RETURN AND RECOVERY FROM MASS EVACUATIONS:

IMPROVING ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Kevin Quigley
Kaitlynne Lowe

May 2023

MacEachen Institute for Public Policy and Governance

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Executive Summary

This is what we want to answer / objectives of the research

Evacuations are highly complex undertakings that involve a variety of orders of government, sectors, and organizations. The people responsible for mass evacuations are confronted with significant challenges: they must coordinate limited resources in a dynamic context, often in degraded conditions, and their decisions are consequential, time-constrained, and sometimes irreversible. These events are happening more often and at a growing and significant human, financial, and environmental cost.

There are four key stages to evacuation: communication and alert, transportation, shelter, and return to community. This paper focuses on return and recovery and is part of a larger project looking to improve evacuation of people with disabilities, including considerations for all four stages. To learn more about the other stages of evacuation, please see the MacEachen Institute website.

The purpose of the paper is to understand how we can improve return to community and recovery following a disaster with specific considerations for people with disabilities. Unless otherwise stated, we refer to "recovery" as the restoration of livelihoods and health, including economic, physical, social, cultural, and environmental assets, systems, and activities (Kushma 2022, XX). All aspects of society are designed for the able-bodied and privileged. The structural and social barriers throughout infrastructure and society impose additional barriers for people with disability. Efforts should be made to avoid paternalistic approaches and focus on empowerment. It is also important to recognize that meeting diverse functional needs is key, as the disability community encompasses a wide range of abilities, functional needs, priorities, and concerns.

Advancements in accessibility and rights for people with disabilities have led to increased concern at all orders of government about improving accessibility of public services, including emergency management services. How can we ensure that people with disabilities are supported during return and recovery from an evacuation? What are the key accessibility considerations for return and recovery post-evacuation? And more specifically, what impacts would people with disabilities and caregivers experience during return and recovery following an evacuation?

Funding for this research

Our Approach and Methods

Our specific objectives were 1) partnering leading risk scholars with those responsible for mass evacuation and organizations that represent the concerns of persons with disabilities to develop a shared understanding of evacuation risks, (2) examining what guides the thinking and actions of those responsible for evacuation, considering the knowledge we have of certain risks and the

contextual pressures exerted on the regime, and (3) improving dialogue among researchers, practitioners, and people with disabilities on the subject of evacuation.

We surveyed 29 people with disabilities and some caregivers and eight emergency managers to understand key considerations from different perspectives. The surveys were distributed by email and hosted on Opinio between October and December 2021. A roundtable on the topic of return and recovery in emergency evacuation was conducted on April 17, 2023, with 15 members of the Advisory Board and invited stakeholders. We reviewed academic literature and other publicly available material, such as reports, media articles, and policies. We used a cybernetic understanding of control, which examines a system's ability to gather information, set standards, and change behaviour. We collected and analyzed data in our survey and roundtable according to these three themes.

What we found:

Findings in literature:

- **Evacuations are not common in Canada but have increased in frequency and severity over the past ten years.** Over 670,000 people have been evacuated in Canada during 273 evacuations between 1990 and 2020. The most common events resulting in evacuation are floods and wildfires.

- **Managing safe return to communities following an evacuation is a significant challenge.** In many ways, the decision to announce the return to a community is comparable to a decision to mandate an evacuation (Stallings 1991, 183). There are similar concerns for public safety and individual risk perceptions that are important to consider. The Government of British Columbia enlists the help of volunteer engineers to support this work.

- **People with disabilities and caregivers have unique requirements to ensure their residences are safe and accessible for their return,** including access to assistive devices and equipment, access to utilities and telecommunications, considerations for service animals.

- **Insurance and disaster relief programs have a role in disaster recovery, but processes and policies need to be clear and user-friendly.** Residents need complete knowledge of their coverage and claim systems should be easy to use and efficient, with payments made quickly.

- **Disasters can have significant impacts on mental health, particularly post-traumatic stress, and cause long-term health and economic impacts.** Access to trauma-informed psychosocial supports can support disaster recovery over the long term.

- **The most resilient communities are often the most connected.** Strong interconnectedness between members of a community often means the community can be more resilient to disasters. Social capital of individual members of a community and the community overall are also important factors for resiliency.

Findings from the surveys:

- **Top concerns with return to community relate to addressing damage and debris, alongside restoration of utilities and access to necessities (e.g., safe food and water).** Respondents with disabilities and caregivers noted that repair work is a concern as well as considerations for managing repairs while also providing caregiving support.

- **Lack of public experience with evacuation:** 90% of survey respondents (people with disabilities and caregivers) have not experienced an evacuation, which poses significant challenges for emergency managers. People's plans likely have significant gaps. Regardless of advance preparation, people may experience emotional and psychological stress that will further complicate an evacuation.

- **Respondents identified their reliance on insurance to recover and replace lost or damaged property.** Some people with disabilities noted they felt comfortable with their insurance coverage and felt fortunate to have financial resources to help recover from an emergency. It was also raised that people have varying degrees of insurance coverage and may not be able to pay out-of-pocket expenses (e.g., insurance deductibles). There are also issues about people not knowing what coverage they have.

- **Emergency manager respondents identified that emergency personnel need to have knowledge of requirements to ensure a residence is accessible and operational** (e.g., access to utilities, free of hazards, access to supplies and supports such as food, transportation, mental health services, and support workers). There are also considerations for medical equipment and assistive devices that impact safe return to community for people with disabilities, as well as service animals and their needs.

This is what we recommend

- Emergency managers need to be more aware of the specific needs of residents to ensure a residence is safe, accessible, and operational. There are unique needs to consider, such as access to supplies and supports such as food, transportation, medical treatment, mental health services, support workers, and service animals.

- Opportunities for people with disabilities, caregivers, and emergency managers to engage directly with emergency planning are vital. The disability community is not homogenous. There are many different functional needs and experiences throughout the disability communities that should be accounted for in emergency responses. For example, emergency responses should consider diverse physical, sensory, and cognitive needs as well as the varieties of experiences in the disability community, even between people with seemingly similar disabilities; this is a complex and particularly challenging feature of emergency response.

- Participants recommended greater support and awareness for caregivers; the return process should enable caregivers to complete their own return and recovery tasks (e.g., repair work, insurance processes, clearing damage or debris) as well as have access to the

people for whom they are caring;

- Preparation for and knowledge about insurance and disaster-relief funding processes would be beneficial, as many people may not be aware of the specifics of their coverage or how it varies according to the disaster. Support to navigate insurance and relief funding processes following an emergency was also recommended;

- Better understanding of who the key stakeholders are (e.g., emergency organizations, first responders, volunteers, service providers) and their responsibilities. Ensure roles and responsibilities for return and recovery tasks following an emergency evacuation are well known and communicated in advance of an emergency, including:
  - o Members of the public, specifically people with disabilities, knowing what they are responsible for, how to connect with necessary services, and what their expectations for support should be;

  - o Staff and volunteers for various organizations and orders of government involved in evacuation;

  - o Understanding how demographic changes and government policies are changing the context. For example, more people with disabilities and seniors are living at home; rates of disability increase as the population ages;

- Since many people have not experienced an evacuation, strategies to prepare for many first-time evacuees will be important for return and recovery.

