HazNet

The Magazine of the Canadian Risk and Hazards Network

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The Era of Extremes

Land acknowledgement

HazNet would like to acknowledge that it conducts its business on the traditional and ancestral lands of the First Nations, Inuit and Métis Peoples of Turtle Island, known as Canada.

HazNet is committed to reconciliation, including learning about and regularly acknowledging the historic and current relationship that exists between the unceded land on which we live and work and the First Nations, Inuit and Métis. Indigenous Peoples are the longest inhabitants and stewards of this land on which we all live and learn, and have long been using sustainability to mitigate risks and reduce the impacts of hazards.

We recognize that there are many ways of knowing, and strive to represent these ways in the material that we bring to you. We also encourage all our readers and contributors to consider how they can personally contribute to Canada's reconciliation with Indigenous Peoples, by continuing to call out the continued use of colonial systems and processes in our field, and hold each other accountable to commit to action.

Cover Image

A resident's first view of their home following the June 30, 2021, Lytton disaster. Photo credit: Patrick Michell

On June 30, 2021, the day after setting a record temperature in Canada at 49.6 °C, the village of Lytton, British Columbia, was destroyed by a wildfire. Two residents died because there was not enough time to evacuate from the fast-moving fire. Nearly four years later, the community is still in the process of rebuilding.

Watch the story of Lytton, the town that burned down in a day: https://www.bbc.com/news/av/world-us-canada-59227915.

The photographer, Patrick Michell, notes:

"In June 2021, our region experienced extreme heat, drought and strong winds culminating in the Lytton disaster. In November 2021, extreme rain labelled as an Atmospheric River hits our region, washing out rail lines, highways, community roads and culverts and affecting septic field operations, floods basements, and overwhelms water treatment plants. In December 2021, extreme cold (-32°C) freezes surface water, water lines in, and septic lines. Extreme snow event shuts down roads, and eventual thaw overwhelms ditches, culverts, and water treatment plants, and floods basements and affects septic operations.

Canada can become a world leader in prevention and response solutions for both transition and adaptation.

Are we? Nope. You ever wonder why?"

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Editor's note

By Carly Benson, Nicole Spence, and Lily Yumagulova

Hey friends, did you miss us? We are excited to be back in action to tell Canada's resilience story.

Just like you, dear reader, our volunteer *HazNet* team has been overextended for the past few years and we imagine you might have been feeling the same. It was challenging for us to pull together an issue while everyone is in a state of *permacrisis*, a prolonged period of instability and insecurity, often characterized by a series of cascading crises.

In this issue, we focus on the increasing frequency and severity of emergencies and disasters, and how they make it increasingly difficult to effectively mitigate, prepare for, respond to, and recover from disasters. We focus on how emergency management is – and is not – evolving to meet these challenges. Let's explore the compelling content you can find in this edition.

In our *Practice* section, learn about inspiring work to unite Coast Salish Nations for emergency response, implementing FireSmart programs, and advocating for culturally sensitive disaster management. Read about Holistic Recovery Models, a three-stage approach to rebuilding communities post-disaster, focusing on safety, healing, and social integration. Discover how Expressive Writing for Mental Health workshops can help communities process trauma from wildfires and smoke.

In our *Feature* section, we deep dive into lessons learned in managing extremes from San Francisco, Denver, Philadelphia, and Los Angeles and how the evolving field of Emergency Management has been dealing with "mission creep," prolonged activations, and the increasing complexity of emergencies. Our ongoing series titled *Inclusive Emergency Management* explores communication and accessibility needs for the d/Deaf, hard-of-hearing, and deafblind populations, emphasizing representation, accessible spaces, and equitable communication.

Our *Interview* section features an interview with Margareta Wahlström, who led the development of the Sendai Framework, as she reflects on the progress made on disaster risk reduction globally, emphasizing the successes of early warning systems, the increasing interconnectedness of hazards, and the importance of empowering community action. As part of our *Indigenous Professionals Series*, Serenna Besserer shares her intergenerational legacy of community service and her work in Indigenous emergency management, highlighting cultural considerations and Nation-to-Nation collaboration.

In our *Policy* section, Kasari Govender, British Columbia's first independent Human Rights Commissioner, writes about Human Rights-Based Emergency Management and advocates for centering marginalized voices in emergency planning, addressing disproportionate impacts, and combating hate during crises. The HazNet team has prepared an informative read about the recently updated Disaster Financial Assistance Arrangements, the largest disaster funding program in Canada. In this issue, we spotlight the recipients of the 2024 CRHNet Awards, a national awards program established to recognize and honour individuals participating in and contributing to the study and practice of disaster risk management. Learn more about each of our winners in the CRHNet section, and if these individuals sound like a friend, colleague, or peer, you can nominate them through the CRHNet Awards Program page on CRHNet.

We are proud of HazNet: Our volunteers have published 26 issues in over 14 volumes over the span of 15 years. During this time, one thing has remained constant - we deliver **high-quality, peer-reviewed, timely and timeless** content. Our reach spans the globe: Canada, Brazil, US, UK, Australia, Indonesia, New Zealand, India, Philippines, and Germany all engage in our platform and community.

We encourage you to send us your suggestions, feedback, and hot tips on how we can continue to elevate the platform and community of HazNet to tell Canada's resilience story. Reach out to us at haznet@crhnet.ca. And as always, check out how to contribute to HazNet on our website https://haznet.ca/.

Carly Benson
Editor, HazNet

Nicole Spence
Editor, HazNet

Lily Yumagulova
Editor-in-Chief, HazNet

President's note

By Jodi Manz-Henezi

We are excited to present the Spring/Summer Issue of HazNet for 2025, which brings a focus on emergency management in an era of extremes: from extreme heat to cold, drought to floods, development marvels to infrastructure failures, innovation to misinformation, we are witnessing it all. As I look back on the past year, I believe the theme for this issue is fitting given the unusually severe disaster events that have occurred globally. These events are not only extreme in their impacts but also within the fluctuation and contrast of hazards, spanning the spectrum of natural, climatological, to technological and man-made.

We must also consider the incredible costs of disasters and their extensive disruptions in our increasingly interconnected society. We are also witnessing extremes in our demographic shifts and projections, with an increasingly aging population influencing urban planning, labour markets, and access to tax revenue, which in turn impacts social capital and priorities. The word "extreme" can be used not only to describe specific natural hazard events but also the costs, consequences, and scope of these events on society.

Extremes can also be used to describe some of the challenges in the emergency management field of practice. Many of our colleagues have been tirelessly running from one event to the next, with little time in between, leading to extreme fatigue and frustration. We must find ways to implement the systemic changes needed to build a more adaptive and resilient society. In a time where political, economic, and social priorities are constantly changing, we need to stay consistent and effective in addressing disaster risk.

What is clear is that the disaster and emergency management professionals of today and of the future need to be more adaptable than ever to navigate through periods of persistent change,while embracing innovative technology, ideas, and opportunities to better plan for and adapt to these extremes. This requires confident and persistent leadership, strong ethics, and better and more inclusive collaboration with other professionals and community groups who have a role to play in creating a more resilient world. How can we make the best use of our time between these back-to-back events? How can we build critical new relationships, reflect on our past, and reimagine a new future, let alone execute that new vision?

In this issue, we will explore some of the questions offered here and more. Through knowledge-sharing and storytelling, we can contribute to the ongoing evolution of our professional practices. Together, we can better navigate our complex, changing world, to safeguard our communities and organizations, our families, and ourselves. Thank you for your commitment and contributions, and I look forward to continuing this journey alongside you all.

Best,
Jodi Manz-Henezi
CRHNet President

CRHNET

Emerging Professionals (EP) Committee Report 2023-2025

By Sarah Cowan, Willow Weber, and Caitlin Parker

Ontario Provincial Operations Centre. *Image credit: Nathan Innes, reproduced with permission.*

The Emerging Professionals (EP) Committee is a national community for students and those entering the field of disaster risk reduction (DRR) and disaster and emergency management (D&EM), to provide a platform to elevate their voices, and to create meaningful opportunities for professional and personal development. Over the past two years, the EP committee has been incredibly active and we are excited to share some of our highlights.

If you are an emerging professional interested in joining the CRHNet EP Committee please reach out to ep@crhnet.ca.

Driven by community needs

Throughout the past two years, the EP Committee has engaged directly with CRHNet members to better understand their needs, and have adapted our programming to do so. An initial survey in Spring 2024 provided important context of the current job market by soliciting insight from both new, seasoned and retired professionals on topics such as availability of jobs, hiring processes, and necessary resources. A second survey in Fall 2024 was used to reconfirm programming needs and understand barriers to participation. Together, these two surveys have informed our deliverables to better serve EPs across Canada; this includes more opportunities for learning, information for employment opportunities, and increased access to the emergency management community. All are clearly reflected in the many activities highlighted below.

Learning opportunities

All EP events were held in a virtual environment, as requested by our members, to support access from across Canada. Learning opportunities featured distinguished guest speakers who shared their personal experience with topics such as cybersecurity, mental health and resiliency, disaster risk reduction, health care emergency management, accessibility, and the use of drones in emergency response and recovery. In partnership with Humber College, a three week certificate course taught participants American Sign Language (ASL) and provided emergency managers with the tools they need to feel empowered to be able to work with and serve a larger and more diverse community. Additional social events have provided opportunities for EPs to connect in informal settings while participating in activities such as trivia.

Uplifting, advocating and providing resources

A foundational pillar of the EP Committee is to advocate and uplift EPs across Canada through sharing resources to support and highlight their contributions. In February 2024, we introduced the inaugural EP Newsletter to provide information related to professional growth. The content varies from issue to issue, but generally you can look forward to upcoming events (both from CRHNet and external organisations), job and volunteer opportunities, community features, and resources. The newsletter is sent via email to all CRHNet members.

New in 2024/25 is the addition of the EP Spotlight on the CRHNet Blog which features an up and coming individual in the field and explores their experience, contributions and hopes for the field.

Thank you to our committee members

All the above would not be possible without the amazing members of the 2023/24 and 2024/25 EP Committee members. Please join us in thanking the EP Committee members for their contributions and support: Dalida Alhaddad, Tugba Altin, Michelle Christopher, Eduardo Zanicoski Colin, Sarah Cowan, Avery Danyluk, Jaci Gilbert, CJ Hann, Brett Hershey, Faith Hinds, Brooklynn Hole, Kellie James, Corey Jakobsze, Jonathan Kohan, Shayna Labbé, Evan Llewellyn, Jen McEachen, Kyle Mcelhinney, Sumaira Niazi, Caitlin Parker, Constance Passas, Michelle Syonne Reyes, Richelle Roosman, Tamara Rose, Aparna Sengupta, Samrah Siddiqui, Sneh Sneh, Jenny Steenstra, Willow Weber, and Jude Yankey.

CRHNet Awards Program: 2024 award winners

By Sophie Guilbault

The CRHNet Awards Program is a national awards program established to recognize and honour individuals participating in and contributing to the study and practice of disaster risk management. Recipients of the 2023 CRHNet awards were celebrated in March 2024 for their exemplary contributions to the field. The winners all demonstrated strong leadership in their respective organizations and the CRHNet Board of Directors and awards committee is thrilled to recognize their active engagement within our community. Learn more about each of our winners below.

The Larry Pearce Education Award

The Larry Pearce Education Award is offered by CRHNet members to deserving post-secondary students undertaking studies in any discipline related to Canadian disaster risk and/or emergency management. This competitive award is intended to encourage innovative disaster risk management work in Canada and defray the post-secondary education costs for recipients in the year the award is granted. Accordingly, recipients must be enrolled in full-time studies in the year in which the award is given.

Recipient: John Hooper

John recently graduated from the Master of Arts in Disaster and Emergency Management at Royal Roads University. Despite a busy career as a full-time firefighter, John successfully maintained an A+ standing in his graduate program. His academic achievements complement his robust work experience and volunteer contributions. Currently working as a structural firefighter with the District of North Vancouver, John was previously employed by the BC Wildfire Service where he assisted with the successful extinguishment of over 750,000 hectares across 25 separate fires. He has also volunteered in several DEM roles, including as a marine rescue specialist with the Royal Canadian Marine Search and Rescue Society, the North Shore Emergency Management Team and has been a volunteer crisis responder for the Kids Help Phone in Vancouver.

John's dedication to academic excellence and his ability to balance his studies with a demanding career exemplify his unwavering commitment to both personal and professional growth and make him an outstanding recipient for the Larry Pearce Educational Award.

Marion Boon Mentorship Award

The Marion Boon Mentorship Award was established in 2020 to recognize exemplary mentorship and leadership in the field of disaster and emergency management. This award was created to acknowledge individuals who have demonstrated a commitment to supporting the development of emerging professionals through advocacy, collaboration, and the transparent sharing of learning, experiences, and ideas. It was named after Marion Boon.

Recipient: Nathan Innes

Nathan Innes' nomination for the Marion Boon mentorship award came from several people who had the chance to witness his optimism, drive, initiative, and vision since he joined the field of Disaster and Emergency Management. Nathan was first recognized by his peers for his mentorship qualities when he became a student leader within the York University Undergraduate Disaster and Emergency Management (UDEM) student society. With the student society, he led crucial work to revitalize UDEM so that York University's Disaster and Emergency Management undergraduate students would have a source of advocacy, representation with the program, and access to meaningful opportunities.

Nathan joined CRHNet a few years ago upon a recommendation from Marion Boon herself and his commitment to the network has been invaluable. At CRHNet, Nathan has been a founding member of the relaunched CRHNet Emerging Professionals (EP) Committee, where his passion for supporting EPs at a national level has really shone through. His commitment to providing meaningful events to support the development of EPs across Canada is invaluable and lives on today through the EP Committee. Nathan devotes himself to contemporary and emerging DEM professionals in his academic, professional and personal life. He has shown great passion and support for the field and is an invaluable member of the DEM community. We strongly believe that Nathan is an exceptional recipient for this award because of his tireless efforts to create opportunities for students and emerging professionals across Canada within the field of Disaster and Emergency Management (DEM).

Canadian Disaster Risk Management Volunteer Award

The Canadian Disaster Risk Management Volunteer Award is presented annually to nationally recognize extraordinary and exemplary volunteerism in the advancement of Canadian disaster risk management. This award is supported by CRHNet membership to encourage disaster risk management volunteerism and to profile exceptional contributions through volunteer work, volunteer initiatives, and volunteer programs. Up to three awards are granted annually.

Recipient: Simon Wells

Simon Wells is an emergency management and public service professional with over 15 years of experience. Simon brings both depth and breadth to the field, holding dual master's degrees – one in Human Security and Peacebuilding from Royal Roads University and another in Business Administration from Toronto Metropolitan University – along with certifications in emergency management, business continuity, and logistics.

Simon's impact is felt across all levels of response, from federal roles in major humanitarian and natural disaster operations to critical leadership during the pandemic and municipal public safety incidents. Known for his expertise in planning, Simon has also excelled in operations, logistics, project management, and leadership throughout numerous emergency responses.

Beyond his hands-on experience, Simon is the driving force behind the Canadian Journal of Emergency Management (CJEM). As its founder and Principal, he has been instrumental in building the journal's reputation, tirelessly engaging staff, volunteers, and sponsors, and advocating for its role in the field. Though Simon is quick to attribute CJEM's success to its governing and editorial boards, his dedication, vision, and behind-the-scenes work have been essential to the journal's achievements.

Simon embodies a true spirit of volunteerism, always seeking to elevate the field of emergency management in Canada. Widely respected and deeply connected, he uses his vast network not for personal recognition, but to amplify the work and impact of CJEM. His commitment to strengthening the emergency management community and supporting this journal's critical mission is truly inspiring and makes him an exceptional recipient for the Canadian Disaster Risk Management Volunteer Award.

T. Joseph Scanlon Lifetime Achievement Award

The CRHNet T. Joseph Scanlon Lifetime Achievement Award is the organization's highest honour and is named after the late journalist, researcher, and professor T. Joseph Scanlon, for his lifetime contributions to disaster risk management. The award is presented annually to recognize the lifetime contributions and achievements of exemplary individuals to the enhancement of Canadian disaster safety. Eligibility for this award is open to all Canadians, and recognizes individual service to public safety through disaster management practice, research, education, and leadership.

Recipient: Michel Doré

Dr. Michel Doré has been awarded this year's T. Joseph Scanlon Lifetime Achievement Award for his remarkable contributions to emergency management in Canada. Over a career spanning more than 30 years, Dr. Doré has been a driving force in building resilience within Canadian communities. His leadership and expertise have been crucial in responding to some of Canada's most significant disasters, including the 1996 Saguenay Floods, the 1998 Ice Storm, and the COVID-19 pandemic, among many others.

Dr. Doré's influence is vast, from his roles as an Emergency Management Coordinator at the local and provincial levels to his tenure as Associate Deputy Minister for Québec, where he advocated for evidence-based approaches in emergency management. His efforts helped shape Canada's first Emergency Management Framework, setting a standard for the country. Beyond his professional duties, Dr. Doré co-founded the Emergency Management NGO Consortium of Canada, led volunteer training programs, and has been an active air search and rescue volunteer with SERABEC/CASARA for the past decade.

