diesel, as well as renewable energy solutions).
- Adapter sous-sol de l'église comme "**back-up" centre des mesures d'urgence** (Baker Brook).
- **Communication** established before events/disaster;
- Work with private care providers (unregulated) which fall under Social Development, to develop and **share emergency plans** and **mutual aid agreements.**
- Nourriture à entreposées;

Emergency Arteries:

All participants were able to draw **primary emergency arteries**. Some but not all participants could draw a **secondary / alternative route** for emergency vehicles, evacuations, etc. In one community, the only routes are away from shore going in-land, across the main rail line. In several communities, it was noted primary emergency arteries can be severed by certain hazards, some neighborhoods could be cut off from flooding of local roads, some smaller communities could not identify a secondary route / alternative routes and would need to rely on local boats as a secondary option. In the City of Miramichi it was noted there is a need for an alternative route on the North side, particularly with one of two bridges connecting the North with the South side (where the hospital is) being shutdown for repairs. Communities identified alternative means of evacuation e.g Acquisition d'un embarquation, d'un bateau si inondation au Village; boats and snowmobiles; Road upgrades should include bike lanes when they are refurbished to help with the mitigation side of the issue – and wider roads could also be helpful for emergency vehicle movement.

Participants agreed it might be a good idea to **exercise evacuation plans** (or muster points). It was noted that not many communities have exercised evacuations in N.B., and we do not have the same culture of safety as residents in Fort McMurray who evacuated with little incident from a devastating forest fire. Comments that signage indicating emergency routes and directions to shelters are not well used around here. Discussion around what could be done for communities like Fredericton that has multiple possible evacuation routes, and different ones may be better depending on the type and location of emergency, vs what should be done in smaller or coastal communities.

Community Engagement: Each community selected a venue to engage their community; many chose a designated emergency shelter for the location.

Action Planning:

These results are captured from a rapid-fire action planning exercise, where participants are asked to mark on a sticky, based on earlier discussion, what they think the key needs are / what are some key goals and possible actions that can be taken. The answers are then read out loud and collected and arranged in categories onto a panel. The result is useful to identify unique and common needs, potential goals, and to synthesize participant's recommendations for actions, all described here:

Goals *(These goals are based on the needs identified by participants**, and are grouped thematically**)*

Four goals emerged from the action planning rounds held at each workshop. There was strong consistency in the responses, which are listed in the first two columns. The actions that were then identified are aligned in the right side column

Goals	***Objectives***	***Actions***
Effective Communication	Regional communication mechanisms in place before, during and after an event (e.g. using provincial framework and ICS) N.B. Municipalities develop communication plans, work to improve literacy internally (e.g. council and staff) and externally (e.g.).	• Use the provincial EMO template to guide communication /response. • Develop provincial-municipal plan for communication so that we are all on same page; • Establish regional communication before, during and after an event; • Someone from public safety giving a presentation to municipalities; • Having multi-stakeholder discussion is valuable (e.g. at this workshop). Good to hear other perspectives.
	Effective Means of Communication (online, offline, and when nothing else works) for both Municipalities and LSDs; Good communication between communities / councils;	• Identify ham radio operators; • Make better use of communication tools; and ICS • Alert systems; Encourage use of Sentinel system to issue alerts. If we can get a 6-12hr advance notice of a problem coming, municipalities can do a lot to protect their people. E.g. for Flooding along tributaries in the North West is needed. • Emergency App (e.g. an App that shows power outages, fire locations, other emergencies); • Key leadership engagement (e.g. Mayor/council); make sure to engage council within a year of an event, for any improvements needed. Improve communication amongst communities, councils;
	Provide easy to access, clear and timely information to the public.	• Community Newsletter / handouts to be kept in visible places; • Page Facebook pour les communautés / municipal officials (EMO, public safety); a Facebook site; Facebook Fridays – push out content on social media e.g. on personal preparedness. Communicate incentives for preparedness activities (e.g. Tax credit for generators, points card).

	Public Education and Higher Awareness/Literacy on Resiliency and Preparedness; Public engaged and informed on / aware of the plan; Resiliency Norms are embedded in NB culture.	• Use municipal website • Public education, improve awareness of resources available / awareness campaigns. Sensibilisation pour la communauté / à la population. • Promote 72hr kit / Checklist for citizens; Promote 72 hr plan e.g. 72 hr planning workshops at Superstore – walk them through what they actually need; launch a campaign to encourage the public to be self-sufficient for 72 hours after an emergency. • Hold community meeting / information workshops on the EMO plan; make presentations on our plan; engage the public / Public education to what the plan is; • Publish a succinct disaster plan - put information on website (e.g. village website) to help residents know risks and what to do, where to go; inform the public what they need to do to be ready; Communicate evacuation routes. Promote where heating/ emergency shelters are located; • Make sure seniors understand what to do, where to go, and have assistance in an emergency; • Identify training opportunities; develop Training, conduct an exercise (mock disaster) /education drill; Need to overcome the 'it will never happen to me' mentality. (instill resiliency norms) • Professional network advocacy; • go door to door. • Teach kids
	Community champions engaged to help their communities advance resiliency efforts;	• Identify and recruit community champions.
	Proper use of 'state of emergency' declaration	• Develop better understanding of what declaring a state of emergency really means / when it should be done; • Exchange lessons learned during Ice Storm 2017, for improved communication, coordination, management
Reduction of Vulnerability	Risk/resilience assessments conducted (risks understood);	• Model disaster risks: identify hazards, identify potential risks and vulnerabilities associated with hazards; • Regional risk analysis; Conduct a vulnerability assessment; Faire une étude sur la resilience; conduct flood risk assessment;