- Robust governance arrangements that are agile, adaptable, and take these complex issues into account; are rehearsed in advance; have appropriate governance mechanisms in place to connect with the right people at the right time.

- Training should be developed for emergency responders and other professionals (e.g., insurance) and volunteers involved in return and recovery processes with the goal to improve accessibility. Such training programs should be led by disability organizations with the necessary resources and supports in place. Specific training can also be developed to support return and recovery processes, such as determining if a residence is safe and accessible to return,

1. Introduction

The people responsible for mass evacuations are confronted with significant challenges: they must coordinate limited resources in a dynamic context, often in degraded conditions, and their decisions are consequential, time-constrained, and sometimes irreversible. These events are happening more often and at a growing and significant human, financial, and environmental cost. Disasters have caused hundreds of billions of dollars of damage and killed hundreds of thousands of people over the past five years, and these costs are rising (Klomp & Valckx 2014; Roy et al. 2020; Sadri et al. 2021). The top ten climate disasters in 2021 alone cost over $170 billion (Kramer & Ware 2021, 5).

There are four key stages to evacuation: communication and alert, transportation, shelter, and return to community and recovery. This paper focuses on return to community and recovery and is part of a larger project looking to improve evacuation of people with disabilities, including considerations for all four stages. Disaster recovery encompasses physical, economic, social, cultural, and environmental systems (Kushma 2022, xx). We identified and explored key accessibility considerations for return and recovery post-evacuation. More specifically, we asked what impacts would people with disabilities and caregivers experience during return and recovery following an evacuation, and how can these experiences be improved?

Many issues impact the general public for return and recovery, including people with disabilities and caregivers, such as restoration of utilities, insurance coverage and access to disaster relief finding, and psychosocial supports. People with disabilities also have unique considerations in these areas, such as specific needs regarding assistive equipment, infrastructure at home, access to insurance and financial programs to replace equipment and supplies, and the types of psychosocial supports needed. For example, our survey respondents noted a need for services to support caregivers who are enabling those with disabilities to complete recovery tasks.

The academic literature emphasized that there are similar concerns for public safety when mandating an evacuation and a decision to permit return to communities. Insurance and disaster relief programs were noted for their role in disaster recovery, but processes and policies need to be clear and user-friendly. Many people with insurance may not know the specifics of their coverage and any variances between causes of damage (e.g., fire, flood, and wind). Access to trauma-informed psychosocial supports can support disaster recovery over the long term, as disasters can accentuate existing mental illnesses and cause new cases of mental illness, which can have long-term impacts on health and economies.

We surveyed 29 people with disabilities and caregivers and eight emergency managers to understand key considerations from both perspectives. To understand our ability to control an emergency response, we can apply elements of cybernetic control to analyze how a system gathers information, sets standards, and changes behaviour, such as an emergency services system (Quigley et al. 2017).

There is a gap in emergency management research regarding evacuation return in Canada, as well as specific considerations for people with disabilities. More work needs to be done in this area to ensure people with disabilities have the knowledge and resources to safely return and recover following a disaster, not only to improve resiliency but also to uphold legal obligations for accessible public services.

2. Context for our study

Canada has experienced an increase in severe weather events in recent years and the impacts are becoming more devastating. Costs of recovering from disasters are rising across all orders of government, sectors, and to all Canadians. There are significant physical, social, and economic impacts to consider, especially because these severe weather events are likely to worsen as climate change advances (Office of the Auditor General of Canada 2016). According to Catastrophe Indices and Quantification Inc., insured damages from severe weather events in Canada have increased to nearly $2 billion in recent years (Baum and Ha 2023). Estimates from Public Safety Canada suggest that every dollar invested in disaster mitigation can save $3 to $6 in recovery costs (Office of the Auditor General of Canada 2016; Public Safety Canada 2022).

People with disabilities often face challenges in preparing for and recovering from disasters due to poverty, discrimination, and limited access to information. Despite these disproportionate impacts, people with disabilities can be overlooked in emergency responses (Dai and Hu 2022). Nearly 22% of the Canadian population identifies as having a disability (Statistics Canada 2018) and this number will only grow as the population ages and definitions of "disability" continue to evolve.

Advancements in accessibility and rights for people with disabilities have increased concern at all orders of government about improving emergency services for people with disabilities. More policies and infrastructure to support people with disabilities to live in their own residences and aging-in-place mean that people with disabilities are dispersed throughout communities (National Housing Strategy 2020 & Enabling Access 2021). Often the main focus of emergency managers is to increase public emergency awareness, but how can emergency processes be better informed by the perceptions and needs of the public, especially people with disabilities?

This concern has been growing nationally and internationally since the introduction of the United Nations Convention on the Rights for Persons with Disabilities (UNCRPD). Many jurisdictions have agreed that the access and functional needs of persons with disabilities should be integrated within each stage of an emergency—planning, response, and recovery. The Sendai Framework emphasizes that people with disabilities should lead and be central to founding emergency initiatives on principles of universal design. This is echoed at the federal level in Canada, as these principles are captured in national emergency management frameworks (e.g., Emergency Management Strategy for Canada – Towards a Resilient 2030) (Public Safety Canada 2019, 9). Such agreements can act as normative frameworks to assess governments' actions and hold them accountable (Stienstra 2018).

2.1. Evacuations in Canada between 1990 and 2020

Evacuations are uncommon in Canada, as the most common response to a disaster or crisis is to shelter-in-place. Evacuations have become more frequent with larger numbers of people evacuated in the past 10 years especially. While the vast majority of Canadians have never experienced an evacuation, more will as severe weather due to climate change worsens. Figure 2.1.1 details the total known number of evacuees by year and shows that the most significant evacuations have occurred between 2011 and 2020 compared to 1990 and 2010. Table 2.1.2. details the total of known evacuees by decade and the percentage change overtime.

Over 670,000 people have been evacuated in Canada during 273 evacuations between 1990 and 2020. The most common disasters causing an evacuation are flood and wildfire. While floods have been more frequent, wildfires have resulted in more known evacuees. Following wildfires and floods, severe storms have caused the most evacuees between 1990 and 2020. Table 2.1.3. outlines the types of disasters resulting in evacuation and the total of known evacuees.

The impacts of evacuations have become more and more costly. Between 1990 and 2020, these events are estimated to have cost at least $18,769,311,409 (normalized[1] at $1,016,142,001). For 2011–2020, the estimated total cost of these disasters increased by 125% compared with 1990–2011 The estimated normalized cost has increased at least 26% from 2011–2020 compared to 1990–1999. Costs for federal Disaster Assistance Agreements (DFAA) also increased by 16% from 2011–2020 compared to 1990–2010. Costs for insurance have increased by 43 times from 2011–2020 compared to 2000–2010. Insured costs account for approximately 45% of the estimated total costs with federal Disaster Assistance Agreements (DFAA) accounting for approximately 5%. Table 2.1.4 details the costs of disasters resulting in evacuation by decade and type of cost.