In addition to his public service, Dr. Doré has made lasting academic contributions, authoring numerous papers and presentations and mentoring the next generation of emergency management professionals. His dedication to fostering collaboration across sectors and his commitment to volunteerism have strengthened Canada's emergency management landscape. Dr. Michel Doré's enduring legacy, servant leadership, and tireless advocacy for the profession make him exceptionally deserving of the T. Joseph Scanlon Lifetime Achievement Award.

Know someone who fits these descriptions?

Do these recipients sound like someone you know? Nominate your friends, colleagues, and peers through the CRHNet Awards Program page on CRHNet.

PRACTICE

Indigenous leaders in emergency management: Christina Kelly

By Christina Kelly

An unwavering commitment to emergency management

Christina's commitment to emergency management is evident in her current roles. She serves as the Emergency Program Manager, Director of Emergency Support Services (ESS) for Nations, Fire Stewardship Team Lead, local FireSmart Representative, Interim Leadership Committee (ILC) Board member for the Emergency Planning Secretariat, appointed member of Akisqnuk Lands Committee, and volunteers with Mission ESS. Her dedication to this field is further demonstrated by her pursuit of an Emergency Management diploma at the Justice Institute of British Columbia after completing a Certification in Emergency Management and Certification in Exercise Design. She plans to continue her education at Royal Roads University for a master's degree in Disaster and Emergency Management. Christina is a dedicated force within emergency management and a lifelong learner.

Uniting Coast Salish Nations in emergency management

Leq'á:mel First Nation is located 30 kilometers east of Mission, BC, located in the heart of the Fraser Valley. Leq'á:mel means "Level Meeting Place" and the Nation belongs to the Halq'emeylem language group among the Sto:lo-Coast Salish Territory. Leq'á:mel have inhabited this area for thousands of years. Recently, they have experienced multiple hazardous events in their traditional territory including ice storms that have challenged the community and caused prolonged power outages, atmospheric river events that flooded roadways and affected fish-bearing waterways, and wildfires that impacted forests and air quality. Severe heat domes and extensive drought have had numerous impacts on the landscape and people with temperatures exceeding 42 degrees Celsius for three consecutive days.

Driven by her unwavering belief in the power of collaboration, Christina is deeply passionate about uniting Coast Salish Nations in emergency management. Emergency response training and exercises foster resource-sharing and capacity support during emergencies and as the impacts of climate change become more pronounced, she advocates for using predictive modeling for extreme heat, floods, and extended drought periods, that could lead to faster response times, quicker recovery efforts, and fewer impacts on communities.

Christina, alongside Jenna Noppen, the Disaster Recovery Manager and ESS Director from Sumas First Nation, have led the development of the regional ESS Team (ESS) for Nations. Many of the Nations struggle with the capacity to develop their own ESS teams yet feel that they could provide better care to their communities than municipal teams during emergency events. The ESS Team for Nations, consists of eleven Coast Salish communities (Cheam First Nation, Sumas First Nation, Soowahlie First Nation, Shxw'ow'hamel First Nation, Seabird First Nation, Sts'ailes First Nation, Sqewlets First Nation, Matsqui First Nation, Chawathil First Nation, Skwah First Nation and Leq'á:mel First Nation) dedicated

Leq'á:mel First Nation. *Image credit: Gordon Armstrong.*

to empowering Indigenous communities through emergency response and providing culturally sensitive support during emergencies. They are provincially certified with Evacuee Registration and Assistance (ERA) training, which, coupled with their deep respect and understanding of Indigenous communities' unique strengths and needs, enables them to provide culturally appropriate support, making a profound difference in the lives of those they serve.

Implementing FireSmart on the Leq'á:mel Reserve

One of Christina's significant initiatives was to initiate the FireSmart program within the community. With the extended fire seasons and wildfires burning faster and with greater intensity, Leq'á:mel have proactively built and implemented a Fire Stewardship Team to train and protect their people, environment, and critical cultural infrastructure. Christina created a mitigation team dedicated to fire risk reduction tactics for Elders' homes on the Leq'á:mel Reserve. Their four-person mitigation crew is working hard to incorporate the seven FireSmart principles and to bring awareness to the community on the importance of being prepared. The First Nations Emergency Services Society (FNESS) has offered instrumental support in training the Fire Stewardship Team at Leq'á:mel.

Christina's efforts were recognized when she was selected as the local FireSmart representative in June 2024, and was invited to speak at the Prince George Wildfire Summit in April 2024, where she emphasized the importance of incorporating the FireSmart programs in the Nation.

Fire Stewardship Team. *Image Credit: First Nations Emergency Services Society.*

Emergency Supports Services for Nations Team. *Image Credit: Sumas First Nation.*

The importance of funding for supporting collaboration and building capacity

In British Columbia, the new Emergency and Disaster Management Act (EDMA) came into effect in 2023 and replaced the old Emergency Program Act. The EDMA was developed in consultation with First Nations as required by the Declaration on the Rights of Indigenous Peoples Act (The Declaration Act). The Declaration Act requires that the B.C. government take all measures necessary to ensure the laws of B.C. are consistent with the United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration). This includes emergency management law. The EDMA is based on the United Nations Sendai Framework for Disaster Risk Reduction that promotes an "all-of-society approach" to emergency management. One of the EDMA requirements is consultation and cooperation with Indigenous governing bodies through all stages of emergency management.

Understanding the importance of the new EDMA, Leq'á:mel's Emergency Manager is working with Mission's Emergency Manager, Monique Weir on exciting opportunities. The first project is the Community to Community (C2C) grant. The program supports the advancement of First Nation and local government reconciliation and relationship-building through the development of agreements (such as protocols, MOUs, and service agreements), joint plans, and strategies, as well as the review of bylaws and policies to recommend potential amendments, or in some cases new bylaws and policies.

A Union of British Columbia Municipalities (UBCM) Emergency Operations Center grant was successfully awarded to Mission and Leq'á:mel to individually conduct two large-scale exercises based on local hazards. Mission will conduct a wildland fire exercise that will allow participants to prepare, plan, and respond to a large-scale wildfire and bring participants together from municipal and neighboring Nations to practice their skills. Leq'á:mel will conduct a large-scale flood scenario next spring bringing host Nations and municipal participants together to strengthen relationships and respond to community-wide flooding hazards.

An additional initiative is the UBCM Public Notification and Evacuation Route Planning grant, which will allow Mission Emergency Management and Leq'á:mel Emergency Management to develop strategic, tactical evacuation plans for both communities, which includes hosting evacuees from both communities, resource sharing, and identifying reception center locations and foster families as an alternative to group lodging facilities. At Leq'á:mel First Nation, Christina created the Foster Families

Leq'á:mel First Nation Weather Station. *Image Credit: Christina Kelly.*

Program to lodge Indigenous emergency evacuees with foster families. Her idea sprang from watching large Indigenous families support and nurture each other during difficult times. Evacuated Indigenous elders and families can be placed in Indigenous homes where they have cultural support and traditional foods, providing a substantially better experience and faster recovery times after emergency events. The program has been successful and will be utilized as an option by the ESS for Nations team to support all Indigenous communities during evacuation events.

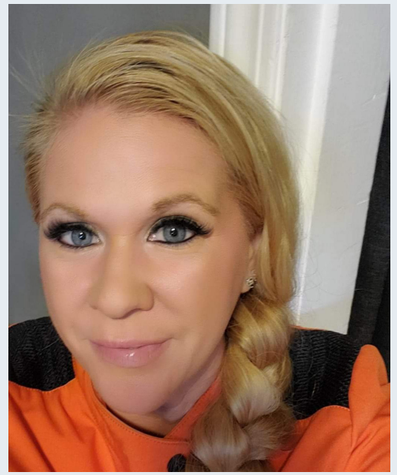
Leq'á:mel Emergency Management Department was also successful in their application to the Disaster Risk Reduction and Climate Change Adaptation Grant. This grant will allow Leq'á:mel to purchase and install a climate station and hydrometric sensors, which will monitor wind speed, temperature, humidity, air quality, rainfall amounts, and water levels. The ability to record real-time weather data will help create models for drought, water scarcity, extreme heat planning, and flooding. These data will be crucial for providing earlier notifications to the community, developing thresholds for trigger points and response plans, and for long-term planning.

Empowering Indigenous emergency management

Christina is passionate about building resiliency and collaborating with multiple Nations to exercise and train for emergencies and firmly believes that this empowers Indigenous emergency response. Christina won an Emergency Management Exemplary Service Award in the category of Building Resilient Communities in 2024, and travelled to Ottawa in February to receive this outstanding achievement.

To Nations who may want to build capacity, Christina suggests "…look to your neighbouring Nations and reach out to emergency management professionals and municipalities; we are all caring individuals looking to build support and empower Indigenous and non-indigenous emergency management practices. No team is too small to make a difference; creating individual hazard response plans for your top-three identified hazards will enable you to strategically incorporate notification procedures and response measures and build much-needed resiliency and faster recovery times for your community."

Christina can be reached at christinak@leqamel.ca and would love to meet virtually or offer personal assistance on strategizing for communities.



Christina Kelly descends from the Kootenai people of the Ktunaxa Nation, a proud member of the Akisq'nuk First Nation. Her grandfather is Kwiɬɬem Sw'a (Big-headed cougar), and her mother, Ishnet Sw'a (Cedar Cougar), is from the Morigeau Family. Christina has been fortunate to work and live on the unceded territory of the Stó:lō and Leq'á:mel peoples.

Leq'á:mel First Nation. *Image credit: Gordon Armstrong.*

PRACTICE

Rebuilding community (while rebuilding the community): A holistic recovery model for the 21st century

By Trisha McOrmond

Contemporary Emergency Management (EM) originated in the 1950s from civil defence, which assisted communities overwhelmed by extreme events (Public Safety Canada, 2015). Today, the task-oriented goals of early EM remain to 'get in, make people physically safe, contain the damage, rebuild physical infrastructure, and get out'.

I spent seven years in government, supporting senior decision-makers in public safety and EM in Alberta and across Canada. The Canadian EM model where the costs of replacing lost belongings and rebuilding infrastructure are addressed by insurance companies, government, and charitable organizations, seldom includes resources targeted for rebuilding the torn social fabric of communities or restoring the mental health of community members. Although the mental, social, and cultural wellbeing of people impacted by the events were not intentionally overlooked by early EM practitioners, even today, the EM recovery model does not actively integrate physical and community social restoration.

The cost of not addressing mental health resilience

EM focuses on heroic response and rebuilding measures, but avoids difficult questions about the long-term community recovery *beyond* hard infrastructure, even as the negative impacts on social infrastructure are increasingly apparent. Kathleen Hogan, Chief People Officer for Microsoft, centres the human energy crisis as the number one issue facing the global economy (Hogan, 2023). Disasters, emergencies, and evacuations exacerbate this crisis and the impact is cumulative. For many people, one disaster could be the tipping point. According to the Centre for Addiction and Mental Health (2024), the annual economic cost of mental health is $50 billion, with substance use disorder costing an additional $40 billion in Canada; workplace disability leave for a mental illness is about double the cost of leave due to a physical illness.

Ideally, EM should prepare individuals and communities for all aspects of hazards: physical, mental, emotional, and cultural/spiritual. Programs to address all aspects of wellbeing for people and communities are needed. Although events of recent years clearly show that disasters exacerbate houselessness, unemployment, mental health concerns, interpersonal violence, and substance use disorder (Parkinson and Zara, 2013), policies and programs to address them lag. The practice remains "time heals all wounds" and the assumption is someone, usually women, will 'make casseroles' and volunteer on weekends.

Generally, Canada's disaster assistance programs do not include resources for rebuilding a community's social fabric, except for anniversary or celebratory events. Speaking from personal field and policy experience, the majority of disaster assistance available beyond physical replacement, is for individual mental health support, usually short-term 'crisis support' (Public Safety Canada, 2024). Most requests for community support are passed to social services agencies such as the Canadian Red Cross (CRC), but without clear objectives or accountabilities related to social impacts. In a review of the American Red Cross (ARC), Harve and Li (2024) note a lack of "formal research papers analyzing social impact on disaster recovery aid for survivors."

Longitudinal research of Fort McMurray residents evacuated in 2016 shows continued, and for some worsening, mental health challenges (Adu, et al., 2022). Research from the Long-Term Evacuees project found long-term feelings of depression and alienation in First Nations who experienced evacuations (NCC, 2021). Across Alberta, people were again evacuated from wildfires in 2024, and reports of depression, anxiety, and overwhelm rose. Long-term individual and community well-being are defined by the strength of formal and informal relationships, a concept known as social capital (Putnam, 2000). Disasters stretch and often break social bonds. Without support for active rebuilding efforts, people become increasingly isolated.

I invite the discipline of EM to develop approaches to address community wellbeing. EM is uniquely positioned for rapid field-testing of theoretical and practical options developed by experts (Ron Kuban, personal communication, July 2017), placing this discipline on the front lines of climate change adaptation, physically and socially. Intentional inclusion has an ameliorative effect on excluded communities impacted by disasters (Gilmer, et. al., 2021) and can enhance community and social fabric, addressing pre-existing systemic issues as part of larger recovery. Intentional inclusion during recovery and rebuilding, enhances the social fabric and can address pre-existing systemic issues.

Universal design

EM could consider adopting Universal Design to meet the needs of emergent and unique situations, providing support across the spectrum of vulnerabilities and strengths of a community:

> "Universal Design is the design and composition of an environment so that it can be accessed, understood, and used to the greatest extent possible by all people regardless of their age, size, ability, or disability." Furthermore, an environment and any component of that environment should be designed to meet the needs of all the people who wish to use it. This is not a special requirement, for the benefit of only a minority of the population. It is a fundamental condition of good design. (Centre for Excellence in Universal Design)

> "Someone, usually women, it is assumed, will 'make casseroles' and volunteer on weekends."

Applied to EM, Universal Design could address the psychosocial, cultural, mental-emotional, and physical aspects of disaster – and would ensure that people most impacted by events and those with the least resources could access services and support. Support and outreach is critical for community healing and integration. Scalable tools have been developed for population subsets to assist (e.g., the Pittsburgh Neighbourhood Resilience Project).

A three-stage approach using established, trauma-informed practices (Herman, 2022) in community restoration is proposed:

1. Establish safety and empowerment: The first priority is always getting people away from direct threat. However, establishing physical safety from the threat does not ensure emotional and psychological safety or empowerment.

Evacuees should be able to move with reasonable personal safety through the temporary accommodation. For example, there have been reports of drug dealers at entrances, which reduces ability to move freely and decreases safety.

2. Support healing and wellness: Beyond access to medical treatment, healing and wellness is not just the absence of disease, but the presence of vitality.

Providing nutritious food, quiet space, child-minding, rhythmic activities, and creative outlets enables people to regulate their nervous system and begin to integrate the events that happened in a safe environment.

3. Connection and Integration: When communities rebuild after disasters, old routines and connections are disrupted and sometimes lost. Proactive drop-in activities are a preliminary step to support reconnection.

Providing a strengths-based program of informal structured individual supports and community events create space to both grieve and imagine.

Conclusion

Even strong communities need support to rebuild their social structures and networks because post-disaster, they are overwhelmed. It is reasonable to believe that providing appropriate funding supports to weave stronger community fabric concurrent with rebuilding buildings improves recovery. When communities work to restore their community fabric with the same rigour given to the physical and economic infrastructure, people experience increased wellness, building more resilient and sustainable communities.

References

Adu, M. K., Eboreime, E., Shalaby, R., Sapara, A., Agyapong, B., Obuobi-Donkor, G., Mao, W., Owusu, E., Oluwasina, F., Pazderka, H., & Agyapong, V. I. O. (2022). Five Years after the Fort McMurray Wildfire: Prevalence and Correlates of Low Resilience. *Behavioral sciences (Basel, Switzerland)*, *12*(4), 96. https://doi.org/10.3390/bs12040096

Alexander, Adam C., and Kenneth D. Ward. 2018. "Understanding Postdisaster Substance Use and Psychological Distress Using Concepts from the Self-Medication Hypothesis and Social Cognitive Theory" in *Psychoactive Drugs*. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6101235/

Bray, B., 2019. *Maslow's Hierarchy of Needs and Blackfoot (Siksika) Nation Beliefs*. Rethinking Learning by Barbara Bray. https://barbarabray.net/2019/03/10/maslows-hierarchy-of-needs-and-blackfoot-nation-beliefs/ accessed 15-06-2024

Centre for Addiction and Mental Health "Mental Illness and Addiction: Facts and Statistics" online. https://www.camh.ca/en/driving-change/the-crisis-is-real/mental-health-statistics accessed 10-06-2024

Centre for Excellence in Universal Design https://universaldesign.ie/about-universal-design accessed 24-07-2024

Gilmer, T.P., Center, K., Casteel, D. *et al.* Developing trauma resilient communities through community capacity-building. *BMC Public Health* **21**, 1681 (2021). https://doi.org/10.1186/s12889-021-11723-7

Dangerfield, Katie and Katherine Ward. 2023. "Anxiety, depression and anger: The mental health impacts of natural disasters" Global News https://globalnews.ca/news/9912490/natural-disasters-wildfires-canada-mental-health/ accessed 12-07-2024

Gutierrez, N., 2022. The Pain We Carry: Healing From Complex PTSD. Oakland. New Harbinger Publications.

