HazNet

The first wave

CONTENTS

President's
Message

2020 was a difficult year, and will bring cascading effects for many years to come. The COVID-19 pandemic has impacted the lives of all Canadians. It brought loss, disruption, fear, and challenges. There will be empty seats at dinner tables across the country that should have held those we lost to COVID-19. In addition, the necessary measures to combat this virus have taken away the opportunity for us to gather and provide comfort to one another. As we move through the winter months, the weight of the emotional toll of the pandemic will continue to grow for many people. Now more than ever, it is important that we continue to support each other, even if we cannot be together in person.

As we move through 2021, it is clear that this year will also bring its share of hardships. However, with the vaccines rolling out, there is a light at the end of the tunnel. We can begin to look forward to hugging our loved ones again.

Until we get to that point, remember, this too shall pass.

To all those who are working the pandemic response and those who are doing whatever they can as individuals to mitigate the impacts of COVID-19, thank you.

Patricia Martel, Ph.D, CEM

President, CRHNet

A note from Lily: A couple of days prior to this issue's launch, my 12-year-old son, Timur, was reading out loud at the dinner table about murmuration, a phenomenon where hundreds, sometimes thousands, of starlings fly in swooping patterns. This constant motion in a quest for centrality gives the birds a fluid sense of safety. "To be safe on the inside, somebody must be on the outside: just like our safety in the pandemic, it depends on the essential workers on the outside." -Timur Reynolds

Editors´
Note

This pandemic has arguably brought a remarkable degree of "disaster literacy" to children and adults. Household preparedness, personal protective equipment, stockpiling, supply chain management are only some of the list of elements gaining growing awareness that are needed to build a resilient society. As the one-year mark of the global pandemic nears, it is an opportune time to step back, reflect, and take stock. While it is too early to know the full extent of the impacts of COVID-19 on Canadians, there are many initial learnings that highlight what worked well, indicate areas of opportunity, and guide any immediate course corrections. But it is more than that. In putting this momentous issue together, we went on a trip through time, reliving each milestone and setback, tracing the highs and lows, and with that, gaining a new perspective on not only how much we have lost, but how much we have achieved. It has been a year for the history books, but in this issue we focus on the critical first few months of the pandemic: *the first wave.*

As the pandemic escalated in the spring, the public became familiar with the dashboards built by Johns Hopkins University and World Health Organization; for some of us, these common operating pictures became a barometer for the state of the world. Online tools to support emergency response are not new, but the COVID-19 pandemic illustrated the benefit of having access to such decision-making aids. In response, Natural Resources Canada and Statistics Canada jointly developed a socio-economic dashboard inclusive of hazard and vulnerability data to support real-time response and planning. Nearly one year later, user feedback has helped make it ready to be deployed as a bilingual platform.

With global dashboards displaying the status of each country, the epidemiologic curve became our benchmark and 'bend the curve' our mantra. For a small number of countries, the case spike was invisible on the global scale; New Zealand being a case in point. Beyond the standard public health measures—including border-related controls, quarantine facilities, testing, contact tracing systems, and lockdowns—another reason stood out for the island nation's success in halting the pandemic: the leadership practices of Prime Minister Jacinda Ardern and her government. Read about a pandemic leadership model that offers transferable lessons for leaders.

Given the magnitude and ongoing nature of the COVID-19 pandemic, many organizations began to envision what the "new normal" would look like. For the Northern Alberta Institute of Technology, this meant pivoting to online delivery and transitioning student support and counselling services to a virtual environment. Read how NAIT managed to relaunch all programming in Fall 2020, witness widespread adoption of and compliance with on-campus health and safety measures, perform contact tracing and notification, and maintain agility in the face of challenge and change.

With over 56% of the global population and over 80% of Candians living in cities, the pandemic made us rethink the nature of urban resilience. From opportunities for diversifying the economic structure of cities to enhancing green spaces and bolstering public transportation, read about ten major lessons that this pandemic can provide for urban resilience to adopt in post-pandemic urban planning and management.

As a society, we came together to try to protect the most vulnerable populations who are at increased risk of developing severe illness or complications from COVID-19: we stayed home, we wore masks, and we prioritized resources for health services. However, the pandemic also revealed that some communities are left behind during public health emergencies. Learn how the Vancouver Emergency Operations Centre created an Ethnocultural Communities Branch to support the communities hit hardest by COVID-19, including low-wage essential workers, seniors facing food insecurity, renters in substandard housing, and people who depend on social services or public transit – often people from racialized and ethnocultural communities. With acts of discrimination related to COVID-19 highlighting the structural racism underlying Canadian society, it is important to learn how social countermeasures can be used to combat misinformation, stigma, and fear associated with COVID-19.

This year had many people asking, 'How can I better plan for uncertainty?' Emergency managers know that with every threat, there is an opportunity to reduce the likelihood and consequence of the next emergency for individuals, communities, organizations, and the environment. Fortunately, there are growing resources to manage events with high levels of volatility, uncertainty, complexity, and ambiguity, captured in the eight emergency planning principles from Australia's new emergency planning handbook.

Within this issue, we also celebrate women in leadership positions. In Canada, Michelle Vandevord (Day Star Woman), a volunteer firefighter of 21 years at the Muskoday First Nation, Saskatchewan, was voted the Aboriginal Firefighters Association of Canada's first female President. Read Michelle's advice for the next generation of girls and women who want to join the fire services.

In a year of disconnect and distance, CRHNet's Emerging Professionals sub-committee aims to connect, empower, and represent the interests of young/emerging academics and professionals all over Canada whose interests are related to risks, hazards, and resilience. We also recently had the pleasure of announcing the 2020 CRHNet award winners at CRHNet's annual general meeting. We went straight to the source to learn why these wonderful individuals were chosen - hear what their referees and nominators have to say!

In January 2021, the tight-knit emergency management community in North America lost two remarkable leaders with the passing of Larry Pearce, who left us after a lifetime of service to Canada and Canadians, and Professor Dennis Mileti, a luminary in the field of hazards and disaster research, who passed from COVID-19 complications. In this issue, we celebrate Larry's life and legacy (which includes the Canadian Research and Hazards Network (CRHNet), the CRHNet Symposium, and HazNet, three uniquely Canadian resources for the emergency management community) in an article by a longtime friend and colleague, Ernie Macgillivray. We celebrate Professor Mileti's legacy by revisiting his interview with HazNet on effective risk communication.

As our focus shifts to vaccination and building back better, the impacts of the global pandemic will remain far-reaching and continue to be felt for a long time to come. As a way to celebrate the resilience of professionals from different regions, sectors, and fields, we curated a colouring book that offers inspirations, challenges, and honest introspections from the past year. Check out the wonderful collaboration of emergency management professionals and artists in our feature Incidental Colour. Keep your eyes out for a hard copy to practice your art skills in the coming year!

Our next issue of HazNet will focus on the silver linings - the positive changes and pivots of this pandemic experience. We hope you will join us in telling Canada's evolving story of risk and resilience.

Lily Yumagulova
Editor, HazNet
www.haznet.ca

Nicole Spence
Editor, HazNet
www.haznet.ca

Emerging Professionals

Canadian Risks and Hazards Network (CRHNet) recognizes the importance of supporting the development of current and emerging professionals and enabling opportunities for individuals to connect and learn from each other, in order to advance the profession and resiliency-building agenda in Canada.

Under the guidance of the newly formed Partnerships and Professional Development Committee, the Emerging Professionals (EP) sub-committee aims to connect, empower and represent the interests of young/emerging academics and professionals from all over Canada whose interests are related to risks, hazards, and resilience. We endeavour to ensure that emerging professionals are presented with a number of networking opportunities, including:

- Providing access to mentors in the field;
- Highlighting the accomplishments of Emerging Professionals at our annual symposium event and in relevant HazNet articles;
- Online sharing of job and professional development opportunities as they become known; and
- Establishing a virtual forum for peers to exchange learnings and perspectives

As part of the establishment and management of the CRHNet, a bursary was created to provide students the opportunity to attend the annual symposium, which fosters partnership building on a national and regional basis. Every year during the annual symposium, the committee has held an in-person mentorship event, where new and up-and-coming disaster and emergency management professionals have the opportunity to engage with knowledgeable, seasoned professionals in order to ask questions, solicit advice, and receive critical guidance for their ongoing studies and careers. Feedback from these events, from both the mentors and mentees alike, has been consistently positive, and noted to be a rewarding experience for all.

The sub-committee also manages the CRHNet's Emerging Professionals Facebook page for connecting with the nation-wide communities and organizations in the fields of emergency management, disaster resilience and climate change adaptation. The forum provides information about career opportunities, internships, scholarships, other educational opportunities, as well as recent research. It also serves as a general platform for discussing topical issues in the field of disaster risk reduction.

2020 required everybody to "pivot" in some capacity as we worked through the challenges of the first wave of the COVID-19 pandemic, and into the anticipation of the second and subsequent waves that we knew were coming. It was important that we ensured access to these networks, recognizing that they are likely going to be even more important now than ever before, as the world acknowledges the important work that is done, and needs to still be done, by disaster and emergency management professionals across all sectors and communities. In 2020, we were able to move our event online with a live mentorship panel as part of the regular program of the symposium events. Our Facebook page has seen a marked increase in followers (+30.4%) and traffic (50,000+ engagements). With our new website just launched and some new partnership opportunities on the horizon, we are looking for new ways to engage with our emerging talent, and tapping into their energy and insight to help find innovative ways to solve the complex problems that are being created by disasters within Canada, and around the world.

We are pleased to be able to provide these opening worlds for this edition of HazNet with the theme "The First Wave", as we acknowledge the commitment of our emerging professionals to safeguarding our people, communities, organizations and the environment and in recognition of the unique challenges that lay ahead with each subsequent wave.

Bettina Williams, MA DEM
Program Manager, Emergency Management Division
Justice Institute of British Columbia
CRHNet Board Member, PPD Committee Member
and Co-Chair of the EmergingProfessionalsSub-Committee

Jodi Manz-Henezi, BA, BSc, MA DEM
Program Chair - Disaster and Emergency Management Program
School of Health and Life Sciences
Northern Alberta Institute of Technology (NAIT)
CRHNet Board Member, PPD Committee Member and Co-Chair of the Emerging Professionals Sub-Committee

2020 Awards CRHNet

In a year that was dominated by sombre headlines, we recently had the pleasure of announcing the 2020 CRHNet award winners at our annual general meeting. We would like to celebrate our winners by sharing a few words from those who can best describe why these wonderful individuals were chosen - the nominators and references. From us at CRHNet, congratulations to all the award winners and thank you for your ongoing commitment to the field of disaster and emergency management!

This year the CRHNet launched a new award, originally called the Mentorship Matters Award. In November 2020, the CRHNet Board unanimously voted to rename this award to be the *Marion Boon Mentorship Award*, in recognition of Marion's tireless role with CRHNet, and as a mentor and respected professional across Canada for the past four decades, and into the foreseeable future.

Marion Boon Mentorship Award. This 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.

This year, two recipients were selected to be recognized for their role as a mentor.

Marion Boon Mentorship 2020 Award Winner
- Josh Morin

"I had experienced and watched Josh mentor emerging professionals throughout the years by being a consultant when questions were asked and sharing critical learning moments that benefited him through his career. He is not shy to share his successes and failures and always emphasizes that the field of disaster and emergency management is one where everyone must work together. He embodies that character through his talent in mentoring. Additionally, he mentors through being a sounding [board]. He takes the time to listen, guide and facilitate [the process] for a mentee to seek answers on their own. He provides support in learning from mistakes, which allows mentees to build their understanding and experiences. Most importantly, Josh is always a cheerleader. Win or lose. Rise or fall. Josh will be by your side, cheering you on to support the satisfaction of [being on] the journey of learning.

It can be daunting to open one's self up to be vulnerable to the learning process. Having someone advocating and collaborating with your every step of the way has helped me make miles in my career and personal confidence." (Lexie Busby)

Marion Boon Mentorship 2020 Award Winner
- Chiran Livera

"Chiran has been a mentor to me for the past two years and it has been an incredible experience. His mentorship has helped me grow as a leader and as response operations manager. He has this collaborative approach, where he works with you to help you achieve your professional goals.

Chiran has also created a culture of mentoring and coaching amongst the Canadian Red Cross Rapid Response Team. The Rapid Response Team is comprised of leaders who deploy to large-scale disasters nationally and internationally. He has worked individually with the team to grow our core competencies and help us become better leaders. He also initiated mentoring and coaching amongst our team members. Creating a culture of mentoring has benefited this team immeasurably. He is always willing to take the time to help people grow. He has made a major impact." (Alexis Kraig)

CRHNet Disaster Risk Management Volunteer Award. This award was established in 2017 to recognize exemplary disaster management volunteerism, and worthy volunteer programs and initiatives contributing to the betterment of Canadian safety. Each year, up to three recipients are selected to be recognized by their peers for their outstanding contribution to some area of disaster risk management without expectation of financial benefit - whether that contribution occurs before, during and/or after a disaster.

Disaster Risk Management 2020 Award Winner
– Ron Kuban

"Ron Kuban is one of the most accomplished disaster risk management professionals in Canada, and beyond. He is also one of the most recognized for his research, books, articles and essays, and for his roles as educator, mentor, chairperson and innovative thought leader. His fifty years of exceptional, meritorious service to the disaster risk management community are unequaled, as is his long service to the Network, as a founding member, Director and President.

It is important to appreciate that many of Ron's contributions to disaster management have been in voluntary capacities, such as Boards, Commissions, Advisory Committees and Conferences. In addition to these activities, Ron has served the broader community with important organizations such as The Canadian Red Cross, The National Platform for Disaster Risk Reduction and Safeguard Canada. Ron's exceptional record of service to Canada, and to CRHNet, which he has tirelessly championed, is deserving of our recognition and celebration. I can think of no person more distinguished or laudable in his accomplishments and am pleased to offer respectfully this letter of support and my highest recommendation." (Ernest MacGillivray)

T. Joseph Scanlon Lifetime Achievement Award. This award was established in 2016, and is the organization's highest honour. It recognizes the lifetime contributions and exemplary work of colleagues in strengthening and advancing Canadian public safety. Each year, one recipient is selected to be recognized by their peers for their collective contributions to disaster risk management education, practice, and/or research.