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[1] The Government of Canada defines normalization as "the process of removing the effects of external influences from a set of data to improve consistency and comparability. For example, adjusting data for inflation or the value of money over time" (Treasury Board of Canada Secretariat 2023).

Figure 2.1.1. The most significant evacuations in Canada have occurred between 2011 and 2020
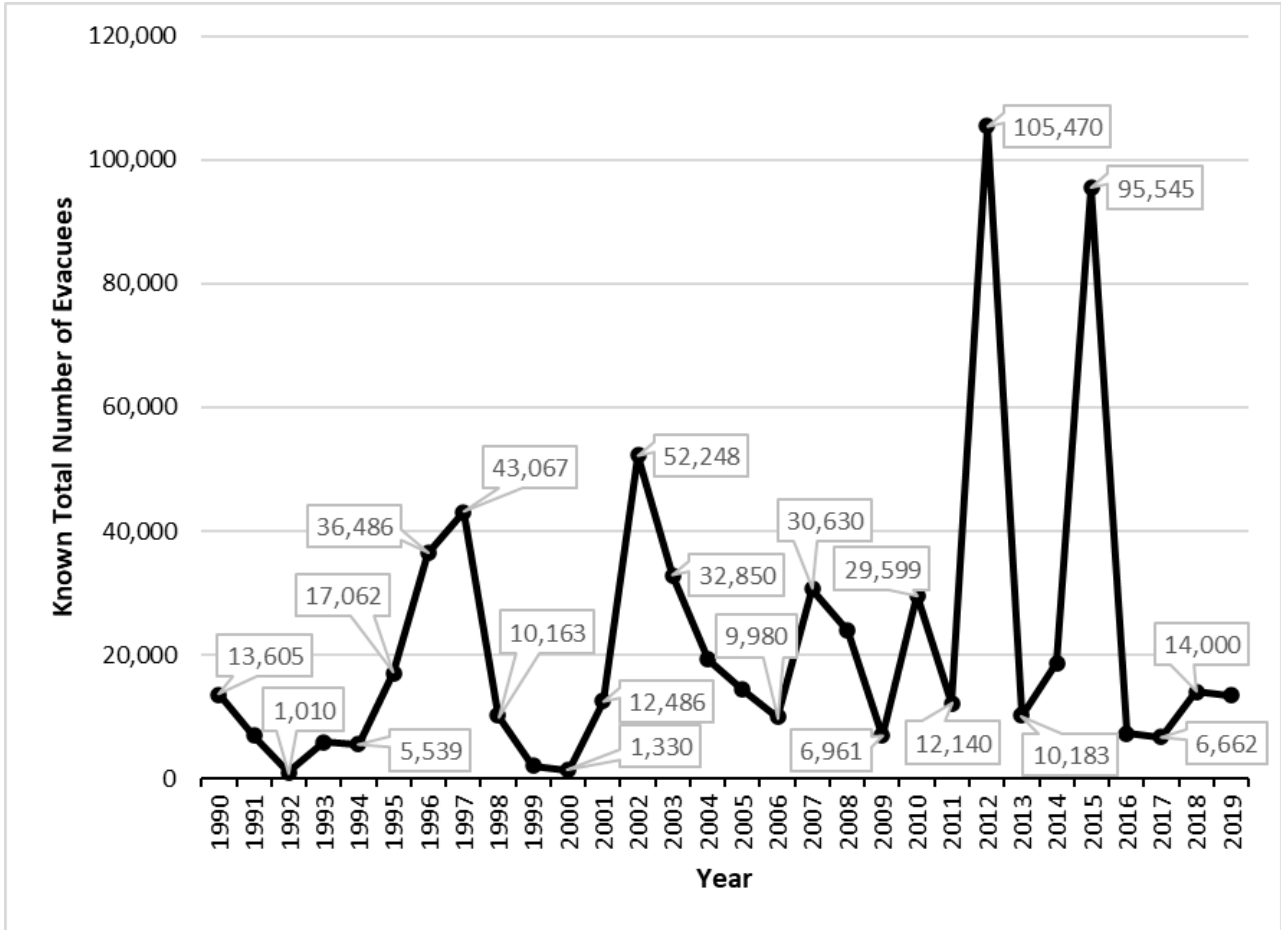
Source: Canadian Disaster Database 2022

Notes on Data: (1) The Canadian Disaster Database (CDD) tracks significant disaster events as defined by the Emergency Management Framework for Canada that meet one or more of the following criteria: 10 or more people killed, 100 or more people affected, an appeal for national/international assistance, historical significance, significant damage/interruption of normal processes. (2) The table includes data of disaster events resulting in known evacuations.

Table 2.1.2. 671,340 people were evacuated in Canada between 1990 and 2020; this trend has increased over time

Timeframe	Total Known Evacuees	Percentage Change Overtime (%)
1990–1999	152,341	
2000–2010	206,008	35
2011–2020	312,991	52

Source: Canadian Disaster Database 2022

Table 2.1.3. Floods and wildfires have been the most common disasters that caused an evacuation (1990–2020)

Disaster Type	Number of Events	Total People Evacuated
Flood	106	248,771
Wildfires	81	293,659
Chemical Spill (Derailment, Vehicle, Marine)	15	9,690
Storms (Specified and Unspecified)	14	33,218
Fire (Residential, Non-Residential, and Non-Residential Arson)	10	10,847
Winter Storm	9	24,952
Chemical Fire	8	13,600
Transportation Accidents (Rail, Air, and Vehicle)	7	3,983
Explosions (Residential and Non-Residential	6	16,700
Tornado	6	2,889
Hurricane / Typhoon / Tropical Storm	3	740
Avalanche	2	71
Infestation	2	1,270
Civil Disturbance / Demonstrations	1	10,000
Landslide	1	300
Earthquake	1	450
Water Infrastructure failure	1	200

Source: CDD 2022

Table 2.1.4. Estimated total costs of disasters causing evacuation have increased by at least 76% between 2011–2020 and 1990–2010

	1990–1999 ($ CAD)	2000–2010 ($ CAD)	2010–2020 ($ CAD)
Estimated Total Cost	5,923,134,834	2,424,605,827	10,421,570,748
Estimated Normalized Total Cost	391,450,018.7	129,757,763.7	494,934,218.6
Federal DFAA Payments	1,231,292,742	1,025,502,161	2,606,828,748
Provincial DFAA Payments	138,294,090	58,225,994	Not Available
Provincial Department Payments	210,932,095	442,500,556	Not Available
Municipal Costs	2,070,834,882	4,103,577	Not Available
Insurance Payments	1,952,388,000	143,895, 000	6,264,978,000
NGO Payments	13,074,073	20,539	Not available

Source: CDD 2022

Notes on data: Table includes known costs, as there are many cases where the total cost has been estimated or the data may not be available for a specific event.

