



Rural Resilience Strategies

Building a Disaster Resilience Plan

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Section 1: Community Resources Strategies
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This document is a companion to the Rural Resilience Index and the Disaster Resilience Planning Guide. It provides some suggested, concrete action strategies for enhancing disaster resilience. These strategies are based on research on best practices in disaster management and resilience. This is not meant to be an exhaustive list but should provide some ideas about how to move forward with your disaster resilience plan by focusing on actions to address the specific areas you identified as priorities for your community in the community resilience assessment process using the RRI.

As with the RRI, the strategies in this document are gathered into two major categories of resilience: Community Resources and Disaster Management. In both of these categories, strategies are further organized to relate to the specific domains of resilience outlined in the RRI. For example, one of the domains of resilience in the RRI category “Community Resources,” is defined by the statement *Our community is close knit and involved*. If that is an area of resilience you have determined needs some improvement in your community, you would review the strategies listed under *Close Knit and Involved* in this document.

As you will already know from reading the Disaster Resilience Planning Guide and from using the RRI, disaster resilience is related to a complex web of community characteristics, resources, and processes. No one solution fits all communities. So, as you review these strategies, consider how you might shape them to suit what you know about your community, the people who live there, and the things that have helped or been successful in the past. You may also consider how several strategies could be combined to improve resilience in several domains simultaneously. For example, if you have decided the community could benefit from a stronger sense of belonging and mutual support (*Close Knit and Involved*), could build greater self-sufficiency (*Self Sufficient and Resourceful*), and that you want to improve residents’ preparedness (*Disaster Preparedness*), you could design a community mapping project that addresses all three of these domains: post a large map of the community and surrounding region and invite residents to contribute photos and stories that describe a previous crisis, emergency, or disaster – where and



when it happened, how they or the larger community coped, what resources helped. The collective photo-story map brings people together toward a common goal, sparks conversations and shared stories, highlights local hazards and residents' individual and shared strengths and capacity creating a visual map of the community's history of resilience.

When considering which strategies to add to your Disaster Resilience Plan, remember to consider both immediate, easy to initiate strategies and those that may require longer-term planning and commitment of resources.

Section 1: Community Resources Strategies

Our community is close knit and involved

- Use collaborative, whole-of-community resource mapping to identify capacity, needs, strengths and deficits within and across different groups in the community.
- Design and initiate community events that bring together a wide range of the community (across ages, cultural and ethnic differences). Such events can increase a sense of connection and belonging and foster a stronger sense of community while enhancing disaster preparedness awareness (e.g., information event that outlines disaster planning, response, and recovery roles and resources).
- Community projects that bring together residents to accomplish shared goals can build a sense of community. Consider organizing events or other ways of identifying a project and initiating activities to accomplish this shared goal (e.g., building a playground; undertaking a community clean up to reduce fire hazards; creating a community garden).
- Community story projects can bring together young people and elders to build a historical record of the community through stories and photos. These stories can be about the community's general history or focused on previous disasters/emergencies to provide lessons learned that can guide future planning (see http://www.orton.org/blog/participation_by_design for ideas).
- The greater the variety of spaces that exist in a community the more likely the various interests, passions and skills of all residents will be addressed resulting in greater involvement of youth, seniors and various cultural/ethnic minorities in activities and programs. Identify existing spaces in the community that have fallen out of use and consider revitalizing them for new activities (i.e. an idle basement at the local Rotary Club could be used as an alcohol free music venue for teenagers. Sharing existing space can maximize their use and create more opportunities for a wider range of community members and events. For example, in Memphis, Tennessee, a Church agreed to share building space with a local Mosque in order to create a place for Muslims in the community to worship.
- Green space has been shown to enhance the quality of life in communities. Work with residents, local businesses, and community organizations (e.g., Chamber of Commerce) to identify unused or under-used spaces that might be transformed into green space.
- Consider starting an online community information site, which includes news, community service activities, citizen engagement, and leadership opportunities. If you opt to adopt a skills sharing network or free cycle program (see strategies adopted under ADAPTABILITY) this might be a good place to start by posting related lists and information.

Our community is self-sufficient and resourceful

Food Security

- Education programs are a fundamental starting point for increasing awareness of food security issues. Initiate an outreach program focusing on where your community gets its food and how to support regional food systems (e.g. agriculture). This could include educating residents about nutritious and abundant wild-food sources such as “Miner’s Lettuce” *Claytonia perfoliata* and fiddleheads (from ferns *Matteuccia struthiopteris*) or meat procured from local hunting and fishing. This might be another way of including elders and seniors and drawing on their knowledge.
- To enhance food security, it is important to ensure as much food as possible comes from local or regional sources. Conduct a community food assessment. For example, do a lot of people have frozen meat or fish in their freezers? Do a lot of people have gardens that produce food? Are food producing farms nearby? How about caches of canned food set aside for disaster?

- Consider creating buying clubs, to purchase in bulk and save money, or developing community gardens, greenhouses, and/or kitchens that prepare low cost or pot-luck healthy meals. This could be paired with a food bank or a faith-based community initiative.
- Create support for community agriculture programs, farmers markets, pocket markets (smaller versions of farmers markets), which decrease dependence on imported food.
- Initiate a community campaign to replace front lawns and empty lots with vegetable gardens, or that promotes adopting a seasonal diet or traditionally local diet based on immediately available resources.
- Neighborhood networks can provide a place to share ideas, save seeds, cooperatively cook, initiate community gardens, conduct communal canning, and in general support the cause of local food security.
- Encourage individual or collective community gardens where excess produce can be donated to local food bank or used to create food hampers for those in need.
- Farmers markets have been noted by many studies as a low-cost way to create a public space for residents to enjoy with friends, neighbors and newcomers - with the added benefit of supporting local farming and food sustainability.