		• Province should go around to do / help with risk assessment and resilience planning, spotlight on known risks
	A significant reduction in vulnerability of people vulnerable to potential hazards/disasters.	• Set up and promote a vulnerable person registry; • Fire department visit homes to find who are the vulnerable people; • Develop a list of people with animals; • Put a System in place to check on seniors (e.g. have a Volunteer list of people to check on seniors; signs in windows identifying seniors, people with handicaps) • Promote 72hr kit
	Municipalities adopt risk-based land use and building practices, reduce flood risk, develop resilient infrastructure, and	• Modify planning act language, introduce planning principles, • Better planning for new construction/zoning, risk based land use decisions for emerging development; • Mitigate development/risk in flood prone areas, relocate buildings after a flood, improve regulations on building in flood risk zones; • Improve building inspection especially in outlying areas / LSDs; • Changer la localization des 2 atous vulnérables; • Living Shorelines to address coastal erosion.
	Basic needs are met / access to emergency shelter, power/heat, fuel, food, water, etc.	• Designate Emergency Shelters; Need a community centre that can serve as a shelter; Need to know and get ready potential emergency shelters; Need to establish warming centres; Establish a warming centre; Ensure pet-friendly emergency shelter space. Ensure potential centres are available and operational. Assurez que les Centres d'accueil sont équipé / Foyers d'urgences pour foyers de soins et personnes vulnérables; Identifier le centre de réchauffement /hébergement official au CCPA avec génératrice; • Organise food distribution/timing of meal preparation during an emergency, consider the volunteers. • Develop a List of community assets.
	Generators purchased for each region; purchased generators sur remorque; Generators are installed for basic infrastructure such as water, EOC, hospitals, municipal hall;	• Modify infrastructure/buildings to accommodate generators, • Purchase and install generators (e.g. for warming centres, pumping stations, EOCs, town halls, hospitals), • Province could do a group procurement of generators; • Ensure access to fuel storage tanks (for generators); • Require new municipal buildings to be ready for generator hook-up, or install renewable energy / alternative energy source
	Key infrastructure (e.g. fuel storage tanks, water tanks/treatment) installed where	• Climate risk assessment in infrastructure; • Reduce vulnerability of critical facilities (e.g. city hall, fire station) in

	needed / protected against future climate impacts;	hazard-prone areas; • Implement specific measures (e.g. structural improvements, erosion control measures) to reduce vulnerability; • Ensure access to water (both for public consumption and for putting out fires); • Ensure access to fuel storage tanks (for generators); • Will need to maintain trimming / clearing vegetation to protect distribution lines.
	Primary and alternate **emergency arteries, escape / evacuation routes established** and modes of transportation for all demographics;	• Set up Muster points; • Plan disaster evacuation routes / diverse escape routes / modes of transportation for all demographics; • Make an access road (for communities with only one way in/out) e.g. Corridor route at Baker Brook. • Look at alternatives for road access to the city in and out, • Develop an alternate traffic route on North side of river (Miramichi); evacuation plans/emergency routes due to Bridge closures. • Conduct soil analysis for re-building route 120, as an alternate access route. • Need boat for responding during floods; • Need to plan on a regional basis
	Alert systems in place e.g. for flooding along tributaries;	• Update contact list in plan, Create fan-out list • Acquire public alert system, e.g. Sentinel systems • Let public know which communication media to use
Improved Planning	Risk/resilience assessments conducted (risks understood);	• Identify tools/experts at municipalities' disposal early in the planning process. E.g. for Climate risk assessment in infrastructure; • Model disaster risks: identify hazards, identify potential risks and vulnerabilities associated with hazards; • Regional risk analysis; Conduct a vulnerability assessment; Faire une étude sur la resilience; conduct flood risk assessment; • Province should go around to do / help with risk assessment and resilience planning, spotlight on known risks
	The emergency plan template (NB EMO) is adopted, communities have all hazard plans (and for each hazard)	• Municipalities adopt the NB EMO template; have a système coordonée de réponse aux désastres; • Develop a plan flexible enough to meet all hazards response; Plan for different types of events. Have a general plan and plan for specific events;

		• Update hazard specific plan to include current weather trends.
	A majority of local and regional emergency plans are revised, updated annually, and exercised with the public and all partners. Plans include evacuation plans.	• Revise Plans / update local EMO plans; Engage REMC to assist with community plan update; Develop plans for EM, resiliency, and adaptation; Mettre les plans d'urgence a jour; Review plans more frequently; Regular/annual meetings to review/update the plan; • Strategic planning with multi-stakeholder input, obtain buy in from Council to support plans/decisions of staff for future planning. Make an emergency plan, including Evacuation plan, integrated with all partners. Consultation with the entire population to develop an emergency plan and raise awareness; • Create strategy for vulnerable populations during and after disaster; • Ask seniors homes, care facilities, long term care units, schools and hospitals, for their ERP to Annex in municipal plan; • Train / Practice the emergency plan, Hold mock exercises, Hold regular disaster exercises. Need to go through the motions, not just talk. Practice helps. Practice the plan with the public
	Regional plans established, measures to improve resiliency and adapt to climate change considered within local and regional plans, used to inform investments.	• Develop Regional EM, resiliency, and climate change adaptation plan(s) / plan d'adaptation regional aux changements climatiques;
	Official roles are identified	• Identify official roles and responsibilities of who should develop plans and what the various roles are. • Mandate an EMO committee
	Municipality uses risk-based land use planning principles	• Integrate resilience principles into municipal plans and bylaws; • Introduce/adopt planning principles (in alignment with new legislation / Community Planning Act currently in 1st reading) • Identifier les lieux stratégiques dans la ville pour répondre aux besoins
	Plans have support of council	• Key leadership engagement (e.g. Mayor/council); for plan / exercises • Make sure to engage council within a year of an event, for any improvements needed. • Improve communication amongst communities, councils; • Convaincre le conseil de débloquer les fonds nécessaires
Improved Capacity	Training is offered to/in all regions in NB, and within municipalities Municipal professionals are trained;	• Identify funds for / government should provide training courses for municipalities to help them prepare their citizens; • Persuade Mayor and Council (et l'administration) to approve funds to prepare, engage and train partners;