Harve, M. A., & Li, D. (2024). Social Impacts of the American Red Cross (ARC) Disaster Interventions: A Scoping Review. *Cureus*, *16*(2), e55265. https://doi.org/10.7759/cureus.55265

Herman, J., 2022, Trauma and Recovery. New York. Basic Books.

Hogan, K., March 30, 2023. "Microsoft Chief People Officer: We are experiencing a global human energy crisis" in *Fast Company*. https://www.fastcompany.com/90872995/microsoft-chief-people-officer-we-are-experiencing-a-global-human-energy-crisis

National Collaborating Centres on Public Health. 2021. "Health & Social Impacts of Long-Term Evacuation Due to Natural Disasters – First Nations Communities: A summary of lessons for public health" *Long-Term Evacuees Project*.

Neighborhood Resilience Project. 2024. Trauma-Informed Community Development https://theneighbourhoodresilienceproject.com Pittsburgh accessed 01-03-2024.

Parkinson, Debra and Claire Zara. "The hidden disaster: domestic violence in the aftermath of natural disaster" https://knowledge.aidr.org.au/resources/ajem-apr-2013-the-hidden-disaster-domestic-violence-in-the-aftermath-of-natural-disaster/ accessed 31-07-2024.

Public Safety Canada (2024) Guidelines for Disaster Financial Assistance Arrangements https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rcvr-dsstrs/gdlns-dsstr-ssstnc/index-en.aspx accessed 08-08-2024.

Public Safety Canada (2015) Canadian Emergency Management College History https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/mrgnc-prprdnss/archive-cndn-mrgnc-mngmnt-cllg-hstry-en.aspx accessed 05-08-2024.

Putnam, R., 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York. Simon & Schuster.

Thurston, Alyssa Mari, Heidi Stockl, Meghna Ranganathan. 2021. "Natural hazards, disasters and violence against women and girls: a global mixed-methods systematic review" *BMJ Global Health*. Online. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8112410/

Trisha McOrmond

I am the Métis founder of, and lead practitioner with, magpie inc. I am a trauma-informed intersectional sociologist, apocalyptic optimist, and decolonial practitioner. I have excellent pattern recognition, am values-driven, and provide that sober second thought that most people too worried about promotions only say after the fact. I have been known to take on questionable side quests.

Burnout and toxic cultures are the result of 19th century solutions to 21st century problems. At magpie, we focus on problem identification and then work with clients to develop relevant contemporary and sustainable strategic objectives to get the work done. From restoring community fabric to helping high-performance teams manage burnout in the face of unknowable change, our commitment is a livable future for all our relations, all the time, with joy and service.

We also make time for lunch and ceremony.

PRACTICE

Expressive writing and the mental health challenges of forest fire and smoke

By Joanne Feenstra

On July 17, 2024, a huge thunderstorm rumbled down the narrow Slocan Lake Valley. Each side of the valley sustained multiple hits of lightning and countless wildfires sprung up. The residents of Slocan, a small, low income, waterfront community on the very south end of Slocan Lake struggled to see even the houses of their next door neighbours through the oppressive smoke that blanketed the town. After eight days of smoke, an evacuation alert was called. During the Alert, residents were too frightened to leave town because the sudden implementation of an actual evacuation Order could mean they would not be able to return home. The weather hovered around the upper 30's, above normal for this time of the year, carrying with it a compounding risk of heat illness. Most individuals in this low income community don't have air conditioning or air purifiers. If people opened their windows in the evenings to let in cool air, they were letting in thick smoke; otherwise, people lived indoors in hot and hotter conditions. Ten days after the fire started, the entire town and surrounding outlying areas were evacuated.

Just 25 kilometres to the north, residents of Silverton, also a small, low income waterfront community on Slocan Lake, experienced a more immediate threat. People living outside Silverton in rural areas were evacuated two days after the fires started. People living in Silverton experienced the sight of immense forest fires nearby and across the narrow lake, embers and ashes falling on yards and houses, and a sound that one person described as being at the Grand Prix as the forest fire devoured the nearby mountainsides.

The trauma of living through disaster

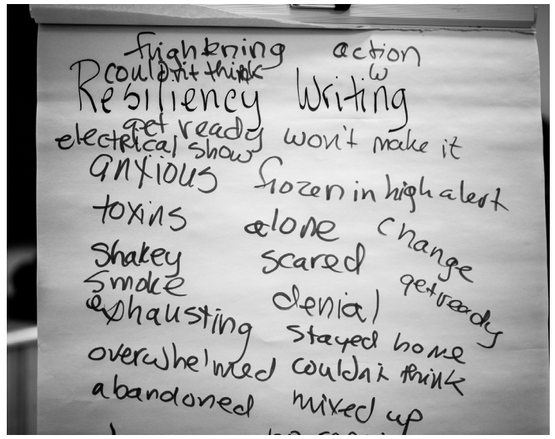
The one narrow mountain road that connects the two communities was closed July 18, one day after the thunderstorm. Slocan had only one other road providing egress - the possibility that the fire could close that one remaining road was a constant concern. As people left the Slocan Lake area behind for parts unknown, social connections became disconnected. Individuals lost mental health and community support. People connected through social media, writing and reading both positive and vituperative posts.

Experiences were as varied as the individuals. Some individuals with mobility needs were left to figure things out for themselves. Individuals reported being happy they had many offers of housing or of being flummoxed as they left on their own to do as best as they could with hotel rooms or campgrounds. People wrote that they had a great time on their mini-vacation or that they just wanted to come back, but when they got home, they were depressed and anxious. People wrote of the stress of having to do normal things, such as go to the hospital for surgery or chemo, while struggling to keep in touch with family or figure out who got to use the one family car all the while evacuating at the same time. People said they felt completely consumed by the decision of whether or not to pack the family photos, of making lists, of trying not to forget medications or the dog's leash, of how much underwear to take. The immediate minutiae of packing became a larger emergency than the threat of the forest fire. Some individuals stated that the evacuation order itself felt like relief; someone else made the decision to leave the smoke. Participants wrote of feeling stupid, sad and unmotivated in the smoke and disaster.

In a study by Humphreys et al. (2022), participants identified eerily similar concerns to those observed at Slocan Lake. The study identified heightened anxiety, depression, isolation, and a lack of motivation as a result of wildfires. Income levels, people's age, health conditions, housing status, and social isolation made some residents more vulnerable to mental health and wellbeing challenges than others.

Another group of researchers, To et al. (2021), reviewed sixty studies to determine the result of wildfires on mental health. The results showed an increased rate of post-traumatic stress disorder (PTSD), depression, and generalized anxiety for years after and new issues arising as a result of environmental disasters; ecological grief, solastalgia (when devastation causes the deprivation of comfort), and eco-anxiety.

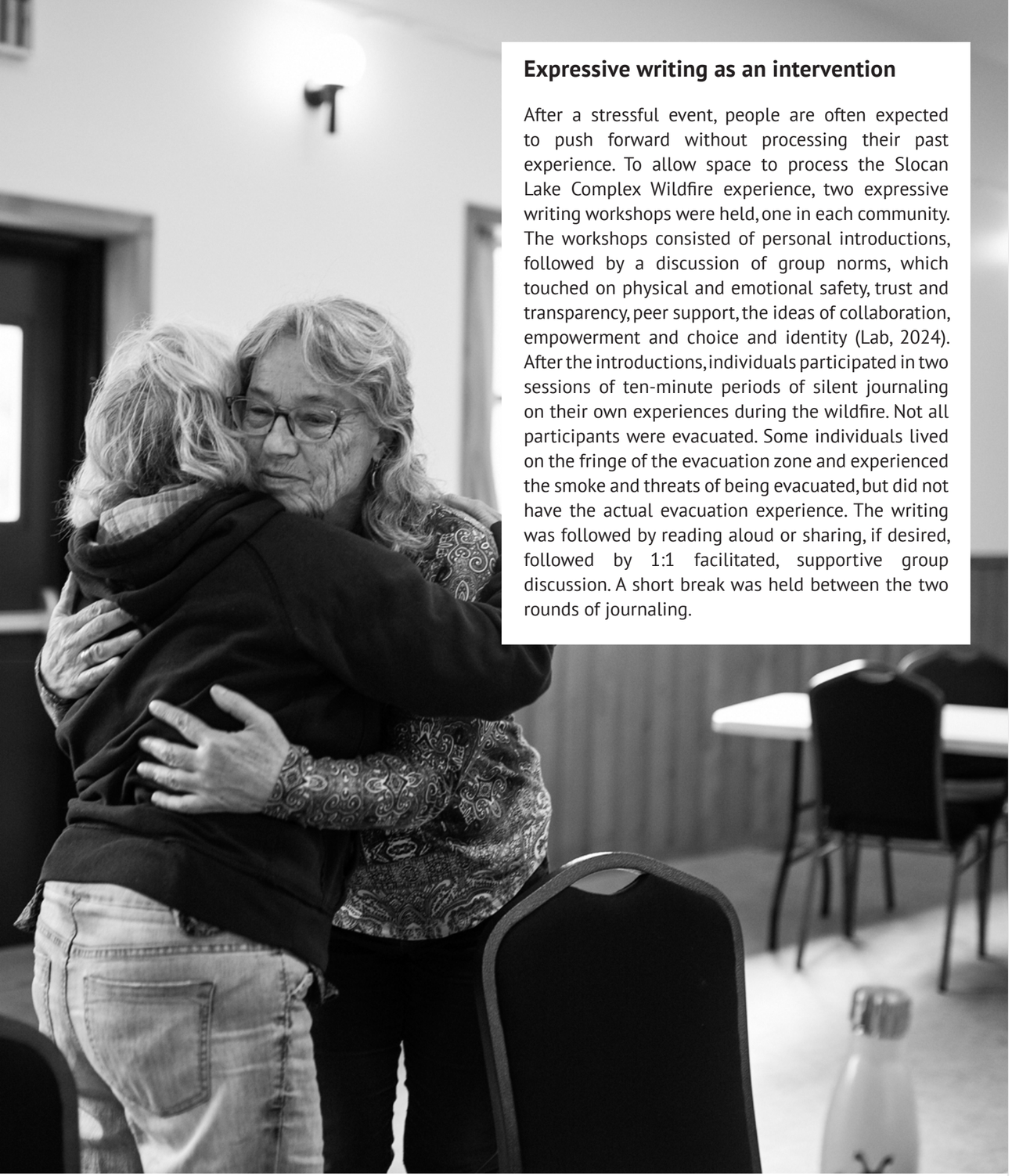
On August 12, 2024, after the firefighters rolled up their hoses, about 1,000 people came home. We survived. While the physical structures of our towns remain intact, for people like myself, the social-emotional impacts still smoulder.



Feelings words list generated by participants. *Image credit: Rachel Bone, reproduced with permission.*

The word "solastalgia" combines the Latin word sōlācium (solace or comfort) and the Greek root algia (pain, suffering, grief). The term describes the feelings a person has in response to the perception of negative environmental change caused by climate change, volcanic eruptions, drought or destructive mining. Solastalgia can lead people to seek comfort collectively. When emotions are processed collectively, reflective functions are increased, leading to resilience and growth (Warsini et al, 2014). "Eco-anxiety" refers to concerns about what might happen in the future.

> "Nostalgia is the homesickness you have when you're away from home and wish to return. Solastalgia is the homesickness you have when you're at home, and your home is leaving you."
>
> — Glenn Albrecht, who coined the term in 2003 (Amsen, 2023)



Expressive writing as an intervention

After a stressful event, people are often expected to push forward without processing their past experience. To allow space to process the Slocan Lake Complex Wildfire experience, two expressive writing workshops were held, one in each community. The workshops consisted of personal introductions, followed by a discussion of group norms, which touched on physical and emotional safety, trust and transparency, peer support, the ideas of collaboration, empowerment and choice and identity (Lab, 2024). After the introductions, individuals participated in two sessions of ten-minute periods of silent journaling on their own experiences during the wildfire. Not all participants were evacuated. Some individuals lived on the fringe of the evacuation zone and experienced the smoke and threats of being evacuated, but did not have the actual evacuation experience. The writing was followed by reading aloud or sharing, if desired, followed by 1:1 facilitated, supportive group discussion. A short break was held between the two rounds of journaling.

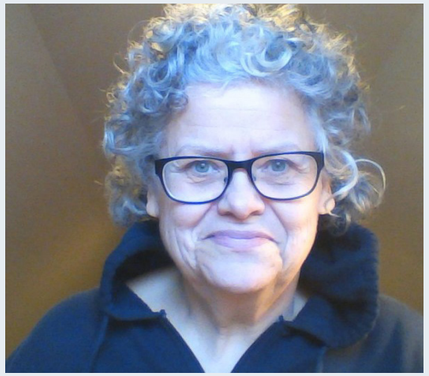
Break time at the expressive writing workshop. *Image credit: Rachel Bone, reproduced with permission.*

The format of the workshops were drop-in; if you had missed day one, you could still attend day two or three. Verbal feedback was carefully monitored to be supportive: "I like what you said" or "I'm sorry you experienced that," or "I never thought about that." Grammar, sentence structure and enunciation were never mentioned.

Participants were directed to write about thoughts and feelings they had during their experiences. They were instructed to not write only about "I wish I took the picture my grandson drew" or "my neighbour left their sprinkler on" but to focus on "I felt, I thought" during the different phases of the entire forest fire and evacuation experience.

While I lack a way to empirically assess the long-term impact of these writing workshops, it is clear that they were well attended and people cried and laughed and hugged. One person who attended the sessions said they were "a great opportunity for healing a trauma event." Another said, "Being able to share my experience with others and listen to the variety of stories was powerful and healing." I was told, more than once, that the workshop "changed my life." People left the workshop with a sense of purpose, of moving ahead and also of acceptance.

Just as people are now searching out air conditioners and air purifiers, one small future best practice towards mental health and resilience in the aftermath of wildfires or other disasters might include providing the opportunity for those affected to process the events creatively through expressive writing workshops. This might enable a few more people to become resilient by confronting the emotional experience of living through a wildfire. By processing feelings such as anxiety, depression, and even PTSD, individuals can work towards promoting greater individual and community resilience.



Joanne Feenstra enjoyed a brief stint as Emergency Measures Coordinator in Haines Junction, Yukon. She then worked as a facilitator and educator for 25 years. At the age of 65, she completed her Master Degree in Integrated Studies and was diagnosed with ADHD. She currently facilitates writing workshops in Slocan.

References

Humphreys, A., Walker, E.G., Bratman, G.N. and Errett, N.A. (2022). What can we do when the smoke rolls in? An exploratory qualitative analysis of the impacts of rural wildfire smoke on mental health and wellbeing, and opportunities for adaptation. BMC Public Health, 22(1). doi:https://doi.org/10.1186/s12889-021-12411-2.

Lab, N.L. (2024). Trauma Informed Facilitation: The Power of Reflection in Training, Workshops and Experiences. [online] nonprofitlearninglab. Available at: https://www.nonprofitlearninglab.org/post-1/trauma-informed-facilitation-the-power-of-reflection-in-training-workshops-and-experiences.

To, P., Eboreime, E. and Agyapong, V.I.O. (2021). The Impact of Wildfires on Mental Health: A Scoping Review. Behavioral Sciences, [online] 11(9), p.126. doi:https://doi.org/10.3390/bs11090126.

FEATURE

The evolving field of emergency management: Perspectives from Big City Emergency Managers

By the HazNet Editorial team

In Canada, modern emergency management as a professional field distinct from civil defense and first response has somewhat struggled to land on its feet, born out of crisis and maturing through tumultuous times. The result is a dynamic field with varying levels of specification, certification, and application - yet, there is one thing that most emergency managers can agree upon: the landscape unto which the field was born exists no more. Gone are the days of single events that defined careers, replaced by concurring and cascading events that become so enmeshed, it is almost impossible to colour within the blurred lines. As nimble as emergency managers are, the systems that support us are barely able to keep up, leaving us to navigate the evolving field of emergency management, with the hope that we can help steer the ship in the right direction.

An origin story: The Natural Hazards Workshop and the beginnings of CRHNet

Every July since 1975, in the peak heat of Colorado summer, the Natural Hazards Center at the University of Colorado Boulder has hosted the Annual Natural Hazards Research and Applications Workshop. Serving as the National Science Foundation's designated information clearinghouse for the societal dimensions of hazards and disasters, the center organizes the Workshop to bring together researchers, government, non-profit, and private sector champions dedicated to alleviating the impacts of disasters.

It was after attending the Workshop in the early 2000s that David Etkin and Emdad Haque supported by Grace Koshida, Larry and Laurie Pearce, Valerie Hwacha, Jack Lindsay, Judith Muncaster, Gordon McBean, and Lianne Bellisario decided to create the Canadian Risk and Hazard Network (CRHNet) and its annual symposium to bring the emergency management community together. Established in 2003, it continues to promote and strengthen disaster risk reduction and emergency management in Canada. In 2009, the organization created a platform to serve the information needs of practitioners and researchers working in the fields of disaster risk reduction, emergency management and resilience, creating HazNet, the magazine of CRHNet.