2.2. Emergency management responsibilities are dispersed across municipal, provincial, and federal government with support from the private and non-profit sectors

There are a variety of decision-makers with responsibilities to mitigate disasters, including all orders of government, the private and non-profit sectors, and emergency management representatives. Provincial and territorial governments have constitutional authority in the case of most disasters and therefore take the lead on managing disaster responses, often in close partnership with municipalities, which implement response plans at the frontline. Provincial, territorial, and municipal governments have worked to improve disaster resilience, including flood resilience and updated building codes for infrastructure, but more needs to be done to improve infrastructure resiliency (Office of the Auditor General of Canada 2016; Public Safety Canada 2022).

Following a disaster, provincial and territorial governments create programs, grants, and incentives that support recovery, and coordinate support to communities. Municipal governments make recovery efforts such as assessing damages and losses, restoring public services, providing emotional support service, and developing recovery plans in conjunction with other orders of government (Government of Alberta 2021).

The federal government provides coordination and funding. Under the *Emergency Management Act,* Public Safety Canada's role is to coordinate federal emergency management activities with the provinces and territories (Office of the Auditor General of Canada 2016). It also supports disaster recovery efforts through the Canadian Armed Forces (CAF), including equipment and personnel. For example, following post-tropical storm Fiona, the CAF was deployed to Nova Scotia, Prince Edward Island, Newfoundland, and Quebec (Lavery 2022; Tutton 2022).

The Canadian Red Cross has a large role in emergency responses throughout the country. It coordinates volunteers, leads programs and services (e.g., emergency shelter and supplies), offers psychosocial support services, raises donation funds, and facilitates financial relief programs (Tutton 2022). The Canadian Red Cross helped over 88,000 households throughout Atlantic Canada who were impacted by post-tropical storm Fiona, including emergency shelter (over 1,200 people), mobilized 520 personnel, supported 40 reception centres and shelters with local authorities, distributed over 5,700 emergency items (e.g., hygiene kits, cots, blankets, and teddy bears for children), and provided psychosocial and well-being support (6,000 conversations) (Canadian Red Cross 2022).

3. Literature Review: Safe restoration of utilities and addressing damage, funds from insurance and disaster financial relief, and access to psychosocial supports are important features of evacuation return and recovery

Recovery following a disaster refers to restoring economic, physical, social, cultural, and environmental systems in affected communities (Kushma 2022, XX). Disaster recovery at the individual level is a process to repair and restore aspects of one's life after an emergency. Recovery efforts at this level can include removing debris, processing insurance and disaster relief claims, replacing lost or destroyed documentation, finding a new residence, accessing mental health support (Government of Alberta 2023).

Overall, the people most impacted by disasters are those who are racialized, low-income, and have a disability. Racial–ethnic minorities and low-income persons have been shown to be more likely to live in disadvantaged and environmentally risky neighborhoods (Crowder and Downey 2010) and to be disproportionately impacted by disasters (Klinenberg 2003; Wisner et al. 2004; Hunter 2005; Elliott & Pais 2006; Falk et al. 2006; Hartman & Squires 2006; Tierney 2006; Sharkey 2007; Brunsma et al. 2007; Alexander, Gaillard, & Wisner 2012; Good, Phibbs, & Williamson 2016; Han et al. 2017; Mukasa 2019). The intersections of social demographic factors, including age, race, gender, ability, income, geography, and primary language make people more vulnerable in an emergency (Yabe & Ukkusuri 2020, Hengfang et al. 2021, & Stienstra et al. 2021). These findings are consistent with prior research on Katrina (Brunsma et al. 2007; Falk et al. 2006; Sharkey 2007), on other environmental disasters (Hunter 2005; Hartman & Squires 2006; Tierney 2006; Wisner et al. 2004), on residential attainment (Crowder & Downey 2010), and international disaster reports (IFRC 2018 and UNDRR 2016). They highlight the unnatural consequences of "natural disasters," which affect socioeconomically vulnerable individuals and communities most (Campanella 2007). Several other factors, such as assistance from organizations (e.g., Federal Emergency Management Agency), are also important considerations (Graif 2016). Researchers note that ethnic minorities and individuals with lower levels of education often experience more looting in an evacuation zone (i.e., the area under evacuation order) than other socio-demographic groups. Moreover, evacuees who are younger, have lower incomes, rent, have children under 18, and are ethnic minorities experience greater levels of income loss following an evacuation. This is consistent with research on social vulnerability to disasters (Wisner et al. 2004; Siebeneck et al. 2013).

Community characteristics, such as social capital, can also determine community preparedness for disasters (Nakagawa & Shaw 2004; Dynes 2006; Airriess et al. 2008; Zakour 2008; Hawkins & Maurer 2010; Wolf et al. 2010; Aldrich 2012; Aldrich & Meyer 2015; Aldrich & Sawada 2015). Strong social ties, collaboration, and leadership help to share knowledge on awareness and eventually activities to reduce disasters (Patterson, Weil, & Patel 2010; Wulandari, Sagala, & Sullivan 2018). Emergency managers highlight strengthening a sense of community as an effective recovery response because communities with stronger relationships can recover more quickly (Government of Alberta 2023). A study found that following Hurricane Katrina, Vietnamese Americans returned to New Orleans earlier and in greater numbers than African Americans and noted that local Vietnamese churches played an important role in early recovery efforts (Li et al. 2010; Siebeneck et al., 2013).

3.1. Managing safe return to communities following an evacuation is a significant challenge, safe utility restoration is often the immediate focus; demographic considerations are also important

In many ways, the decision to announce the return to a community is comparable to a decision to mandate an evacuation (Stallings 1991, p. 183). There are similar concerns for public safety, and individual risk perceptions are important to consider. Factors such as environmental and social observations (e.g., storm conditions, businesses closing, others evacuating), risk perception, socio-demographic characteristics, and personal experiences with disasters influence evacuation decision-making processes (Baker 1991; Cutter 1996; Dash & Gladwin 2007; Lindell & Perry 2004, 2012; Quarantelli 1984; Tierney & Perry 2001; Lindell et al. 2007; Zelinsky & Kosinski 1991; Huang et al. 2012; Siebeneck et al. 2013). People with disabilities and caregivers have unique requirements to ensure their residences are safe and accessible for their return, including access to assistive devices and equipment, access to utilities and telecommunications, considerations for service animals.

Many factors influence residents' decisions to return to their communities. Following Hurricane Katrina residents were more likely to return if they had less than college education, a residence in the New Orleans metropolitan area, a higher paying job, were over 30 years old, employed before the storm, married, or owned a home (Landry et al. 2007).