Energy Security

- Enrolling in the Community Energy Systems Program, run by the Office of Energy Research and Development, can help the community meet their energy needs more efficiently and cost-effectively by identifying and developing waste heat recovery, thermal storage, and local sources of renewable energy. These can be used as alternate power and/or heat supplies.
- At the same time, consider a community campaign to assess and ensure each residence and key community building has an emergency energy back-up option (e.g. generators, wood burning stoves, community spaces that have those back-ups for residents who do not).
- Consider running an outdoor education program in your community that addresses survival skills. If your community lacks funding, think of ways to integrate survival skills and outdoor education into existing programs i.e. through your local Church, Synagogue or Mosque, Youth Tribal Council, community centre, etc.

Volunteerism

- Engaging new volunteers with experienced volunteers increases commitment and prepares them to take on more senior roles as required. Plan events that promote interaction between veteran and new volunteers in your community.
- The sustainability of community, faith-based and service organizations is based on a variety of factors such as funding, volunteer retention, in and out migration of residents, and diverse local needs. A 'one-size-fits-all' strategy won't work, so consider the specific issues that impact group sustainability carefully.
- Keeping volunteers 'in-the-loop' during quiet times can help sustain their interest. This can be as simple as including them on email broadcast lists or sharing meeting minutes. Ensure communication with volunteers continues during down times.
- Work style preferences can vary across generations. To ensure potential volunteer groups are not lost these differences need to be addressed. Identify and blend the different work styles that exist in your community. This can include considering ways of participating through on-line opportunities using social media, other web-based options.
- Diversifying (on-line, through the mail, in person) the way volunteer training is done can help increase the capacity to conduct training, resulting in an increase in the size of the volunteer pool.

- Diversity builds strength. Diverse people bring diverse skills, networks and experiences to any organization. Be sure to recruit volunteers from a wide range of backgrounds and seek additional networks if you are accustomed to drawing volunteers from the same ones time and time again.
- Consider adopting incentives for volunteering. Things like volunteer lunches and thank you cards can go a long way in making volunteers feel valued and appreciated. This is also essential to volunteer retention. Poorly acknowledged volunteers often don't stick around.

Our community is diverse in skills, knowledge and culture

- Sharing and celebrating cultural heritage and local knowledge is an important way to include diverse members in any community. Develop opportunities (e.g., themed community picnics, holiday celebrations) with various cultural and religious groups to share and celebrate their cultural heritage, such as musical performances, dances and festivals.
- Organize a community-wide skills and knowledge mapping or inventory project. Technical, mechanical and practical skills, such as the ability to identify local edible plants, operate front-end loaders, or manage volunteers, can be useful in a disaster context and on a day-to-day basis. Many people have expertise from previous experiences that is largely invisible (e.g., someone who was a previous municipal manager may move to a community and take up farming). Mapping can help identify hidden talents and strengths and build more social connection
- Creating a skills sharing network is another way of discovering and maximizing untapped potential in your community
- Identify who in your community has written effective grants in the past. Ask them to host a grant writing workshop and to mentor others, including youth, in grant writing skills. Follow-up by applying for grants: local, regional, provincial and federal.
- When it comes to enhancing community disaster resilience elders can bring knowledge, skills and expertise to the table. From the Great Depression to World War Two, many elders have lived through challenging times and developed invaluable survival skills as a result. This can include knowing about food preservation, gardening, farming, 'make-do' mechanics, or having developed leadership skills.
- Disaster organizations world-wide acknowledge the powerful role of long-time residents, including First Nations' elders and seniors, in enhancing disaster resilience. Draw on their knowledge to shape community events, plans and educational campaigns.
- The government of Canada provides \$28.1 million every year to the New Horizons for Seniors Program (NHSP) for projects that enable seniors to participate in social activities, pursue an active life, and contribute to their community.
- Educational initiatives linking older generations with children can also be a powerful opportunity for enhancing disaster resilience. For example, if your local elementary school is teaching a unit to children on geography, or history, consider how to integrate disaster preparedness and hazard awareness into those units and invite a local Elder to share stories about how the community has dealt with disaster in the past and what was learned as a result.
- Involving and including all members of a community enhances disaster resilience by ensuring diverse representation and, therefore, more accurate disaster planning and mitigation while at the same time strengthening intergenerational and between-group bonds.
- If several languages are used by members of your community on a day-to-day basis, consider adopting multi-lingual literature, resources, and public notices.
- Hold a community disaster preparedness workshop, forum, or meeting that includes drawing on the knowledge and experiences of community Elders, ensuring greater participation through the provision of transportation and specific invitations. Participants can share their expertise regarding local hazards and historic ways of reducing hazards and risks.

- Work with local school, churches, community groups to create an educational initiative linking older generations with children (e.g., local elementary school curriculum unit on disaster preparedness could include a local Elder to share stories of community's past events and coping).
- Educational programs can increase sensitivity and empathy about senior abuse and promote respectful intergenerational relationships.

Our community has a strong health and social support system

- Needs and resource assessments of community groups can identify strengths and areas that need more support within the community. This can increase awareness of what groups exist, what they do, and how they can work together.
- Identify potential grants through governments and foundations. Some may be directly related to disaster preparedness but many of these may not be directly related to disasters but can improve disaster resilience. A stronger, healthier community is a more resilient community.
- The causes underlying crime rates, substance abuse, disease, suicide, poverty and violence are complex and intergenerational often require the actions of many generations, levels of government, and organizations to fix. Community meetings, forums or workshops can open up the discussion about where problems exist and what resources (both internal and external to the community) might be used to help. As Margaret Mead once said: "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."
- Partner with regional nursing and medical schools to develop a strategy for recruiting, retaining, and supporting healthcare workers in your community.
- Consider a public awareness campaign that focuses attention on issues related to promoting equity and accessibility for those with disabilities
- Although we recognize that access to healthcare in rural communities varies, health education in the form of physician-to-patient encounters can be a useful. Invite public health nurses or other health experts (e.g., from a local or regional college or university or health organization) to participate in health education programs in your community. If they can't physically come consider other ways such as through tele-health options, blogs, webinars.
- Community Economic Development (CED) strategies can help communities address issues related to economic growth and ensure that the benefits of growth reach the marginalized and poor. For more information about Community Economic Development go to: http://www.theecologist.org/how_to_make_a_difference/culture_change/406111/how_to_set_up_a_social_enterprise.html.
- You may also want to consider joining the Canadian CED Network for support in getting started.
- Social Enterprises are also a great way to use business ventures for social causes. For information about Social Enterprises go to: <http://www.enterprisingnonprofits.ca/resources/secouncil>
- Discuss with local and regional charities how your community might establish a food bank, soup kitchen, or other supports to residents in need. This might include establishing a local/regional transition home to provide safe shelter for women fleeing violence in relationships.
- Those living in sub-standard housing or who are homeless are particularly vulnerable in a disaster. Review the document "Disaster Planning for People Experiencing Homelessness" available through the U.S. National Healthcare for the Homeless Council's website: <http://www.nhchc.org/DisasterPlanning.pdf> and consider other ways of raising awareness of and a response to homelessness.