The evolving field of emergency management

Team members from HazNet were in attendance at the recent 2023 workshop. During the plenary titled 'State of Emergency—Resource Commitments and Compassion in an Age of Extremes,' four emergency managers from San Francisco, Philadelphia, Denver, and Los Angeles shared their experiences in responding to compounding social and environmental disasters. These four speakers were members of the Big City Emergency Managers (BCEM), an independent, non-profit organization founded in 2005, with a mission to "foster the development and growth of robust and nimble emergency management operations in the nation's largest, most at-risk metropolitan jurisdictions so that the country is better positioned to prevent, protect against, mitigate, prepare for, respond to and recover from major incidents and catastrophic emergencies."

As Canadian emergency managers face many similar challenges in this era of increasing crises, it is an opportune time to learn from the lessons shared by our neighbours. The HazNet team has summarized the most salient points from this panel in this piece, highlighting the complex nature of emerging from a pandemic while facing increasingly unstable social, environmental, and political landscapes.

"Mission creep": From acute emergencies to extended crises

One of the key challenges facing the field of emergency management is "mission creep": responding to more and more socio-economic crises beyond traditional hazards. The panelists described activating emergency operations centres for emergencies, ranging from homelessness to the opioid epidemic, to finding emergency shelter for migrants and refugees. While this "mission creep" began prior to the COVID-19 pandemic, there was general agreement that the pandemic marked a turning point for the field as it thrust the behind-the-scenes work of most emergency management organizations into the spotlight. Elected officials, senior leaders, and the public gained a new appreciation for the role emergency managers could play in convening partners to coordinate the response to difficult situations.

*COVID-19 was the thing that catapulted us (emergency managers) into a different sphere of responsibility. The perspective of emergency management has really changed, in many ways for the positive. People now understood what we did and our "secret sauce". **We are the ultimate problem solvers. We are the conveners.** Since COVID-19, we've been brought into anything that has the definition of a crisis.*

For San Francisco we have been coordinating the response to homelessness, the opioid epidemic, overdoses, and now we are in the business of running what we call a drug market agency coordination centre. We are working arm-in-arm with law enforcement combined with what we were already doing around street conditions. I have two licensed social workers on my staff now because we have a whole new division.

- Mary Ellen Carroll, San Francisco

> "We are the ultimate problem solvers. We are the conveners."

San Francisco's Emergency Operations Center during APEC (Asian-Pacific Economic Cooperation), a designated National Special Security Event (NSSE). *Image Credit: Mary Ellen Carroll.*

“Since 2018 we have activated in response to six distinct headline-worthy events that I know were not part of our playbook prior to 2018.”

Flooding in Manyunk Neighbourhood, Philadelphia. *Image Credit: Jeffrey Kolakowski, Philadelphia Office of Emergency Management.*

On July 4, we evacuated our annual concert and fireworks celebration due to severe storms. Tragically, we had an active shooter mass shooting event where five people were killed. In June, we experienced a major collapse of I-95 causing complete closure for 12 days. Then in March, we monitored and began enacting a water distribution strategy as the freshwater intake for 400,000 Philadelphians was at risk of toxic exposure due to a chemical spill. I would say we have the traditional risks pretty well covered.

We also activated the Emergency Operation Centre in 2018 for 90 days to address the opioid crisis. We've supported planning and operations for five homeless encampments over the past three years. I was there from when the US Army Core first called to inquire about available shelter facilities for evacuated Afghans, until the last of 29,713 people came through our international airport. I stood beside our City Manager while controversial statues were taken down or boxed up during 2020 and I was there at 6 a.m. last November when a bus from Texas brought the first of 1,739 migrants and counting to the City of Philadelphia. ***Since 2018 we have activated in response to six distinct headline-worthy events that I know were not part of our playbook prior to 2018.***

We've found ourselves trying to use the emergency management apparatus that's been built for floods and fires to other types of crises. For local emergency management, I don't see it changing if we continue to build into risky areas, if we continue to have political divisiveness over what the research tells us are ways to address these systemic issues.

- Dominick Mireles, Philadelphia

When I took this job as an emergency manager back in 1998, things were fairly calm. The city was recovering from the El Nino rainstorms and we were doing a lot of Preparedness Fairs and fun things. We were even gearing up for Y2K. Life was good. Life was simple. Fast forward 25 years, can you imagine what our lists of concerns are? New non-traditional issues. Migrant movement. Extreme heat. Severe weather. COVID-19 recovery. Homelessness. Balancing all of the special and mega events that come to the City of Los Angeles. So we have a lot going on. By the way, our EOC was activated for 1,065 days.

While [emergency managers] do not have all the answers, we are called upon to bring everybody to the table for the hazard or the issue of the day.

- Carol Parks, Los Angeles

One of the things I think is interesting is the use of emergency declarations and the use of the emergency operation centre. It's not new to emergency management, we've been doing that forever, it's a shift in how governments utilize emergency management. Elected officials have realized that declaring a state of emergency and activating the emergency operations centre is a very public, very visible way to say, "This is a crisis and I am taking this seriously."

We were under emergency declaration for Covid-19 for two years, we have been under emergency declaration for the migrant and asylum seeker influx now for about seven months. Is this a political statement or is the use of an emergency declaration and activation of an EOC a viable mechanism to address the needs?

- Matthew Mueller, Denver

Sprinting a marathon: The evolving role of an emergency manager

While there is clear value emergency managers can bring to a wide range of crises, the increasing demands present new challenges: prolonged activations are stretching resources thin, while traditional training and planning in emergency management has failed to keep up with the rapid rate of change. Many emergency managers enter the field out of a desire to help people in crisis and the increase in scope provides new opportunities to do that; however, the response model is not sustainable when activations last months or years. The panelists reflected on some of the unique situations they have dealt with and the strain it has begun to put on their teams.

As emergency managers, we have learned to become professional pivoters. During COVID-19, everybody was talking about 'well I have to pivot to do this and pivot to do that.' We have learned how to pivot because we not only have to deal with one thing at one time, we deal with multiple things at one time and we are called upon to have answers.

- Carol Parks, Los Angeles

Since 2020, how emergency management is utilized and how we are viewed has changed drastically. Between 2006-2019, we averaged three Emergency Operations Centre (EOC) activations and an average of four days in the EOC per year. Since 2020, we've gone to four EOC activations per year for an average of 88 days per year. When you look at the growth, things have changed dramatically. I actually had to have a conversation with our budget office saying, 'I've got 4 years of data saying this trend isn't changing and we need to take a long, hard look at how we're resourced based on those expectations.'

- Matthew Mueller, Denver

Hardwired to help, but stretched thin for increasingly complex emergencies

Managing complex social emergencies requires new skill sets as part of emergency management. In San Francisco, this meant getting licensed social workers on staff:

For San Francisco we have been coordinating the response to homelessness, the opioid epidemic, overdoses, and now we are in the business of running what we call a drug market agency coordination centre. We are working arm-in-arm with law enforcement

Denver Downtown, Aerial drone shot. *Image Credit: City and County of Denver.*

combined with what we were already doing around street conditions. I have two licensed social workers on my staff now because we have a whole new division.

- Mary Ellen Carroll, San Francisco

In Philadelphia, managing complex social emergencies also meant finding solutions for unmet needs:

You'd expect the Director of a Big City Emergency Management department to be a systems builder. I do that…and then sometimes I'm literally at the store buying pet food for a shelter because the supplier in our plan doesn't have after-hours access to the supplies. With this dichotomy in mind, what do you do when the emergency management scope has ended but you're actively watching someone fall through the cracks? When partners say 'we don't have a mandate or authority here' or 'our funding doesn't cover that'? If the definition of emergency management is 'the managerial function charged with creating the framework within which communities reduce vulnerability to hazards and cope with disaster' I guess we emergency managers do all that . Personally, I'm pretty hardwired to want to help somebody when they are in need; that's why I love this work. But as a leader I need to acknowledge that not everybody shares that viewpoint, and emergency managers aren't necessarily trained to face these complex issues. So what tools do we have in this space and what does success look like?

- Dominick Mireles, Philadelphia

Where we go from here: "We cannot become what we need to be by remaining what we are"

The world is changing more rapidly than we can adapt, with new and emerging crises on the horizon. While traditional hazards such as floods and fires are not going away – and in fact are accelerating in frequency and intensity – the demands on emergency managers continue to increase. Panelists shared the view that emergency managers have a lot to offer in managing crises, with a valuable skill set in bringing people together to solve problems. But the traditional tools we rely on – incident action plans, 24/7 emergency operations centre activations, government-centric planning and response – often do not work as well when applied to these increasingly complex humanitarian and socio-economic crises. Reflecting on where the profession is headed, the panelists offered suggestions on how emergency managers can begin to prepare now for an uncertain future.

The fact is that emergency managers do approach problems differently. There's something special about simultaneously not owning any of the problem space but still being in a leadership role. You're a facilitator and a trust worker.

Now, I don't think that emergency management should be applied to everything. We aren't solving systemic issues and sometimes we're just used as a band aid. You really do need to have a passion for this work. It's not easy.

- Dominick Mireles, Philadelphia

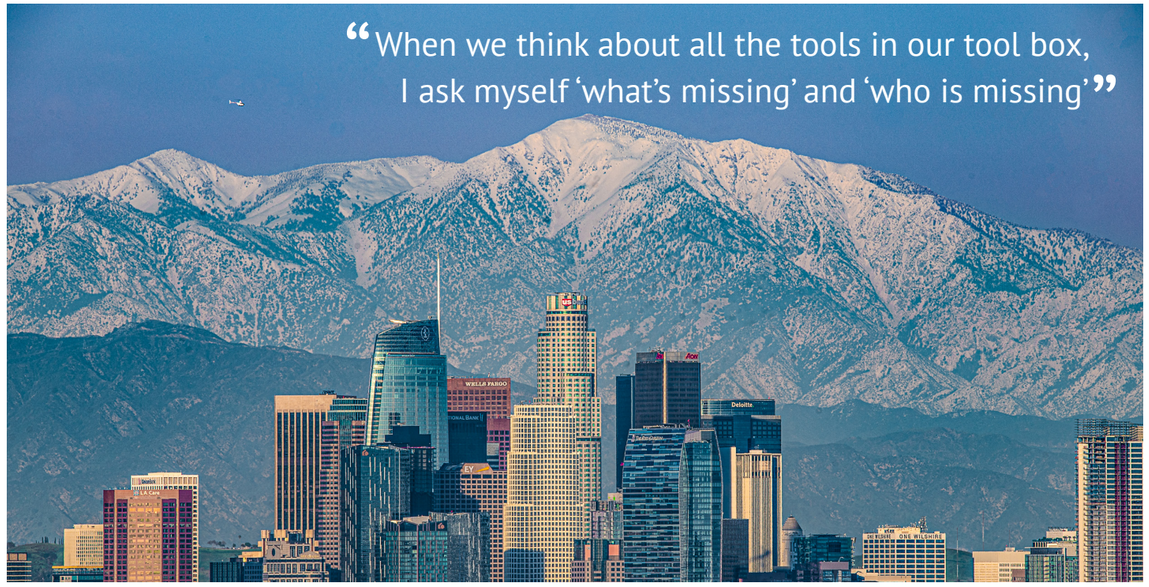
It is such an amazing field in the sense that you get to delve into so many different areas and it's never boring. In San Francisco, we need project managers, analysts, community representation (people who come from and know the community), GIS folks, social workers, and so on. But we never have enough positions, so it's looking at developing skills across the board: project management, analysis, being able to talk to different people. Emergency management is less and less about writing 500-page incident actions plans and a million page emergency plans; it's not the plan that's helpful but the planning process.

- Mary Ellen Carroll, San Francisco

We have to embrace this new normal and look for ways to find solutions and empower our residents. ***When we think about all the tools in our tool box, I ask myself "well what's missing" and "who is missing".*** *We need to go out and talk to people both in the community, to learn what's happening on a day-to-day basis and to look beyond the traditional walls of government: places of worship, researchers, the practitioners, the engineers, the architects, the scientists and the list goes on. When we look at what's on our new plate – and we don't have just a regular size plate, we have a platter – even though the issues are complex, we have an opportunity to make a real difference.*

I love the quote from Max De Pree, who said "we cannot become what we need to be by remaining what we are". The past has taught us that the future may not be in our history books.

- Carol Parks, Los Angeles



Los Angeles. *Image Credit: Jose Lozano for LA Sanitation and Environment.*

Find out more

You can listen to the full panel session on YouTube, read the closing comments from the 2023 Workshop, and learn more about the annual meeting on the website for the Natural Hazards Center at the University of Colorado Boulder.

Mary Ellen Carroll is the executive director of the Department of Emergency Management in San Francisco. She oversees a department responsible for leading San Francisco in planning, preparedness, communications, response, and recovery for daily emergencies, large City-wide events and major disasters. Her responsibilities include the overall operations of San Francisco's 9-1-1 center, Emergency Operations Center, and the City's emergency public alert and warning systems.

Carroll has almost 25 years of experience in local public service, including 15 with the City and County of San Francisco. Throughout her tenure in San Francisco, she has led numerous incident command activations, managed the City's pilot policy on drone usage, wrote the initial iteration of the continuity plan for the City's financial system, managed the response to the 2013 Rim Fire that resulted in almost $50 million in damage to San Francisco city assets, and has deployed in a mutual assistance role to regional disasters including several wildfires. She is a certified emergency manager, as well as a surfer, backpacker, soccer player, and mother.

Carroll holds a bachelor's in International Studies from George Washington University and a master's in Urban Studies from Virginia Tech.

Dominick Mireles was appointed director of the Office of Emergency Management (OEM) by Mayor Jim Kenney in April, 2022. As the director, Mireles oversees all aspects of the City's planning for, response to, and recovery from emergencies, disasters, and complex planned public events, working jointly with other city, state, federal and non-governmental entities in the execution of this mission.

Over the past seven years of his career with OEM, Mireles has provided strategic guidance and oversight to four program areas in the application of an all-hazards emergency management program, including the emergency operations center, information technology, logistics, and the Regional Integration Center. Mireles also served as OEM's logistics program manager and the group leader for OEM's Regional Integration Center and the project manager for several new and sensitive initiatives, including the roll-out of ReadyPhiladelphia.

He holds a bachelor's degree in criminal justice from Bloomsburg University of Pennsylvania and is currently enrolled in a master's program at the Naval Postgraduate School's Center for Homeland Defense and Security. Mireles also volunteers with Team Rubicon, which mobilizes veterans to help people prepare, respond and recover from disasters and humanitarian crises.

Matthew Mueller is the executive director of the Denver Office of Emergency Management (Denver OEM). He has spent his professional career of more than 20 years dedicated to the fields of emergency management and humanitarian assistance. In his role as executive director, he is responsible for the strategic oversight of emergency preparedness, response, recovery, and mitigation for the City and County of Denver. He also serves as chair of the Urban Area Security Initiative, the Securing the Cities Executive Committee, and the Local Emergency Planning Committee. Additionally, he serves on the Governor's Homeland Security Advisory Council.

Prior to joining Denver OEM in 2009, Mueller worked as a public health preparedness planner and for the American Red Cross Bay Area as the assistant director of Disaster Services. He began his professional career as a contractor for the U.S. Agency for International Development, Office of Foreign Disaster Assistance where he served on response teams for humanitarian crises throughout Africa. Additionally, he served as a Peace Corps Volunteer in Mali where he managed clean water and sanitation projects.

Mueller holds a BS in civil engineering from the University of Iowa and an MBA from the Dominican University of California. He is a certified business continuity Professional and a master exercise practitioner. He is a Chicago native and a proud Denver resident.

Carol Parks is the general manager for the City of Los Angeles Emergency Management Department. She was promoted to this position in August 2021, after serving as a senior emergency manager for 20 years with LA City. During her career, she has provided oversight for both long and short-term executive-level citywide emergency management projects and programs involving department-specific and/or multi-agency and multi-jurisdiction coordination. This includes initiatives such as the automated external defibrillation program; the tsunami evacuation route initiative; the disaster service worker program; a supply chain resilience pilot study; disability, access, and functional needs planning and training; homeland security grants; emergency management planning, operations, and facility contracts; and citywide community preparedness initiatives including the current Ready Your LA Neighborhood program.

She has served in several oversight roles for the Emergency Operations Center activation for the COVID-19 activation. Ensuring that Angelenos and business owners are well informed and prepared for disaster is her career-long passion and she has served on leadership teams for Emergency Network Los Angeles and the Earthquake Country Alliance. Additionally, Parks has received numerous City and County Awards and recognition as a co-producer of an Emmy Award-winning public service announcement on the importance of family preparedness.

Parks is a graduate of Georgia Institute of Technology with a bachelors in industrial management and holds a masters from Georgia State University in instructional Design. She and her husband have three daughters. She is an active member of her church and enjoys traveling, decorating and horseback riding.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FEATURE

Inclusive Emergency Management: Communication and accessibility needs for the Deaf, Hard-of-Hearing and Deafblind population

By Jen McEachen, Sarah Cowan, and Caitlin Parker

The Inclusive Emergency Management Series aims to address key issues for diversity and inclusion in emergency management. In this issue, we explore communication and accessibility needs for the deaf, hard-of-hearing, and deafblind population through reflections on the recent CRHNet course offering *ASL 010: ASL for Emergency Situations,* facilitated by Humber College. This three-part course introduced learners to Deaf culture, and basic American Sign Language (ASL) ranging from the alphabet and feelings, basic conversation, describing injuries, to concepts such as 'firetruck'. This article is meant to be a starting point for considering accessible disaster and emergency management. Thus, these recommendations are not comprehensive and each emergency manager is encouraged to explore this topic further.