Joseph T. Scanlon 2020 Award Winner
– Paul Kovacs

"Paul was the Senior Vice President at the Insurance Bureau of Canada and was instrumental in establishing the not-for-profit Institute for Catastrophic Loss reduction at the University of Western in 1997 and has been its Executive Director ever since. This institute and his leadership has been extremely influential in increasing awareness, engaging insurance and reinsurance industry in framing strategies and policies to respond to growing pressures such as increased extreme weather and climate risk, in part as a consequence of climate change as well as having a prominent role in shaping disaster reduction policy for Canada and international structures including the World Meteorological Organization, the International Sustainable Development for Disaster Risk Reduction, and federal governments in Canada and even outside of Canada.

In this regard, Paul has served personally on many national and international advisory and working structures and has been very effective in bringing the insurance and reinsurance sector along with his journey. He is recognized for his tireless commitment to the cause of public safety and disaster risk reduction, as well as his influential leadership across training, communications and research." (David Grimes)

The Larry Pearce Education Awards "were created to reward post-secondary students undertaking studies in any discipline relating to Canadian disaster risk and/or emergency management. These awards encourage innovative disaster risk management work and intend to help to defray the post-secondary education costs for recipients. There are three awards granted annually in Larry's name; the award winners for 2020 are Amabel D'Souza, Dan Seguin, and Tianna Putric.:

Our first place winner ($1000) went to Amabel D'Souza.

Amabel is a diploma student at NAIT in the Disaster and Emergency Management program. Outside of her exceptional academic performance, Amabel also has been successful in a number of volunteer initiatives, including her role at the United Nations Forum on Indigenous Issues in 2019, where Indigenous stakeholders were engaged to share their concerns and experiences with climate change. She has led numerous workshops on fishing livelihoods and livelihood diversification. In addition she has acted as a government advocate for two communities in Thailand who have suffered negative impacts of flooding and relocation as a result of hydroelectric development in the area. Her research on this topic was published in 2020 in Sustainability and she continues to take leadership roles to support Indigenous peoples on issues that matter to them. Amabel volunteers as a court liaison with the Elizabeth Fry Society in Edmonton and was previously a volunteer researcher and conference facilitator for the Calgary Immigrant Women's Association. Amabel has plans on starting her PhD next year, with a focus on the utilization of Indigenous knowledge in disaster risk resilience. Congratulations Amabel!

Our second place winner ($750) went to Dan Seguin.

Dan is a Masters student at Royal Roads University in the Disaster and Emergency Management program. In addition to his exceptional academic performance, Dan is also an experienced practitioner who is able to bring his expertise in solving complex problems through unique approaches and participative processes to the field of Disaster and Emergency Management through the blending of learning and behavioural theory. He has held both volunteer and paid positions in fire services, and also brings to the field extensive experience as a consultant in organizational design and strategy. Dan is recognized as a true leader in his program by his instructors and peers alike, noting that he never hesitates to show empathy, lend a helping hand, and live his values in all of his interactions through his expressions of genuine kindness and respect. Congratulations Dan!

Our third place winner ($500) went to Tianna Putric.

Tianna is an undergraduate student in the York University Disaster and Emergency Management program. In addition to her studies, Tianna also volunteered as an Emergency Management Assistant for the University's Department of Community Safety where she assisted in the updating of the institution's HIRA, completed a research report on food insecurity in the region, and supported the Canadian Red Cross' shelter assessment of the campus. She continues to research and write about the various risks faced by Ontario, Toronto and York University and demonstrate her commitment to the field through her academic and volunteer work. She has also been described as an effective communicator, a team player, hardworking, and caring person. Congratulations Tianna!

A few thoughts for
Larry Pearce

-Ernie Macgillivray

A few thoughts about Larry Pearce, who left us recently after a lifetime of service to Canada and Canadians.

Larry was young at heart, but old school - that is to say a substantial person, a noble soul, a gentleman. He clearly adored his family and friends. He appreciated colleagues and let them know it. In this year of fear and confusion and loss, it would be hard to find a better person to take us by the hand and show us the way. Alas, Larry has left us now to our fate, if not on purpose, and we are diminished.

There is undoubtedly a list somewhere of twenty attributes of a great leader. Larry ticked all the boxes. He was a perennial optimist, who thought the best of people and humanity. You could always count on Larry for a sincere

warm welcome, a mischievous conspiratorial twinkle, and most importantly, unbridled enthusiasm. Larry invested in people and relationships. He resolved conflicts, built bridges, brought people together and fostered good will and collaboration wherever he could. He inspired us to do our best and he made us all better. Larry did what the best leaders do, he made the team better and stronger and took his satisfaction from the team's success.

Larry always did more than his fair share of the work, whatever the role, encouraging others in the process. His senior years were accompanied by both adversity and infirmity, yet he never stopped contributing. He inspired a generation of us, by personal example, asking us to raise the bar, to learn more, to collaborate better. He and his partners largely achieved those things, working diligently over decades. Never satisfied, Larry would observe that there is still so much to do. He's quite right about that and we need more like him to get it done.

What Larry was most proud of and perhaps should be best remembered for is being a champion for the profession and practice of emergency management. He saw the need and, with a vision of how to make things better, acted on it. His legacy includes the Canadian Research and Hazards Network (CRHNet), CRHNet Symposium and HazNet, three uniquely Canadian resources for the emergency management community. Each of these was intended to contribute to the body of knowledge, promote research and evidence-based policy and decision making, and foster professionalism. Larry, for his part, humbly played down his own contributions and held out praise for others, especially his life partner Laurie. In truth, if we have been an effective team, it is because we had Larry as our coach and Laurie as the general manager.

My fondest memory of Larry remains sitting with him in his living room, taking in a spectacular view overlooking Indian Arm with a glass of wine in my hand. We were waiting patiently for Laurie to get home from work. He smiled broadly and asked, what should we do next?

For more on Larry and his legacy, there is a celebration of his career in the Fall 2017 edition of HazNet (Celebrating Larry Pearce | HazNet). His obituary may be found here (Larry Pearce | Obituary | Vancouver Sun and Province (remembering.ca)

Thanks Lar.

Please visit CRHNet website if you wish to make a donation to support the Larry Pearce Education Award for emergency management students: https://crhnet.ca/larry-dale-pearce/

Incidental colour

By Lilia Yumagulova

Scenario planning was one of my favourite courses as part of my undergrad engineering degree in emergency management. It was a course that unleashed the full force of worst-case scenario thinking. Imagine an extremely flammable hazmat spill event near a school, a jail and a large regional hospital. Now add an earthquake. And all of this under conditions of a pandemic. However, the course was not only about a wild flight of imagination. It was about hazard, risk and vulnerability assessments; it was about everything that came afterwards, planning, prioritizing the population groups, leveraging of resources, and minimizing the damage of cascading effects.

I did not realize it at the time, but worse-case scenario thinking would eventually become both a highly valuable planning skill and an occupational hazard. As Chris Hadfield writes in his book, *An Astronaut's Guide to Life on Earth*, "Truly being ready means understanding what could go wrong – and having a plan to deal with it." Hadfield describes the different worst-case scenario simulations (sims) that astronauts go through to forge the strongest possible armour against fear: hard-won competence. A fire on the International Space Station sim. Your own death sim. For Hadfield, this worst-case scenario planning has become a "reflexive form of metal discipline" not just professionally but in life. On Earth, when he walks into a crowded elevator or buckles his seat belt on a plane, Hadfield reflexively thinks about how he could "work the problem" and what his role would be in the case of a crisis. "Like most astronauts, I am pretty sure that I can deal with what life throws at me because I've thought about what to do if things go wrong, as well as right. That's the power of negative thinking."

Emergency management is no rocket science. But we share a lot of the same risk management principles. Long before this pandemic hit, municipalities, First Nations, and organizations across Canada were working on updating their pandemic plans. Somewhere, tucked away in a government office there is a person that has thought about the multiple scenarios that can happen to their community. Today, let us celebrate our colleagues that have been working with worst-case scenarios to prepare for a brighter, more resilient future. This is the power of walking under your own cloud.

For this special feature, we connected with HazNet contributors and volunteers - emergency management professionals from different regions, sectors, and fields - to curate a colouring book experience that offers inspirations, challenges, and honest introspections on how this whole experience has been for them. These reflections are accompanied by beautiful illustrations by Nina Chetvertneva, an artist currently based in Moscow, Russia and Carime Quezada, originally from Guadalajara, Mexico who currently lives in Vancouver and is HazNet's graphic designer.

What is truly remarkable, is the incidental nature of this "collaboration." Nina, Carime and I developed these illustrations based on different themes a few years back, long before the pandemic. Today they come to life with reflections from emergency managers from Maritimes, Quebec, Saskatchewan, and the West Coast.

This is the power of art. It brings us together, across space, time, cultures, and across the current context of disconnect and loneliness.
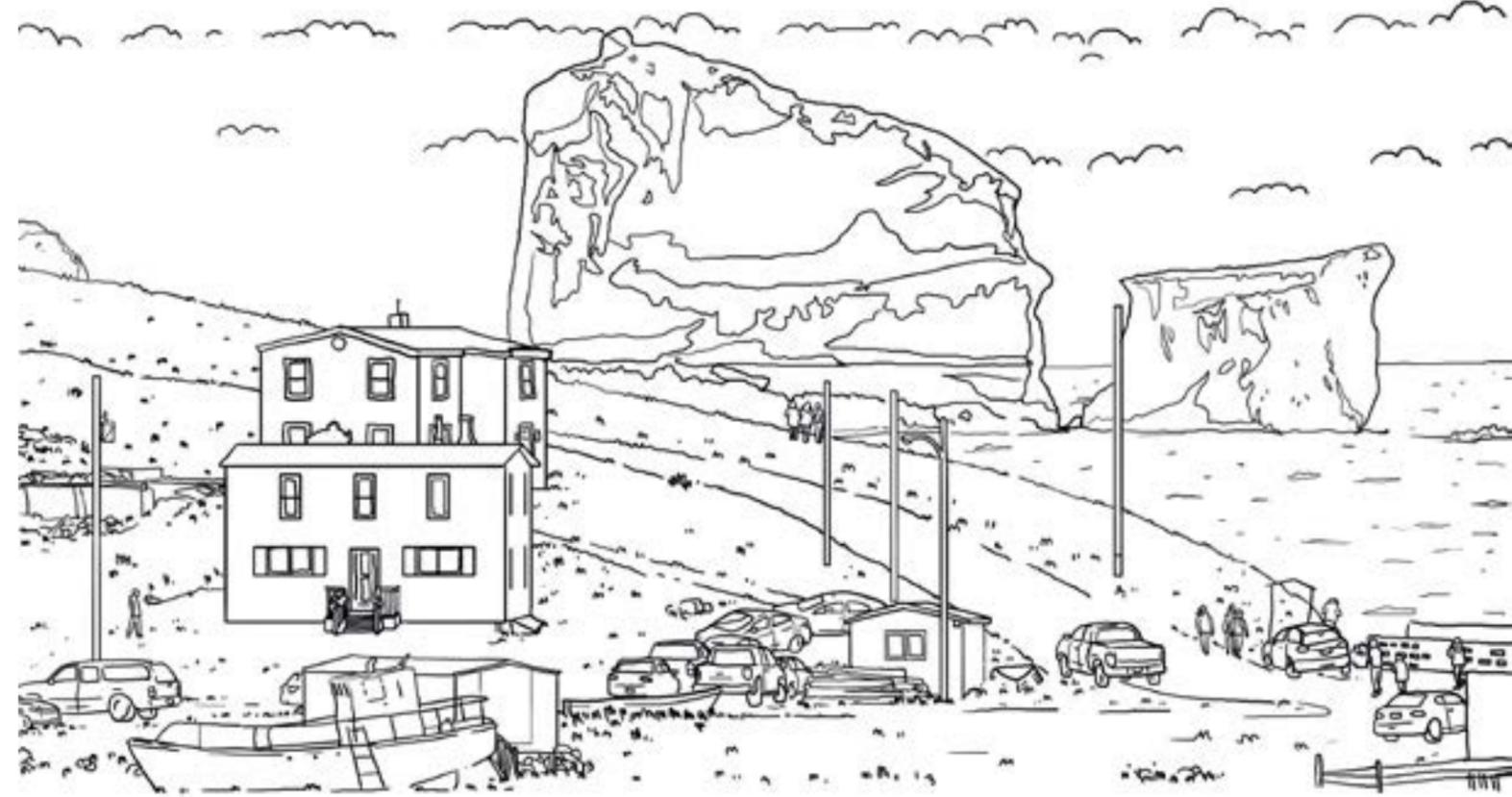
Get that pencil box out.

Immerse yourself into incidental colour.

What is your best-case scenario for a return to a new, better, more just 'normal'?

Nina Chetvertneva

Carime Quezada

As a retiree, I have been less affected than many by CO-VID-19 and the global response. Out of the fray, and with time on my hands, I have been able to gain an objective perspective, both broadly and in considerable detail.

The takeaway: we cannot underestimate the impact on people's mental health and psychological safety. Much of the population is under tremendous stress, whether they show it or not. Much like an iceberg, we can gain a sense of the impacts, while knowing most of the damage lies below the surface.

This is a very long marathon. It's not nearly over. Recovery will be a very long process. Take care of each other. Appreciate that everyone is hurting to some degree and many are hurting a lot. Compassion should guide us all.

- Ernie MacGillivray

http://haznet.ca/road-shared-situatio-nal-awareness-disasters/

Nina Chetvertneva

J ust as autumn is a time of change, disasters are catalysts for change. When we only focus on cha-llenges and problem-solving, it is easy to underes-timate the vast potential of this moment in time. But without intention, without imagination, we risk mis-sing the opportunities this pandemic presents.