- Adopt social housing in your community. Review “Under Pressure: Affordable Housing in Rural Ontario” and “A Guide for Affordable Housing in Rural Communities” at: <http://ruralontarioinstitute.ca/file.aspx?id=df2bb16b-2536-4555-bd19-1bfac096a316> AND http://www.south-norfolk.gov.uk/housing/media/housing_in_rural_communities_guide.pdf
- Explore how the community might build safer through enforceable building codes and permits that address local hazard risks.

Our community has strong local leadership and governance

- Incorporation can increase funding through taxes and through access to grants for capital projects (e.g., improving transportation and/or communication infrastructure or retrofitting key buildings to meet local hazard risks). It is important to note that Provincial and Territorial Governments individually govern incorporation procedures, for this reason eligibility and protocol vary from Province to Province and Territory to Territory.
- Communication is directly linked to accountability and transparency. Communicating results on performance can involve engaging the public on choosing and defining performance measures. Create an open and inclusive public engagement processes to inform performance reporting.
- Future leaders need to be cultivated through education, training, skills development, and mentorship. Create youth leadership programming drawing on Chamber of Commerce, teachers, formal and informal leaders in the community and seniors and elders as mentors.
- Create mechanisms for transparent leadership, depending on your community’s context you might want to consider biannual progress reports on governance, consensus decision making (transparent because everyone’s involved), and/or participatory community meetings, forums or workshops as a venue for democratic decision making. Invite a wide range of community members.
- When it comes to big community decisions, turn to both formal leaders (i.e. government representatives, president of the business association etc.) and informal leaders (i.e. teachers, social workers, grandparents, others who contribute).
- Identify the sources of formal and informal leadership in your community and draw on these leadership networks to identify and communicate disaster roles and responsibilities.
- Measuring and reporting on performance is one aspect of transparency. Establish planning and planning review cycles (even if your not incorporated) that involve community members in providing feedback and guidance on policies and protocols (disaster and non-disaster related) and produce clear and accessible reports on reviews and revisions. Ensure those who may have difficulties participating (e.g., because of transportation, ability, availability) have ways of contributing to this process.
- Accountability includes answerability and sanctions. Answerability means providing information on and justification for decisions. Sanctions are the measures for reprimanding inappropriate actions. Create a community advisory committee to provide feedback and address each area of accountability
- Information technology can be an accountability tool, making financial, performance and election information open online. If most people in the community have internet access, consider creating a website for accountability reporting.

Our community is stable and sustainable

- The diversification of rural economies can require significant time, funding and investment. Incorporation can increase access to and control over rural development grants. If possible, hire an economic strategist to work with the community to identify economic diversification options and opportunities.

- Collaborate on a regular basis with the regional district/county governments (or equivalent) on a long-term vision for the community's and the region's response to anticipated changes in the population (e.g., increasing aging population).
- Goods and services available via the internet have facilitated engagement with international markets in an unprecedented way. The ability to work from home has changed with online access. Broad band (high speed) internet is critical to participate in the web-based economy. Search for and access government or corporate support for bringing broad band to the community and/or making it more widely accessible.
- If internet-based entrepreneurship is new to your community and local educational opportunities remain limited, consider hiring a consultant/find a volunteer with experience running an internet-based business from home to share information and demonstrate how to get started.
- Promote sustainability through educational initiatives regarding food security, sustainable harvesting practices, the benefits of local ownership (e.g., community forest licenses, community buy-backs of shut down mills, factories)
- Consider adopting local bartering for goods (i.e. if you live in a farming community, you may already do this, eggs for milk etc.) or a "freecycle" system, basically a public list of things people don't want any more that others can review and choose items from for free.
- Establish cooperatives – basically a group of people who decide to work together for a common purpose. These can include housing cooperatives where cooking, childcare and maintenance are shared, to purchasing cooperatives where everyone pitches in to buy bulk to keep prices lower, to artist's cooperatives and worker cooperatives where everything is owned and managed by the workers, including decision making powers. More information on worker cooperatives can be found at the following website: <http://ocdc.osu.edu/pdf/startcoop.pdf>
- You can also create a skill sharing network where people list skills publicly and trade skills (e.g., an hour of sewing for an hour of plumbing). You can review the following website to see how other communities have set-up skill sharing networks: <http://www.skillsharenetwork.org/>
- Increase general awareness about the decision-making processes related to ecological issues and resource management. Assess local residents' opinions and priorities on resource use, development options and strategies for management including developing local environmental policies and environmental assessments. Access local and regional academics and community-based research teams for expertise and capacity development.
- Environmental education programs can support public involvement in resource management. Work with local non-for-profit environmental organizations to explore ways of integrating environmental awareness, sustainable resource management into school curriculums and public information sessions.
- Develop and promote volunteer opportunities that involve residents (children and others) with not-for-profit environmental organizations and sustainability initiatives to increase awareness and influence with resource management.