		• Training is offered in all regions
	Lateral alliances and partnerships established between communities / e.g. Mutual Aid, Shared Services, Co-Procurement	• Develop Lateral alliances and partnerships with other municipalities. Reach out to neighboring communities; engage not just as a municipality but as a region too; Joint plans with neighbouring municipalities/ regional plans; • Engage professional and grassroots citizens alliances; Planning together for the future;
	Support provided by RSC for municipalities and LSDs	• Regional support for plans; facilitate on a regional basis buy in des municipalités; CSR can take the leadership; regional co-ordination and communication to address the needs and move resources to where they are needed most at any point in time, before, during and after disasters.
	Volunteers are supported (e.g. food for search and rescue; and for their health and safety);	• Develop a plan to support volunteers; • Organise food distribution/timing of meal preparation during an emergency, consider the volunteers.
	Have a budget/funding in place to support resiliency efforts, and reserve funding for emergencies Débloquement de fonds nécessaires pour l'équipement et d'autres mesures de résilience; Funding is secured for alternate/ancillary generation;	• Request funding (e.g. ETF, GMF) for plans; • Need permanent funding for resiliency measures; • Acheter en gang – liste des équipements pertinent qui peuvent aider selon l'urgence; Have consultation regarding shared services and group purchasing; • Provide proper funding for emergency planning and related costs associated to emergencies i.e. equipment; Achat d'un système de communication efficace pour la ville, identifier des fonds pour faire l'achat. identify sources of funding for necessary equipment; Identify funds for making improvements, • Identify funds for purchasing supplies such as generators, and for off-the grid energy sources (renewables like wind, solar, biomass); Invest in renewables that could be resilient through a storm. Plan and budget for backup power, and to make infrastructure more resilient.
	Initiatives are funded / councils approve funds to make resiliency improvements (or the province does).	• Organiser le conseil municipal pour fournir des fonds, pour une compagnie de génie (consultations) • Persuade Mayor and Council (et l'administration) to approve funds • Develop strategies to ensure capacity for providing essential needs: food, water, shelter, energy, etc., and for reducing risk.

Conclusion

Overall, the workshops were very well received and participants felt that they were much more aware of climate resiliency in the context of their specific regions afterward. 98% of those who filled out the workshop evaluation form said that the material presented in the workshops will help advance resiliency planning/projects in their community region.

An interesting and unplanned aspect of the 2017 workshops is that almost all were directly affected, or threatened, by severe winter weather with the Miramichi workshop needing to be re-scheduled due to a major ice storm. The experience of recently living through an extreme ice storm also helped the resiliency message resonate with participants, and generated desire for action on the topic.

Communities do not realise the scope and scale of their responsibilities until a disaster happens. The mapping exercise used during these workshops helped participants become more aware of what is at play during a disaster, how planning can minimise some of the challenges, and what gaps, and what help, exists to improve community resiliency.

We would like to thank all the speakers and participants. Many comments from participants indicated that there was not enough time to absorb all of the information from the presentations and to take full advantage of the mapping exercise. Recommendations included expanding the workshop to be a full day event to allow participants to delve more deeply into the topic.

This project could not have happened without the leadership of the AMANB's Education Committee, the support of the New Brunswick Emergency Measures Organisation, the New Brunswick Climate Change Secretariat, the Canadian Red Cross, and the financial support of the New Brunswick Environmental Trust Fund.

Appendix 1 - Summary Feedback / Evaluation Forms

What they liked best: Many participants indicated the best parts of the workshop were the table top map exercise, the dynamic group discussion, as well as the speakers who were very knowledgeable and presented great information (e.g. on climate change adaptation, on the provincial EMO framework, and related resiliency tools and resources). Participants enjoyed the table-top and plenary discussions, hands-on learning, being engaged, action planning, and working together / collaborating with municipal and emergency management professionals from various communities. It was noted that a small group = better exchange of information between communities.

What they liked least: Several participants indicated there was too little time, and would like a whole day to cover the information, participate in the exercise, communicate exercise results and plan actions at the end. Other comments included: noise level (but good discussions!), the refreshments though not bad; nothing, it was great! Nil. Time of day. Poor turnout. un peu trop loin, manque d'un carte spécifique (pour une ville); Je n'avais pas de plume.

Biggest insights that emerged from the workshops:

- Participants identified communication as a critical need with room for improvement. They noted a lack of awareness and how important it is to inform residents and seniors/disabled.
- There are different ways of evaluating hazards. More risks and vulnerabilities than just floods.
- There is community willingness to adapt. Communities are engaged and want to plan and act.
- Planning is key. Municipalities need to not only have a plan, but to make it known. It was noted that municipalities should update and exercise the plan, at least once every 3 to 4 years.
- Resources are available. Benefits from working together/collaboration and co-procurement.
- L'Urgence de planifier et de prévoir des actions concrètes
- New Information
- Importance of plans, need to identify possible dangers
- Need to develop a Regional Plan
- The effects of climate change on municipalities / coastline
- Réalisation que le changement du climat est une priorité
- Importance of communication, getting information to residents. Communities require more education on the importance / what is involved in emergency preparedness.
- Plans are needed
- Common challenges faced by all
- The clustering of community assets(?)
- Funding is available
- Material provided can be used as a guide
- Travail d'équipe
- Nécessité d'élaborer des plans d'action
- Plan au resilience peut(?) être prèt lors d'une crise
- Grand Besoin de bien planifier +1
- Not ready for all things that were brought to light
- Des bonne idée des personnes
- Beaucoup d'ouvrages à faire
- Très bonnes idées