It is important for members of the public to understand the challenges they may face in returning to their communities following an evacuation, including how to manage loss of utilities (Siebeneck et al. 2013). This understanding can occur through advance preparation, although it is challenging when the majority of people have not experienced an evacuation before.

There have been compliance issues with return plans following past hurricanes (Siebeneck & Cova 2008). Studies have shown that managing safe return is one of the most significant challenges during hurricanes, especially when residents try to return too early (Sorensen et al. 1987; Zelinsky and Kosinski 1991; Siebeneck et al. 2013). Generally, members of the public are warned to wait until experts have determined the safety of a location, checked for structural damage, and resolved utility issues (e.g., power lines). Depending on the emergency, experts may need to determine the extent of damage and contamination, such as radiation (Centers for Disease Control and Prevention 4 April 2018; Government of Alberta 2023). Evacuees who return too early could compromise efforts to maintain security in an evacuated area, and it can be dangerous. Assessments are needed to determine whether buildings are stable and have safe access to water, sewerage, and electrical power (McEntire & Cope 2004). Communities should be able to prioritize their needs based on their own assessments and standards. Delays in returning to a community can impact not only individuals, but local economies as well (Lane et al. 2003; Siebeneck et al. 2013).

In the United States, FEMA facilitates a Community Emergency Response Team (CERT) program. The program educates volunteers about disaster preparedness and provides training about basic disaster response skills (e.g., fire safety, light search and rescue, team organization, disaster medical operations). The goal is to provide a consistent and nationwide approach to train volunteers that responders can rely on for support during disaster situations (FEMA 2023). The Government of British Columbia has developed an initiative modelled on a California program that trains volunteer engineers to help determine when communities are safe

to return to following a natural disaster. These volunteers are part of the Canadian Red Cross's Emergency Management Team and have expertise in engineering, architecture, and other related fields (Canadian Red Cross 2023).

3.2. Insurance and disaster relief programs have a role in disaster recovery; residents need complete knowledge of their coverage and claim systems should be user-friendly and efficient

The Vice President Atlantic for the Insurance Bureau of Canada (IBC) described insurers as the "second responders" to disaster events. Insurance for homes and contents supports recovery after disaster, and if effective can reduce financial impacts and stress following a disaster (Dixon, Shochete, & Shakespeare 2015). The role of insurance in emergency management policies and processes has been explored in academic literature and there are many benefits as well as criticisms of the insurance system (Booth & Harwood 2016; O'Hare, White, & Connelley 2016; Eriksen, McKinnon, & de Vet 2020). Criticisms include the focus of insurance being mostly in terms of finances, with less focus on wellbeing, and that the process can be difficult to navigate (Eriksen & Simon 2017; Eriksen, McKinnon, & de Vet 2020). Concerns have been raised about people who are uninsured or underinsured, as well as people located in high-risk areas (Quantum Market Research 2013; Eriksen, McKinnon, & de Vet 2020). Moreover, many insurance programs are designed to build things back the way they were, with possible updates to meet building codes, rather than build back better (BBB).[2]

Disaster relief programs also provide financial support following an emergency for a variety of purposes. For example, governments can create funding programs that target damages not covered by insurance (e.g., replacing supplies, removing damaged trees) (discussed further in section 3.3.2) (Office of the Premier 14 October 2022). Donations to charities and organizations like the Red Cross also play an important role in disaster relief. Relief efforts following post-tropical storm Fiona were the largest Red Cross response in the country (Smellie 7 February 2023). There can be tensions between insurance and disaster-relief funding programs, including charitable donations, and potential to counteract efforts if these are not considered when designing programs. For example, insurance and relief programs may duplicate efforts to reimburse residents for recovery costs rather than target specific needs.

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[2] The United Nations Office for Disaster Risk Reduction defines BBB as "the use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster-risk-reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment" (UNDRR 2023).

3.2.1. Role of insurance in disaster recovery

Insurance and government disaster-relief funding are important for household disaster recovery (Hofmann 2022). There is often confusion about what is covered by insurance, as different causes have different insurance implications (e.g., damage from a fire compared to flood damage). People with disabilities may have additional insurance implications to make necessary repairs and replace damaged assistive devices and other equipment. Of the over 22% of Canadians that report a disability, nearly half (44.9%) required at least one type of assistive device or aid, or an accessibility feature in their home (Choi 2021). Provincial and territorial governments, non-profit organizations (e.g., March of Dimes), and Veterans Affairs Canada offer support for people with disabilities to access assistive devices (Government of Canada 2007).

Financial preparedness is recommended to help make recovery efforts more efficient, and communities more resilient. Community resilience is defined as "a community's or region's capability to withstand significant multi-hazard threats" (Hofmann 2022). Steps taken by individuals to secure insurance, prepare documentation in advance (e.g., list of belongings), and become knowledgeable about how to make a claim can support the return process (Government of Alberta May 2021). A lack of effective disaster recovery policies and insurance claims management undermine efforts to build community resilience, as delays for reimbursement impact recovery and preparation for future disasters. Insurance policies and coverage options are often complex. Confusion about deductibles, for example, limit an individual's ability to make informed decisions and can result in gaps in coverage. Individual mitigation actions, such as decisions regarding insurance, depend on many factors (e.g., risk awareness, premium price, deductible, capacity to pay, perceived risk) (CCIR 2023).

Generally, the first insurance money paid out following a property loss is additional living expenses (ALEs). ALE benefits cover immediate and critical needs, including food and shelter, following a loss. An ALE "is any necessary increase in living expenses incurred by the insured so that his household can maintain its normal standard of living" (Alford & Pringle 2007). If a policyholder's home is not livable or tenable, then the "Fair Rental Value" for the residence, or rented portion of the residence, is paid. Additional living expenses are reimbursable if required to maintain a normal standard of living, as has been enforced by many courts (Alford & Pringle 2007). Following post-tropical storm Fiona, nearly $20 million was allocated specifically for ALEs.

In the southern U.S., Hurricane Katrina killed more than 1,200 people and caused an estimated US$125 billion in damages and US$60 billion in insurance losses, with over 1.7 million claims across six states. The federal government spent over US$110 billion in relief and recovery efforts. Recovery from Hurricane Katrina was fraught with challenges, including conflicting statements from local, state, and national government officials about funding sources, and roles and responsibilities (Hofmann 2022).

Low-income housing residents may not be able to maintain standards of living and cover out-of-pocket costs for repairs or disaster-risk improvements simultaneously, so early and efficient payouts are required. People with disabilities also have unique requirements to ensure their homes are safe to live in (e.g., assistive devices and equipment, infrastructure, clearance of debris, specific concerns for utility restoration, considerations for service animals).