Our community has adequate services and utilities

- In rural Canadian communities, at least 30% of wells contain contaminated drinking water, not safe by government standards. Nitrate is one example of a water-soluble contaminate that can easily transfer from chemical fertilizers, excrement, and other organic waste into groundwater. Nitrate contaminated water is hazardous to human health. If drinking water supplies are not subjected to any kind of treatment, consider investing in shock chlorination to reduce bacteria or point-of-use devices (e.g. water softeners, filters). Establish routine community-wide water testing to track and more effectively address contamination issues.
- Use public campaigns to educate residents about how to test for and address water safety issues.
- Carry out a local assessment of public utilities and services (e.g., shared water distribution, sewage, and power systems) and the resiliency of each to disaster, pay attention to: 1) coverage (Where is it available?); 2) accessibility (How easy is it to access and who has access?); 3)

reliability (How reliable is the system prior to disaster?); 4) sustainability (Is there a routine maintenance program? How likely is it to survive a local disasters?); 5) redundancy (Are back-up options available in case of disaster ; 6) overall quality (Is the quality of the system good?).
Schedule regular maintenance checks of critical infrastructure

- The Departments of the United States Army and the Air Force have produced a useful guide on bridge maintenance which you may want to consider reviewing. You can access the guide at: http://www.webpal.org/SAFE/aaarecovery/8_transportation/TM%205-600.pdf forums or meetings is already included in the Resource Guide
- Broadband ICT (information and communication technologies) can help rural communities overcome communication challenges. For example, e-government, distance education, and telemedicine applications all require high-speed connectivity. However, it is important to first assess resident support for ICTs, as success is contingent on local participation. Survey community and consider applying for funding for Broadband ICT, if your community does not already have it

Regional governance and services support our community

- Assess the 'surge capacity' of local or regional hospitals, fire halls, and police stations in the event of a disaster and secure further funding for improvements if necessary
- Work with local and regional leaders and organizations to develop strategies for creating and sustaining local entrepreneurship and jobs and for retaining skilled workers in rural communities. Immigrant entrepreneurship is recognized as a key means for sustainable economic and social inclusion. Immigrants bring social networks, skills and talents to their communities.
- Cultural and eco-tourism can supplement traditional industries in rural communities. Regional and community-based partnerships, including cooperatives, can be effective ways to develop and promote tourism and cultural activities that benefit multiple communities in the region (e.g., music and art festivals, promoting county fairs).
- Communicate with regional/county (or equivalent) major service centers to initiative collaborative planning processes for economic, environmental, and emergency management initiatives.

Disaster Management Strategies

Our community is disaster aware

Education

- Individuals who participate in disaster preparedness education and training programmes are more likely to have a strong awareness and understanding of hazards faced by the community and how to respond and deal with them. Find ways of engaging residents in community disaster awareness sessions and drills.
- Community education programmes focused on local hazards and the community's past experiences with them can be offered through community centers, schools, business, at local events, etc. Explore whether other organizations such as Natural Resources Canada, Emergency Social Services, and provincial/territorial emergency programmes may be able to partner with your community to develop/provide such programmes.
- Disaster awareness education can be linked to other community/public education campaigns and activities, local school curriculums, and included in brochures, on the community website, and on community notice boards.
- Harness the wisdom of local Elders, senior citizens and long-time residents in exploring the community's past response to hazards, disaster and crisis. Work with the local school, churches, and other community organizations to develop programs and curriculum that involves these individuals in sharing their knowledge.
- Ensure public awareness of disaster risk and response roles by including information sessions and material in public school education programming and integrated into existing public events (e.g., booths at the community fair; pamphlets included with tax notices) and spread broadly through volunteer networks, groups and other social networks (e.g., clubs).
- Develop easy to follow community-specific information brochures regarding hazard warnings, evacuation processes and routes, and emergency preparedness. These can be adapted for the local community from more generic material made available through provincial/territorial/regional or federal governments.
- Organize meetings between those involved with land and resource planning and locals invested in hazard mitigation activities and disaster management.
- Provide information on local hazards and emergency procedures to seasonal residents, tourists, and other transient populations through tourism booths and handouts.
- Monitor public opinion about risk prior to a crisis, and about the severity of an event after it has passed. This can provide important information about how and which messages need to be strengthened or adapted.
- Conduct a disaster awareness community survey to assess preparedness and awareness.

Hazard Warning Systems

- Early warning systems can reduce injuries and save lives. Consider implementing an early warning system in your community if you have not already done so and routinely (e.g., annually) testing the system.
- Create a schedule for regular testing of the early warning signals and systems. Include local schools, churches, and other community-based organizations and residents in these drills. The more people are aware of what a signal means and how to respond, the more likely they are to be able to act appropriately. Make sure to involve children, seniors, and community residents who may face specific challenges related to cognitive, physical, or other disabilities (e.g., hard of hearing, blind, those who rely on wheelchairs or medical equipment).

Evacuation

- Harness the knowledge of locals in the identification of escape routes, particularly long-time residents who are familiar with seasonal variations in access, regional weather patterns and past disasters. Information regarding how to organize community workshops, forums or meetings is already included in the Resource Guide.
- Conduct a community mapping exercise to create a common understanding of the primary and secondary access routes in and out of your community. A community planner could help facilitate this.
- Many rural communities are extremely isolated and may be strongly impacted by extreme weather conditions and seasonal access. Ensure that disaster plans account for issues pertaining to seasonal access. You may need both winter and summer evacuation plans that build in contingencies in case the primary route is blocked or inaccessible.
- Consider what types of vehicles and how many would be needed to evacuate residents safely and quickly in different scenarios.
- For example, if you have a single highway leading in and out of your community and it becomes blocked or damaged, residents will need to evacuate by other means (e.g., via boat, back/logging roads, flying). Identify options in your disaster plan and include a consideration of ongoing maintenance.
- Not all residents will have access to a vehicle. Document, and plan for, vulnerable populations that may not have direct access to a vehicle during a disaster, but also consider how a vehicle-sharing network or car cooperative or other creative sharing options might increase options (e.g., access to health care, access to lower-cost shopping) for carless residents.