Whenever I felt exhausted or overwhelmed this year, a powerful coping mechanism was to find a quiet mo-ment (usually while walking my dog), step out of a pro-blem-solving mindset, and recognize the monumental, paradigm-shifting trends in this pandemic response:

The prominence and competence of female leaders. Centering kindness and empathy at the forefront of public messaging. Openly acknowledging that the impacts of the pandemic are disproportionate across society. Recognizing and celebrating all essential wor-kers - grocery clerks, truck drivers, farmers, and janitors - not just first responders and healthcare professionals. Appreciating how much we need each other and shi-ning a light on the dangers of loneliness and isolation. Accepting personal responsibility for risk and unders-tanding that everyone has a role to play. These trends are powerful steps towards embracing a whole-of-so-ciety approach to disasters and risk reduction.

Often in disaster response, we concentrate on the details of what we should have done differently and create lists of incremental improvements. This time, I hope we dare to dream bigger - to focus on transfor-mations that will have a lasting impact on building a more disaster-resilient Canada.

-Carly Benson

Such life around us

D uring the first wave, I was working overtime, alone in my apartment with my plants as my sole companions. This spring, I observed nature burst to life be-tween my four walls, from sprout to sprout. Between operational calls and org charts, I found time and space to take great care of these minuscule greens. Their virides-cent shade could not soon enough cover my windows. A proof, maybe, that the worst is not always certain. What I do know for certain: I have never seen a command post in so small a jungle north of the 47th parallel.

- Paul-Émile Auger
http://haznet.ca/seeking-active-hope-thou-ghts-evolution-profession/
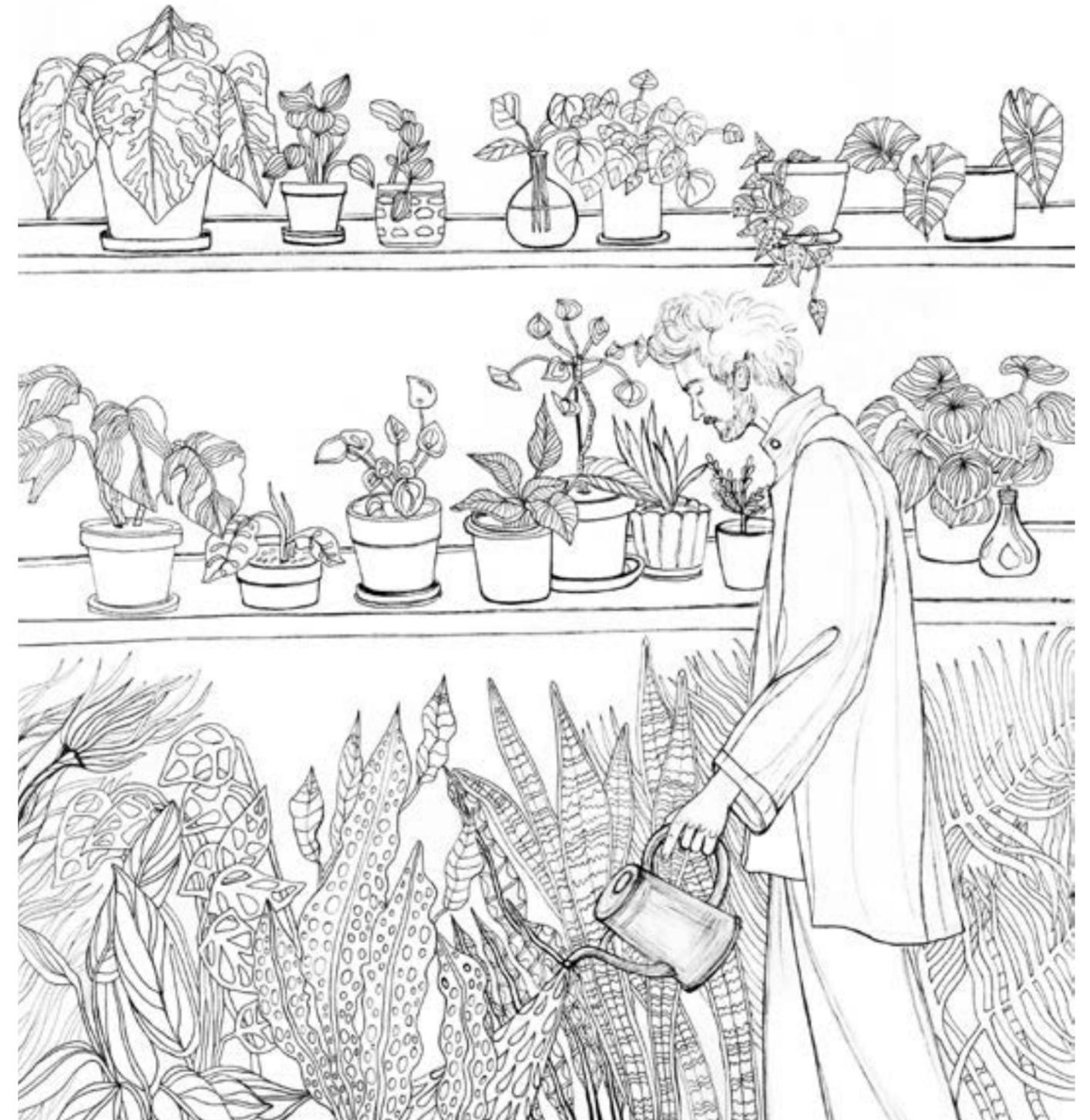
Nina Chetvertneva

Flying home from Europe on March 17, I knew my usual self-care routines would be gone. Hikes and coffee shops were replaced with long days and Zoom meetings, rejuvenation and connection replaced with exhaustion and distancing.

But with constraints comes creativity. Returning to work after quarantine was a relief; I found self-care in my long walks to work and levity with coworkers, and with spare time precious, neglecting chores to return to nature.

Most of the time, I was forced to sit with the enormity of it all. Anger, fear, and frustration showed up to serve a message - that these circumstances require greater attention. Despite their potential for destruction, disasters are an opportunity to build resilience and challenge existing power dynamics, and can act as a catalyst to turn collective grief into collective action.

-Nicole Spence

Nina Chetvertneva

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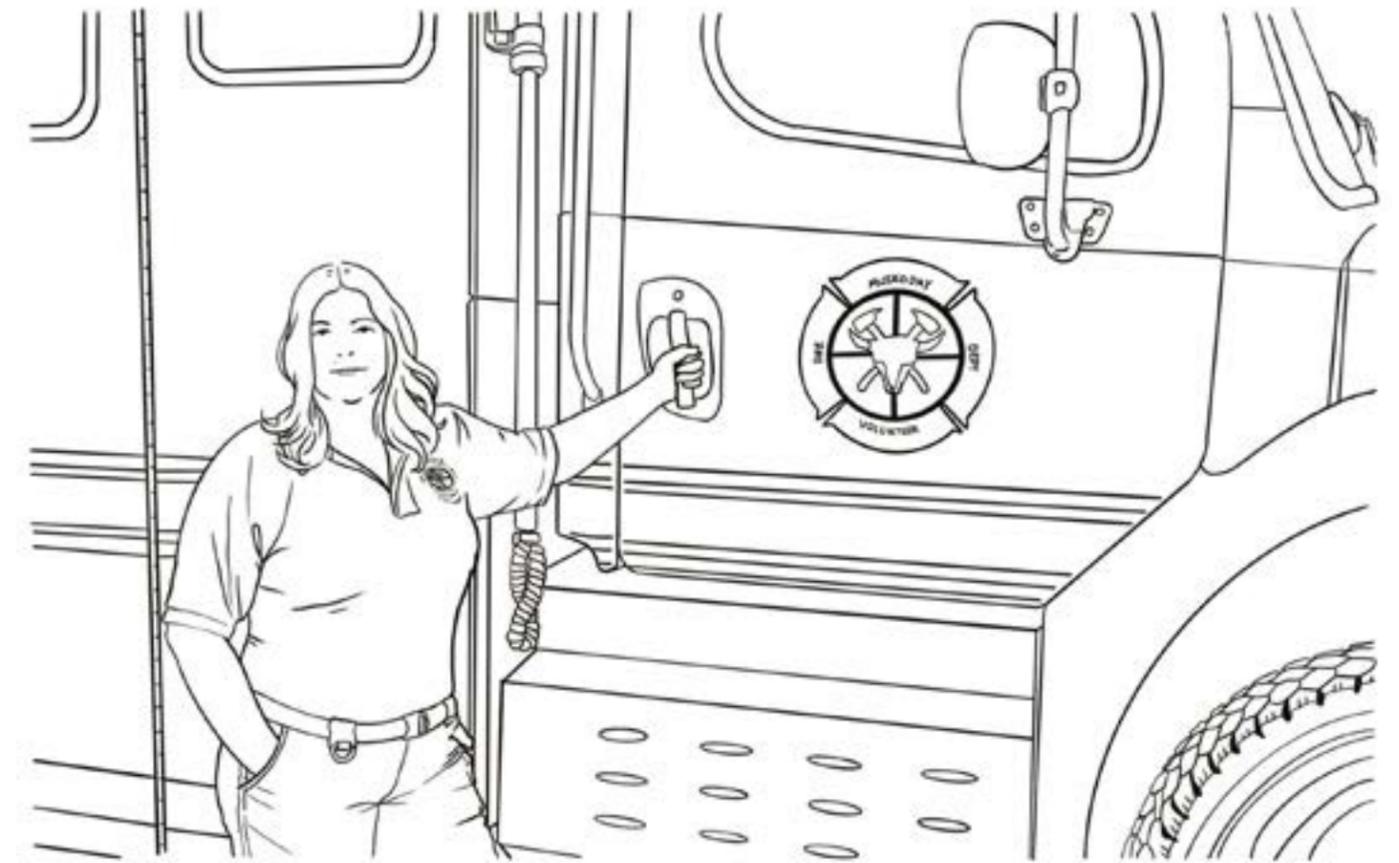
Day Star Woman - Michelle Vandevord

Executive Director for Saskatchewan First Nation Emergency Management in Prince Albert; First female President for the Aboriginal Firefighters Association of Canada

Carime Quezada

My name is Michelle Vandevord, and I'm from Muskoday First Nation. The most important job I've ever had is being a Mother. I'm very fortunate to have been given three beautiful daughters, whom I love more than anything in the world. That is, until I had grandchildren...now there is love you can only appreciate once they touch your life!

I've enjoyed many different jobs on the reserve over the years, but none has been more important than my volunteer work. It's who I am, and it pushes me to be the best I can be. I do it to honor my Grandmother Delilah and Mother Lillian, whom I miss dearly. They instilled in me volunteerism and a love for my community at a very early age, and for that I will be forever grateful.

When I was asked to attend a Firefighter meeting at the Fire Hall, it was an easy decision. That was 18 years ago, and as I write this, I'm wondering—where did the time go? This summer will be my 22nd year with the Muskoday Volunteer Fire Department. It's the most important job I've ever had with my community.

I joined Muskoday Volunteer Fire Department because at the time, there were no women on the force. I took it as a challenge to start something new, and also to be a role model for the young girls on the reserve—especially my own daughters.

My advice for the next generation of girls who want to join a Fire Department is: Don't give up. Work hard and earn respect. Never be afraid of the challenges, because skills will come in time and with practice. Don't ever let anyone tell you that you can't do it, because you can. Be a role model on and off the job.

Most importantly, don't be scared to say when you are afraid to do something—but know your limits. It took me five years to climb a ladder and get on a roof, but eventually I did it. Be a hero in your own mind first, and then spread that spirit outward.

Michelle Vandevord

Voted as the Aboriginal Firefighters Association of Canada first female President

By Lilia Yumagulova

Michelle Vandevord (Day Star Woman) is from Muskoday First Nation, Saskatchewan. Michelle is a mother of three daughters and three adopted sons. She is also a very proud Kookum ('Grandmother' in Cree) to four smart, handsome and funny boys who in Michelle's words "are the reasons I work so hard".

Michelle is currently the Associate Director for Saskatchewan First Nation Emergency Management (SFNEM) in Prince Albert. The Prince Albert Grand Council founded SFNEM from knowledge built on responding to many emergency events in Northern Saskatchewan. The capacity needed to be shared with all First Nation communities in the Province. SFNEM provides Fire and Emergency Training, Response Services to First Nation communities, and organizations. SFNEM's mission is to build capacity on-reserve so First Nations can lead and manage their emergencies as they have planned. This capacity is built through a wide array of services and courses ranging from Structural & Wildland Fire Hall Assessments, Community Risk Assessments, Emergency Management courses, Firefighting courses and Daycare and Headstart Inspections. SFNEM also leads the Free Firefighting equipment donation program that coordinates donations of used firefighting gear within the communities that need them the most.

Saving lives as a female firefighter

Michelle's inspiring career as a female firefighter started with her volunteering for her community. She has been an active member of the Muskoday First Nation Volunteer Fire Department for twenty one years as the longest serving female firefighter and the first female Captain in the department's history.

Michelle's exceptional leadership goes beyond Canada and is recognized internationally by the National Fire Protection Association (NFPA) Rising Star Program.

In advocating and supporting fire safety and emergency management capacity on reserves, Michelle's career has been a nationally inspiring example that has enabled a new generation to follow in her path:

When asked about her greatest achievements Michelle shared,

> " My job every day is to support First Nation emergency management training, response and fire services on-reserve in Saskatchewan. My team is creating real change and building capacity that has been recognized across Saskatchewan and Canada. This year we witnessed the first all-female team compete in the Saskatchewan First Nation Regional Firefighting Competition. My goal is to see more First Nation female's in the fire service, in higher positions, and be a voice for them to break glass ceilings all over Saskatchewan and Canada."

> " It is saving lives in and around my community. It is seeing the look in a little girl's eyes when I'm in my turnout gear. It is teaching Fire Prevention programs and hearing from parents how excited their children were to come home and make home escape plans. And, sadly, it has even been through our greatest losses such as being asked to stand in uniform for funerals of Motor Vehicle Collisions we have attended."

Picking medicines for our First Nations.

"All fire calls that we attend are preventable"

When Michelle says she wants to break glass ceilings for girls and women, she speaks from experience - as a female firefighter that has accomplished many firsts, she is a national role model. In 2019, Michelle was voted in as the Saskatchewan Director for the Aboriginal Firefighters Association of Canada (AFAC). In 2020, she was voted in as the first female AFAC President. Michelle is the first woman to hold both of these positions in the association's history.