- La preparation – les outils à développer pour transformer nos faiblesses ens « objectifs »
- Prendre connaissance des problèmes future
- De toujours de garder à date
- Besoin de Plans de secours
- Problème de génératrice
- Similar issues in many communities
- The need for resiliency in a regional plan / proposals
- The need for continued workshops of this nature
- Good discussion on what hazards to identify and the probability of high, moderate, low
- Number of risks in our community
- Need for action and be prepared
- Disaster Planning
- The city is looking at planning and to get plans more operative
- More money needed
- Need financial support
- Ou se situer ou bâtir pour le future.
- Comment songer a ou créer une route d'évacuation a l'extérieure de la communauté
- A quel point nous avons du travail à faire
- Échanger d'idées avec autre municipalités
- Éducation de la population / Need more public education
- Communication, + informer, planification
- Importance d'un plan, d'être préparé
- Le besoin d'être organisé
- Communication très importante
- Plans régionales
- Simplicité
- Ecouter les idées des autres était inspirant
- Collaboration régionale – planification et implémentation du plan
- Zone a risque
- Travailler conjointement avec les autres
- L'urgence de se préparer avec nos routes d'accès qui sont vulnérables (route 113).
- L'identification des forces de notre ville
- Lieux communautaires
- Plan d'urgences
- Besoin urgent
- Temps est critique
- Que l'on a des défis pour l'avenir
- Communication, meilleurs partages d'infos et matériels
- Préparation pour potentiel de catastrophe

Actions that may be taken as a result of attending:

- Educate and engage our residents, community engagement, more information must be relayed to public. better communication with clients,

- Village assessment, vulnerable person registry
- Incorporating more types of resilience in plans and by-laws, Update our EMO plan, revision of our plan, will work some information into our municipal plan. Start and implement the plan.
- Follow-up discussion and implementation.
- Partage d'outils
- Sensibilisation à l'importance de planifier à l'avance
- Use the EMO Plan framework
- Implement recommendations by NB DELG
- Find solutions to local hazards/risks
- Better use of tools
- Update HIRA (hazard-identification and risk assessment) in our organization's response plan
- Staff discussions, plan for the future
- Resiliency Plan
- Push for community progress
- Discussion
- Planification
- Inform our municipality of the importance of being ready
- Plan d'adaptation -discussion avec membres du conseil
- Mettre de la pression sur les conseils municipales pour avoir de priorité
- Pour se procurer des matériaux nécessaire il faudrait avoir le budget
- Mieux préparer et plus critique sur les mesures à adopter
- Lire et participer à plus d'ateliers
- Belle Vision pour le futur
- Developper des formation a la population – p. ex. 72 heure kit
- Incorporate into plans
- Focus on this issue in regional plan process
- Reinforce my concerns about hazard @culvert #9
- Better engagement
- Ensure proper plans are in place
- More discussion with city council re: emergency planning
- Work toward a plan in general / integrate resiliency
- Update emergency plans, plan for resiliency, apply for funding
- Keep involved with MREAC to do what I can to assist
- Take ideas to my smaller community
- Beaucoup d'information. Organiser rencontres d'information
- Participation
- Finir plan d'urgence. Formation sur le plan. Education a la population
- Discuter l'importance avec autres
- Travailler sur notre plan
- Plus de sensibilisation avec la population
- Aller chercher de l'aide
- L'importance de la planification
- Information additionelle dans notre plan d'urgence

- Beaucoup d'information. Organiser rencontres d'information
- Développement du centre de la ville
- Travailler avec une plus grande collaboration
- Prévenir et être prêt aux prochain défis
- Faire du lobbying pour faire avancer notre préparation
- Nous rapporterons tout! Amélioration de communications!
- Travailler pour faire avancer les mesures d'urgences

Will the material help advance resiliency planning / projects in your community region: 98% said yes

Further recommendations / feedback:

- Great Workshop – Would love to see if as a whole day event to cover more material.
- I think you are right on target, great job! Glad I attended.
- Oui. Encouragez les mock exercises dans les municipalités.
- Très intéressant, motivant, et utile, Merci
- Organize a whole day session
- Excellent scéance, très informative
- Très Bien! Merci!
- Well done! Thank-you!
- It was a lot more interesting than I thought it would be.
- Thought it would be higher level, and appreciated that it was brought down to on-the-ground examples. The mapping is a useful exercise. The RSCs should be here.
- Request to hold this type of session as a day time / full day event.
- Will there be continuation of the Provincial Roundtable on EM and Resiliency? It would be of interest to continue sharing lessons learned across the Province.
- Merci
- Non, on vous fait confiance
- Bon conférencier
- M. Capozi très intéressant :)
- Très instructifs
- Ca nous fait réfléchir
- Participation de la Province a mettre sur pied des programmes pour les plus petites municipalités
- Que le gouvernement fournisse plus d'argent
- Split cost for emergency power
- Nice.
- Good session
- Make good planning decisions that may be impacted by climate change.
- Good actions were identified
- Thanks
- Great meeting
- Merci!
- Ca nous fais ouvrir nos pensées du futur : -)

- Excellente soirée!
- Bonne session mais pas assez de temps dans l'exercise. Devrais être faite un après midi et continuez après le lunch.
- Good presentation, professional, just not enough time for table top exercise
- Besoin de sensibilisation publique
- Très bien!
- Présentation très interessants qui devrait être présenté à plus de gens
- Merci!
- Avoir plus de temps
- Plus de temps, trop rapide, aimé plus détail sur les dangers potentiels
- Très bon, aurait aimé plus de temps et plus de conférenciers
- Atelier trop chargé pour le durée de temps qu'on avait

Appendix 2 - Participants:

1. Alain Belanger, Ville d'Edmundston
2. Alex Henderson, SNBSC
3. Alex Oldfield, Fredericton Age Friendly Community Advisory Committee
4. Angèle McCaie, DG, Rogersville
5. Anita Savoie Robichaud, Maire, Shippagan
6. Bert St-Onge, Club Radio Amateur du Madawaska Inc
7. Beverly Best, Councillor, Village of Salisbury
8. Birgitte Mazerolle Arseneau, Shippagan
9. Brent Whelan, NB EMO
10. Bryan Martin, North Ouest Search and Rescue Club Radio Amateur du Madawaska
11. Bruce Parks, NB EMO
12. Cédric Landry, CSRPA
13. Chris Melvin, Hanwell Rural Community
14. Christine Landry, NBEN-RENB
15. Christy Arseneau, Wanigan Consulting
16. Cyrille Simard, Ville d'Edmundston
17. Dan Harrington, SNBSC
18. Danielle Charron, AMANB
19. Danielle Dugas, Maire, St-Louis-de-Kent
20. Darren Row, City of Miramichi
21. Dave Cowan, St-Isidore
22. Deborah Armitage, Councillor, Village of Sussex
23. Denis Poirier, Tracadie
24. Donald DuFour, Ratisseur Search and Rescue
25. Ed Sipprell, Energy Resource Development
26. Francine Caron, Village Baker Brook
27. Gaetan Pelletier, Village de Clair
28. Gary Cyr, Ville d'Edmundston
29. Gilles Belleau, Shediac
30. Gilles Lee, Force Policière Edmundston
31. Gilles Legacy, Town of Dalhousie
32. Harold Power, St-Isidore
33. Harry Collins, MREAC
34. Henri Battah, Tracadie
35. Jacques Doiron, Ville d'Edmundston
36. Janice LeBlanc, Sécrétaire Adjointe, Saint-Antoine
37. Jay Shanahan, City of Miramichi
38. Jean Pierre Richard, Conseiller
39. Jean-Philippe Brideau, St-Isidore
40. Jeff Hoyt, NB Climate Change Secretariat
41. Jerry Gogan, Mayor, Village of Petitcodiac
42. Jimmy Thibodeau, Tracadie
43. Joey Power, Village d'Atholville
44. Johanne McIntyre Levesque + 1, Village de Charlo
45. J-Philippe Oudin, Ville d'Edmundston
46. Kevin Theriault, Town of St. Andrews
47. Kris Butcher, Town of Sussex
48. Lise Roussel, Ville de St-Léonard
49. Marc Belliveau, Canadian Red Cross
50. Marc Cloutier, Conseiller, Cocagne

51. Marcel Basque, Tracadie
52. Mariane Paquet, Santé Publique N.-B.
53. Marie-Paul Robichaud, DG, Saint-Louis-de-Kent
54. Maurice Boutot, Saint-François
55. Mélanie Aresnault, Maire Suppléante
56. Melanie Frost, Hanwell Rural Community
57. Mike Leblanc, REMC, NB EMO
58. Myriam Léger, St-Isidore
59. Na-Koshie Lamptey, Public Health NB
60. Nelson Cloud, Angotum
61. Oscar Roussel, St-Isidore
62. Pascale Maltais, Village de St. Hilaire
63. Paul Dionne, Ville d'Edmundston
64. Paul Fiander, City of Miramichi
65. Paul Murphy, Village of Norton
66. Phil Robichaud, Southeast Regional Service Commission
67. Pierre-Damien Arel, Ville d'Edmundston
68. Randy Hansen, City of Miramichi
69. Raoul Leger, Conseiller, Saint-Antoine
70. Raymond LeBlanc, Fire Marshall
71. Rémi Hébert, Ville de Shippagan
72. Richard Daigle, Ville d'Edmundston
73. Rick Breau, Environment NB
74. Ricky Gautreau, Maire Saint-Antoine
75. Rino Morneault, Village de St. Hilaire
76. Rob Capozi, NB Climate Change Secretariat
77. Robert Noel, Town of Dalhousie
78. Roger Chiasson, Bas-Caraquet
79. Roger Doiron, Ville de Richibucto
80. Sean Morton, Town of St. George
81. Serge Dupuis, Université de Moncton
82. Shawn McNeil, Village of Salisbury
83. Stacey Kelley, Public Health NB
84. Stephane Boulay, Village de Clair
85. Stephanie Doucet + 1, RSC Chaleur
86. Steve Levesque, North West Ground Search and rescue
87. Suzanne Thériault, St-Isidore
88. Teri McMackin, Councillor, Village of Petitcodiac
89. Terri Parker, Hanwell Rural Community
90. Terry Keating, Mayor, Village of Salisbury
91. Tim Hamer, MREAC
92. Troy McQuinn, Ambulance NB

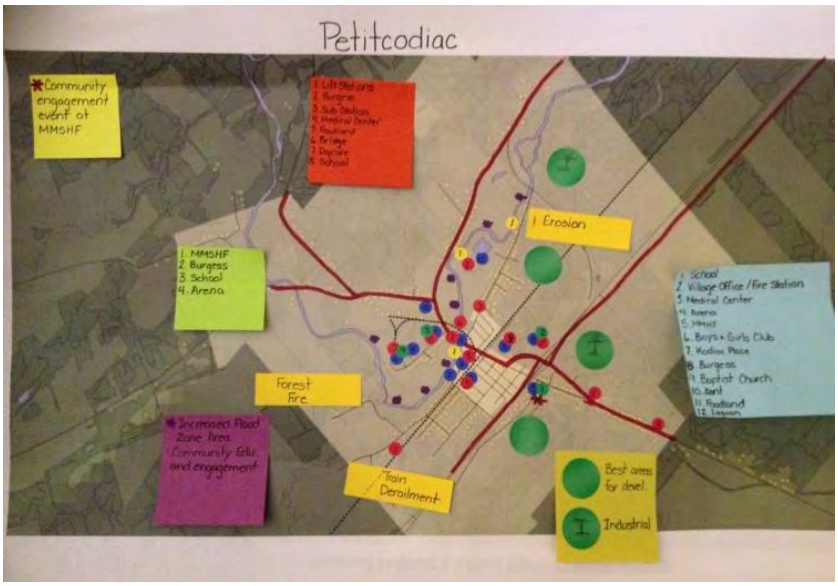
Appendix 3 - Exercise Maps / Cartes de l'exercise sur table

The color code of stickers/stickies is: Blue = community feature; Red = vulnerability; Green = asset that improves resilience or can be used during a disaster; green circle = area to encourage new development; red crosshairs = areas to discourage development; red lines = emergency arteries / evacuation routes; Yellow sticky with red star = location of community event.