Our community is prepared for disaster

Community Organizations and Business

- Encourage community-based organizations and businesses to work with each other and local associations (e.g., Chamber of Commerce) to identify what resources they might contribute in a disaster, what needs they might have in a disaster, and what vulnerabilities exist for them individually and collectively, thereby maximizing their capacity and that of the community.
- Involve local organizations and businesses in promoting disaster readiness in the community. They might consider carrying disaster preparedness brochures, sponsoring disaster education events, contributing items to household preparedness kits, encouraging volunteerism amongst their employees, incorporating disaster recovery into their business plans, or reviewing and assessing their risks and insurance coverage.
- Ensure that local disaster plans have accounted for and included the needs and potential contributions of local businesses and organizations.
- Provide education/training sessions for businesses on how to develop effective business continuity plans. Consider hiring a business continuity consultant, or find out whether the regional/provincial/territorial government can provide expertise and training in this area (many have resources on their websites). The local Chamber of Commerce or other local groups (e.g., Rotary Club, Legion) could take a leadership role in business preparedness.
- Involve local volunteer groups and service organizations in encouraging residents to prepared by sponsoring seminars, information sessions, and disaster preparedness awareness raising events (e.g., ShakeOut BC earthquake preparedness events; Girl Guides Emergency Preparedness Survivor event; Disaster Preparedness week)

Households

- Encourage local residents to develop family evacuation and disaster communication plans (how to communicate with each other if they are separated by a disaster event). Most of these measures require little to no cost for disaster (e.g., identifying safe household exits in the event of an emergency, family meeting places, out of town contacts – long distance lines are often the first to be restored when phone service is interrupted, contacts for neighbors, emergency childcare, lists of health information, insurance information (if relevant), local hazards, and local evacuation procedures. Draw on provincial/territorial and other disaster websites for information on what should go into these plans.
- Consider how to involve school children in household preparedness building on/copying other successful programs such as those encouraging children to learn about and practice fire drills at home. The Government of Canada provides an extremely useful 20 min online step-by-step program for household disaster preparedness and mitigation.
- Consider incentives and community-wide initiatives to encourage household disaster preparedness. Install smoke, fire and carbon monoxide detectors in key community buildings and encourage all households to do the same – if cost is prohibitive to some community members consider seeking grants through local organizations and/or government agencies.
- Encourage residents to take disaster training courses or first aid through the Canadian Red Cross or St. John Ambulance Services. Increasing the number of residents that have this knowledge and the skills to go with it increases resilience.
- The Canadian Mortgage and Housing Corporation's (CMHC) Emergency repair program offers financial assistance to low-income Canadians in rural areas to perform emergency repairs to their homes.

Schools

- Canadian Red Cross has developed a curriculum based school aged disaster education program for use in Canadian schools. The program is called 'Expect the Unexpected'. Inquire with the Canadian Red Cross about introducing the 'Expect the Unexpected Program' in your community's schools.
- Develop plans (protocols, timelines) for regular (at least annual) disaster drills in schools. These should include responding not only to structural fire but responding to other local hazards risks and the different responses those may require (e.g., fire versus flood). All children, staff, and faculty/teachers should be involved and parents should be encouraged to become familiar with these drills and support children in understanding and practicing their responses.
- Ensure schools and daycares have up-to-date contact lists for parents/primary caregivers including alternate care-givers should parents/primary care givers be unavailable, injured or killed.
- Similarly, parents should know what school protocols are in an emergency, what can be provided for children who are at school when a disaster strikes, and have contact lists for school officials. They should also develop family emergency plans that include communication (how to contact each other if separated) plans, and family reunification strategies.
- Incorporate school preparedness and response plans into community disaster plans promoting community-wide awareness and unified efforts that support schools' capacity to prevent, prepare for, respond to and recover from disasters.
- Continuity of education after a disaster is one of the critical aspects of promoting recovery for students and their families. Work with local mental health professionals and school administrators to developing plans and programs that address the mental health needs of
- faculty, staff, and students in the event of a disaster.
- Invest in smoke, fire and carbon monoxide detectors for local schools and test them regularly.

- Assess the hazard readiness of local school structures and consider upgrading to current hazard standards as needed. This may include assessing whether a school is in a high hazard-risk zone and whether there are other mitigation strategies that might minimize the risk to the school, and/or planning to relocating schools when it becomes possible.

Our community structures are protected

- Conduct a community-wide disaster preparedness campaign focused on encouraging all households, businesses and community buildings to install and/or test their fire, smoke, and carbon monoxide alarm systems.
- The Canadian Mortgage and Housing Corporation's (CMHC) Emergency repair program offers financial assistance to low-income Canadians in rural areas to perform emergency repairs to their homes.
- Identify the mechanisms (local and regional) that address building codes and assess whether they take into account local hazards, and enforcement of standards consistent with local hazard conditions. It may be time for a community meeting, forum or workshop to explore gaps and consider how to support upgrading of essential community buildings to meet local hazard conditions.
- Institute an annual survey of primary and secondary evacuation routes that includes surveying each route to make sure it is passable, well marked, and that the type of vehicle required to use it is clearly known (e.g. four wheel, all terrain)
- Institute initiatives to reduce risks to infrastructure. This can include such things as clearing brush and trees from around telephone polls communication and hydro-electric towers; shoring dykes and banks on waterways; inspecting and maintaining bridges).
- Ensure that developers, particularly those from outside of the community, are aware of local hazards and risks. Communities can work to develop community plans that reduce the number of businesses and homes that are built or rebuilt in high hazard-risk areas.
- Initiate a community program to help households retrofit existing homes to reduce risks (e.g. smoke detectors, carbon monoxide detectors, securing hot water tanks)
- Comprehensive and integrated land-use planning processes are helpful tools for hazard mitigation. Once a risk reduction and resilience plan is created, it can serve as a reference for elected officials, investments, and new development (to avoid development in high risk areas and to ensure building practices that address local hazards and risks).