One of her most memorable and honourable moments was when the Assembly of First Nations passed the resolution supporting the creation of the Indigenous Fire Marshal's (IMFO) office, during a 2017 session in Ottawa. The creation of the office is led by AFAC, which was formed to address existing gaps in fire services of First Nations communities in Canada with a core mandate to

Michelle and Sheena Charles organized a Preparing Our Home workshop in Stanley Mission, SK to enable Indigenous youth leadership in emergency management .

> **create a new organization through Indigenous collaboration - for us, by us."**

Pine Bluff special heritage site with members of my team Lorne, Randy and the PAGC Grand Chief Brian Hardlott

Michelle´s favourite pic of she and her mentor Randy Bair. He's the reason she attended her first firefighting meeting. They were doing search and rescue training.

Presenting Michelle Ring from ISC with a Star Blanket for all the she has done for our FN communities in Saskatchewan.

As Michelle takes on this significant national role, she emphasizes the importance of fire prevention:

> **We know that fire deaths are 10 times higher on-reserve. There are many factors that play into those stats. The work that we do to build capacity means that First Nation Fire Departments can respond with the proper training and equipment. A big part of my job is teaching firefighters how to deliver fire prevention programs to the communities they serve. This is a very important part of my job and one that is close to my heart. All fire calls that we attend are preventable. If we can increase awareness of fire hazards in the home and community everyone will be safer, and firefighters will respond to less calls. Everyone in the community plays a part in fire safety."**

Receiving my 20 year service medal fro the Muskoday Chief Austin Bear.

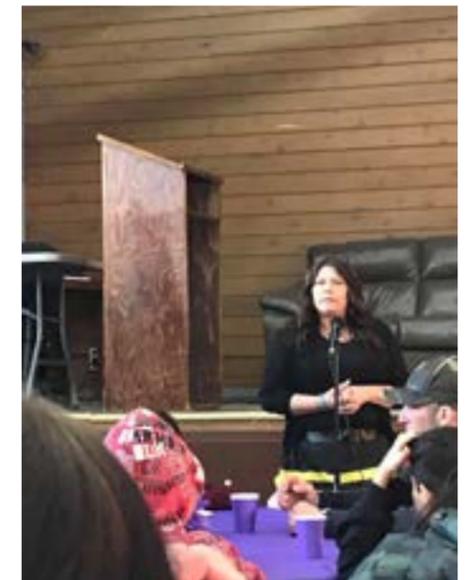*Speaking at Muskodays International woman's day evening gala*

Fire Prevention

As we celebrate Michelle's exceptional career of service and dedication to fire safety, we want to thank her for being an inspiring role model for little girls and women in Indigenous communities and across the country by saving lives in her community and being the embodiment of change in this evolving and dynamic field.

Dennis Mileti passed away, but he left us a legacy of effective risk communication

By Lilia Yumagulova

Dennis Mileti, a luminary in the field of hazards and disaster research, passed away on January 30, 2021, from Covid-19 complications. He was 75 years old.

Dennis Mileti was the Director Emeritus of the Natural Hazards Center. He authored over 100 publications focusing on the societal aspects of mitigation, preparedness, response, and recovery for hazards and disasters. His book, Disasters by Design, published in 1999, involved over 130 experts in assessing knowledge, research, and policy needs for hazards in the U.S. He was co-founder and Co-Editor-in-Chief of the Natural Hazards Review, an interdisciplinary all- hazards journal devoted to bringing together the natural and social sciences, engineering, and policy communities.

"Dennis was a mentor, friend, colleague, and inspiration to all who met him, heard him speak, or were fortunate enough to know him," said the Natural Hazards Center's current Director Lori Peek, who is also Mileti's former student. "He could light up an entire room with his powerful words and insights."

Shannon Saunders, an emergency management professional reflected on this loss to the emergency management community: "Dr. Mileti's work impacted mine in every way. *Disasters by Design* is still the first book I recommend when someone tells me they want to know more about emergency management. His idea of a sociological approach to studying the art and science of disasters is what drew me into the field. I carry the thoughts of human impacts in disasters through all my work (or at least I try to). Our conversa-

tion with Dr. Mileti in Toronto is still one of the most profound moments in my career."

As shared by the Natural Hazards Center, Mileti is widely recognized as one of the world's leading risk communication scholars. He was an advocate of creating messages and warnings that encouraged people to prepare for and respond appropriately to disaster risks. He knew that moving this research into action could save lives. Visit this tribute page to celebrate the life and contributions of Dr. Dennis Mileti: https://hazards.colorado.edu/about/dennis-mileti/tribute

I connected with Dennis a few years ago for an interview for HazNet. We are reprinting it here to honour his foundational work.

Lily: You've been in this business for many years and you've worked with some of the giants. If you were to boil down everything that we know about preparedness into a couple of paragraphs, what would you like everyone to know?

Dennis: In reference to individuals and the family, here's what I'd say if I were summing it up.

Number 1: The single most important influential thing that gets human beings to prepare for disasters is experiencing a disaster. And what that means is, if you give San Francisco a big earthquake, after the earthquake is over and after the horse is out of the barn, people will prepare like crazy.

However, what I would say to those who would wish to increase public preparedness is to be ready to take full advantage of that and be ready to steer the public in the right direction when you have their attention after an earthquake. And quite frankly, I don't know anyone in this nation or any other that does that. And so the time to get people interested in earthquake insurance is after the earthquake not before.

Number 2: Short of experiencing an earthquake, when you're talking to people to be prepared in general, to mitigate their homes more extensively etc. The most influential vehicle for influencing human behaviour is totally ignored by FEMA and the Red Cross and Offices of Emergency Services, [and] Association of Floodplain Managers, etc. The single most influential spokesperson to motivate the public to prepare are other people in their life. Their friends, their relatives, and neighbours. And this is not unique to preparedness, although the data is in that it is. How human beings are wired, how we're made up genetically, is that we

are copy cats or "monkey see, monkey do." That's how motivation spreads.

The thing to get going is to get people who have taken steps to mitigate or prepare for a natural disaster to open up their mouths and tell their next-door neighbour and friends [about] steps they took. For example, I live in a very earthquake vulnerable part of the country and after I have friends over for dinner I typically walk them over to a statue on a table in my living room and say, "Try shaking that statue." They try shaking the statue and it doesn't move. Then I giggle and say, "Try shaking the box it's on," and they try shaking the box, and it doesn't move. Then I say "Try shaking the table that the box is on," they try shaking it and it doesn't move. Then they look at me like, "Why is everything glued down?"

And that's how I can protect the lives of people I live with and protect them from injuries in the event of an earthquake. And I know that when they're driving home, the wife pokes the husband and says, "When are we going to glue things down?" That's how you do it.

It's not government. Government isn't the best spokesperson to motivate preparedness, it's the people you know and love, admire, trust, and are a part of their everyday life. And so, given that, do you know of any public efforts to motivate people who have already prepared to share with and tell their friends and relatives what they have done? That is the most productive way to do it, so why are we continuing to do it in other ways, rather than the most productive way? It's an interesting question, isn't it? The bottom line is that most public agencies' public education efforts [are] really not about motivating the public, what

[they're] really about is having them look good. And to look like they're doing their jobs. And so that's Number Two: *getting human beings to share what they've done. And so, you need to invent a repetitive message campaign.*

Number 3: if you want to motivate the public to prepare, it needs to be repetitively messaged if you want to break through the malaise of everyday life when the average human being has 1000 problems to worry about. They're probably going to be worried about getting clean clothes on their families' back, putting a dinner down, and what dress to wear to dinner, before they ever get ready for something they don't believe is ever going to happen to them. Now the way you get to people, the way you get into the human mind is repetitive messaging.

Let me ask you a question. How old were you when you could remember hearing your first ad for Coca-Cola? And when was the last time you heard an advertisement for Coca-Cola? And how many did you hear in between the years? Coca-Cola knows we need a repetitive message while agencies that are trying to encourage preparedness don't. You've got to market it. If you want the public to prepare you can't put on a big extravaganza event one day a year and expect that anybody is going to do anything. You've got to remind them to do it, daily. And so, you need to invent a repetitive message campaign.

Now listen to this: you're not the only one if you're engaged in motivating the public to prepare that's talking to the public. So, let's just say for flood hazard mitigation let's pick a town like Boulder, Colorado. You have the NOAA, the State, the Red Cross, and local emergency management talking to them. There are many different spokespersons. They need to be saying the same thing, otherwise it confuses people and people think nobody knows exactly what they should or shouldn't do.

They also have their friends talking to them and so what needs to happen is you need to have the message coordinated and so the Red Cross, FEMA, the city, the county, state, etc. are all saying the same thing. And that means you need to brand the message, not the messenger. And that involves organizations giving up their favourite personal emergency preparedness activities and coordinating with each other. And that's very difficult to do.

Summary:

Number 1: Get people that have already prepared talking to their friends and relatives, sharing what they've done, and that will accomplish more than anyone else on the planet can do.

Number 2: Get different groups interested in getting the public to increase their preparedness to disseminate the same message rather than their own unique message.

Number 3: The message has to be repeated frequently, not infrequently, just like advertising. Why would Coca-Cola keep spending money on advertising if they've been around 100 years? Because they know the minute they stop advertising, people will forget all about them. You're dealing with human beings. These three points would enhance preparedness levels. Even the most you could accomplish isn't as much as you would ideally want: most human beings aren't going to prepare no matter what.

Vancouver's EOC response to COVID-19: Outreach to ethnocultural communities

By Aaron Lao and Belle Cheung

Racialized and ethnocultural communities are hit hardest by crises like COVID-19, but can be left behind in emergency response. This article shares the approach of the Ethnocultural Communities Branch of the City of Vancouver's COVID-19 Emergency Operations Centre. This new team leveraged the existing relationships of a diverse group of staff to connect into existing networks within ethnocultural communities, and to advise and support emergency response efforts. By taking a community-centred, culturally-informed and multilingual approach, the team ensured a more effective emergency response that lays the groundwork to embed racial equity in broader emergency management.

Racial equity in the emergency response:
A culturally-informed and multilingual approach

The COVID-19 pandemic has revealed that we are not all in this together; rather, it has highlighted which communities are left behind in times of public health emergencies. Those who have been disproportionately impacted – including low-wage essential workers, seniors facing food insecurity, renters in substandard housing, and people who depend on social services or public transit – are more likely to be from racialized and ethnocultural communities.. These communities face very real and added impacts from disasters, including poorer socioeconomic conditions prior to the pandemic (Cheung, 2020), contracting COVID-19 at disproportionately high rates (Bowden & Cain, 2020), facing barriers accessing COVID-19 response measures (Owen, 2020), and suffering greater economic losses during lockdown (Hou, Frank, & Schimmele, 2020).

Worse, they are often left behind by emergency response efforts because of the barriers related to the languages they speak, the colour of their skin, the types of resources available to them, or other socio-economic factors faced on a daily basis. Further inequities exist among and within ethnocultural communities, with some groups - especially those at the intersection of various marginalized identities - facing compounded barriers. The year 2020 has highlighted a growing recognition that racialized and ethnocultural communities have been – and now more than ever, continue to be – marginalized in emergency management, including planning and response efforts.

A new approach to emergency response:
the Ethnocultural Communities Branch (ECCB)

This article shares the approach of the Ethnocultural Communities Branch (ECCB) of the City of Vancouver's COVID-19 Emergency Operations Centre (EOC) from March to June 2020. Our experience illustrates how an emergency response grounded in a racial equity lens helps ensure a more effective and appropriate response, and lays the groundwork to further embed equity into resilience planning.

During the City of Vancouver's COVID-19 response effort, staff recognized the need to support racialized and ethnocultural communities, alongside other priority groups such as Indigenous peoples and those living in shelters. A new team focused on racialized communities was created within the EOC: the Ethnocultural Communities Branch.

Literature on emergency response shows that different groups experience disasters differently. This is what can be referred to as "social vulnerability" (Etkin et al., 2010) – where certain social groups are already vulnerable prior to a disaster, are disproportionately impacted by crises and face more barriers during recovery.

Providing clear and accessible information during emergencies is essential to ensuring public health and safety. In a city like Vancouver that has a majority of visible minority residents, this includes engaging ethnocultural communities (e.g. the Vietnamese community), language communities (e.g. Punjabi speakers), and groups facing disproportionate barriers (e.g. migrant workers and newcomers). These groups already experience greater vulnerability in normal circumstances (e.g. more likely to be low-income), and this is exacerbated in times of crisis.

At the centre of the ECCB was a simple strategy: to bring in City of Vancouver staff who have lived experience and existing relationships with racialized and ethnocultural communities to ensure that these communities are not forgotten or left behind by the emergency response. The ECCB brought together a

A screen grab of the City of Vancouver's translated COVID-19 landing page in Vietnamese.

representative group of staff from departments across the City of Vancouver with the cultural competencies, multilingual skills, and professional expertise working in seven of Vancouver's largest ethnocultural and language communities (Chinese/Cantonese, Chinese/Mandarin, Punjabi, Filipinx/Tagalog, Vietnamese, Korean and Farsi).

The ECCB staff brought relationships with multilingual media, directors of neighbourhood houses, a roundtable of leading settlement organizations, grassroots organizations, influential faith leaders, community organizers, and more. These relationships also meant that communities were able to more openly identify their concerns to someone who understood them and spoke the languages they were most comfortable with. These well-grounded relationships also meant that communities were able to more openly identify their needs to people they trusted, resulting in the exchange of much richer information.

The ECCB model allowed staff to connect with communities with whom the City of Vancouver may not have a relationship, to hear about concerns on the ground that may never have reached the EOC, and most importantly, share multilingual information as quickly as possible in an evolving pandemic.

Lessons for a more equitable emergency response

The COVID-19 pandemic has highlighted systemic racism and inequities that have long existed, and will continue to exist beyond the pandemic. The lessons learned from our experiences in the ECCB are not only applicable to other emergencies, but must be adapted for each emergency response in order to truly help people in times of crisis.

Culturally-appropriate outreach. Through our outreach, community groups repeatedly stressed that the lack of accessible information and resources were a critical deficiency in the COVID-19 response. This lack of engagement is worrisome for populations already at-risk, and in some cases, is a matter of life or death. An equitable emergency response includes not only clear and accessible information in multiple languages (which is critically important for health information and public health guidelines), but also emergency response efforts that are culturally-appropriate and tailored to serve and respond to each community.