Town of Sussex

Village of Salisbury

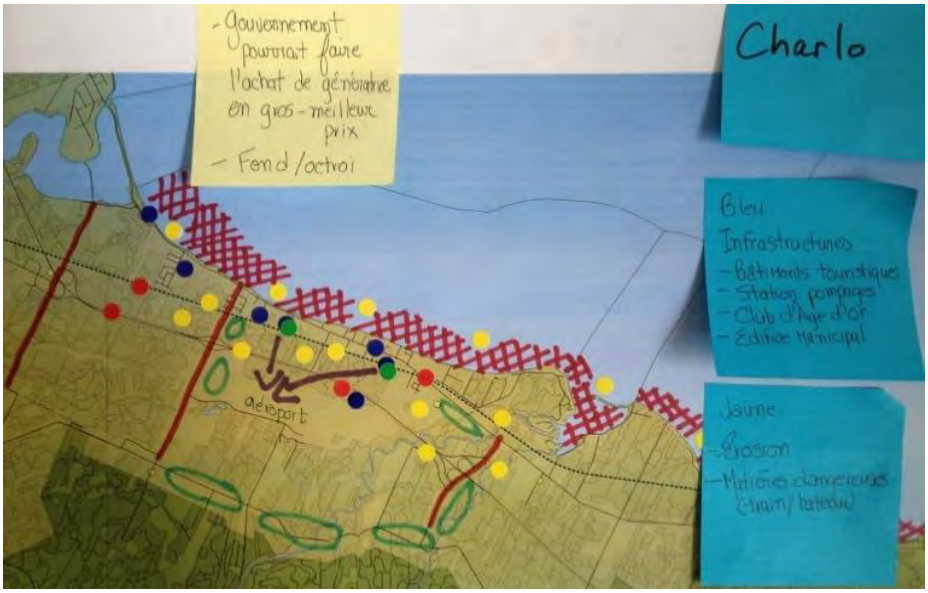
Village of Petitcodiac



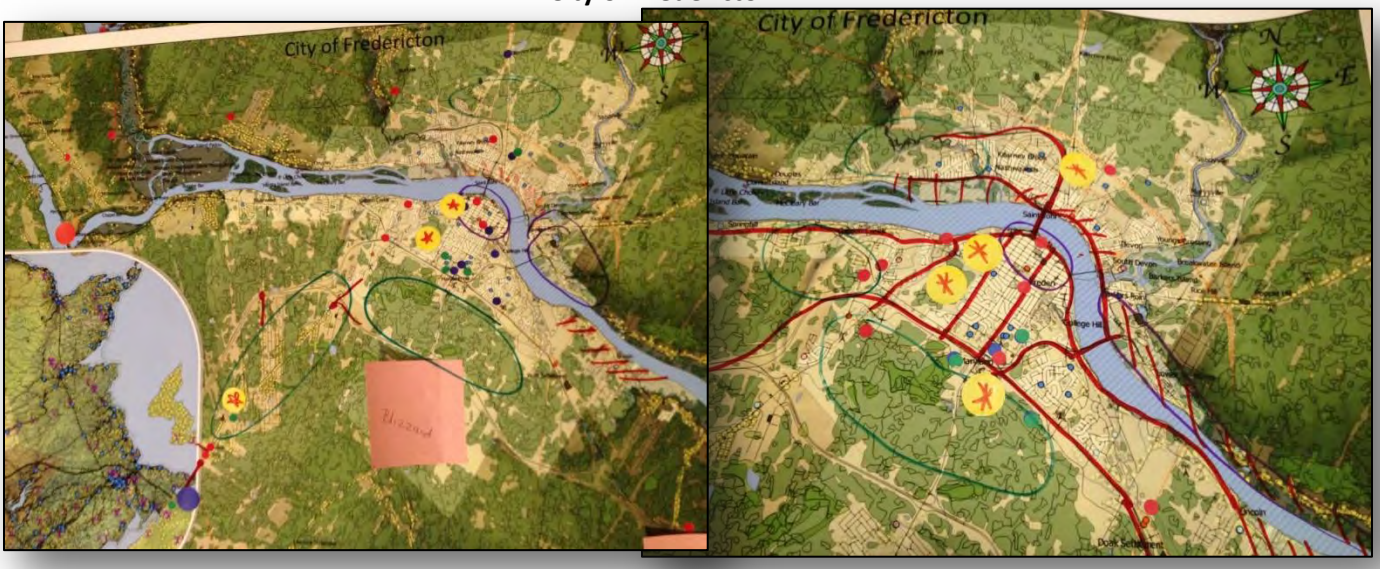
Town of Dalhousie:

City of Bathurst

Village of Charlo

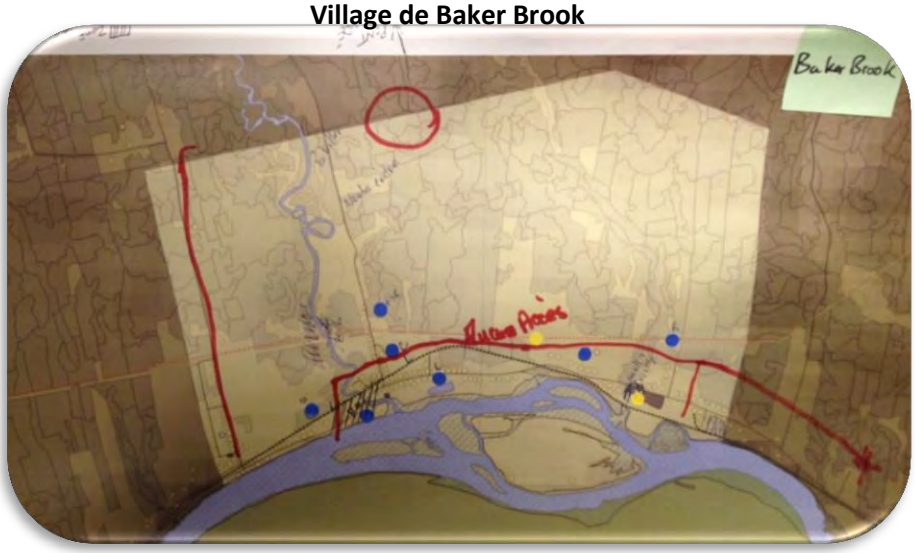


City of Fredericton

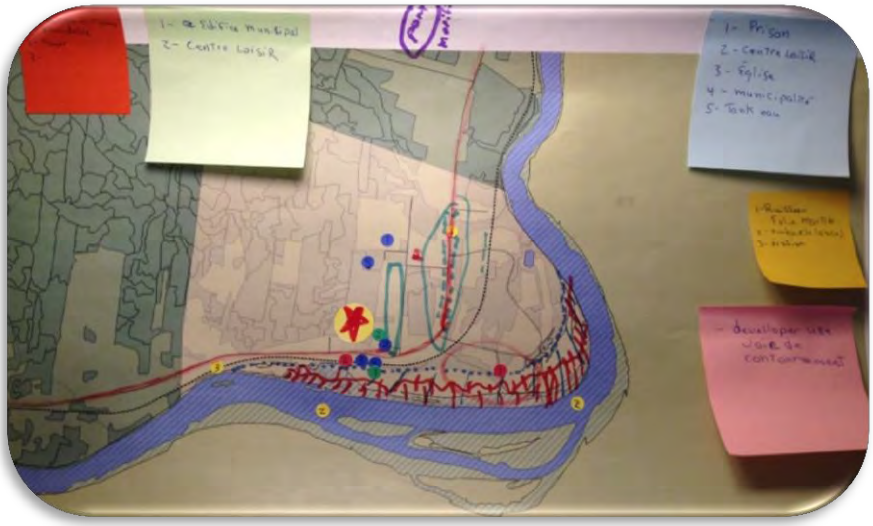


Ville d'Edmundston

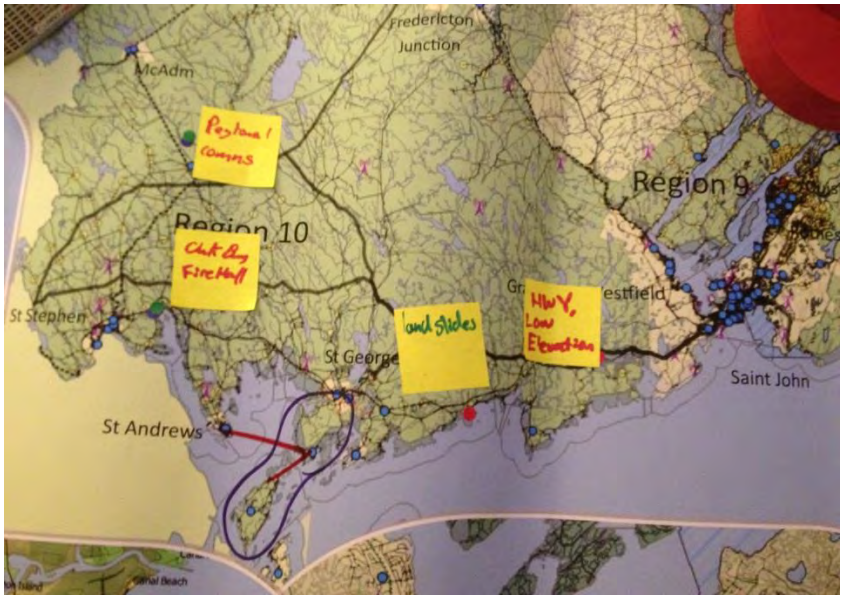
Village de Baker Brook



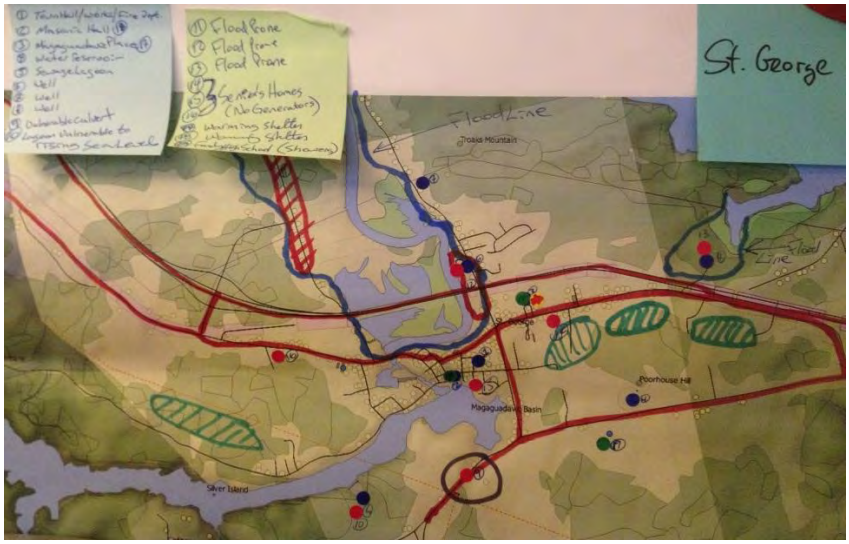
St. Hilaire



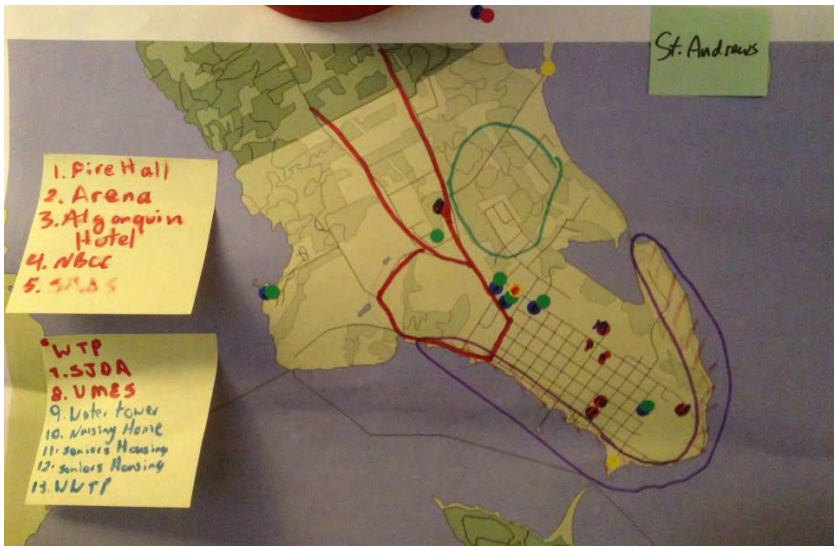
St. George Region



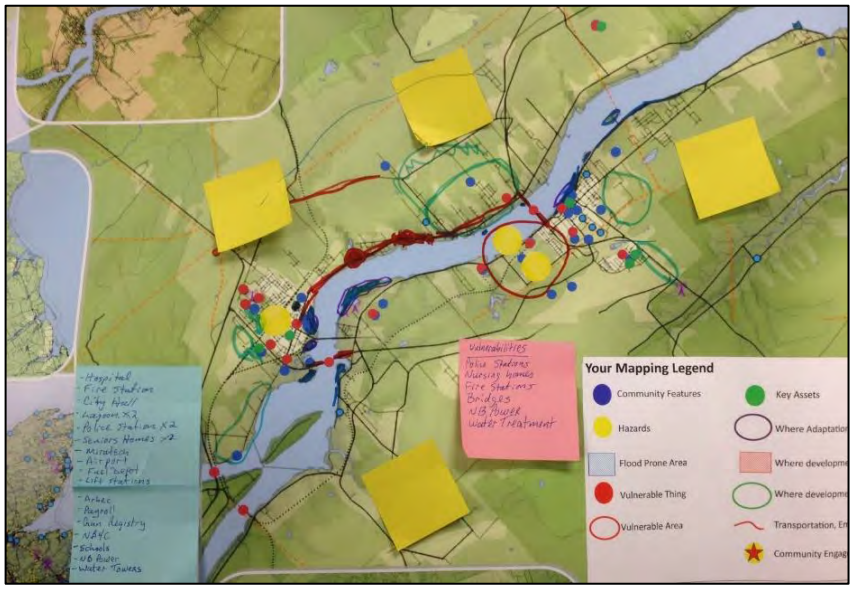