Massive catastrophes such as Hurricane Katrina and, more recently, post-tropical storm Fiona in Canada, have exposed weaknesses in the insurance claims management process. For example, homeowners were still struggling with insurance claims over six months after Fiona (Cameron 2023; Pottie 2023). Specific insurance coverage for hurricanes is rare in Canada. Wind damage is often covered, but coverage for damage due to flooding is more complicated. Overland flood insurance may be available unless a residence is in a known flood plain; the source of the water is an important factor (Insurance Bureau of Canada 2022; Lord 2022). For example, damages caused by storm surges are not covered (Lord 2022). Insurance companies paid $840 million to repair damaged homes and small businesses—the largest payout ever in Atlantic Canada. $20 million of this was allocated for ALES, as stated above. Effective management of insurance claims processes can be more challenging if the processes themselves are difficult to navigate, if there is confusion about eligibility, or if there is confusion about government-sponsored buy-out programs. The Canadian Council of Insurance Regulators (CCIR) recognizes that more coordination with governments is necessary to ensure general public understanding of disaster financial assistance programs, including eligibility requirements (i.e., identifying situations where assistance will not be available) (CCIR 2023).

Disasters can be opportunities to rebuild physical, social, environmental, and economic systems to improve resiliency,[3] often described as "building back better" (BBB). BBB improves resilience by integrating disaster-risk-reduction measures into reconstruction, restoring physical infrastructure and societal systems, as well as revitalizing livelihoods, economies, and the environment. Criticisms of BBB include that it lacks a people-centred housing recovery approach and an understanding of community-level needs and priorities. There are also many different interpretations and applications of BBB. Resiliency strategies include whose resilience is being built (context), shocks and stresses (disturbances), ability to manage shocks/stresses (capacity to respond), and build back better (reaction). It is connected to investments in both physical systems (e.g., infrastructure, material, labor) and social systems (Hofmann 2022).

3.2.2. Role of disaster relief funding programs in recovery

There are many kinds of disaster relief funding. At the federal level, disaster financial assistance arrangements (DFAA) fund the provinces and territories to support their recovery from natural disasters. Recovery payments have greatly increased over the past decade compared to the rest of the program's 45-year history. Between 2010 and 2015, the federal government spent $3.3 billion on DFAA, compared to a total of $2.4 billion for the previous 39 years (Office of the Auditor General of Canada 2016).

Post-disaster relief spending is laden with "political opportunism and short-sightedness." Politicians pledging and deploying personnel and resources post-disaster are opportunities for governments to appear generous and strong (Eriksen, McKinnon, & de Vet 2020; Coppel & Chester 2014 ,13). Many governments rely on charities and other not-for-profit organizations to support recovery efforts, especially to provide mental health and social support. Often these organizations are underfunded and understaffed, and may not be formally included in

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[3] Resilience refers to a range of systems that can withstand shocks and stresses, recover following an event, and adapt to new circumstances (Hofmann 2022).

emergency response plans (Eriksen 2019; Australian Red Cross National Disaster Resilience Roundtable 2014; VCOSS 2017).

Through the DFAA, the federal government covers up to 90% of eligible provincial expenses following a disaster, including providing transportation, emergency food and shelter, and restoring or replacing uninsurable dwellings and items (Office of the Prime Minister October 2021). Through Provincial Disaster Financial Assistance, the majority of the projects funded are for provincial and municipal infrastructure.

The Prime Minister announced the Hurricane Fiona Recovery Fund to provide up to an additional $300 million over two years (starting in 2022) to support those impacted by the storm and long-term recovery efforts. The efforts included restoring economic activity, repairs to improve infrastructure, ensuring the safety of navigation, and protecting marine wildlife. The new fund was intended to support costs that may not be covered by existing federal programs (e.g., DFAA) and is in addition to the matched funds donated to the Canadian Red Cross (Office of the Prime Minister 4 October 2021).

One noted challenge from the Auditor General is that federal financial disaster programs do not encourage provinces, territories, and municipalities to invest in projects to improve their overall resiliency to severe weather, particularly regarding infrastructure. The report stated that the government made funds available through various programs between 2008 and 2016,[4] but little was spent on disaster mitigation projects. The federal government had $253 million available between 2011 and 2016 through three programs,[5] but less than half was applied for and even less paid out by the end of 2016 (less than 25% of approved funds). Only about one-third of proposed projects involved infrastructure improvements. The report noted that the federal government has not put in place funding incentives to improve infrastructure resilience significantly across the country.

Provincial governments also can create funding programs to support disaster recovery. The Government of Nova Scotia created recovery programs following post-tropical storm Fiona to replace spoiled food and supplies from power outages and remove damaged trees. Targeted programs were created to support farmers and woodlot owners impacted by the storm (Office of the Premier, October 2022).

The Red Cross raised $54.2 million in donations for its efforts following Fiona, including $22.3 million in matched funds from the federal government (Tutton September 2022). The donations supported on-the-ground operations as well as emergency financial assistance. Of this, $30 million was distributed as $500 grant payments to registered households in Eastern Canada impacted by the storm. There were logistical challenges when distributing the funds, as it took public agencies over two months to distribute the money. On Prince Edward Island, some residents spent hours in lineups to confirm their identity before they could be paid, sometimes

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[4] Notes on federal programs: (1) 2011 Flood Mitigation Investments program (Public Safety Canada), (2) New Building Canada Fund (Infrastructure Canada) (14 types of infrastructure priorities, but only one is related to disaster mitigation), (3) National Disaster Mitigation Program (Public Safety Canada), (4) Disaster Financial Assistance Arrangements (Public Safety Canada), which focuses on disaster recovery.

[5] The three programs assessed: (1) 2011 Flood Mitigation Investments program, (2) New Building Canada Fund, (3) National Disaster Mitigation Program.

only to be turned away and told to come back another day (Tutton September 2022; Smellie 2023).

The Institute for Catastrophic Loss Reduction has noted that governments need more robust disaster relief funding plans that can quickly get money to people in need. Disaster relief is often done on an ad hoc basis and treated as a one-off occurrence rather than an ongoing process. There is also a problematic reliance on public donations as a revenue source for disaster relief funding and for volunteers to take on extensive responsibilities (Smellie February 2023).

3.3. Psychosocial supports in disaster recovery, disasters can accentuate impacts on mental health, particularly post-traumatic stress

Each disaster will have different impacts on individuals and their mental health, which vary from person to person. Recovery efforts can be impacted by the mental health of the residents, and challenges can increase further with prolonged disruption to mental health services (Davidson and McFarlane 2006; Agyapong et al. 2021). Disaster survivors generally show high rates of post-traumatic stress disorder (PTSD) compared to people who have not experienced a disaster (Bryant et al. 2014; Dai et al. 2016; Galea et al. 2007; Grievink et al. 2007; Marshall et al. 2007; Zaffina et al. 2014). This is also true for emergency service workers who show high rates of PTSD, even years after a disaster (Ask & Gudmundsdottir 2014; Berninger et al. 2010a, b; Agyapong et al. 2021). There are also considerations for people with mental illnesses prior to the disaster, such as re-traumatization for people with PTSD, anxiety, and depression. Supports for families are also vital, especially families of children with disabilities.