The authors of this article are members of the 2023/24 CRHNet Emerging Professionals (EP) Committee. The EP Committee supports early-career professionals in Disaster Risk Reduction (DRR) and Disaster and Emergency Management (D&EM) in Canada through advocacy, encouraging growth and professional development, and fostering a sense of community. Please note that of the authors, Jen is deafblind, and Sarah and Caitlin are hearing.

Right now, many best practices related to accessibility are not the norm in Canada. We can do better. Here are a couple suggestions to get you started:

- Ask. If you are unsure how best to support someone, please ask them.
- Representation and inclusion is required in all phases of the emergency cycle, including the development and testing of policies and procedures.
- Communicate information through a number of different formats, including visual, audible and written.
- Be proactive and adaptable in providing accommodations to allow for full participation of all involved.

Defining and understanding the Deaf Community

The deaf community is highly diverse and includes people who identify as deaf, hard-of-hearing, deafened, deafblind and more. But, what do we mean when we say 'deaf', 'hard-of-hearing', and 'deafblind' and what is the proper terminology to use to show respect?

In Canada, the Canadian Association of the Deaf (CAD-ASC) estimates that there are "357,000 profoundly deaf and deafened Canadians and possibly 3.21 million hard-of-hearing Canadians" (2015).

This is the very question that the *ASL 010* course began with. The term **'deaf' (lowercase "d")** is used to describe a **medical condition** for those with little or no functional hearing, whereas 'hard-of-hearing' refers to a range of hearing loss from mild to profound. 'Deafblind' is a term used to describe a combination of hearing and vision loss. The Canadian Association of the Deaf (Association des Sourds du Canada) notes that deaf may also be used as a collective noun to refer to the community of people who are deaf (e.g., the deaf community) (n.d.). They also highlight that it is important to note that **Deaf (capital "D")** is a sociological term for people who participate in the **distinct culture, society, and language of deaf people** (n.d.). Throughout this article, where appropriate, the authors use d/Deaf to recognize both the medical and sociological definition of the term.

Deaf culture is centered around sign language, a form of communication using visual gestures and signs. Today, there are estimated to be around **300 sign languages used worldwide** (National Geographic Society, 2024). In North America, some of the dominant dialects are American Sign Language (ASL), Quebec Sign Language (LSQ), and Mexican Sign Language (LSM). There are also a variety of Indigenous signed languages, such as Inuit Sign Language, which existed historically and continue to be practiced today (Dawe, 2022). Reflecting on the course, one participant stated, *"I feel like I have a better understanding of Deaf culture that is useful in my day-to-day role in public education and risk communication as well as my response role with Emergency Support Services."* Similarly, another course participant shared: "*Not only did we learn some foundations of ASL in emergencies, it was also a window into Deaf culture, its expressiveness, humour, and visual transmission of information and emotion.*" If you are interested in learning more about the spectrum of the d/Deaf community, we recommend the Canadian Association of the Deaf and CNIB Deafblind Community Services.

In Canada, the Canadian Association of the Deaf (CAD-ASC) estimates that there are 357,000 profoundly deaf and deafened Canadians and possibly 3.21 million hard-of-hearing Canadians.

In Deaf culture there are a number of signals that are appropriate to use if you need someone's attention, try one of the following:

Waving in the air

Tap on the shoulder

Direct eye contact

Emergency management has failed to adequately consider and address the needs of the disabled community, and more specifically, the d/Deaf population

(Noik, 2018; Engelman, Craig and Iles, 2022; Calgaro et al., 2021).

Considerations for delivering information in emergency management

Emergency management has failed to adequately consider and address the needs of the disabled community, and more specifically, the d/Deaf population (Noik, 2018; Engelman, Craig and Iles, 2022; Calgaro et al., 2021).

This article focuses on Canadian emergency management, but unfortunately, there is limited literature available on the Canadian context. For this reason, we include research from international contexts. Quigley and Lowe (2020) published *Environmental Scan: Emergency Management Policies and Programs for People with Disabilities in Canada* which may be helpful for anyone interested in better understanding the landscape of policies and programs in Canada.

While people within the d/Deaf community may share certain similar experiences or characteristics, they have a wide range of unique communication and accessibility needs that must be considered in all facets of disaster and emergency management. It is important to note that the considerations below are generalized and the most appropriate approach for one person may look very different from another. For this reason, it is best to directly **ask each person how they can best be supported**. Here, we reflect on documented challenges of the d/Deaf population as informed by scholarly work and a key informant (Jen), and suggest considerations for practitioners to improve the accessibility of emergency management at all stages (preparation, mitigation, response, and recovery). Most importantly, it needs to be stated that **individuals with disabilities are capable of sustaining and supporting themselves with guidance from individuals with lived experience**.

Representation and accessible participation

First and foremost, representation is key. In all aspects of emergency planning, including the development and testing of policies and procedures, it is critical to include representation from the d/Deaf community. In one U.S. study, it was found that only 31% of the reviewed 55 state and territorial-level emergency operations plans specifically considered the needs of d/Deaf and hard-of-hearing individuals (Ivey et al., 2014, p.150). As articulated by Gordon (2019, p. 5), the exclusion of d/Deaf and hard-of-hearing individuals from emergency planning processes elevates the risk of harm to members of the d/Deaf population and emergency responders, and increases strain on emergency resources. As one course participant reflected,

> *"This course was a thought-provoking, engaging and applied way to start thinking about DEI [Diversity, Equity, and Inclusion] in your line of work in emergency management whether it is in response, preparedness, or in planning for equity-denied communities. For example, do you have an alerting/ warning system that does not rely on sound only? Are your frontline responders able to communicate with d/Deaf residents in the event of evacuation?"*

However, inviting d/Deaf, Deafblind, and hard-of-hearing individuals to participate in these conversations is not sufficient. To allow for active and full participation, consider how to set up environments to support engagement from members of the d/Deaf community. A great example of this is from the City of Ottawa, who in February 2024 hosted an open community forum to discuss "emergency preparedness for persons with disabilities" (2024). The first half of the session provided residents with knowledge of existing resources and services, while the second half provided time for the Office of Emergency Management team to learn from the community about their needs and to answer questions. During the event registration processes participants were encouraged to advise organizers of any accommodation needs to ensure their ability to participate. This is a good example of facilitating a accessible space to allow for meaningful engagement for everyone, and recognizing that learning is a two way process - the community was also able to teach the emergency managers.

Accessibility of physical and virtual spaces is an important consideration for supporting members of the d/Deaf community. As outlined above, there are a number of adjustments and supports that can be easily made to significantly increase the accessibility of a physical space. Messaging and services are increasingly delivered in a virtual environment so it is important to ensure that virtual environments are accessible by, for example, adding closed captioning to audio and video, providing written transcripts, and adding ASL interpreters to videos. Virtual meeting platforms such as Zoom, Microsoft Teams, Google Meet, and Webex, are often improving or changing their accessibility tools. Key features to look out for when deciding which platform to use include captioning, generation of transcripts, adjustable video sizes, and recording. In physical spaces, there are also a number of technologies that can be utilized to support accessibility. For example, we are often overly reliant on audible directions, but providing accessible signage is a crucial component to supporting the independence and comfort of the d/Deaf population.

Considerations for creating accessible spaces

- Seating close to the speaker
- Live Captioning and an ASL interpreter
- Assisted Listening Devices, such as loop systems
- Designate Quiet Zones to minimize background noise
- Convey information through visual, audible and written materials
- Provide advance notice of available accommodations, and invite attendees to request specific accommodations in advance

Office sign displaying the office number in both written numbers and braille. *Image credit: Brett Sayles, reproduced with permission.*

Two seated people at a table having a conversation using ASL. *Image credit: SHVETS production, reproduced with permission.*

For individuals who are able to receive and interpret audible information, consider ways to increase the ease of understanding. For example, an evacuation reception centre may be a large, crowded and noisy environment that can overwhelm a d/Deaf person who may need to strain to hear, or ask for information to be repeated. For this reason, it's important to consider the choice of room, group size, and to create space for one-on-one conversations. Similarly, these centres often do not have resources available to interpret or communicate using sign language, requiring individuals to communicate through verbal or written language. The CNIB provides *Clearing Our Path*, accessibility guidelines for the built environment for individuals living with sight loss, including those that are deafblind (2016). Similarly, the CAD-ASC's Advancing Accessibility Standards for Deaf, Deaf-Blind and Hard of Hearing Canadians, provides a review of, and recommendations additional to, the Accessible Canada Act (2023).

Accessible communication and emergency messaging

A lack of equitable access to emergency communication is a major hurdle for the d/Deaf community to prepare, mitigate, respond, and recover from emergencies and disasters (Russell et al., 2018, p.7). Accessible communication for the d/Deaf population requires acknowledgement of the ranges of hearing abilities, communication preferences, literacy levels, and other disabilities. The term "deaf" does not always mean that audible information cannot be received and interpreted - although the ease and ability of receiving and interpreting this information may vary greatly. Skills and tools such as lip-reading, cochlear implants, and assistive listening devices can provide a level of hearing or comprehension of spoken language. For many d/Deaf individuals, their primary and preferred language is sign language - however, this is not the case for everyone.

"A lack of equitable access to emergency communication is a major hurdle for the d/Deaf community to prepare, mitigate, respond, and recover from emergencies and disasters"

Further, Deafblind individuals often prefer to communicate through languages such as tactile ASL, Two-Hand Manual, and more recently, Protactile. Communication cards may be used to communicate immediate needs. Deafblind individuals may also be accompanied by, or require the support of, an intervenor - a professional who acts as 'the eyes' and 'the ears' of a Deafblind individual by providing information about the environment and enabling communication. Members of the d/Deaf community may use an interpreter- a professional who translates information from spoken language into another, often sign language, and vice versa. If an intervenor or interpreter is involved, **always address the individual directly, not the interpreter or intervenor**. Each person will have their own preferred method of communication and it is important to consider and address the potential implications of each of these.

Individuals who primarily communicate using sign language have a wide range of literacy levels, and some may find written language difficult to understand. For this reason, information should be communicated in a variety of formats, including sign language, plain language, and easily understood visuals. A California study from 2013 evaluated emergency preparedness materials and found that the reviewed materials tested above the recommended U.S. grade 4 reading level (Neuhauser et al., 2013, p.7). A similar review in Canada could be the focus of future research.

One issue that has gained recent attention, is the accessibility of mainstream emergency alert systems (Noik, 2018). Traditionally, when a disaster strikes, alerts are sent out through television, radio, social media platforms, and wireless public alerting (e.g., Alert Ready). However, these systems are often not properly designed to communicate effectively with d/Deaf or hard-of-hearing individuals, causing critical information to be missed (Noik, 2018; Cooper et al., 2024). For example, in Canada the National Public Alerting System (NPAS) requires the accompaniment of an audible tone for all radio, TV, and wireless providers, but does not require the accompaniment of graphics or interpreted video. During disasters we often observe informal and formal channels of community support to address communication deficiencies. For example, in the US, the Federal Emergency Management Agency (FEMA) provided formal ASL updates on Hurricane Francine on YouTube; whereas in Canada, DeafDots, provided email notifications and ASL YouTube videos to provide critical updates during the 2023 Kelowna wildfire.

The World Federation of the Deaf and World Association of Sign Language Interpreters (WASLI) provide *Guidelines on Access to Information in National Sign Languages During Emergency Broadcasts*, which outlines recommendations for how to ensure emergency broadcasts are accessible for the d/Deaf community (2021). A key component of these recommendations is to ensure that sign language interpreters are qualified with national or internationally recognised qualifications (2021, p. 1).

"It is essential to consider how we deliver information in a format that is designed to be accessible."

Hurricane Irma: A Case Study

During 2017 Hurricane Irma, agencies used ASL interpreters to deliver evacuation orders, and situational updates to residents. The interpreters had a variety of experience and certification, from one having no formal training only personal experience from signing with a deaf brother, to a certified ASL interpreter, and a Certified Deaf Interpreter (CDI). The differences between these three interpreters can be clearly seen in a video created by YouTuber, Paul Simmmons who stitched clips of these three interpreters together for a informative comparison of ASL interpreters during Hurricane Irma. Famously, the residents of Manatee, Florida experienced significant confusion from receiving interpretation from an untrained interpreter who used incorrect signs and failed to properly communicate the necessary information (Burris, 2019, p.9-10). To support d/Deaf residents of Florida during this storm, the president of the *Florida Association of the Deaf,* Lissette Molina Wood, created a YouTube video to update residents using ASL. While no documented lives were lost because of this miscommunication, the potential for harm and loss of life due to the failure to communicate life-saving instructions is significant.

Accessible preparation

As it is for all aspects of emergency management, preparation saves lives. The United Nations Office for Disaster Risk Reduction (UNDRR) conducted the 2023 Global Survey on Persons with Disabilities and Disasters and found that **84% of persons with disabilities did not have a personal disaster preparedness plan** (2023, p.ix). Across Canada, there has been an increase in resources available to support the d/Deaf community to prepare for emergencies and disasters. For example, governments such as Emergency Management Ontario published the booklet, Emergency Preparedness Guide for People with Disabilities (2024); and the government of Nova Scotia provides specific suggestions for the d/Deaf community in, *Are You Ready? Emergency Preparedness Guide for Persons with Disabilities and Older Adults in Nova Scotia*. These include suggestions such as checking that your local emergency system can interact with TTY (teletypewriter) or internet-based relay service, and preparing communication cards to use with first responders or other response personnel (2021, p.10). Although these materials and tools are good starting points, author Jen McEachen notes, TTY is quite outdated and no longer used by many individuals in the d/Deaf community.. For this reason, it is important that these documents are prepared in collaboration with members of the d/Deaf community, reviewed often, and, as always, adapted to individuals and their needs. Problematically, to access these resources, folks need to be aware of them and to actively seek them out. The resources themselves could be improved with more community engagement and by increasing awareness of their existence for those who need them.

Author Jen reflects on her own experience as an advocate and educator for the d/Deaf/Deafblind population, noting that "*the few times that organizations have hosted training and invited me for knowledge-sharing opportunities with the d/Deaf and Deafblind population for emergency management and preparedness webinars, invitations to attend are rarely disseminated widely and often only advertised to their small clientele within their organization*." Jen adds, "*unfortunately, at this time I am not aware of any organizations that focus on emergency management or preparedness for the d/Deaf and Deafblind - a huge and very concerning gap in our field*".

Gallaudet University, a private university for d/Deaf and hard-of-hearing students, provides a first-of-its-kind program, *Disability-Inclusive Disaster Risk Reduction and Emergency Planning*. No such program exists in Canada as of yet.

Conclusion

Improving accessibility is an ongoing commitment. Calgaro et al. (2021, p.1) identified one of the biggest inhibitors to building resilience is the "failures in understanding, engaging with and overcoming deeply embedded cultural divides that exist within the d/Deaf community and between the d/Deaf and hearing worlds." Examining the knowledge and training of state emergency management agencies in the U.S., Engleman et al. (2013, p.1496) found a substantial gap in the knowledge and training that addressed the needs of the d/Deaf population. This is reinforced by the findings of Russell et al. (2018, p.2) who reported that Canadian emergency management organizations "have little or no working knowledge of how to communicate with d/Deaf, hard of hearing and Deafblind people during times of natural or man-made disasters."

As emergency managers, we are responsible for providing equitable emergency services to everyone we serve. This means that we need to actively seek out opportunities for learning, engagement, and meaningful inclusion with the d/Deaf community. For 20 emergency managers in Canada, the *ASL 010* course provided an important introduction to basic principles of d/Deaf culture and ASL. Although it was a great start, this course is only the beginning. We challenge all emergency managers to review their policies, involve members of the d/Deaf and Deafblind community, and adopt additional measures to improve the inclusion and accessibility of their programs. In all aspects of emergency programs, we as a field, need to make meaningful opportunities for the inclusion and contributions of persons of the disability community in all stages of disaster and emergency management.

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Thank you to Humber College and all those who participated in the *ASL 010* course in June 2024. A special thank you to our peer reviewer who was a representative of the d/Deaf community for their time and guidance.

For those looking for support in increasing the accessibility of their practice, Jen provides consultation services through JLM Resiliency and Accessibility Consulting and welcomes anyone to reach out at JLM.accessconsulting@gmail.com.

We warmly invite organizations who are involved in delivering emergency management and emergency preparedness resources and services to the d/Deaf population to reach out to info@crhnet.ca for potential partnership opportunities to increase your reach.

Caitlin Parker (MA-DEM) is currently pursuing a Master of Counselling program at City University of Seattle. She is also a recent graduate from Royal Roads University with a Master of Arts in Disaster and Emergency Management. Her research was in the field of psychosocial support for individuals experiencing intimate partner violence.

Jen McEachen (she/her) is the Diversity, Equity, Inclusion and Accessibility (DEIA) Director at CRHNet. She is a student at the Justice Institute of British Columbia (JIBC) where she also sits on JIBC's Accessibility Advisory Committee. Jen is the owner of JLM Disaster Resiliency and Accessibility Consulting.