Knowledge management. In some cases, the ECCB advised, enhanced, and amplified the response efforts of other teams in the EOC, whether by gathering information on the ground to supplement planning efforts, or by sharing translated resources through influential community leaders and culturally-relevant social media.

Communications. At other times, the ECCB took on independent projects, such as hosting virtual multilingual town hall events with City of Vancouver leadership, compiling multilingual COVID-19 online resources in seven languages (Cantonese, Mandarin, Punjabi, Tagalog, Vietnamese, Korean, and Farsi), or organizing a Day of Action Against Racism campaign to combat hate arising from COVID-19.

Community Networks. Community resilience requires trust and relationships. In a pandemic, it may not feel like there is enough time to move at the speed of trust, but we can jump-start the process by tapping into existing relationships and networks. A central, ECCB-like entity to support racialized and ethnocultural communities in an EOC ultimately advances equity across the emergency response effort.

A more effective and more equitable approach to disaster response is possible. Building these critical relationships may be challenging, but they are a core part of resilience and crucial to whether a disaster response effort has reached everyone in our communities. In many cases, the coaches and leaders on this front may already be in our institutions - we just have to activate and support them by putting the right structures in place.

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Aaron Lao and Belle Cheung served as Co-Directors of the Ethnocultural Communities Branch in the City of Vancouver's COVID-19 Emergency Operations Centre from March to June 2020. They have diverse experiences in community, urban, and cultural planning in Vancouver, located on the unceded territories of the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh (Squamish), and səl̓ilw̓ətaʔɬ / sel̓íl̓witulh (Tsleil-Waututh) Nations. aaron.lao@vancouver.ca and belle.cheung@vancouver.ca

Developing a socio-economic dashboard with real-time natural hazard data

By Heather McGrath, Vincent Decker, France Labrecque,
Zachary Nick and Besjana Osmenaj

The need for situational awareness

During a disaster, identifying areas where emergency response and support are needed most is challenging. Online tools to support emergency response are not new, but the COVID-19 pandemic has illustrated the benefit of having access to such decision-making aids. Research into automated tools to support risk reduction strategies and to support response for natural and cascading hazards has accelerated as a result of the global pandemic (Quigley et al., 2020). One example is the dashboard created and first shared Jan 22, 2020 from John Hopkins University (Dong et al., 2020). In Canada, the COVID-19 Situational Awareness Dashboard was developed jointly between several federal organizations and is updated daily to illustrate the trends of the pandemic over time and shows how the situation in Canada is evolving (Government of Canada, 2020).

To support real-time emergency response, a balance needs to be struck between hazard specific risks, the changing situation and parameters (i.e. protocols), and response activities (Quigley et al., 2020). This involves both how operations are dispatched and with the assemblage of evacuees to safe temporary housing/ shelter locations. Along with information about the spatial extent and the magnitude of the hazard, knowledge of the population at risk is important to support emergency response operations. Chakraborty et al. (2020) developed an index of 49 theoretically important indicators that span socio-economic, demographic, and ethnic classes in relation to Canadians' flood risk.

Creating a common operational picture

In this work, the problem of how to support emergency response operations during a pandemic was addressed by developing an online tool that presents a common operational picture (COP). This COP is a statistically enabled, integrated, dynamic, explorable WebGIS dashboard that uses interconnected widgets which provide indicators (such as demographic profiles and counts of population) through selections and filters in order to provide necessary information during an event. Primary source and authoritative data and is accessed by web services and delivers the most current information.

Natural Resources Canada (NRCan) and Statistics Canada (StatCan) jointly developed this COP. Both departments have a history of supporting emergency response activities. At NRCan, the Canada Centre for Mapping and Earth Observation's (CCMEO) Emergency Geomatics Service (EGS) has been providing near-real time information during ice breakup and flood events through exploitation of Synthetic Aperture Radar (SAR) satellite imagery since 2011. SAR is particularly useful due to its ability to differentiate water from dry land, and its ability to penetrate cloud cover, regardless of the time of day or night. Since the 2016 forest fires in Fort McMurray, StatCan has been supporting emergency response, crafting statistical portraits of whom and which places of the region were most vulnerable.

Data layers: Socio-economic, hazard, and essential facilities

The data layers for this dashboard are organized into three categories: *socio-economic, hazard,* and *essential facilities*. Data is available as thematic layers and charts/graphs.

In the *socio-economic* category, users can view information about the population, including age, income, number of children, language spoken, etc. and factors that lead to vulnerable infrastructure such as housing structural type and construction period. These indicators align with those suggested by the Canadian Red Cross (one of the beta-testers of this dashboard) for support of their operations and those suggested by Chakraborty et al. (2020). By having access to these population indicators during an event, response plans can be devised that are customized to best fit the needs of the population living in and around the hazard areas. The last set of data in the socio-economic group, all of which is available from the 2016 Canadian Census, are details on the type and count of housing structures, age and suitability. Often the specific number of inhabitants of a given building is unknown, but knowledge of the occupancy type (single family, duplex, apartment, etc.) and the suitability status (according to the National Occupancy Standard (NOS)) provide information on the size and whether the dwelling has enough bedrooms for the size and composition of the household.

The *hazard* information includes current earth observation derived maps of flood and ice from EGS. Data from NRCan Canadian Forest Service displays active/ current fires, fire danger areas and hotspots. Hurricane tracking from the National Oceanic and Atmospheric Administration (NOAA) is also presented to allow visualization of forecast hurricane tracks and cones of uncertainty.

The final group, *essential facilities,* includes curated data such as police stations, fire stations, and schools. StatCan's Open Database of Health Facilities (ODHF) provides locations of hospitals, ambulatory health services, and nursing and residential care facilities. These datasets provide valuable information for setting up shelters, including proximity to closest facilities for health care. Provincial transportation network data, via 511 services, provides details on road closures, incidents, and roadworks for identifying safe routes for traffic. As well, traffic camera services monitoring many major roadways provide a live bird's-eye view in metropolitan areas of Quebec and Ontario. The hope is to expand this list in future versions , but at present these are the two regions compatible web services have been identified. Lastly, the operational status of radio communication and broadcasting towers is available (derived from Innovation, Science, and Economic Development Canada's Technical and Administrative Frequency List).

Dashboard design and function

An Esri Story Map series is the main interface to the dashboard (see Figure 1). Using Story Maps is a quick way to build and tell stories through maps on the web. There are several pre-built templates and themes which enable a user to rapidly design a custom and interactive experience that may include any or all of the following: interactive maps, static maps, images, videos, text, links to other web resources, etc. These maps can feature private and/or publically accessible data, and can be styled and customized with colours, symbology and interactive components (for example, turning layers on and off, and clicking on features to identify attributes).

The main tab, **Dashboard**, was designed as an online interactive map using Web App Builder. This map has been designed to automatically provide summarized data at the *dissemination area* level (400 – 700 persons) based on the view-extent in the widgets that run along the bottom of the map. A user can change this by either selecting *dissemination areas* in the map or using one of the pre-configured filter options. When either of these selections or filters are applied, the widgets are dynamically updated on-the-fly. During an active hazard event, bookmarks are pre-configured to particular areas of interest, allowing for quick, consistent, and easy navigation to the extent of the affected area. Users can easily cycle through the different data layers to view the legends and turn them on or off. Standard clicks on the map present attribute information relative to the data layer and point selected. Finally, through the layer table on the right, users can access the Add *Data option* to add any datasets from external sources, the ESRI ArcGIS Online community, or their own data.

The **Catalog tab** provides metadata and links to the entire catalog of datasets used in the dashboard.

Survey and **Enquête** present a short survey for user feedback in either official language.

'**NRCan Observer**' is a crowdsourcing geographic information project that allows end users to collect and view flood and ice observation points and photos tagged to these points.
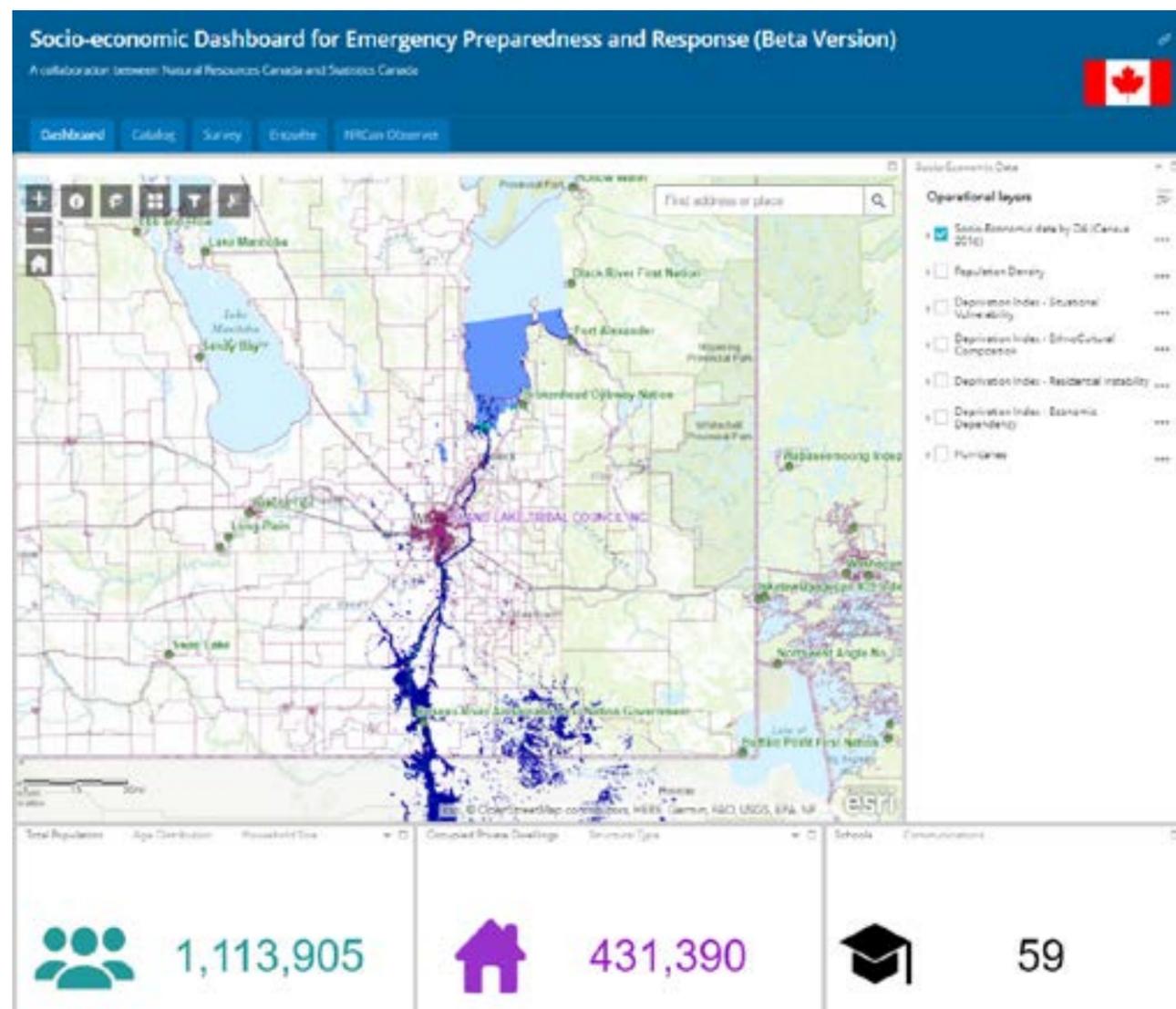

Figure 1 Screen-shot of socio-economic disaster dashboard showing Floods in Current year (2020).

The beginning of something great

Developed to support emergency response operations, especially during COVID-19, the socio-economic dashboard presents a COP of hazards and indicators of vulnerability to support real-time response and planning. The beta-version was available in spring 2020. Currently, feedback from users is being reviewed to improve the application and translation is being undergone to offer it as a bilingual platform for spring 2021.

Our first finding is that the curated list of hazard, socio-economic data and essential facilities datasets described here has been valuable both through accessing the Dashboard itself and accessing the data directly. There were several users with GIS experience who showed greater interest in access to the Catalog tab in order to create their own applications or integrate the data into their existing dashboards. The remainder of users found the Dashboard to provide them with a wealth of information that they previously did not have access to and they were very enthusiastic about the ability to visualize and query the data in this way. In one example, a user was able to identify the language profiles of citizens affected by the 2020 spring floods and was able to send out crews to support who had the appropriate language skills for this affected portion of the affected community.

A more comprehensive review of user feedback is underway and will lead to next steps for this dashboard and the catalog of data.

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Heather McGrath is a Research Scientist working with NRCan, and has been working on this project with Vincent Decker, Strategic Advisor for Emergency Geomatics at NRCan. The team from the Statistical Geomatics Centre at StatCan, includes Section Chief France Labrecque, Geomatics Advisor Zachary Nick and GIS Analyst Besjana Osmenaj.

Safe reopening of postsecondary institutions

By Josh Bowen

Surprise! School is closed

On March 15, 2020, the Government of Alberta suspended all face-to-face post-secondary classes in an effort to curb the spread of COVID-19. At the Northern Alberta Institute of Technology (NAIT)—a polytechnic that sets itself apart through technology-based experiential hands-on learning and its connection to industry—this meant fundamentally disrupting almost 34,000 learners and staff in the middle of the semester.

Within four days, NAIT pivoted 93% of face-to-face programs to online delivery; transitioned student support and counselling services to a virtual environment; resumed essential industry-partnered applied research; and engaged emergency management teams at Alberta's post-secondary institutions and government agencies to coordinate our responses and share lessons being learned on the fly.

As emergency managers know, the response phase can be intense, all-consuming, and changes daily. By April 6, the case count had started to plateau with less than 50 new cases per day, and NAIT was in a steady-state with minimal on-campus activities for the summer. NAIT's Emergency Operations Centre (EOC) team stood down after logging nearly 2200 hours, handing over responsibilities to a Continuity of Operations team. This team was tasked with maintaining the status quo, until restrictions were lifted and regular operations could resume or the situation escalated again.