Generally, people are at a higher risk for PTSD if they are female, young, of a racial/ethnic minority, of a lower socio-economic status, with previous trauma, personal and family history of mental illness, unexpected and sudden death of loved ones, loss of property, and limited social support (Briere & Elliott 2000; Kessler et al. 1995; Ozer et al. 2003; Papanikolaou et al. 2011; Scher & Ellwanger 2009; Van Ameringen et al. 2008). Injury, loss of a loved one, and property damage are often the most significant factors for PTSD (Marshall et al. 2007; Agyapong et al. 2021). While nearly half of individuals diagnosed with PTSD are expected to recover within three years, disaster-related PTSD has one of the highest remission rates (60%) and those who do not improve after a few years often experience prolonged PTSD (Morina et al. 2014; Davidson & McFarlane 2006; Kessler et al. 1995; Agyapong et al. 2021).

This first study of mental health impacts of the 2016 Fort McMurray wildfire estimates PTSD prevalence rates[6] at 12.8% six months after the fires (14.9% females and 8.7% males) (Agyapong et al. 2021). A follow-up of flood survivors in China showed disaster-related PTSD 15 years after the event. This was especially true for people who lost relatives (odds ratio 12.37), received low levels of social support (odds ratio 5.47), experienced physical injury (odds ratio 5.01), or used negative coping styles (odds ratio of 4.92) (Dai et al. 2016; Agyapong et al. 2021).

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[6] Experiencing PTSD symptoms for at least one month.

4. Our Approach and Methods

Our specific objectives were to (1) partner leading risk scholars with those responsible for mass evacuation to develop a shared understanding of evacuation risks, (2) examine what guides the thinking and actions of those responsible for evacuation, considering the knowledge we have of certain risks and the contextual pressures exerted on the regime, and (3) improve dialogue among researchers, practitioners, and communities in this domain.

The research questions guiding us were, what are the key accessibility considerations for return and recovery post-evacuation? And more specifically, what impacts would people with disabilities and caregivers experience during return and recovery following an evacuation? We used a cybernetic understanding of control, which examines a system's ability to gather information, set standards, and change behaviour. We collected and analyzed data in our survey and roundtable according to these three themes.

Emergency evacuation is an interdisciplinary event and involves organizations from many sectors and orders of government. In 2020, an advisory board was established to recognize the interdisciplinary nature of emergency evacuation and implement principles of community-based participatory research. The Board's members guided research for the project, including providing feedback on research instruments (e.g., survey guides), reviewing materials, and participating in roundtable sessions. The Board comprised academics and representatives from partner organizations in the public sector, private businesses, emergency services, disability organizations, and NGOs.

Scholarly literature and other publicly available material such as media articles and policies was reviewed. We relied on data from the United States because more research regarding evacuation has been done using American examples, particularly regarding hurricane evacuations. There are gaps in the literature about return to community following an evacuation, particularly about people with disabilities.

Eight participants from public, private, and non-profit sector organizations responsible for evacuation completed a survey. A total of 29 participants who self-identified as having a disability or caregiver responsibilities were also surveyed, including members of registered disability-related organizations, to understand the perspectives of persons with disabilities and their priorities during an evacuation. The vast majority of respondents with disabilities or caregiver responsibilities have not experienced an evacuation themselves, which limits the data as many people can only imagine how they would respond.

Participants were recruited though the project's Advisory Board members and their respective organizations. The surveys were distributed by email and hosted on Opinio between October and December 2021. There were challenges to engaging representatives from emergency services due to the ongoing Covid-19 pandemic.

A roundtable on the topic of return to the community following an emergency evacuation was conducted on April 17, 2023 with 15 members of the Advisory Board and invited stakeholders. The roundtable was an opportunity to develop a collaborative community of practice in this area, discuss experiences and contexts relating to return to community after an evacuation, provide feedback on report drafts, and identify areas for further study.

5. Results

5.1. People with disabilities survey findings

65% of respondents personally identify as having a disability while 25% identify as a support person for someone with a disability.[7] Our participants' disabilities included the following:

- Blindness
- Visual impairment
- Deafness
- Deafblindness
- Physical impairment
- Hearing loss
- Chronic pain
- ADHD
- Depression
- Autism Spectrum Disorder

Many respondents indicated use of assistive devices and medications, including white cane, walker, hearing aids, service animals, reliance on a support person, alternative formats (e.g., braille, text-based emergency announcements and captioning, large print). Implementing mechanisms for decision-makers to hear directly from potential evacuees with disabilities about their needs was raised by respondents as an area to improve. This is especially important for invisible disabilities such as autism and dementia. Families especially will face challenges and need support. A "one size fits all" approach is ineffective at meeting a variety of functional needs.

The majority of people have not experienced an evacuation, meaning most people can only imagine the scenario and how they would respond. 90% of respondents have not experienced an evacuation, but approximately 30% of respondents have participated in an evacuation drill or practice through school, work, and summer camps.

Survey respondents were asked about the top accessibility issues that came to mind regarding evacuation. Responses are summarized and ranked by frequency in Table 5.1. The following issues were identified as being top of mind for survey respondents: transportation, access to equipment and supplies, reliance on someone to intervene—especially for people without personal support networks, and how to access medical treatment if necessary. These same concerns relate to returning to communities following an evacuation.

With respect to return to community specifically, participants noted that this phase might be one of the most challenging within the overall emergency response. The importance of planning for safe return in advance of an emergency was highlighted. Respondents noted that doing any repair or cleaning work could be a significant challenge, including ensuring utilities and equipment were reconnected safely. Access to necessities, such as safe food, was also identified. Some stated they would need a someone to intervene and support them, including to assist with getting meals if their kitchen were inoperable and food was spoiled.

Key concerns included access to information, access to mental health services, access to medical treatment, plans for successful return and recovery, and lack of family and community

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[7] The support roles included supporting newcomers to Canada who have disabilities, day programming for people with disabilities, organizations supporting adults with intellectual disabilities, regional EMO, and parents of young adults with intellectual disabilities.

support. There are also particular considerations for service animals, including appropriate space and supplies. Additional concerns outlined by respondents included access to financial resources, home care, and other supports. Many respondents raised concerns about a lack of personal support networks, or difficulty for friends and family to intervene in an emergency. Table 5.1 outlines the accessibility concerns listed by respondents, from most to least frequent.

Some participants noted confusion about who is responsible to support efforts to return after an emergency, and whether there is sufficient training. Training to specifically ensure the transition back is emotionally supported for evacuees in addition to physical support. This includes understanding of varying abilities. Ensuring appropriate staff and volunteer capacity was also noted. There were concerns that people could "fall through the cracks" if there are jurisdictional issues.