Sarah Cowan (MDEM) is Lab Manager and lead researcher with CEMPPR Lab (Collaboration for Emergency Management, Policy, and Preparedness Research) at York University. Her research interests include decision-making, risk perception, public policy, and inclusive whole-of-society resilience. Sarah is also an Emergency Preparedness Specialist with Muskoka Algonquin Healthcare (MAHC).

References

AlertReady. (n.d.). *Your Phone has the Power to Save a Life*. https://www.alertready.ca/.

Burris, S. D. (2019). Deaf mis-interpretation during Hurricane Irma: A case study and evaluation.

Calgaro, E., Craig, N., Craig, L., Dominey-Howes, D., & Allen, J. (2021). Silent no more: Identifying and breaking through the barriers that d/Deaf people face in responding to hazards and disasters. *International journal of disaster risk reduction*, *57*, 102156.

The Canadian Association of the Deaf (CAD-ASC). (n.d.). *Terminology*. https://cad-asc.ca/our-work/terminology/.

The Canadian Association of the Deaf (CAD-ASC). (2015). *Statistics on Deaf Canadians*. https://cad-asc.ca/issues-positions/statistics-on-deaf-canadians/.

The Canadian Association of the Deaf (CAD-ASC). (2023). *Advancing Accessibility Standards for Deaf, Deaf-Blind, and Hard of Hearing Canadians*. https://clearingourpath.ca/index.php/final-report-clearing-our-path-asc-project/.

Canadian National Institute for the Blind (CNIB). (2016). *Clearing our Path Version 2.0*. https://clearingourpath.ca/.

The City of Ottawa. (2024). *Join us for a discussion about emergency preparedness for persons with disabilities*. https://ottawa.ca/en/city-hall/city-news/newsroom/join-us-discussion-about-emergency-preparedness-persons-disabilities.

Cooper, A. C., Cooke, M. L., Takayama, K., Sumy, D. F., & McBride, S. (2024). From alert to action: earthquake early warning and deaf communities. *Natural Hazards*, 1-22.

Dawe, A. (2022). *Indigenous Sign Languages of North America*. https://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=1001&context=headandheartprogram_2022.

Emergency Management Ontario (EMO). (2024). *Booklet: Emergency Preparedness Guide for People with Disabilities*. https://www.publications.gov.on.ca/store/20170501121/Free_Download_Files/301303.pdf.

Engelman, A., Ivey, S. L., Tseng, W., Dahrouge, D., Brune, J., & Neuhauser, L. (2013). Responding to the deaf in disasters: establishing the need for systematic training for state-level emergency management agencies and community organizations. *BMC health services research*, *13*, 1-10.

Engelman, A., Craig, L., & Iles, A. (2022). Global Disability Justice In Climate Disasters: Mobilizing People With Disabilities As Change Agents: Analysis describes disability justice in climate emergencies and disasters, mobilizing people with disabilities as change agents. *Health Affairs*, *41*(10), 1496-1504.

Gordon, J. P. (2019). *The lived experience of the deaf and hard of hearing community in Cape Cod, Massachusetts with emergency preparedness and response planning: A narrative inquiry study* (Doctoral dissertation, Northeastern University).

Ivey, S. L., Tseng, W., Dahrouge, D., Engelman, A., Neuhauser, L., Huang, D., & Gurung, S. (2014). Assessment of state-and territorial-level preparedness capacity for serving deaf and hard-of-hearing populations in disasters. *Public Health Reports*, *129*(2), 148-155.

National Geographic Society. (2024). *Sign Language*. https://education.nationalgeographic.org/resource/sign-language/.

Neuhauser, L., Ivey, S. L., Huang, D., Engelman, A., Tseng, W., Dahrouge, D., ... & Kealey, M. (2013). Availability and readability of emergency preparedness materials for deaf and hard-of-hearing and older adult populations: Issues and assessments. *PloS one*, *8*(2), e55614.

Noik, Sherry. (2018). *Deaf Canadians 'at risk' in times of national emergency*. CBC News. https://www.cbc.ca/news/health/deaf-canadians-at-risk-in-times-of-national-emergency-1.4832321.

Nova Scotia. (2021). *Are You Ready? Emergency Preparedness Guide for Persons with Disabilities and Older Adults in Nova Scotia*. https://novascotia.ca/emergency-education/docs/are-you-ready-emergency-disabilities-en.pdf.

Quigley, K., & Lowe, K. (2020). *Environmental Scan: Emergency Management Policies and Programs for People with Disabilities in Canada*. https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/maceachen-institute/Final%20Report%20-%20PwDs%20in%20Emergency%20Management.pdf.

Russell, D., McLaughlin, J., & Demko, R. (2018). Barrier-free emergency communication access and alerting system [Research Report]. *Canadian Hearing Society*.

Sayles, B. (n.d.). 4005 Sign. *Pexels*. https://www.pexels.com/photo/4005-sign-3217673/.

SHEVETS production. (n.d.). Young female friends communicating using sign language in library. *Pexels*. https://www.pexels.com/photo/young-female-friends-communicating-using-sign-language-in-library-7516283/.

Text with 9-1-1. (n.d.). *Service Availability*. https://www.textwith911.ca/en/service-availability/.

United Nations Office for Disaster Risk Reduction (UNDRR). (2023). *2023 Global Survey Report on Persons with Disabilities and Disasters*. Geneva. https://www.undrr.org/media/90432/download?startDownload=20240914.

World Federation of the Deaf, and World Association of Sign Language Interpreters (WASLI). (2021). *Guidelines on Access to Information in National Sign Languages During Emergency Broadcasts*. https://wfdeaf.org/wp-content/uploads/2021/01/WFD-WASLI-Guidelines-on-Access-to-Information-in-SL-During-Emergency-Broadcasts_Final.pdf.

POLICY

A human rights-based approach to emergency management*

By Kasari Govender, B.C. Human Rights Commissioner

Illustration from From hate to hope: Report of the inquiry into hate in the COVID-19 pandemic. *Image credit: © BC's Office of the Human Rights Commissioner, reproduced with permission.*

**This is a revised excerpt from the Commissioner's report entitled From Hate to Hope: Report of the Inquiry into Hate During the COVID-19 Pandemic*

During our inquiry into the rise of hate during the COVID-19 pandemic (report released in the spring of 2023), it became clear that a human rights-based approach to emergency management is essential to preventing spikes in hate, discrimination and violence during times of societal crisis. A human rights-based approach would anticipate disproportionate impacts, including increases in hate, and take steps to proactively protect individuals and communities from harm. While we do not know whether we will have another global pandemic during our lifetimes, we do know that we will continue to see states of crisis in the form of extreme weather and other climate related catastrophes. Unfortunately, our findings around the importance of human rights to emergency management remain highly relevant.

Recognizing the disproportionate impacts of disasters

A human rights-based approach is a conceptual framework that seeks to centre the voices of those marginalized and to make inequalities visible in order to redistribute unjust distributions of power. Key principles include the indivisibility, inalienability and universality of rights; intersectional equality and non-discrimination; meaningful participation, inclusion and empowerment; transparency and accountability and the rule of law.

A human rights-based approach to emergency or crisis management would acknowledge that the most marginalized people in our society, including Indigenous and racialized people, women, people with disabilities, LGBTQ2SAI+ people, seniors, people experiencing homelessness, mental health issues and addictions, and migrant workers are disproportionately affected in times of crisis and would anticipate and address these disproportionate impacts. It would also recognize that public health measures that restrict the exercise of rights for people, including prisoners and people living in long-term care homes or mental health facilities, must be done in accordance with the law and respect for fundamental human rights.

During our inquiry, my Office conducted cross-jurisdictional research into human rights-based approaches to emergency management planning. Over the last 50 years, some disaster and emergency planning approaches have moved away from their roots in civil defence toward a more decentralized, multi-disciplined and multi-jurisdictional approach using a human rights-based framework.

A human rights-based approach acknowledges that while emergencies and disasters are indiscriminate in whom they affect, they disproportionately impact already marginalized and vulnerable people. In a human rights-based approach, marginalized and vulnerable people, including recipients of aid, are involved in all stages of emergency planning in an active, voluntary and meaningful way. Their needs are addressed as basic human rights and programs and policies are aimed to build their capacity.

Examples of human rights-based approaches

Post Hurricane Katrina, the U.S. Federal Emergency Management Agency uses a "whole community" approach to emergency management. 'Whole community' is a means by which residents, emergency management practitioners, organizational and community leaders and government officials can collectively understand and assess the needs of

> "'Whole community' is a means by which residents, emergency management practitioners, organizational and community leaders and government officials can collectively understand and assess the needs of their communities and determine the best ways to organize and strengthen their assets, capacities and interests."

their communities and determine the best ways to organize and strengthen their assets, capacities and interests.

By doing so, a more effective path to societal security and resilience is built. Whole community is meant to increase individual preparedness and engage with members of the community as vital partners in enhancing resiliency and security.

In April 2020, the Ontario Human Rights Commission issued a policy statement on a human rights-based approach to managing the COVID-19 pandemic. Regarding responding to racism, ageism, ableism and other forms of discrimination, the policy statement specifies:

- Ensure that steps taken in response to COVID-19 are based on evidence, and deliberately challenge, reject and dispel stereotypes.
- Anticipate and take into account the potential for certain communities to experience increased racism, ageism and ableism as a result of the government's response to the COVID-19 pandemic.
- In collaboration and cooperation with vulnerable groups, take all necessary steps to proactively protect individuals and communities from hate, racism, ageism, ableism and discrimination propagated by private individuals.
- Monitor and report on any trends in hate and discrimination related to the COVID-19 pandemic, and pursue appropriate sanctions, including criminal prosecution where appropriate.

Illustration from From hate to hope: Report of the inquiry into hate in the COVID-19 pandemic. *Image credit: © BC's Office of the Human Rights Commissioner, reproduced with permission.*

Incorporating a human rights-based approach in emergency management

I believe updates to existing emergency response procedures must incorporate a human rights-based approach, must include Indigenous peoples and other communities that are disproportionately impacted by crises and, specifically, must address the anticipated rise of hate and gender-based violence during times of crisis. Emergency procedures should also include accessible mental health supports and additional funding should be made available to community organizations that work to combat racism, hate and violence. I also heard and agree that public officials have a key role to play in both unequivocally denouncing hate when it occurs and in promoting cohesion through their messaging during emergencies.

Emergency response must not only necessitate an analysis of who may be disproportionately impacted or ignored during times of emergency; it must also account for perspectives about solutions that may be overlooked because of bias or systemic discrimination. For example, in the context of forest fires in British Columbia, many First Nations have successful strategies that have been adapted across the generations who have stewarded this land. We ignore these voices at everyone's peril.

In sum, a human rights-based approach is not only the legally and morally correct approach to emergency management. It not only will prevent harm to those who are hardest hit or may be left behind. It is essential to effective management and social cohesion for whole communities in times of crisis.

Kasari Govender is British Columbia's Human Rights Commissioner. As an independent officer of the Legislature, Commissioner Govender is uniquely positioned to ensure human rights in B.C. are protected, respected and advanced on a systemic level. Her work through BC's Office of the Human Rights Commissioner centres listening deeply to British Columbians to inform educational materials, policy guidance, public inquiries, interventions, community-based research and more that protects marginalized communities, addresses discrimination and injustice and upholds human rights for all.

More information about the role of the B.C. Human Rights Commissioner can be found at bchumanrights.ca. The Office can be contacted at info@bchumanrights.ca or 1 844 922 6472.

POLICY

What is the Disaster Financial Assistance Arrangements program (DFAA)? Q&A

By the HazNet Editorial team

As the saying goes, recovery is the least understood and is often neglected phase of emergency when it comes to policies, practices, and research. As outlined in the Emergency Management Framework for Canada, emergency management is considered a shared responsibility across all of society (Public Safety Canada, 2017). Nowhere is this more evident than how we pay for the costs of disasters.

When people and communities experience a disaster, the cost to pick up the pieces and get back to a regular state of functioning come from a myriad of places: government funding, insurance, personal savings, family and friends, donations or support from charitable organizations, employer benefit programs, private sector, loans, and so on. For any given disaster, people may experience more or less support from this patchwork system. Major headline-grabbing disasters tend to mobilize the most resources while personal disasters such as a single home fire or flooded basement have the least.

In an era of extremes where we see rising disaster frequency and impacts, this patchwork system of disaster financing has taken on a more prominent role. More Canadians experience losses from disasters each year, while communities in higher-risk areas face year after year of impacts with little time in between to recover.

The largest funding program in Canada for significant natural hazard disasters is the Disaster Financial Assistance Arrangements (DFAA) Program, run by Public Safety Canada. On April 1, 2025, Public Safety Canada launched an updated version of the program. The HazNet team put together the following article as an introduction to this program and some of the key changes to it.

What is the Disaster Financial Assistance Arrangements (DFAA) program?

The DFAA Program is a federal funding program that provides financial assistance to provinces and territories for the costs of large-scale natural hazard disasters. It is a reactive program, meaning that funding is only available after a province or territory has experienced a disaster. The program helps to fund disaster response, relief, and reconstruction costs.

Some key concepts for how the program works are listed below, which can help provide context when reading the DFAA Program Guidelines.

Authority: The DFAA Program gets its authority from the *Emergency Management Act* (EMA), which describes how it works. The main elements of the program are outlined in the EMA, including:

Funding is available to *provinces and territories only*, not to municipalities, Indigenous governments, or individuals (Section 4(1)(j) "providing financial assistance to a province")

Funding is only available *once a disaster has reached a certain scale* (Section 4(1)(j)(i) "the provincial emergency has been declared to be of concern to the

Lytton 2021-2025: From home, to evacuation, to displacement, recovery starts (a fence), heirloom recovery, decontamination, archaeology, and a new foundation. Move-in date – to be determined. *Image credit: Patrick Michell.* To learn more, watch BBC's "The town that burned down in a day": https://www.bbc.com/news/av/world-us-canada-59227915.

federal government"). The DFAA Program uses a per capita funding formula to define large-scale disasters.

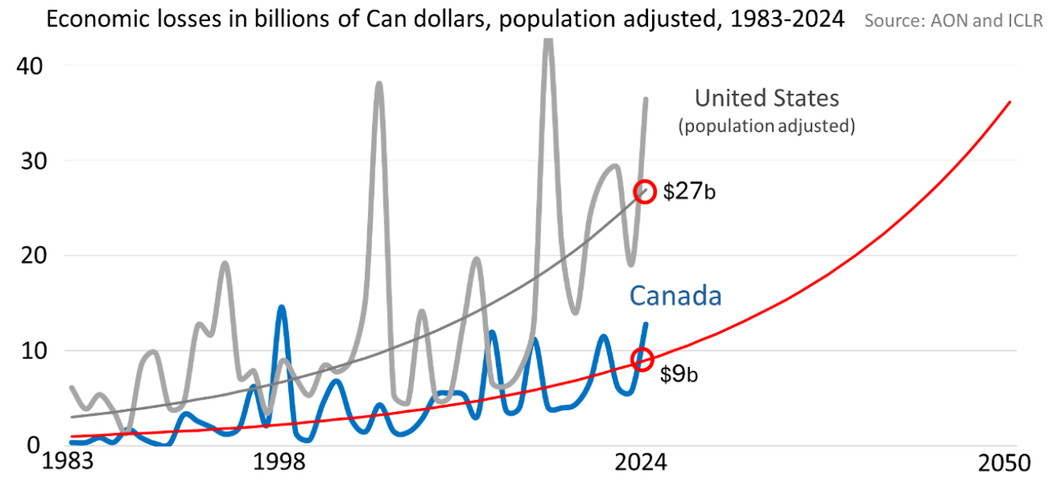
A province or territory initiates a request for financial assistance (Section 4(1)(j)(iii) "*if* the province has requested the assistance"), meaning the federal government cannot offer funding through this program *unless a province or territory requests it*.

Each disaster requires a decision from the Governor in Council to provide funding under the DFAA Program (Section 7 "The Governor in Council may…declare a provincial emergency to be of concern to the federal government and authorize the Minister to provide financial assistance"). This means that *the program does not have a set budget like most funding programs*, but seeks approval for each disaster on a case by case basis. There is no maximum amount that can be paid for a disaster.

Cost Share: The DFAA Program is a cost-sharing program, which means that for every dollar spent, a portion of it is paid by the federal government and a portion is paid by the provincial or territorial government. In the DFAA Program, the federal cost-share levels range from 70-100%, depending on the activity.

Eligibility: The DFAA Program uses the term 'eligibility' to describe activities that can be cost-shared as part of the program. *Not everything that a province or territory spends money on during a disaster is eligible for the program*. Similarly, there may be costs paid by other sectors of society (e.g., insurance, municipalities, businesses, individuals) that are not eligible for the program either.

Ice chunks along a river during river break up. Ice jams are a common cause of flooding in northern parts of Canada. *Reproduced with permission.*



This chart shows the trendline of disaster losses in the United States (adjusted for population) versus Canada over the past forty years. Canada is where the United States was approximately 20 years ago (approximately $9 billion per year) but is following a similar trendline. *Image credit: Institute for Catastrophic Loss Reduction, reproduced with permission.*

Why was the DFAA program modernized?

The DFAA Program was created in 1970 to provide federal funding to provinces and territories for disasters. Over the years, some updates have been made to the program (e.g., in 2008, a provision was made to allow for some mitigation funding instead of just rebuilding to pre-disaster conditions); however, the program has remained fundamentally the same in its 50-year history.