Our livestock, animals and farms are protected

- During disasters animals, like humans, can become agitated, fearful and engage in atypical behaviors that owners may be unprepared to handle. Newer rural residents in particular may lack the experience and livestock movement equipment to be able to safely evacuate animals in a disaster event. Animal evacuation needs to be coordinated and is made easier when equipment, fences, facilities are in good working order and there is a plan in place. Working collaboratively to evacuate – helping each other – is natural and critical. Ensure that at least one person in the team is focused on keeping watch for additional oncoming hazards or changes in conditions that increase risk.
- Develop plans for farms, livestock and other animals that consider the nature and likely impact of local disaster risks. Plans should include:
 - Having easy access to phone numbers for local emergency operations centers, other government officials (e.g., have these on cell). In the event that livestock have to be released owners should report the location, identification, and disposition of animals to the emergency response operation especially if animals may pose a threat (e.g., aggressive by nature).
 - Site maps that identify key structures, watercourses, likely location of animals (e.g, pastures, ranges), first aid equipment, spill kits, septic tanks, location of hazardous goods (e.g., pesticides, paints, veterinary supplies, compressed gas, other gas, manure storage)

- Access to and location of equipment needed to move animals or create escape routes (e.g., front end loaders, wire cutters)
- Access to sand bags and other dyking materials, empty containers for foods/manure/other supplies needed for evacuated animals or to contain contaminated material
- Inspect pastures and ensure livestock/horses have access to higher ground in every pasture in case of floods/flash floods
- Inventory and invest in boats/trucks that can be used to move livestock in flood conditions and other disaster conditions. This includes having enough heavy equipment and snow vehicles individually or collectively to move livestock/animals to safer shelter areas when habitual shelters are threatened (e.g., canyons, draws and windbreaks that become inundated by drifting snow). Have a plan for how this will happen that addresses fear reactions of animals (e.g., moving younger animals who are at higher risk because of less physical strength may also encourage older animals to move (herd and maternal instincts) when reluctant.
- Have a plan for moving animals to shelter and alternate food access during ice storms, which may disrupt normal foraging possibilities during and after.
- When fleeing from a wildfire, livestock are often injured or killed by running into fences, barriers or getting trapped in canyons. Develop plans for evacuation that address: removing halters and other equipment that can caught and trap an animal; ensuring adequate escape routes and appropriate equipment to create alternate routes (e.g., wire cutters, heavy equipment); facilitating identification and reunification with owner (e.g., spray painting cell phone number on sides of livestock prior to releasing them), identification tags (e.g., luggage tags) . Firefighters will cut fences and open gates when possible but this may be something that owners need to consider doing.
- Develop cooperative plans and strategies for addressing the needs (food, shelter, water) of livestock and other animals in a sudden or slow onset emergency (e.g., drought) and ensure these plans are known to and integrated into community and regional disaster plans
- Develop emergency action networks so that livestock operators and farmers have a coordinated plan that maximizes their capacity to respond and save livestock and other animals, equipment, buildings in the event of a disaster. This can include knowing which gates to open to create evacuation routes for animals in the event of a fire, tornado or other potential threat.

Our community has a comprehensive disaster plan

- Overly detailed plans can hamper response efforts by eliminating flexibility to deal with changing needs, resources and conditions. Use guiding principles, rather than operational details, in your community response plan so the response can be adjusted as needed.
- If you already have a community disaster plan, review it to ensure it addresses all phases of a disaster: preparedness, mitigation, evacuation procedures, response procedures, and recovery (e.g., where will be people stay whose homes have been damaged or destroyed?; what options are there for setting up a recovery center where people could access information, support, etc). Be sure that the plans address the range of needs and issues of diverse community members including children, seniors, ethnic/religious groups, and those with disabilities.
- Emergency management plans are living documents that should be revised and changed as threats change, information becomes available, and the system and resources for detecting and responding to threats shift over time. Set up a schedule for reviewing and revising the plan on a period basis. This might be linked to a community-wide disaster drill. Include updating maps (e.g., evacuation routes; new buildings, roads, or utility lines) and inventories in the review
- Involving community members or representatives of various groups in the community in the creation or review and revision of the local disaster plan helps ensure it is accessible to, and addresses the needs of, community members of different ages, cultures, languages, mobility needs, etc. Consider holding a community meeting or neighbourhood meetings to review the plan with residents, business owners, service organizations and groups in order to get feedback regarding gaps, changes, special needs and capacities etc. This has the added advantage of increasing awareness of and buy-in to the plan

- Give a wide range of community members an opportunity to discuss, study and create community goals for hazard mitigation and strategies for how these can be integrated into or inform other community plans, goals, policies, and programs.
- Review the hazard risk profile and the implications of specific hazards for the community plan (e.g., differences in evacuation routes related to different hazard types).
- Work towards clear and effective communication channels and procedures with local, regional, provincial/territorial and federal government emergency management departments and organizations and ensure that disaster plans account for plans the regional, territorial/provincial, and federal levels. Good plans are also well integrated between local groups (i.e. do the local clinic's disaster plans fit with the local elementary school's disaster plans? How about local businesses and the town hall – do plans mesh?)

Emergency Shelter

- Emergency shelters provide a safe place for community members in the event of a disaster. School gymnasiums, community centres and halls have all been used as emergency shelters during disasters in small towns/
- Many rural and remote communities have tourism-based economies and are subject to extremely high rates of seasonal tourism. For example in some communities the population might double during the summer months. Designate emergency shelters that are appropriate in size, type, and function for your community and the hazards it faces with a consideration for how seasonal populations may impact sheltering needs (room, food, water, sanitation).
- Make sure more than one person has access to keys, alarm codes for these buildings and knows how to access emergency power (e.g., back up generators), water shut off valves, and other critical supplies.
- Recovering from a disaster can take time. For this reason it is important to target not only immediate needs in disaster plans, but to provide some long-term strategies for recovery. Ensure that your plans include both long and short term recovery solutions for sheltering in the event that homes are destroyed or damaged.