Our "New Normal for Now"

The assumption in many circles was that the pandemic would be over before the start of fall semester; however, rapidly rising case counts around the world in April and May made it clear the pandemic was going to last longer than many early predictions.

By mid-May, the decision was made that fall courses would be delivered virtually wherever possible while some shops and labs would be held face-to-face to meet key learning outcomes. The "new normal for now" meant that less than 6,000 people would come to our four campuses each week, down from nearly 20,000 per week in fall 2019. This approach enabled hands-on learning objectives while minimizing on-campus activities to prioritize the health and safety of our community. NAIT's challenge became this: ensure hands-on learning in shops and labs, and industry-partnered research is done in a safe, coordinated way... in the middle of a pandemic. The focus of this article is on the actions taken to meet this challenge.

The Right Team(s)

It's been said the wrong team can cause the best plan to fail while the right team can work miracles with a bad plan. In many large organizations, the teams working on projects of this strategic importance are often selected based on where they sit in the org chart.

Reopening our doors was a strategic undertaking that touched all areas of our institution at all levels. What we needed was the right teams with the right mandates and authorities to refine, implement, and iterate—all while wading through the "unknown-unknowns" that came with COVID-19 and with hitting the reset button on such a large organization. We adopted a "both, and" approach in establishing two teams to operationalize NAIT's relaunch.
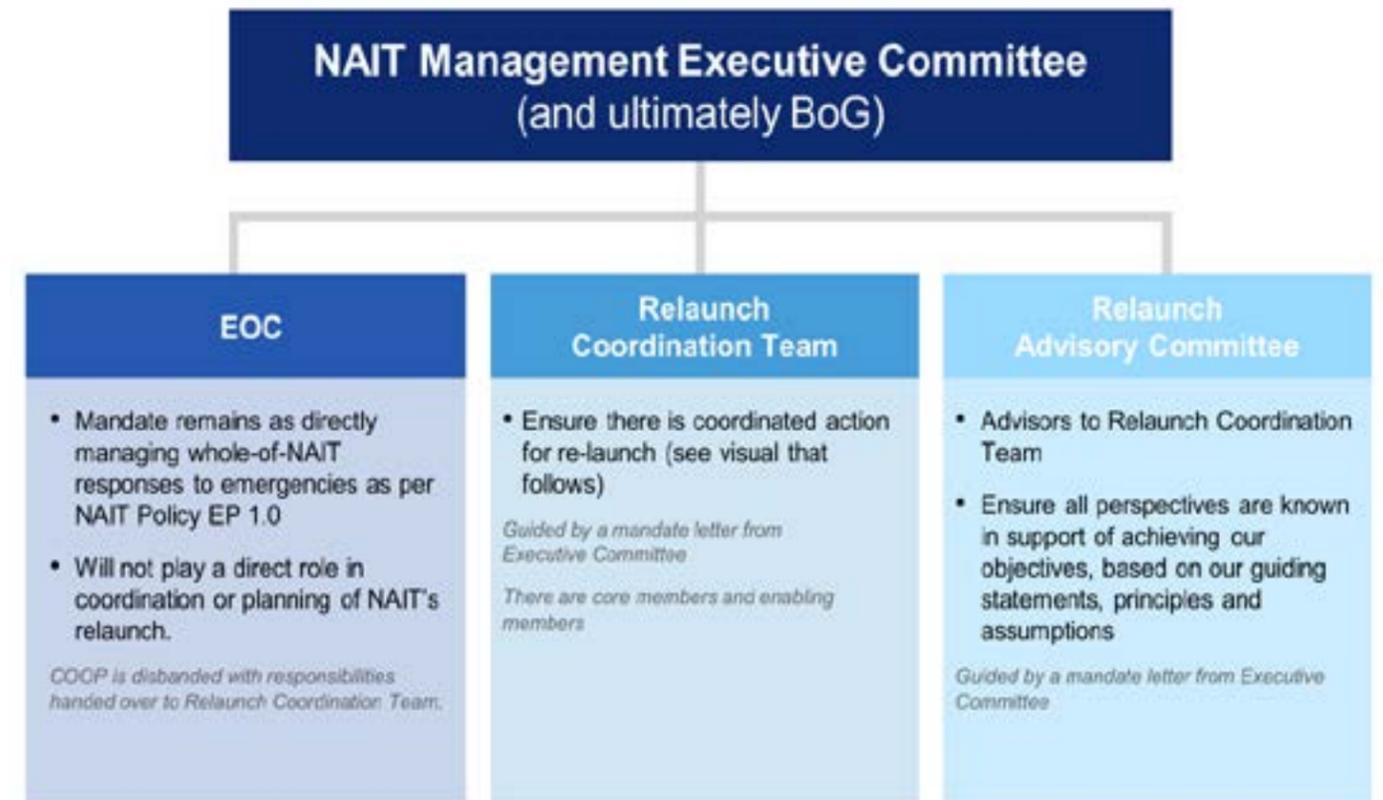

Figure 1: NAIT's coordination structure ensured that everything related to COVID-19 was coordinated through the RAC and RCT leaving the EOC able to respond to any non-COVID-19 incidents.

Relaunch Advisory Committee

Comprising senior leaders for each business unit within NAIT, the Relaunch Advisory Committee (RAC) was tasked with communicating and enabling the coordination of the strategic direction and operational activities across schools, departments and portfolios, ensuring a whole-of-NAIT lens was applied to planning. These leaders held the authority to make decisions for their respective areas.

Relaunch Coordination Team

Comprising representatives from across NAIT selected to bring a deep understanding of their respective areas, the Relaunch Coordination Team (RCT) was tasked with leading whole-of-NAIT coordination of relaunch activities. Members of the RCT were invited based on specific character traits:

- action-oriented;
- collaborative and team-focussed;
- able to bounce between 30,000-foot and 1-inch views without getting whiplash;
- understand the organization (across multiple portfolios); and
- a sense of humour.

Most critical was that their absence would be noticed. In other words, we built a team of people known for making things happen across the institution. Finally, we were intentional with people's time. We fully seconded many members of the RCT, and partially seconded key enabling members to ensure the team wouldn't be pulled away from the critical tasks at hand.

Figure 2: NAIT's strategic framework for relaunch focussed on ensuring all areas of NAIT were brought together in a coordinated fashion.

Level-Setting Expectations Early: Up, Down, and Across

From the outset of relaunch planning in May, NAIT adopted a Build Back Better framework to ensure the short-term "new normal for now" didn't eclipse the longer-term organizational transformation process that was already in progress before the pandemic began. While the framework helped set the strategic context, we understood that this endeavour would be a slow turn of the dial rather than a flip of the switch.

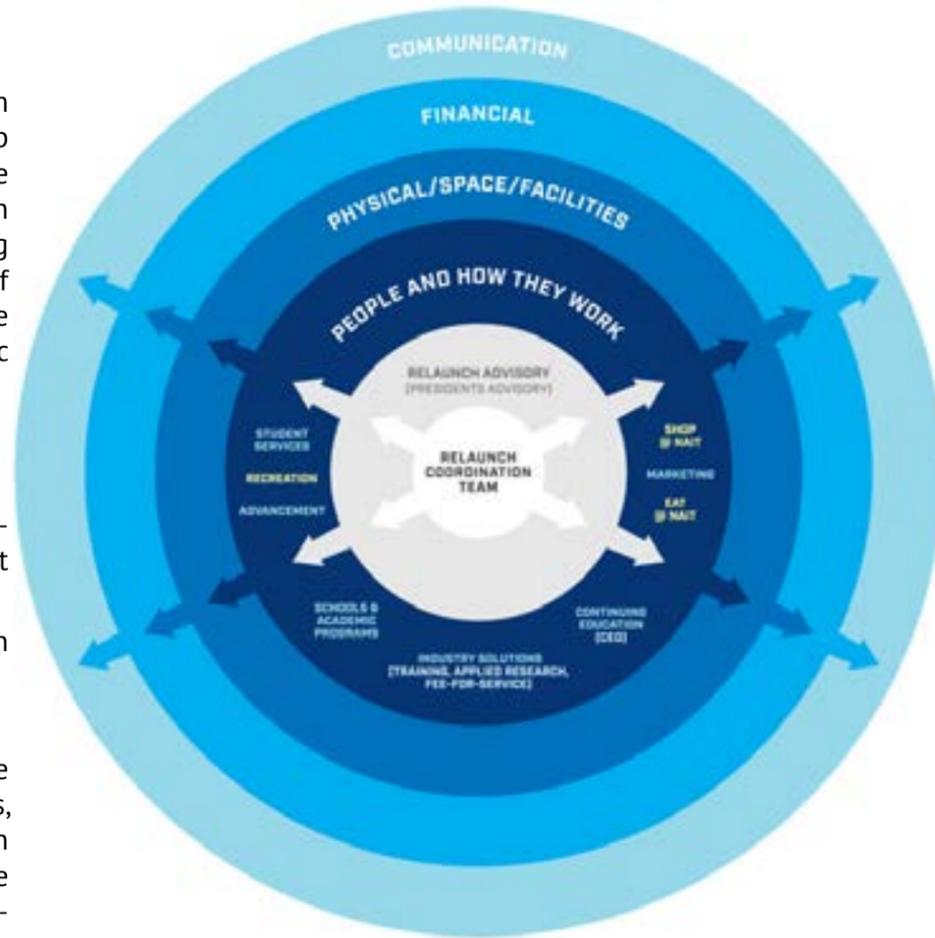With almost 34,000 staff and students, we had to deliberately level-set expectations across the whole organization. A consistent, coordinated, whole-of-NAIT approach was adopted. The strategic guidance from our executive team fed into explicit mandate letters for the teams tasked with coordinating our relaunch. Guidance for safety, space planning, and communications was produced for use across the institution. Mandatory COVID-19 awareness training was developed for our staff, students, and contractors.

All of this was published on a dedicated public-facing website to ensure everyone inside and outside of NAIT had access to all the information they might need. We continually updated it as new information came to light and as things changed on our campuses and with public health restrictions. The site became our single source of truth.

Communication is the Glue

Coordinated communication has been a key priority. There were significant changes to what had been routine as we moved through the new normal for now and these changes needed to be communicated consistently and effectively to ensure we could reopen safely. Throughout the pandemic, communication has been the glue that holds the response and recovery efforts together.

Dedicated communications resources and clear mechanisms for passing information were critical to our success. Further, these dedicated individuals were heavily supported by our Communications department. Key messages were shared directly by leaders and across multiple channels to ensure our community received consistent and timely information. Innovative campaigns reinforced these messages.

Figure 3: An example of communications developed for our community and released publicly for anyone to use.

Figure 4: Our "Stay Home If You're Sick" campaign reinforced messaging to curb the spread of COVID-19 while reminding staff and students that we will support them through COVID-19 related absences. This background image was developed for use in Microsoft Teams meetings.

We anticipated the need to address emotionally charged scenarios, preemptively developing two sets of messages focused on outbreaks impacting our community and a fatality related to COVID-19. This ensured that if those messages were needed, we would have them ready and would not have to craft messaging while also dealing with the emotional impacts of the situation.

What are we missing?

As we worked through the plans, safety procedures, and communications for the initial relaunch activities that brought limited numbers of staff and students safely back to campus in July, the RCT adopted a meeting wrap-up question: What are we missing? This question drove us to update, revise, and iterate plans and procedures. It forced us to listen to what each of the sub-teams was doing and think about how the decisions being made would impact the areas we represented.

The question started off operationally focussed, meaning "what detail did we miss, what perspective did we fail to include?" and evolved to a bigger picture and strategic meaning "what important item should we tackle now?". The same question; a different level of focus. This question, posed with enough time left in the meeting to engage in a substantive debate, kept us focussed on a relentless pursuit of excellence.

The next big challenge

Despite the challenges presented, NAIT managed to relaunch all programming in Fall 2020, witnessed widespread adoption of and compliance with on-campus health and safety measures, performed contact tracing and notification (faster than the provincial health authority), and maintained agility in the face of challenge and change. These successes are rooted in an understanding of purpose within the teams assigned to coordinate our relaunch, and our approach to communicating openly and transparently with our community. The lessons we have learned, and continue to learn, are being shared with the aim of fostering a more resilient society beyond our walls.

Figure 5: *Our "Kindness is Contagious" campaign was developed to support our community's mental health and encourage people to reach out and support each other.*

So, what's next? Our team is developing contingency plans for potential future restrictions and what ongoing steady state operations look like as we continue teaching and working this way through the winter semester. And the next big challenge? Translate everything we have learned into the fabric of the institution and work within the "now normal" to balance between protecting the physical and mental health of our community while continuing to offer invaluable hands-on-learning opportunities.

Josh Bowen is currently serving as the Director, Relaunch Coordination Team at NAIT, on secondment from the Centre for Applied Disaster and Emergency Management. He has been involved in emergency management for well over a decade and is passionate about fostering resilient communities and organizations, leadership, and learning.

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Covid-19 in global cities:
Implications for urban design and planning

By Ayyoob Sharifi and Amir Reza Khavarian-Garmsir

Urban resilience:
Ten lessons from the COVID-19 pandemic

Enhancing resilience capacities is of critical significance in a world of increasing uncertainties and instabilities. This is particularly essential in urban areas where most of the world population currently lives and increasing urbanization trends are projected for the foreseeable future. Given the significance of building on urban resilience, many scientists and policy makers around the globe have placed it high on their agenda over the past few decades. However, their focus has mainly been on either climate resiliency or resilience to disasters from natural hazards such as earthquakes and tsunamis (Sharifi, 2020). The COVID-19 pandemic hit cities in the midst of this increasing focus on urban resilience. It offered an unprecedented opportunity to also reflect on resilience of cities to pandemics (Sharifi & Khavarian-Garmsir, 2020).

To better understand the implications of the pandemic for urban resilience and highlight lessons that it can offer for post-pandemic urban planning, design, and management, we have conducted a comprehensive literature review (Sharifi & Khavarian-Garmsir, 2020) and a brief overview analysis (Sharifi, forthcoming) of the early literature related to cities and COVID-19 to highlight implications and lessons.