St George



St. Andrews



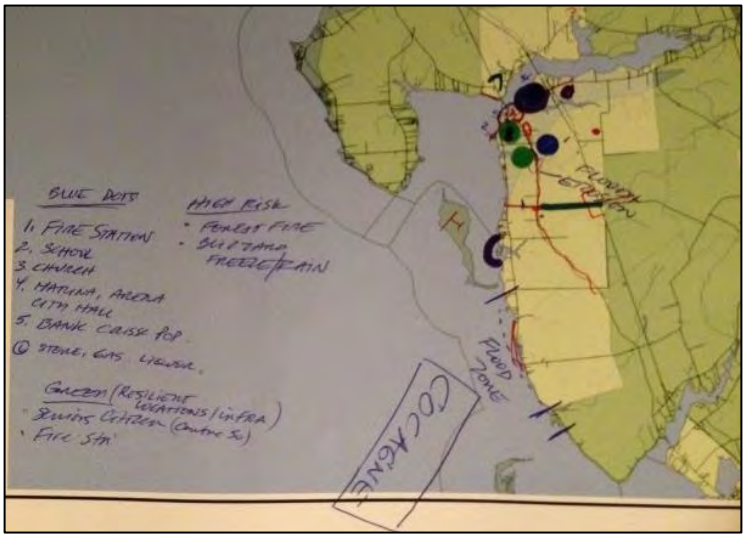
City of Miramichi



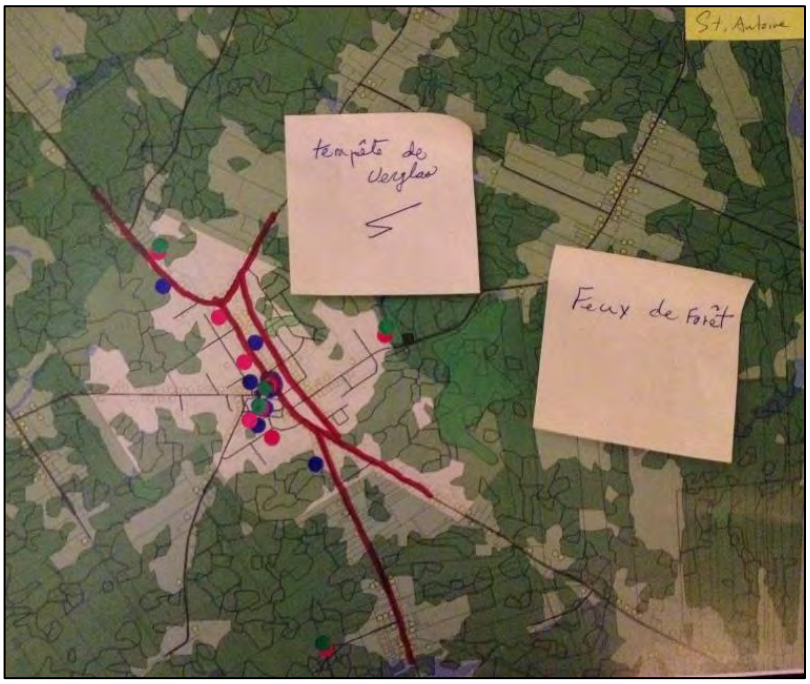
Rogersville

City of Moncton

Cocagne



Saint-Antoine



Saint-Louis-de-Kent

Appendix 4 – Pictures

In Salisbury

On the way to Bathurst : (Ice storm in Miramichi)

In Fredericton:

In Edmundston :

In St. George

In Saint-Antoine

In Tracadie