Debris Management

- An important part of disaster recovery is dealing with debris. Debris can hinder rescuing those who are injured, hamper community access and evacuation, and complicate a disaster by creating additional dangers in the community.
- Review the local disaster plan (or when drafting one) consider: 1) where disaster debris will be placed when it is removed from main areas of your community; 2) who will remove debris; 3) what vehicles are available to assist with debris removal; 4) what emergency equipment is available to remove debris in order to conduct a rescue operation (i.e. jaws of life); 5) pre-disaster identification of resources (tape, rope, pylons, flag people) that can assist in blocking off dangerous areas full of scattered debris; 6) pre-disaster identification of areas that are likely to produce particularly hazardous debris i.e. nuclear power plants, waste sites, places where bio-hazardous materials are stored, industrial areas with high concentrations of chemicals

Inventories

- Create an inventory of your community's assets and plan to account for gaps. Emergency Management inventories can provide immediate and necessary information about equipment, emergency supplies, and individuals with equipment and skills. You can also integrate this information directly into your disaster plans.
- Treat these inventories as living documents. Build a plan that includes methods and schedules for reviewing and revising these on an annual basis. Include in these reviews a schedule for regularly cycling and renewing supplies that can expire such as emergency water and food supplies.

- Inventories can include:
 - Detailing where and what equipment is that may be useful in response and/or recovery; who has special skills that may help; identifying people with specific vulnerabilities or dependencies that may require additional help; where key disaster equipment and resources are located; where and who has keys for community buildings that may be needed for shelter.
 - Detailing vehicles in your community, including boats, cars, trucks, buses, helicopters, planes, etc. – anything that could be used in an evacuation to get residents out safely. Consider creating a vehicle-sharing network in your community. Document, and plan for, vulnerable populations that might not have direct access to a vehicle during a disaster.
 - Identifying where and how much emergency water and food supplies are in community.
 - Documenting dwellings, occupants and vulnerable community members. This can help in the development of disaster plans that will meet the needs of all residents.
 - Mapping evacuation routes. When mapping these address seasonal variations in access.
 - Documenting who has skills, knowledge, experience that may be useful in the disaster context. This may involve ‘translating’ skills and knowledge (e.g., someone with lots of human resource experience might coordinate volunteers; someone with construction/plumbing/electrical skills and knowledge might contribute to post-disaster assessments)

Communication

- Carry out a local assessment of communications options and the resiliency of each to disaster, pay attention to: 1) coverage (Where is it available?); 2) accessibility (How easy is it to access and who has access?); 3) reliability (How reliable is the system prior to disaster?); 4) sustainability (How long is it likely to last?); 5) redundancy (Are back-up options available in case of disaster i.e. if power fails, wood burning stoves?); 6) overall quality (Is the quality of the system good?).
- Broadband ICT (information and communication technologies), otherwise known as “high speed internet” can help rural communities overcome communication challenges and increase disaster awareness and preparedness. For example, e-government, distance education in disaster preparedness, and telemedicine applications all require high-speed connectivity. The Canadian Government has committed to increasing access to broadband for rural and remote communities. If you don’t already have access, consider applying for funding to access or consider alternatives such as satellite.
- When disaster strikes back-up communication systems can be extremely important. For example, if bad weather, fires, floods, or earthquakes disrupt phone lines, door-to-door evacuation alerts conducted in person might be required. Having more than one back-up communication option is even better. Each can impact communications in unique ways, so a variety of back-up options can be a necessity. Review existing plans and plans in development to ensure that back-up communication options are integrated into those plans.
- Develop and implement a schedule to regularly check on communications options, and address changes in the community or region including changes in who is living there, what technologies are available, and what back-ups are required. Consider whether these reviews and updates should be a mandatory expectations and where the responsibility lies locally for managing those.
- Mailing out disaster plan brochures, calendars and evacuation maps to all businesses, faith-based groups, community-based organizations and households annually can be an effective way of communicating information. Plan to routinely mail out disaster plans, calendars and evacuation maps in your community.
- Ensure that communication channels are clearly established between various agencies in disaster plans and interagency agreements. This can include regularly updating contact and telephone lists.

Our community is involved in ongoing disaster planning

- Implement a collaborative approach to disaster management by initiating conversations with key stakeholders in the community and the region. A collaborative (rather than a top down) approach can support greater buy-in, more cooperation and progress. It also requires a different leadership style and skills including facilitation skills that address differences in stakeholders' priorities, mandates, and resources
- Form a local disaster and emergency management planning committee and find ways to keep it active (e.g., organizing mock disaster drills, training, public education outreach)
- Consider hosting workshops, forums or meetings that explore local knowledge of past disasters from long-time residents, Elders and senior citizens and draw on their insight in your disaster planning process and plans.
- Create opportunities for residents to discuss and contribute to setting priorities for reducing shared risks and increasing the community's resilience. This could include helping to determine the allocation of resources to hazard mitigation and disaster preparedness strategies. Unconventional problem solving can help you think through how to utilize existing social and volunteer networks within the context of disaster planning and response.
- Identify volunteers with the skills and techniques required for grant writing – harness those abilities to secure resources for disaster-related work. Community-based organizations and local colleges or universities (if you have any in your community or region) are often good places to look. Those involved with local governance boards also often have an understanding of grant writing.
- If money is available, hire an expert in disaster planning and response. Finding someone who is both knowledgeable and local is best; however, if you have to hire an outside consultant ensure that the consultant works collaboratively with local community members, fire fighters, healthcare workers, police, businesses and non-profit organizations and will deliver a plan that is truly tailored to local hazards, resources, priorities, and needs. Many consultants will adapt a generic template that may or may not meet local needs.
- Since most local governments have limited resources available for disaster preparedness, preparedness measures must account for cost-effectiveness, priority setting, and the utilization of unconventional problem solving and networks. Having a professional grant writer assist with securing funds for disaster-related work can also be helpful.
- Due to geographic isolation, many rural communities are dependent on local service centres outside of the community or have close relationships with neighboring regions. Joint planning, and sharing of resources can increase capacity. Bulk purchase of equipment for instance can be more cost effective. Resilience can be built at the local level and at a regional level particularly with communities who are geographic neighbours.
- Mutual aid agreements and memorandums of understanding can help when preparing, responding to, or recovering from a disaster. Such agreements can address requirements and methods for information sharing, division of responsibilities, and clarify various roles and responsibilities in response and recovery. Consider creating disaster management agreements for agencies (government and nongovernment), organizations and other groups in your community and the region
- Incorporation can help a community engage with other government partners and bring local disaster resilience concerns to the table. Incorporation also allows for different access to relevant grants and, through taxes, it can also provide some measure of funds for supporting disaster resilience and risk reduction (It is important to note that Provincial and Territorial Governments individually govern incorporation procedures, for this reason eligibility and protocol vary from Province to Province and Territory to Territory).