Of different definitions that exist for urban resilience, we adopt the one provided by the National Academies of Science, Engineering, and Medicine, since it is straightforward and allows understanding how different capacities contribute to urban resilience during various stages of disaster risk management. Based on this definition, urban resilience is the "ability to plan and prepare for, absorb, recover from, and adapt to adverse events" (TNA, 2012). These abilities would allow cities to maintain their functionality under changing conditions. In the following section, links between these four abilities and different lessons learned from the pandemic will be briefly discussed.

Major lessons for urban resilience

Ten major lessons that this pandemic can provide for urban resilience are briefly discussed below.

1. *Diversify the economic structure of cities:* Lack of diversity in terms of economic structure and livelihood options increases the scale of economic decline. Economic diversification initiatives should be prioritized to enhance shock absorption and facilitate rapid recovery.

2. *Diversify supply chain:* The pandemic has caused supply chain disruptions in some parts of the world. This highlights the excessive dependence of cities on their hinterland areas and indicates the necessity of diversifying supply chains and increasing local input to enable shock absorption and strengthen self-organization and adaptation capacities.

3. *Reduce socio-economic inequalities*: The pandemic has exposed the deep-rooted inequities that exist in many cities around the world. Such inequalities make it difficult to contain the spread of the virus, thereby putting the broader community at risk. Enhancing socio-economic equity is, therefore, of critical importance for improving absorption and facilitating recovery from the pandemic.

4. *Adopt a more integrated urban management approach:* Lack of integrated management, where different urban sectors collaborate and interact with each other, may cause conflicts between different urban sectors, thereby, diminishing the capacity to respond swiftly and take adequate and coordinated recovery and adaptation measures.

5. *Take advantage of the capabilities provided by smart city solutions:* In many parts of the world smart solutions have contributed to enhancing effectiveness and efficiency (i.e., achieving the maximum outcomes by minimal use of resources) of measures taken to identify and isolate infected individuals, and to take necessary actions in response to shifting demands.

6. *Take actions to enhance social capital and sense of community:* Improvements in these regards contribute to urban resilience by, among other things, enhancing the rate of compliance with social distancing measures and strengthening the culture of community-based social support.

7. *Promote active modes of transportation:* While significant declines in public transportation usage have been reported in many cities, active modes such as cycling, and walking have gained considerable attention. Further investments in active modes can, therefore, not only improve absorption capacity, but also facilitate adaptation through inducing behavioral change. Promoting such active modes should, however, not undermine the mobility of people with mobility challenges. For that purpose, a balanced modal share that facilitates universal accessibility would be needed.

8. *Reform public transportation systems:* public transport is generally believed to be more resilient to shocks and stressors as its infrastructure is more robust and it would also minimize likelihood of congestion in case of emergency evacuation. The pandemic has, however, damaged public trust and has caused safety concerns. Reform plans and programs are, therefore, needed to avoid renewed and additional interest in automobile ownership and automobile-oriented development.

9. *Promote compact urban development:* Despite concerns about higher possibility of infection in high-density areas, research shows that density is not a significant risk factor. This is because high-density areas may have better access to services and capacities needed for absorption and recovery. In addition, due to improved awareness of risks in dense areas, residents may act more cautiously and pay more attention to social distancing rules. Therefore, high-density areas that provide adequate access to services are likely not to be risky. Furthermore, given multiple other benefits of compact cities (e.g., for climate change adaptation and mitigation), promoting compactness is desirable.

10. *Provide more open and green spaces in urban areas:* Improved provision of open and green spaces is critical for ensuring compliance with social distancing measures. It also allows people to maintain their outdoor exercise and recreation activities, thereby strengthening their coping and adaptive capacities.

Linking the lessons to urban resilience

To demonstrate how these lessons and their associated factors can be linked to the four resilience capacities, thereby contributing to urban resilience, a list of key resilience-related factors and associated capacities are included in Table 1.

Key resilience-related factors	Capacities that are likely to be influenced			
	Planning	Absorption	Recovery	Adaptation
Diversified economic structure		+	+	
Supply chain diversification		+		+
Economic inequalities		+	+	
Long-term visioning	+	+	+	+
Integrated management featuring a combination of top-down and bottom-up approaches		+	+	+
Smart city solutions	+	+	+	
Sense of community		+	+	+
Social inequalities	+	+	+	
Presence of active transportation systems		+		+
Revitalizing/reforming public transportation systems	+	+		
Appropriate levels of density	+	+	+	
Proper design of open and green spaces	+	+	+	+

Table 1. Key resilience-related factors and their links to underlying resilience capacities (Sharifi, forthcoming). The plus sign indicates that the respective factor contributes to that specific resilience capacity.

Overall, while the full impacts of the pandemic are not yet known, early evidence provides useful insights that can be adopted for post-pandemic urban planning and management. While enhancing resilience to climate change impacts will most likely still be the main priority of many urban planners and policy makers, actions should also be taken to better respond to future pandemics. An important issue to be noted is that most of the lessons discussed here are likely to also provide co-benefits in terms of resilience to climate change and other stressors. For instance, diversifying economic structure will certainly enhance the capacity to absorb other stressors such as climate-induced floods. We hope that planners and policy makers will find these lessons useful.

Dr. Ayyoob Sharifi is an associate professor at Hiroshima University. His research is mainly at the interface of urbanism and climate change mitigation and adaptation. He actively contributes to global change research programs and is currently serving as a lead author for the Sixth Assessment Report of IPCC.

Dr. Amir Reza Khavarian-Garmsir is an assistant professor at the Department of Geography and Urban Planning, University of Isfahan, Iran. His research work focuses largely on how climate change and technological innovations affect urban transformations.

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Addressing stigma:

How emergency management can contribute to developing COVID-19 social countermeasures

By Jack Rozdilsky and Aaida Mamuji
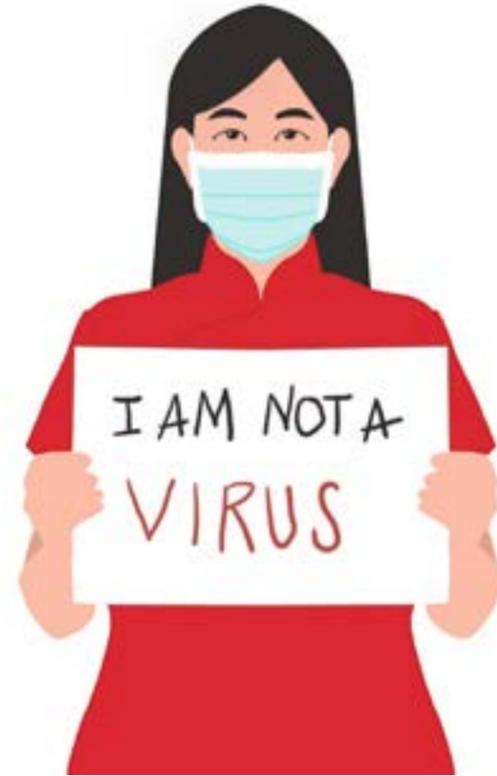
S ince the first recorded case of COVID-19 in Canada on January 25, 2020, the first ten months of the pandemic have taken the lives of over 10,000 Canadians. The nation is currently besieged with autumn waves of community spread, with over 216,000 confirmed cases of COVID-19 in Canada being reported by late-October (PHAC, 2020).

In response to the pandemic, numerous actions have been taken to counter or offset the impacts of COVID-19, known as countermeasures. These countermeasures have included *pharmaceutical and medical actions,* such as vaccines and treatments; the implementation of new *policies and regulations*, such as restrictions on international travel and single site orders; and efforts to address the *social impacts* of the pandemic. These latter social countermeasures include public health responses, communication strategies, and public education efforts, all of which encompass actions that individuals and communities can take to react to the

virus (CIHR, 2020). This article focuses on the social countermeasures to combat misinformation, stigma, and fear associated with COVID-19.

A recent research project supported by the Canadian Institutes of Health Research aims to explore how to shield communities from the ravages of the pandemic through the use of social countermeasures to reduce vulnerability (Mamuji et al., 2020). In particular, the project seeks to address anti-Chinese discminiation, known as Sinophobia, by attempting to destigmatize diaspora Chinese communities in the Greater Toronto Area. Based on initial findings from that project, this article provides a short background on COVID-19 stigma, suggests moving from stigma to an understanding of complexity and capacity, and concludes with a call to action for emergency managers to consider how they can contribute to efforts aimed towards reducing COVID-19 stigma.

COVID-19 stigma

As early as February 2020, the World Health Organization (WHO) highlighted the emergence of instances of Coronavirus stigmatization among specific populations (WHO, 2020). As the virus was beginning to emerge on a global basis, WHO warned that stigma can contribute to more severe health problems, ongoing transmission, and difficulties controlling infectious diseases during an epidemic.

One aspect of pandemic stigma that is evident in Canada is COVID-19 related discrimination targeting the Chinese community. Due to the geographic origins of the first major prevalence of COVID-19 in Wuhan, China, there have been instances of persons having underlying tendencies of discrimination, xenophobia, or racism, equating COVID-19 illness and risk with Asian persons. Discriminatory actions have ranged from subtle microaggressions to outright physical violence. In one well publicized incident in the Greater Toronto Area, a man became agitated when asked to don a mask in an Asian food store. He then went on a verbal anti-Asian racist tirade which spread rapidly via social media outlets (Miller & Fraser, 2020). Such discrimination has resulted in increased mental health stresses experienced by those who are ethnically Chinese in Canada (Wu et al., 2020).

Moving from stigma to complexity and capacity

Acts of discrimination related to COVID-19 are part of the underlying structural racism in Canadian society. The reporting and tracking of incidents of COVID-19 discrimination, as covidracism.ca does, is important as it establishes the extent of the problem. But in terms of the next steps, when the conversation starts and stops at the reporting of experiences of stigma, the narrative remains the victimization of the community. Focusing solely on the impacted community and the stigmatizing behaviour of perpetrators can lead to normalization of the experience. This can result in situations where those with discriminatory tendencies take the growing number of incidents as justification for continued displays of Sinophobia, resulting in further marginalization of the community. Simultaneously, those witnessing such discrimination may find it challenging to constructively move society past the status quo, resigning to the fact that such sentiments are ingrained in society. As such, we argue in favour of the expansion of the narrative on anti-Chinese stigma during COVID-19 to include a more comprehensive and nuanced understanding of Chinese diaspora communities, thereby expanding the scope of the story being told.

Initial findings from the study suggest that the narrative can be expanded from one of anti-Chinese stigma to a narrative of understanding the *complexities* of and leveraging the *capacities* present in the Chinese community. During the spring and summer of 2020, part of the project focused on the Greater Toronto Area, where over 80 individuals identifying as being ethnically Chinese were interviewed. The goal was to better understand their lived experience during the pandemic.

In terms of complexity, it is important to recognize that the Chinese community is not homogenous, which is in contrast to how many media outlets often discuss the community. Toronto's Chinese community is diverse in terms of geographic origins with persons from mainland China, Hong Kong, Taiwan, and elsewhere. It is also multifaceted in attitudes towards public affairs in both Canada and Asia. In other words, for Toronto there is not one contingent of persons who can be said to represent the Chinese community.

In terms of capacity, the project documented early actions taken in Toronto demonstrating the home-grown ability of the Chinese community to protect themselves and protect others during the very early days of the pandemic in Canada. For example, early preventative actions such as businesses requiring employees to wear masks and having their temperature checked took place in the Chinese enclaves of Toronto in winter, well before such actions became commonplace at other businesses across the Toronto region in the summer (Figure 1). Physical distancing was practiced when some individuals and families that had traveled to China over the winter holiday voluntarily self-isolated upon their return to Canada. Some members of the Chinese diaspora community decided to forgo social gatherings as early as late January, including Chinese New Year celebrations. These actions reflect the adoption of responsible emergency management and public health actions that are embraced as part of the Chinese culture, and are informed in part by efforts to manage previous disease outbreaks such as H2N2 and SARS.

Figure 1: Capacity of the Chinese community to cope with the pandemic is illustrated by the early adoption of COVID-19 safety protocols, well before other segments of the community. On the left is a February 12, 2020 image with signs advocating for mask wearing at a Chinese business in Toronto. On the right is an August 14 image announcing mask-wearing requirements at a Markham retail store that became effective on July 17. (Left - Photograph from research participant used with permission / Right – Photograph from Jack Rozdilsky used with permission)

How emergency managers can contribute

While instances of anti-Asian discrimination due to COVID-19 have been well-documented during the first half of 2020, such unfortunate acts are only one portion of the story of how the Chinese diaspora community has been coping with COVID-19. Emergency managers and decision makers can play an important role in 'flipping the script' to change how the broader society views the story of the Chinese diaspora communities' relationship to COVID-19. This can be done by highlighting the actions that members of the Chinese community took to help mitigate the spread of the disease early on in the pandemic, and by fostering spaces of learning and exchange between members of the community and those officials responsible for handling pandemic response. Such efforts would not only aid in the development of initiatives and efforts to destigmatize the Chinese community, but also acknowledge the capacity that the community has in assisting broader society in overcoming COVID-19.

Going into 2021, the project will be reaching out to the women and men of Canada's emergency management community to explore how the strengths of our profession can add value to pandemic response and recovery by enhancing social countermeasures, especially in addressing stigma. These efforts include, but are not limited to, efforts to inform media messaging, public education campaigns, and events that promote community cohesion. More information on the project can be found at emforall.com.

By better understanding the complexity as well as the capacity of communities, emergency managers and public health officials can play a key role in preventing the unfair targeting of specific ethnic groups ahead of the next infectious disease outbreak.

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Jack L. Rozdilsky, Ph.D. and **Aaida A. Mamuji, Ph.D.** are both Associate Professors of Disaster and Emergency Management at York University. Dr. Rozdilsky is a co-principal investigator and Dr. Mamuji is the research team lead investigator for a CIHR funded project which is part of the Government of Canada's research effort to address the 2019 Novel Coronavirus outbreak.

rozdilsk@yorku.ca
amamuji@yorku.ca

Pandemic leadership:

Lessons for leaders from New Zealand's COVID-19 response

By Dr Suze Wilson

Since the beginning of the current global pandemic New Zealand has twice completely halted all community transmission of COVID-19. This result places its residents in the privileged position of having largely normal daily lives and the ability to safely focus on economic recovery. At the same time people in many other countries face ongoing restrictions, rising COVID-19 case numbers, and ever worsening economic conditions. While a range of public health measures to manage the virus' spread – such as a tightly controlled border, government-managed quarantine facilities, testing, contact tracing systems and constraints on public freedoms, including lockdowns – have been essential features of New Zealand's response to COVID-19, so too have the leadership practices adopted by Prime Minister Jacinda Ardern and her government.