The societal and risk landscape has changed dramatically during that time. Canada's total population has almost doubled (from 21.3 million to 41.6 million), its urban population has increased from just over 16 million to almost 35 million (Statistics Canada), and its average temperature is approximately 2 degrees warmer (Environment and Climate Change Canada, 2024). In addition, since the late 1990s, Canada has seen a significant increase in the frequency, impact, and cost of natural hazard disasters.

As the chart above shows, Canada's losses from disasters are following a similar trajectory to the United States, only twenty years behind. If we continue at this rate, by 2044, annual disaster losses could triple from $9 billion to $27 billion.

In recognition of this trend, Public Safety Canada conducted a comprehensive review of the DFAA Program (from 2020-2023) with the intent of modernizing it for the future we face. The purpose was to look at how the program might spend money differently to better address not only the rising costs of disasters, but also the increasing impact on people, communities, and well-being (Public Safety Canada, 2024).

As part of the review, the federal Minister of Emergency Preparedness convened an expert advisory panel to provide strategic recommendation for the DFAA Program. The panel report Building Forward Together outlined ten strategic recommendations for not only modernizing the DFAA Program, but also for updating other elements of Canada's overall approach to disaster risk management to increase alignment across all federal funding programs.

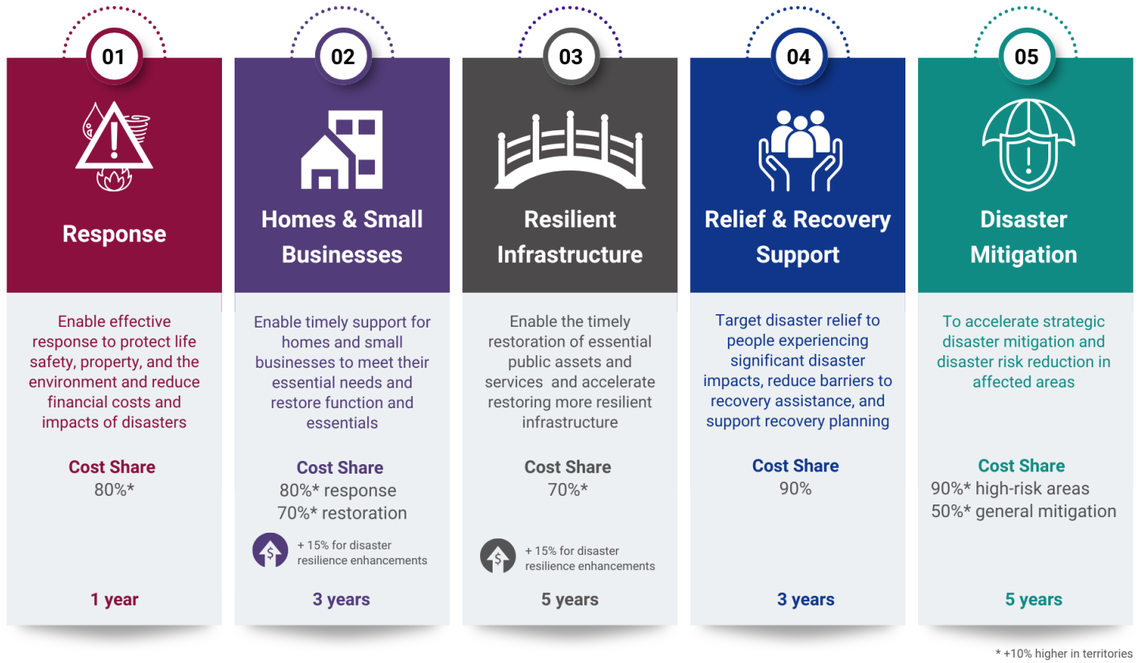
On January 29, 2025, Minister Sajjan announced the modernized DFAA Program.

What key changes were made to the DFAA?

Let's start with what *didn't* change. The Government of Canada did not update the *Emergency Management Act*, which means the parts of the DFAA Program defined in legislation remain the same. This includes that it is a reactive program only available after a disaster, that DFAA funding can only be provided to provinces and territories, and that provinces and territories must first request financial assistance. If you think of it in terms of a home renovation project, this means the foundation, structure, and getting into the front door all remain the same.

However, once inside the front door, things look significantly different. The program has shifted to an *objectives-based approach*, so the types of activities that are eligible are now based on set objectives intended to achieve certain outcomes, rather than on a prescriptive list of do's and don'ts. There are five objectives in the program, organized into five specific funding streams**.** Each funding stream has a specific objective, a cost-sharing amount, and a timeframe for eligible activities.

For each funding stream, let's take a look at the key changes.



Overview of the five funding streams in the new DFAA Program. *Reproduced with permission.*

Temporary medical facilities set up in Fort McMurray while the region was evacuated from due to wildfires. Temporary measures to protect people during a response are covered under Stream 1 of the DFAA Program. *Reproduced with permission.*

Response (Stream 1): Many of the response activities in the new program are similar to the previous one (evacuation, emergency support services, response coordination, etc.), although the language has changed to mirror common response terminology that will be familiar to emergency managers versed in the incident command system. This includes terms such as 'protecting life safety' and 'incident stabilization'.

Of note, the new program makes explicit reference to volunteer coordination and deployment, and talks about activities such as setting up volunteer registration centres, providing stipends or covering travel expenses for volunteers, etc. This shows recognition for how important volunteers and voluntary organizations are to disaster response in Canada.

Homes and Small Businesses (Stream 2): Each province and territory has its own disaster financial assistance (DFA) program to provide financial support to people and small businesses for uninsurable disaster losses. Most provinces and territories closely align their programs to the federal DFAA so they can receive federal funding, but there are distinctions between them.

Some of the key changes for homes and small businesses in the new DFAA include:

A broader definition of 'home' to explicitly include renters, tenants, and non-traditional living arrangements, recognizing that a large and growing number of Canadians do not live in or own a detached, single-family house.

The inclusion of people who are unhoused, precariously housed, or transient who lose their belongings during a disaster, who can now receive financial assistance for those losses.

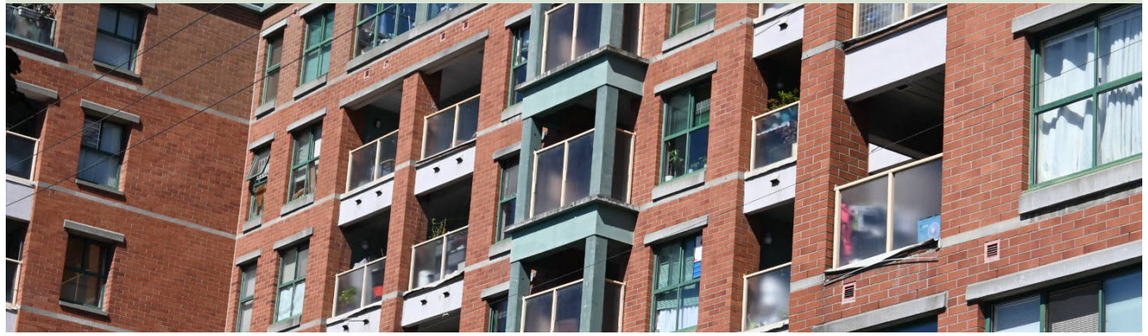
A much broader definition of a small business, which can now include businesses earning up to $15 million per year (instead of $2 million), harvesters of natural resources and other types of businesses that didn't fit the previous program, and landlords providing permanent housing (not short-term and vacation rentals).

Neither the federal or provincial/territorial disaster assistance programs are meant to be a substitute for insurance. As taxpayer-funded programs, they are designed to cover uninsurable losses and to replace the essential items that people and small businesses need to get back on their feet. This means they don't cover everything a person may lose in a disaster, and they don't necessarily put back essential items the way they were (for example, if someone had a high-end refrigerator, they might receive assistance to replace it with a standard model instead).

While the previous program set a national definition for 'essential items' for homes and small businesses, the new program leaves that definition up to provinces and territories. This allows for more regional definitions of 'essential' based on the unique contexts across this large and diverse country.

What does 'uninsurable' mean?

An uninsurable loss means a hazard or asset for which insurance is not available in the region. This assessment is made at a provincial, regional, or community level, not an individual one. The program does not consider whether an individual has insurance or not, only if insurance was available. Currently in Canada, hazards such as wind, hail, and fire are widely considered insurable, while flooding in high-risk areas is not.



Apartments in Vancouver, BC. The updated DFAA Program includes more types of housing. *Image credit: Taylor Legere*.

Seasonal wetlands at Charleson Park, Vancouver, BC. When wetlands are designed and maintained as natural protective infrastructure, they can be created or expanded as strategic mitigation in Stream 5. *Image credit: Taylor Legere*

Restoring Resilient Infrastructure (Stream 3): The most important change for public sector reconstruction costs is *the removal of the term 'pre-disaster conditions'* from the previous program. Instead, the new program uses the term 'standard replacement value' which means *bringing damaged infrastructure up to current codes, standards, and bylaws*. In addition, there is a 'build back better' provision (called 'disaster resilience enhancements') for every damaged structure to receive additional funding for risk reduction measures at the site level that go beyond current codes and standards.

This change fundamentally shifts the focus of the DFAA Program from 'put back what was there before' to 'rebuild more resilient structures'. As our collective codes and standards improve throughout Canada as communities adapt to growing risks, the DFAA Program is set to keep pace with those improvements while continuing to offer funding to go beyond.

Relief and Recovery Supports (Stream 4): This stream is new to the DFAA program. While some of the activities included were eligible under the previous program as response costs (such as mental health support and temporary housing), the new program dedicates an entire funding stream to supporting people. Some key changes include:

- Increasing the timeline for disaster relief from six months to three years.
- Focusing on activities that reduce barriers to receiving support, recognizing that while everyone may be eligible for disaster assistance, some people face additional obstacles to accessing it (e.g., language or literacy barriers, transportation or access barriers, requiring child care, etc.).
- Providing *additional* support and services to people who are more likely to experience further challenges with recovery (such as women fleeing domestic violence or low-income households).

This stream also includes support for *community recovery and resilience planning after a disaster*, something that is not commonly done across Canada or where it is, the costs to do it are primarily borne by the local governments closest to the disaster and its recovery efforts.

Disaster Mitigation (Stream 5): This stream is also new to the DFAA Program, although elements of it existed in the previous one, and is the most forward-looking aspect of the program. Unlike the other funding streams that support activities to respond to and recover from the disaster, Stream 5 establishes a pot of money (called a 'funding envelope') to strategically reduce future disaster risk. The pot of money increases with the size of the disaster, and is based on a percentage of the total amount of money spent on response and recovery.

Projects can include structural mitigation and nature-based solutions (e.g., building berms, retrofitting buildings, establishing wetlands, etc.), non-structural mitigation (e.g., risk assessments, relocation programs, updating land use bylaws, etc.), or community-level programs (e.g., a community-level FireSmart assessment and grants for people to implement risk reduction measures).

While the funding can be used for almost any type of mitigation, there is a strong incentive for risk-based mitigation projects because there is a much higher federal cost-share level for projects that protect high-risk areas (90% instead of 50%). High-risk areas may be designated by the local, regional, Indigenous, provincial/territorial, or federal governments. According to the DFAA Guidelines, a high-risk area is a geographic area with "an enduring, elevated risk of severe consequences stemming from the impact of a specific or multiple natural hazard(s)" (Public Safety Canada, 2025).

How does this help with rising disaster costs?

The changes in the DFAA Program increase the total federal funding available to provinces and territories after a disaster. The design shifts the focus of recovery efforts from putting back what was there before to supporting people and reducing disaster risk. The shift better aligns Canada's disaster financial assistance with recommendations from Priority 4 of the Sendai Framework for Disaster Risk Reduction, which encourages national governments to use opportunities during recovery to reduce disaster risk, to improve structural standards and land use during reconstruction, and to support people (pp. 22-23). Over time, the collective investments made in risk reduction should bend that upward trend of disaster losses and ultimately reduce relative disaster costs for Canadian society.

Unfortunately, as a reactive program, the DFAA Program does not provide funding for mitigation, adaptation, or preparedness measures before a disaster. Without more emphasis and funding for pre-disaster risk reduction activities in Canada, we will continue to have to learn by painful experience and make risk reduction investments only after suffering losses.

What happens next?

While the federal program launched on April 1, 2025, most provinces and territories are still in the process of updating their disaster financial assistance programs. It is up to provinces and territories to determine how many of the federal changes they plan to incorporate into their programs, which establishes what type of disaster financial assistance is available to municipalities, people, and small businesses.

To learn more about the federal program changes, visit the DFAA webpage.

References

Environment and Climate Change Canada (2024). *Adjusted and homogenized Canadian climate data.* https://www.canada.ca/en/environment-climate-change/services/climate-change/science-research-data/climate-trends-variability/adjusted-homogenized-canadian-data.html

Public Safety Canada (2017). *Emergency Management Framework for Canada.* https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/2017-mrgnc-mngmnt-frmwrk/index-en.aspx

Public Safety Canada (2024). *Modernizing the DFAA*. https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rcvr-dsstrs/dsstr-fnncl-ssstnc-rrngmnts/dfaa-mdrnzng-en.aspx

Public Safety Canada (2025). *Guidelines for the Disaster Financial Assistance Arrangements*. https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rcvr-dsstrs/dsstr-fnncl-ssstnc-rrngmnts/2025/dfaa-gdlns-en.aspx#a1

Statistics Canada (2025). *Annual demographic estimates.* https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2021030-eng.htm

Statistics Canada (1971). *1971 Census of Canada : population : vol. I - part 1*. Accessed online at https://publications.gc.ca/collections/collection_2017/statcan/CS92-709-1971.pdf

INTERVIEW

Are we making progress? An interview with Margareta Wahlström on disaster risk reduction, the Sendai framework, and the importance of practical knowledge transfer

By Lily Yumagulova and Carly Benson

Margareta Wahlström served as the first Special Representative of the United Nations Secretary-General for Disaster Risk Reduction and head of the UN Office for Disaster Risk Reduction (or UNDRR, which was known as UNISDR at the time) since her appointment in 2008. She led the development of the 2015-2030 Sendai Framework for Disaster Risk Reduction, adopted in March 2015 at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan. It was the first such agreement to set targets for reductions in disaster losses including mortality, numbers of people affected, economic losses and damage to critical infrastructure.

HazNet's managing editor Lily Yumagulova first interviewed Margareta at the Sixth Annual National Roundtable for Disaster Risk Reduction in Calgary in November 2015. Margareta stepped down as head of the UN Office for Disaster Risk Reduction later that year. As we passed a mid-term point with the Sendai Framework, Lily connected with her recently to hear about her perspective on how the Sendai Framework has been put into action.

On the progress so far

Lily: We are more than halfway through the Sendai Framework. In what areas have we made the greatest progress?

Margareta: We've made the greatest progress on the rapid spread of early warning systems. The focus has been on saving lives, but there is now a growing recognition that these systems must also protect people's livelihoods. I've been quite impressed with how many have stepped up to this early warning challenge.

Another benefit is that we managed to get health, pandemics, and epidemics into the Sendai Framework, and the wisdom of that has already been proven. But I also feel we haven't been able to leverage all of the useful things that went into the Sendai Framework because there are so many issues piling on to the international and national system.

Some of the benchmarks in the Sendai Framework may not have been really feasible. Was it reasonable to expect every country to have local disaster risk reduction plans? It was a dream, of course. But just because we haven't reached these benchmarks doesn't mean we haven't made progress. Instead of looking at these as failures, we should ask, "What have we succeeded with?"

In geopolitics and domestic politics, the tendency for short-term thinking is so serious it has become dangerous. But we have seen positive change at the local level. Across the world, cities and people forming self-organizing communities are taking the initiative, they aren't waiting for anyone to tell them what to do. You always need an enthusiastic group of people to drive things. But there is still a need for advocacy. For policy. For practical knowledge transfer. The Sendai Framework emphasizes that knowledge should be accessible and available; it must be presented in such a way that is helpful to normal people who are not experts. And we haven't made enough progress here.

On the interconnectedness of conflict, hazards, and resilience

Lily: With the benefit of hindsight, is there something you would have done differently? Is something missing from the Sendai Framework?

Margareta: Well, the most obvious one is the link between conflict, hazards and disasters, and risk resilience. This was a tough part of the negotiations, and many regions wanted it included, but some governments didn't due to geopolitics. On the more positive side, this is a growing area of research, particularly the link between conflict and the more obvious climate issues.

Recognizing interconnectedness here is so important because of the compound impacts on financial capacity, on development, on sustainability, and people's lives. This is an arena that still needs further work and we need to talk about in a more practical manner.

Lily: How has the nature of disasters changed since 2015?

Margareta: We as human beings can be very optimistic. We tend to believe that the same thing doesn't happen twice in the same place. But these days, it does. And we've also seen a rapid acceleration of compounding impacts on households, where it isn't just damage from a disaster but the impact on people's health and livelihoods too.

What we had predicted in 10 to 15 years is already here.

We're starting to see entire regions of the world become unlivable. Huge cities are sinking because they've been built in river mouths. And while governments are starting to move their capital cities elsewhere, can we really expect 10 million people to

"What we had predicted in 10 to 15 years is already here."