Emergency Operations Centre

- An Emergency Operations Center (EOC) coordinates a disaster response. If your community does not have a space designated for one, consider what public building might work (e.g., town hall, local fire hall, city hall, school, community centre). Ensure the local EOC has more than one source of power by making plans for back-up power sources (i.e. generator, etc.) and access to water and other necessary supplies.
- If your EOC is located in a high hazard-risk area (according to Risk Profile) the relocate it immediately to off-set the risk that one of your key disaster-related lifelines will be damaged or lost. Even if your EOC is located in a low risk area, you will still want to consider a back-up plan for relocation just in case the area is unexpectedly impacted during a disaster. Consider alternative locations as a back-up plan
- Clarify EOC roles, responsibilities, and areas where EOC plans and local and regional disaster plans (businesses, schools, healthcare facilities, government, non-profit organizations, faith-based groups, etc.) are related and where there are gaps that need to be filled. Harmonizing across plans can help reduce inefficiencies and potential conflicts that can put lives and or property at risk.
- EOC drills (e.g., mock disaster drills, table-top exercises where those involved work with scenarios in a group discussion) are most effective when they include testing of local (and if possible regional) emergency plans, staffing levels, personnel training to address gaps in knowledge/training, evacuation and other critical emergency procedures, equipment and materials. Ensure mock disaster drills are comprehensive and inclusive of the measures listed above.

Our community has adequate first response capacity

- The Government of Canada has recognized the importance and value of volunteer fire fighters across the country by providing a \$3000 tax credit to assist communities in recruiting and retaining volunteers. Encourage and recruit volunteer fire fighters in your community.
- First Nations communities can receive funding for police services through Public Safety Canada's First Nations Policing Program (FNPP). Seek FNPP funding if your community qualifies and you are interested.
- In Canada community policing is performed by municipal police or contracted provincial or federal officers. The costs to the communities differ with each service. Assess your community's policing needs and the available resources to determine which policing strategy will best meet your community's needs.
- Ensure first response team members regularly renew and update related certifications.
- Consider creative community fund raising strategies and accessing public/government grants to upgrade fire stations, access disaster specific training for first responders. Brief educational interventions, such as 5 hour courses on disaster management, have been shown to significantly improve knowledge amongst health care professionals. Consider offering a short disaster management course for health care workers in your community
- Communication technologies such as "smart devices" have the potential to improve communications, information management and overall response time with responders in rural areas and locations where sustained phone communication is a challenge. Consider incorporating the use of "smart devices" into first response plans, but be mindful of access to power sources should direct access to electricity fail during a disaster.
- Identify and connect with local and regional resources and service providers who may contribute to disaster resilience and response capacity. This can include working with existing support services (e.g., local counselors, faith based groups, public and mental health teams) and specialized disaster response organizations (e.g., emergency social services, Canadian Red Cross, regional/provincial/territorial emergency managers) to identify and clarify roles, responsibilities, and procedures, get help setting up local teams, access training.

Our community has adequate emergency medical response capacity

- Identify and work with existing mental health and social service providers (e.g., mental health workers, counselors trained in critical incident stress management) and specialized disaster mental health support services (e.g., disaster psychosocial response teams) to develop plans on how to provide emotional and psychological support to first responders.
- If your community does not have substantial local healthcare available and residents utilize regional hubs, coordinate with regional healthcare hubs (i.e. nearest hospitals, clinics) in disaster planning to ensure protocol for mass casualties coming from your community. Be sure to account for continuity of care in related disaster plans and do so in coordination with regional healthcare hubs. Review disaster plans to account for patient transportation (including, the likelihood of mass casualties) if your community is reliant on a regional service hub for healthcare. For example, kits can be purchased to retrofit standard buses for carrying stretchers. See the following website for more information: <http://www.firstlinetech.com/products/dpr/ambubus/bus-stretcher-conversion-kit/>
- Address medical/health care surge capacity during disaster drills. If your community experiences mass casualties your resources and services may be pressed to the extreme limit. Conduct disaster drills on a regular schedule and be sure to assess the outcome of disaster drills carefully – they will vary from standard drills and will likely require multiple organizations and partners to be effective and realistic. Take stock of available healthcare resources should disaster strike, both inside and outside of the community. If there are minimal resources available locally, networking with other communities and service center hubs can improve plans and coordination in a disaster.
- Work with existing response organizations to increase local capacity. St. John Ambulance, for example, provides medical first responder volunteer training and first aid and health care at public events by clearly identified volunteers. Consider working with St. John Ambulance to help meet your community's emergency medical response needs. The Canadian Red Cross may be able to lend your community healthcare equipment through the HELP Health Equipment Loan Program. For more information see: <http://www.redcross.ca/article.asp?id=3094&tid=077>
- Review disaster plans to account for patient transportation (including, the likelihood of mass casualties) if your community is reliant on a regional service hub for healthcare. For example, kits can be purchased to retrofit standard buses for carrying stretchers. See the following website for more information: <http://www.firstlinetech.com/products/dpr/ambubus/bus-stretcher-conversion-kit/>. Be sure to account for climate, geography, seasonal access, alternative routes, and alternative vehicles (for example, if main roads are cut off will you need to use boats, planes or snowmobiles to transfer patients?) in a wide variety of disaster scenarios.