As a New Zealand based leadership scholar, I have sought to crystallize the approach taken by the Ardern-led government into a pandemic leadership model which offers potentially transferable lessons for leaders in other locales, be that at organizational, city, state or national levels. This article provides some brief contextual background and then summarizes the key features of that model, which was first published in the journal Leadership in June 2020.

Background

New Zealand has now successfully brought community-based transmission of COVID-19 to a complete halt twice, first in May and then again in October 2020 (Cheng, 2020). In doing so, it has suffered comparatively modest case numbers and deaths on a per capita basis. In between these two waves, the country had over 100 days of zero community cases. At present, the only cases are in managed isolation/quarantine facilities and comprise people who have recently entered New Zealand from overseas. Beyond these border-related controls, there are currently no limitations on domestic activities, leaving New Zealanders and local businesses able to operate on a COVID-19 free basis.

New Zealand's government has adopted broadly similar public health measures to those used in many other countries. The country has certain advantages compared to others, such as its island nation status', its smaller, low density population base, and a slightly later start to COVID-19 transmission than Europe, meaning leaders could watch and learn from others. Granted these factors, the leadership response, while not faultless, has been effective, with a COVID-19 mortality rate of 5.12 per million (de Best, 2020). Moreover, in both the March and August waves, widespread public compliance and support for the government's response was secured.

From detailed observation and analysis of Prime Minister Ardern's policy initiatives and key messaging in relation to COVID-19, I developed a model of the key leadership practices being used. While no magic bullet, nor yet a proven 'best practice' model because multi-national analysis is still needed, these 'good practices' nonetheless offer ideas for leaders in organizations, cities, states and a national level to learn from and adapt as necessary to local conditions.

Pandemic leadership: A good practice model

Informed by Ardern's approach, I argue effective pandemic leadership appears to be grounded in a clear sense of purpose or mission, namely that of minimizing harm to lives and livelihoods. This purpose is grounded in both practical and ethical considerations. It has real potential to garner follower support with its focus on the primary concerns most people have in relation to the pandemic – their health and economic security. Moreover, this purpose offers leaders a broad but clear direction to help them navigate the pandemic and evaluate the merits and effectiveness of possible actions. Through holding both health and economic considerations as central concerns, this purpose also encourages leaders to pursue strategies that recognise the interdependencies between such matters, not to see them as either/or choices. Consistent with this, Ardern has frequently argued the best health response also constitutes the best economic response.

This purpose is then enabled by three key bundles of leadership practices – being led by expertise, mobilizing collective effort, and enabling coping. Cumulatively these practices help in generating leadership that deserves to be, and is, trusted by people - such that followers will lend their efforts to the goals set by leaders.

Being led by expertise requires leaders to accept the important role subject matter experts can play in relation to pandemic leadership. Putting ego aside and soliciting and carefully listening to that expert advice helps leaders to make decisions based on facts and evidence, not political considerations or gut feel. This is a foundational requirement for effective pandemic leadership - and is clearly missing in places facing very high numbers of cases and deaths, such as the US and Brazil.

Mobilizing collective effort requires a range of efforts that aim to inform, educate and unify people to take the actions required to achieve the purpose of minimizing harm to lives and livelihoods. As part of this communicative effort, clarity of direction and a willingness to be quite blunt about issues of concern is key. However, these tougher messages must be presented with empathy and their rationale made clear, as just issuing orders is not sufficient to win active support. Leaders must also pay attention to practical considerations that are of concern to people, seek feedback and avoid being defensive when questions or problems arise. All these practices help build collective

effort through demonstrating that leaders genuinely care about the needs and view of those they claim to lead.

Enabling coping involves efforts to help people in planning, developing knowledge and skills relevant to surviving the pandemic and in making sense of events. Fostering kindness helps in coping and should be emphasized by leaders. Soliciting and role modelling creative ways to cope with life and business activity under pandemic conditions should also be promoted by leaders.

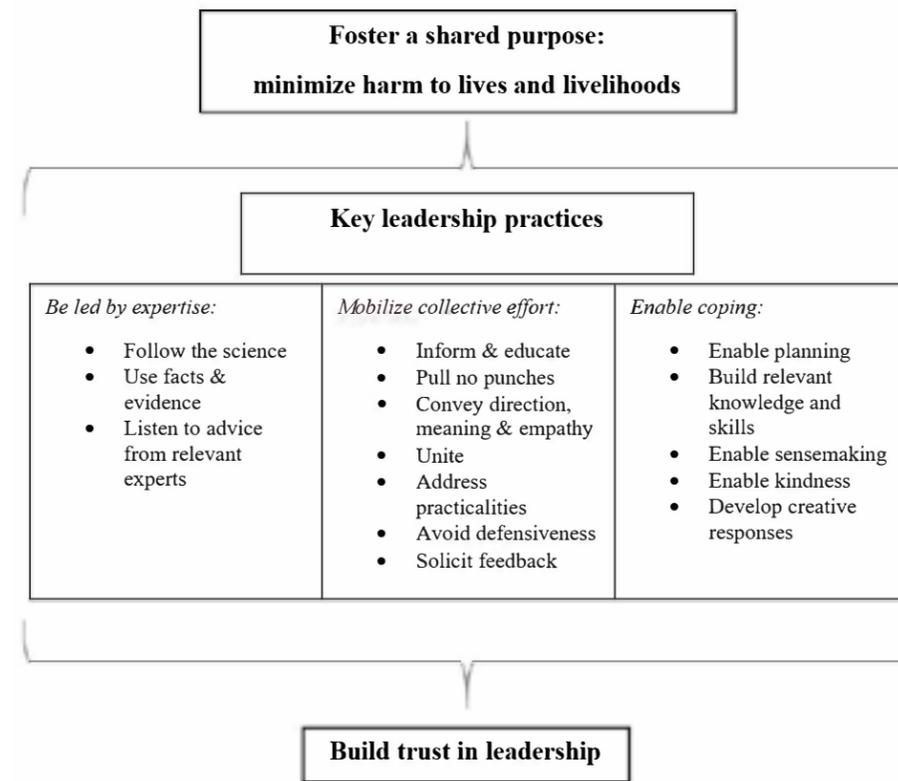The diagram below offers a visual summation of the pandemic leadership model (Wilson, 2020):

Figure 1: Pandemic leadership: A good practice framework

Combined, these practices can help leaders in grappling with the pandemic. Indeed enacted skillfully the evidence from New Zealand suggests these practices can help in mitigating the damage inflicted by the novel coronavirus while also building trust that leaders are, as they should, acting in the best interests of those they lead. The full study provides examples of each of these practices as used by Prime Minister Jacinda Ardern and her government.

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Dr Suze Wilson is a senior lecturer and leadership scholar at Massey University in Auckland, New Zealand. She is involved in teaching leadership and other people-related topics to Executive MBA and MBA students. Her research has been published in book form by Edward Elgar and Routledge and in journals such as Leadership, Organization, J. Bus Ethics and Culture and Organization, and draws on critically oriented, post-heroic perspectives of leadership.

Australia's new emergency planning handbook

By Ella Wilkinson and David Parsons

From 2009-2019, 7,348 disaster events were recorded worldwide by the Emergency Events Database (EM-DAT), leading to approximately US$ 2.97 trillion in economic losses and affecting over four billion people (UNDRR & CRED, 2020). The economic cost of emergencies in Australia over the past decade averages $18.2 billion per year, and the real cost in terms of human suffering and environmental damage surpassing this already large burden (ABR, 2017). A key to minimizing the cost and effects of these emergencies, after all reasonable risk reduction measures have been taken, is effective emergency planning.

The Australian Institute for Disaster Resilience has published a new Emergency Planning Handbook (the Handbook). The Handbook establishes Australia's agreed-upon principles for good practice in emergency planning, and is part of the larger Australian Disaster Resilience Handbook Collection .

Emergency planning plays an important role in the development of disaster resilience capability. The emergency planning process is the collective and collaborative effort by which agreements are reached and documented between people and organizations to meet their communities' or entities' emergency management needs. Emergency planning involves identifying and documenting strategies for preventing, preparing for, responding to, and recovering from emergencies. Effective emergency planning contributes to reducing the likelihood and consequence of emergencies for individuals, communities, entities, and the environment - and can have positive economic benefits.

What has changed?

The Handbook replaces an earlier 2004 manual and recognizes significant changes in the emergency planning landscape. These changes include:

- The international shift to disaster risk reduction, with planning covering all the phases of prevention, preparedness, response and recovery;

- The recognition that we need a shared responsibility across society to building resilience through emergency planning;

- The importance of engagement through communication and consultation across the planning process;

- Partnerships between the public, private, and not-for-profit sectors;

- The importance of being flexible and adaptive to utilize emergency capability and capacity;

- The need to consider catastrophic, cascading and concurrent disasters; and

- The value of an effective lessons management process to improve planning outcomes.

What are the key emergency planning principles?

The Handbook sets out eight emergency planning principles. These principles are:

1. Emergency planning is **risk informed.** Planning is based on a risk management study.
2. Emergency planning **reduces unknowns**. Planning increases understanding of risks, vulnerabilities and treatment options across the social, built, economic and natural environments.
3. Emergency planning is **collaborative and inclusive.** Planning involves consultation and engagement with those affected by the plan.
4. Emergency planning is strategic. Planning develops **strategic** objectives, relationships and networks.
5. Emergency planning is **solutions orientated**. Planning develops agreed approaches to managing risks and consequences.
6. Emergency planning is **iterative.** Learning from each step informs the next steps.
7. Emergency planning **enables adaptive capacity.** Planning develops frameworks that provide a base on which to build flexible and adaptive solutions.
8. Emergency planning is a **shared responsibility.** Planning documents actions to be undertaken by a wide range of people/entities.

How should an emergency planning task be managed?

The Handbook uses a project management approach to developing an emergency plan, with clear deliverables, accountability, and methodology. Standard project steps of establishing a project plan and establishing a project team are recommended. The project plan is critical and sets out the project sponsor, establishes authority, appoints a project manager, and sets out the development pathway for the creation of the plan. The plan is validated through trials and exercises and regular monitoring and review of the plan and its progress are recommended.

The overview of the emergency planning process is shown in Figure 1 Emergency Planning Process (AIDR 2020).

What planning guidance is provided?

The Handbook sets out a sample set of contents for a plan. However, detailed guidance on issues such as evacuation planning, community recovery, flood emergency planning, land use planning, public information and warnings, and lesson management are contained in specific handbooks covering these topics.

How can I better plan for uncertainty?

The Handbook notes that there may be a requirement for certain plans to focus on managing events with high levels of volatility uncertainty, complexity and ambiguity. In these cases it is recommended plans:

• Be strategic adopting a principles-based approach;
• Identify subject matter specialists who can provide expert advice;
• Create flexible leadership structures that can integrate entities not identified in the planning process;
• Create collaborative networks and relationships that can provide support to each other and share innovative ideas;
• Establish processes that enable adaptive and creative thinking to produce innovative solutions;
• Create a learning organisation approach which enables rapid prototyping, trialling and evaluation of solutions.

How was this handbook developed?

This handbook was prepared by the Australian Institute for Disaster Resilience (AIDR) with David Parsons of Crisis Management Australia, and with financial assistance from the Australian Government. Responsibility for the views, information or advice expressed in this handbook does not necessarily reflect the views of the Australian Government. This handbook was made possible through the support of a broad cross-section of the disaster resilience and emergency management sector.

The Australian Institute for Disaster Resilience

The Australian Institute for Disaster Resilience develops, maintains and shares knowledge and learning to support a disaster resilient Australia. Building on extensive knowledge and experience in Australia and internationally, we work with government, communities, NGOs, not-for-profits, research organisations, education partners and the private sector to enhance disaster resilience through innovative thinking, professional development and knowledge sharing.

AIDR is supported by its partners: the Australian Government Department of Home Affairs, Australasian Fire and Emergency Service Authorities Council (AFAC) and the Australian Red Cross.

All handbooks in the Australian Disaster Resilience Handbook Collection are available free to users around the world.

David Parsons is is a lecturer in Emergency Management at Charles Sturt University Australia, the Deputy Director Training and Leadership at Response and Recovery Aotearoa New Zealand and the owner of Crisis Management Australia.

Ella Wilkinson is Project Officer at the Austra-lian Institute for Disaster Resilience (AIDR) working in the National Handbooks team, contributing to the development of the Australian Disaster Resilience Handbook Collection. Ella is studying a Master of Environment at the University of Melbourne and in 2015 undertook an internship at the United Nations Office for Disaster Risk Reduction in Geneva as a Content Editor for PreventionWeb.net.

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HazNet is a bi-annual magazine of the Canadian Risk and Hazards Network (CRHNet) that brings together the latest in research and practice to enhance resilience in Canada.

HazNet aims to facilitate public, professional and scholarly discussion through analysis, views, lessons learned, and insights into current and future issues of disaster risk reduction in Canada and internationally.

Editor - Lilia Yumagulova and Nicole Spence
Layout / design - Carime Quezada and Lilia Yumagulova
Copy Editors - Sarah Kamal and Nicole Spence
Editorial Assistant - Shaun Koopman

CRHNet is a not for profit association established to:

- Initiate the development of a Canadian inter-disciplinary and cross-sectoral network of researchers, academics, and practitioners to enhance understanding of emergency management in all dimensions and help build Canadian capacity to deal effectively with threats and consequences from all hazards;

- Create a Canadian annual Symposium for dialogue focusing on disaster risk reduction and facilitate policy formulation and the adoption of best practices in Canada;

- Provide a Canadian venue to learn from the experiences of other countries by inviting internationally reputed scholars, practitioners, and participants to the annual Symposium and to share Canadian experience and efforts in disaster reduction;

- Publish a bi-annual magazine, HazNet, comprised of articles on a wide range of topics within the emergency management and disaster risk reduction sectors.

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