CRHNet Board members at the Sixth Annual National Roundtable for Disaster Risk Reduction in Calgary in November 2015 with UNISDR (now UNDRR) representatives Margareta Wahlström (centre) and Ricardo Mena (right). *Image credit: CRHNet.*

move? And how do we ensure enough productivity to keep communities sustainable? There is a growing realization that all these effects are coming together and making the situation even more complex.

On the 'marginalized majority' and the importance of language

Lily: One of the successes of the Framework was focus on empowerment. For example, Sendai Priority 4 clearly states that: "Empowering women and persons with disabilities to publicly lead and promote gender equitable and universally accessible response, recovery, rehabilitation and reconstruction approaches is key". Have we made progress in this realm?

Margareta: In the Sendai Framework, we worked so hard - and succeeded - to avoid the platitude of 'vulnerable groups'. The framework emphasized the agency of people and communities, and it doesn't matter if those people are women, Indigenous groups, people living with disability, etc. But now, this language of 'vulnerable groups' is back in force, even in the Sendai mid-term report. The issue with 'vulnerable groups' is the ease with which it is used to describe all people except, as someone said once, 'able-bodied white men'. It reduces a wide range of vulnerabilities of different nature and of different contexts to one concept that is not well defined. It is important not to accept the simplicity of 'vulnerable groups' and to recognize the agency of people and not constantly reduce us to 'victims'.

On taking a long-term perspective to disaster risk reduction

Lily: Originally you wanted the Sendai Framework to be for 30 years because 15 years was not enough time. So what do you see as the urgent priorities moving forward?

Margareta: I see a big opportunity for the business sector taking up this agenda. While there are valid criticisms of some companies and industries, we are in a period now where governments are weak. They can't get anything done. So instead, we see business leading in risk reduction, in sustainability.

Originally, businesses took up these issues because their staff wanted it. Now, their clients want it. This represents a huge opportunity to drive change and not expect governments to do everything. Real progress on disaster risk reduction requires us to continue to work with those that control the economy.

There is also a significant role for academics to help us leverage the knowledge that already exists. Scientists often ask me "What can we do?" and my advice is the same: Learn how to write and communicate in a practical way to decision-makers. Don't start a paper with 25 pages explaining your methodology. Start with what you really want people to know. We also need to aggregate data from local case studies to add to the collective knowledge base and give us something to build on to help us take the next big step.

Finally, we need to find a way to scale up Traditional Knowledge. So much of this is held at the local level, but global thinking could benefit from these insights. There's a missing link connecting Traditional Knowledge with global policies.

> **"In the Sendai Framework, we worked so hard - and succeeded - to avoid the platitude of 'vulnerable groups'. The framework emphasized the agency of people and communities, and it doesn't matter if those people are women, Indigenous groups, people living with disability, etc."**

"There has been some progress towards Priority 1 of the Sendai Framework, including an increased understanding of risk, the use of climate risk and geographic information system (GIS) tools, more guided risk assessments, decentralization of roles and responsibilities, and the development of risk atlases. However, data availability is limited, including sector-specific data and limited access to sex-, age-, and disability-disaggregated data. There is a need for improvements in data collection, analysis, and data interoperability. The incorporation of ancestral and traditional knowledge in DRR has been limited, and only some engagement of traditionally marginalized or vulnerable groups has been achieved".

(UNDRR, 2023. The Report of the Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030. UNDRR: Geneva, Switzerland, p. 75

On the role of youth

Lily: Having seen and led these processes over the years, what is your advice for youth?

Margareta: Be active. It can be so tempting to drown in hopelessness and become passive. So ask questions and find something that engages you, preferably with others. It doesn't have to be a big thing, but a way to create meaning and have a positive impact on the future. We should also think about how to reach out and support others, to engage with them, which is important for young people, middle-aged people, and elderly people.

The future might seem scary and we live on a planet that's rapidly heating and drying. I'm sure this is on young people's minds. But the only help for that is to talk about it, to learn more, to make choices, and to see the link between what you do and the bigger world, because what you do matters.

> **"There is also a significant role for academics to help us leverage the knowledge that already exists. Scientists often ask me "What can we do?" and my advice is the same: Learn how to write and communicate in a practical way to decision-makers."**

Margareta Wahlström has over 40 years of extensive national and international experience in humanitarian relief operations in disaster and conflict areas, and in institution-building to strengthen national capacity for disaster preparedness, response, and for risk reduction. Her academic background includes economic history, political science, social anthropology, archaeology and philosophy of science.

Lily Yumagulova is the managing editor of HazNet.

INTERVIEW

Intergenerational legacy of community service: An interview with Serenna Besserer

By Lily Yumagalova and Cindy Marven

As part of HazNet's Indigenous emergency management practitioners interview series, Lily Yumagalova had the pleasure of speaking with Serenna Besserer, an Inuit woman and a member of the Nunatsiavut territory of Labrador, who is currently a Senior Emergency Management Program Advisor of the Indigenous Engagement and Support Programs Unit for Emergency Management Ontario (EMO). EMO is responsible for emergency management in the Province of Ontario. Serenna was born and raised in Labrador.

Serenna brings generations of community service, 15 years emergency management experience, decades of community service, and an Indigenous perspective, to her current position as Senior Emergency Management Program Advisor with the Indigenous Engagement and Support Programs Unit for the Province of Ontario.

Walking in her family's footsteps

Serenna has "public service in her blood". Her childhood after-school hours were frequently spent jumping from ice pan to ice pan near her father's marina in Happy Valley-Goose Bay, Labrador, or playing games and having snacks with seniors at the long-term care facility where her mother was the activities director for, while her grandmother (the administrator) and her aunt (counsellor) worked at the women's transition house they were instrumental in establishing. Her father was in the military at a young age and retired from the NORAD radar base in Nunavut and her grandfather was in the Royal Canadian Armed Forces.

Serenna's Father. *Image credit: Serenna Besserer*

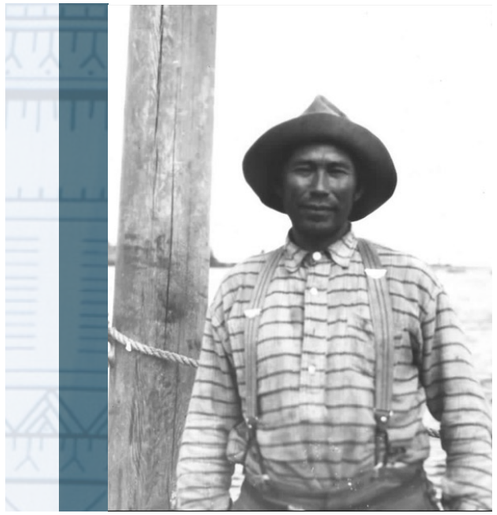
She highlights her grandmother - Inuit Elder Jean Crane - as an inspiring example of community service. In addition to the womens' transition house , her grandmother also helped to establish the first Canadian Red Cross chapter in Labrador at Goose Bay and provided health services as a nurse's aid for fly-in communities and communities along the Labrador coast . Recognized as an artist, teacher, and healer blending Indigenous knowledge and nurse's aid training, Elder Jean Crane was awarded Queen Elizabeth II's Diamond Jubilee Medal in 2012, and an Honorary Doctorate from Memorial University in 2021 for her leadership and commitment to health, community, and education. Serenna notes that her family also has roots in search and rescue. Elder Crane's father, Gilbert Blake famously helped lead the operation to rescue Dilllon Wallace, of the ill-fated Wallace-Hubbard expedition in 1903, and in 1905, returned with Leonidas Hubbard's wife, Mina Hubbard along with George Elson, a Cree trapper, and others, to successfully lead and complete the mapping expedition in Labrador. The story of Serenna's great grandfather Gilbert Blake's rescue mission has been captured in books (https://breakwaterbooks.com/products/the-lure-of-the-labrador-wild).

At the age of 11, Serenna moved with her family to North Bay, Ontario for education opportunities and for her father's work. She met her husband at college and soon thereafter, moved to Timmins, Ontario where they lived for almost two decades. A stay-at-home mom, she volunteered at her childrens' schools,

Serenna with her grandmother. *Image credit: Serenna Besserer*

in many coaching and leadership roles for their sports teams, for Girl Guides, Big Sisters and Big Brothers as well as for Search and Rescue. Serenna currently volunteers on the Board of Directors for the North Bay Indigenous Hub (NBIH), which provides a wide range of programming services including traditional healing, primary care, health promotion, chronic disease management, family-focused maternal/child health care, mental wellness care, diabetes care, and a culturally integrated licensed child care facility. All of the programs are to be delivered in a culturally safe manner to the local urban Indigenous population in addition to their partner First Nations, Nipissing, Temagami and Dokis First Nations. Serenna also volunteers on the Board of Directors for the Ontario Association of Emergency Managers covering the important portfolio of Indigenous emergency management.

While volunteering for Search and Rescue, she noticed an advertisement for a position with the Canadian Red Cross, coordinating community volunteers for disaster management. She applied, got the position, and fell in love with the work. She took advantage of available training opportunities, and went back to college to study emergency management and holds a designation with the International Association of Emergency Managers as an Associate Emergency Manager, a very tough designation to achieve and to maintain. Over the next 10 ½ years with the Canadian Red Cross, she worked as the Timmins' Disaster Management Community Service Coordinator, then as the Assistant Manager for James and Hudson Bay Coastal Offices, and subsequently as the Regional Manager of Operations for the Red Cross emergency management program, encompassing all of Northern Ontario. Working with First Nations leadership, her team established a Canadian Red Cross satellite office in Moose Cree First Nation. "It was the first Red Cross office on a reserve in Ontario. And only the second in Canada. So a lot of working with the First Nation leadership to get that rolling. Emergency Management was an area of focus for this office. office." The Canadian Red Cross also set up programs to train community members to be Personal Support Workers (PSW). "To help the local health centre we



Gilbert Blake. *Image credit: Serenna Besserer*

taught the PSW course, we flew in nurses to teach the college level PSW program. This work was in partnership with Northern College. It was a huge logistical undertaking getting the mannequins up, hospital beds to practise on, and an office.I think we did that in every community on the James Bay. They now have four offices on the James Bay Coast: Moose Cree First Nation, Moosonee, Attawapiskat and Peawanuck (Weenusk) First Nation. " These offices provide different services at each community but some examples of programs are social recreation for elders, assisted living and disaster management. Her last position with the Canadian Red Cross was as Regional Manager of Operations - Disaster Management Program for Northern Ontario from December 2018 through June 2021. She then took a position as the Emergency Management Coordinator for the Anishinabek Nation representing 39 First Nation communities. In this role she supported the 39 Anishinabek Nations as needed with emergency management matters such as training, emergency response plans, HIRA's etc.

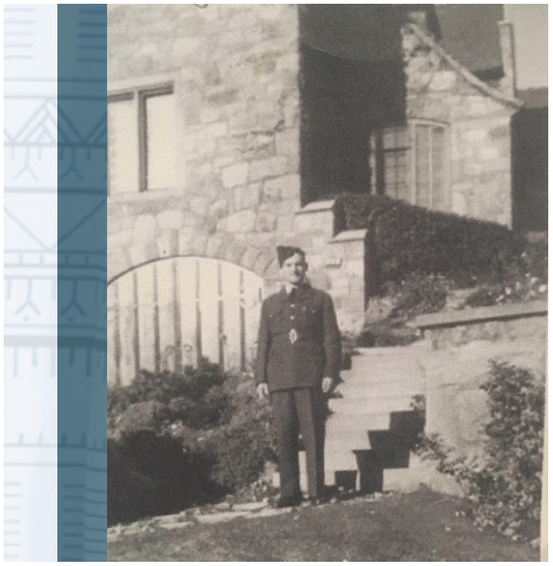
Now in her capacity with the Ontario government, and with provincial ministries, First Nation Chiefs and their leaderships, the federal government, host municipalities and organizations, as well as supporting

non government organizations (NGO's) to support evacuations, Serenna marvels at her grandmother's ability to pull people and resources together with little formal support. "I would just get people who wanted to help together," her grandmother told her. Serenna added "The church groups would make lunches and dinners, people would donate clothing, the seamstresses in town would make clothing. And then she would call people and say, "Do you have room for two people in your basement", and then place them all in the communities."

Serenna acknowledges that her family's Inuit heritage, history, and Traditional Knowledge is difficult to pass down to her children who grew up away from Serenna's family, culture and traditions. Her children are very aware of their family's heritage, but without a direct connection to that land and family in Labrador, deeper learning is challenging. Serenna and her mother still forage for natural medicine and it is important for them to pass this knowledge along to the children. "They see me, I make natural medicine, my mom forages and does natural medicines as well. So definitely it's in their blood but they don't get to witness it on a bigger scale; but it's very important that they know that they are Inuit." Serenna has been welcomed by the First Nations people and that while they have different food, culture and ceremony, she notes they share strong connections with Mother Earth - fire, land, and water.

Connecting Indigenous and non-Indigenous emergency management

Serenna has practised emergency management in both Indigenous and non-Indigenous communities and notes there are key differences. "So as an example, municipalities have certain obligations under the Emergency Management and Civil Protection act (Ontario legislation) to, every year, update their emergency plan, conduct emergency tabletop exercises, etc., and that is not a requirement for that to happen in First Nation or Indigenous communities, nor is there as much funding to do this work". People play multiple roles in a community and the emergency manager may also be a band council member and the



Serenna's grandfather. *Image credit: Serenna Besserer*

public works provider. People performing multiple roles have little time or funding to accomplish their tasks as they are being pulled in multiple directions. There is increasing interest in developing capacity in Indigenous emergency support services within and among Indigenous communities, something Serenna is strongly supportive of.

One of the challenges faced by Indigenous communities is communicating the importance of traditional hunting grounds and their role as critical infrastructure to urban or non-Indigenous people. For example, if a forest fire passes near a community and destroys the plants and animals and ecosystems that feed the community, it creates an emergency. It takes a long time for an area to recover to provide food. "The forest fire may not be in my community but that is where we fish and hunt and that's gone now. That is emergency management in Indigenous communities, that is critical infrastructure. That feeds entire communities, if that was our traditional hunting ground and the forest fire went through it." Similarly, the construction of roads and other infrastructure to support mining can harm a community's ability to harvest food. First Nations have very unique needs.

Serenna's perspective as an Inuit woman enriches and informs her work in Indigenous emergency management. For example, she is keenly aware of the cultural and spiritual needs of people evacuated from Indigenous communities. "You crave that wild meat, you crave berries and access to culture, so it's important just to provide those resources to the people that are being evacuated. If they're religious, maybe have contact with the church. Maybe they need somewhere to smudge or maybe elders need a quiet room - but to think of that cultural aspect during an emergency instead of just food, clothing, and registration - you need to think "the people need this" and it provides a lot of mental health and sanity, I don't know, ease of mind, to have those cultural things." She is aware that the stress of emergencies can amplify existing problems like domestic abuse, addiction, or mental health conditions, so meeting these needs is important as well.

With these significant challenges it may be difficult to remain hopeful, yet Serenna points to the response of Canadians to the plight of the community of Attawapiskat. In 2011, the community declared an emergency. They were facing winter with a severe shortage of housing for residents and many existing homes were in need of major repairs. This brought international attention to the situation, and Canadians sent money and items to the Red Cross who set up an emergency shelter. "Kids wrote cards of hope to other kids in school. While it took calling a state of emergency, it created awareness of what was going on in this community, and that they needed more physical infrastructure. While the rest of the world could not provide that physical infrastructure, they all sent love and that really gave me hope."

Advice for youth

To Indigenous youth, Serenna encourages them to "Stay in school. Graduate high school. After that just follow your passion, live each day to its fullest, try not to get absorbed into bullying online, just try to be the best person that you can be. There are a lot of opportunities for youth to get involved with different initiatives. Keeping some kind of focus or direction when they're young will lead to healthy adults." And if youth are interested in emergency management, she suggests they "put their name out there and get involved. Teenagers now have to do 40 hours of nonprofit work to graduate high school in Ontario so if it's emergency management work, contact your local EMS, or fire department or Chief and Council and ask what programs there are for emergency management and see if you can get involved to help with activities such as emergency preparedness week or fire prevention week . Maybe you can do a research project. Even youth can become involved with the Canadian Rangers, search and rescue, take the training - there are a lot of free resources out there and a lot of different capacities to get involved with."

To conclude, Serenna speaks of changes that give her hope for the future. "I think that this role that I am in now, and the other First Nation Emergency Management Coordinators that are funded through Indigenous Services Canada, is giving me hope. These are brand new roles - this is bringing skills, assets, and connections to the communities. She also emphasises the value of Nation-to-Nation support. "We're all trained in the same job, let's work together and make better stronger communities and a better stronger response". Nation-to-Nation support gives me hope in emergency management. Having indigenous people trained at the community level in emergency management is the difference between a positive navigating of a crisis, and mitigating long term impacts versus a detrimental, harmful experience adding to an already existing crisis.

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Editor-in-chief – Lily Yumagulova
Editors - Nicole Spence and Carly Benson
Copy editing - Cindy Marven and Alex Sokolowski
Layout / design - Taylor Legere
Online platform support - Ivan Chow

Canadian Risk and Hazards Network (CRHNet) is a not-for-profit organization established in 2003 to promote and strengthen disaster risk reduction and emergency management in Canada.

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