The ability to access financial resources such as cash and banking systems was also raised, let alone concerns about having enough funds to cover costs in an emergency. Some respondents said they felt fortunate to have insurance and other financial resources to recover following a disaster; not all are so fortunate. Other participants emphasized the need for financial support, noting that not everyone can afford the same degree of insurance coverage or expenses to cover a deductible out-of-pocket. Some respondents noted they would rely on insurance to replace lost property. Another consideration is if medical equipment or an assistive device needed to be replaced. Support to navigate the insurance claim process was recommended.

Respondents stated that mental health and social supports would also be necessary, including opportunities to debrief. It is important to ensure a trauma-informed response to address the emotional hardships and stress that accompany disasters. Trauma-informed and violence-informed approaches recognize the connections between violence, trauma, and negative health outcomes and aim to increase safety, control, and resilience for people seeking services due to trauma and/or have a history of experiencing trauma or violence (Public Health Agency of Canada 2018). The importance of keeping families together was emphasized and noted as being important for caretaking considerations. A survey respondent noted that the COVID-19 pandemic was raised as a lesson that emergencies can "change people". Respite services were recommended to allow family members and caregivers the opportunity to address repairs and other recovery responsibilities. This can enable families to conduct recovery work while their loved one is cared for.

Table 5.1. Access to information, mental health services, access to medical treatment, and ability to maintain hygiene are some of the top-of-mind issues of surveyed people with disabilities and caregivers relating to return from an evacuation.

What are the top accessibility issues that come to mind relating to return from evacuation?
1. Access to information (e.g., print, non-print, digital)
2. Access to mental health and emotional support services
3. Access to medical treatment (e.g., medications, treatments)
4. Ability to maintain personal hygiene
5. Plans in place for successful return and recovery
6. Whether or not first responders are aware of who and where vulnerable people are
7. Need for an intervenor with appropriate skills to provide support
8. Lack of community and family support
Additional information provided by survey participants
Knowledge sharing is important and needs to be intentionally done
Standards for evacuation procedures for people with disabilities.
Timely, accurate, and accessible information is important.
A significant portion of the population struggles with accessibility, financial resources, home care, and other supports.

5.2. Emergency management survey findings

80% of survey respondents had roles relating to evacuation or emergency management and rated their knowledge of evacuation processes as 8–10 out of 10. All respondents also rated their knowledge of the accessibility of evacuation processes as 7–9 out of 10. 80% of respondents had previously supported evacuation efforts of houses, buildings (e.g., long-term care facilities), and communities (e.g., First Nations), including evacuations due to fire, flooding, and extreme weather events.

These evacuations included supporting people with disabilities. 60% of respondents rate the accessibility of current evacuation processes at 6 out of 10, whereas the remaining 40% rate this at 2 out of 10. This demonstrates a discrepancy, even within the emergency management community, about the degree of accessibility of current evacuation processes. Part of this can be attributed to differences between jurisdictions, the disconnect between strategy, standards, and implementation, as well as issues communicating evacuation planning in advance that reaches the public effectively.

80% of respondents indicated participation in an evacuation practice and 90% participated in multi-organizational meetings about evacuation or emergency management more generally. Organizations involved include RCMP, EHS, Fire Department, emergency management organizations, Ground Search and Rescue, Red Cross, public health, emergency services, animal health support, Autism Canada community advisors and ambassadors, organizations within the disability community, First Nations, and Indigenous Services Canada. In terms of improving these meeting spaces, respondents recommend increasing sharing of best practices

and identified lessons, as well as expanding active engagement with people with disabilities and other stakeholders.

The accessibility considerations that were top of mind for the emergency management respondents highlighted the importance of planning that considers a diverse array of functional needs (e.g., visible and invisible disabilities), creation of back-up plans, and plans to address specific accommodations. It is vital that the disability community be active in the planning, learning, and post-event debriefs to ensure their lived experiences shape responses. The support of families, friends, and communities becomes increasingly important during emergencies but also might not be feasible depending on the circumstances. Survey respondents in the emergency management sector recognize that the public lacks the knowledge to prepare for an evacuation effectively.

Survey respondents identified that improvements should be made to educate the general public about how to better prepare for evacuations. One recommendation was to implement mandates to ensure evacuation plans with legislated considerations for people with disabilities. Community organizations, such as disability organizations, should be involved well in advance of an emergency to address any gaps and improve training for personnel at all steps of evacuation. Opportunities for people with disabilities, caregivers, and emergency mangers to plan for emergencies together in advance are important. Emergency plans need to capture the needs of people with disabilities and caregivers, and these communities can better prepare for emergencies with the technical knowledge and experience of emergency managers and responders. In Manitoba, the Disability Emergency Management Network (DEM-Net) and in British Columbia the Disability Alliance British Columbia takes an active role in emergency planning and training (Independent Living Resource Centre 2023; Disability Alliance British Columbia 2023).

Specifically relating to return to the community, emergency manager respondents recommended that home checks be required before returning people with disabilities to their residence. This includes ensuring the residence is operational (e.g., access to utilities, free of hazards) and there is access to social supports (e.g., food, transportation, mental health services, support workers). There are also considerations for any medical equipment and assistive devices that impact safe return to community.

5.3. Roundtable findings

A roundtable on the topic of return to the community following an emergency evacuation was conducted on April 17, 2023 with 15 members of the Advisory Board and invited stakeholders. Participants discussed experiences and contexts relating to return to community after an evacuation.

It is important to consider processes that determine whether or not a residence is safe and accessible to return. Similar considerations also relate to the shelter phase of evacuation. Each jurisdiction has its own process to lift an emergency order that has mandated an evacuation. At times, third parties (e.g., contractors) are involved in repair work. Concerns about impacts on dignity of risk were raised as a caution to ensure responses are not paternalistic and limit the dignity of the people processes are intended to support.

The fact that evacuations are rare events and the majority of Canadians have never experienced them means that there will be significant challenges for first-time evacuees as these events increase in frequency and severity. Members at the roundtable raised that it is important to ensure that emergency responses consider the needs of renters and people in poverty in addition to homeowners.

Personal support workers are often strained for resources and capacity and this would be accentuated during an emergency situation where there will be increased reliance on personal support workers. There needs to be support for workers in these fields.

The role of insurance is important as recently demonstrated in the response to post-tropical storm Fiona. Residential insurance claims in response to Fiona were 4 to 5 times higher than other disasters. Losses were most significant in Nova Scotia and Prince Edward Island.

Typically, insurance companies have the goal to repair and rebuild in the same location. The importance of implementing "build back better" concepts emerged, particularly with respect to insurance processes and the current focus on adhering to minimum standards. While insurance companies will make repairs according to the most up-to-date building codes, more should be done to incentivize and encourage principles of building back better to improve resiliency rather than returning people to exactly what they had in place before the disaster. "Managed retreat" was also discussed as processes to relocate families living in vulnerable areas (e.g., coastal).

Training should be put in place for all professionals and volunteers involved in emergency response (e.g., responders, insurance adjusters, non-profit volunteers) that is led by people with disabilities with the aim of making emergency responses more accessible to diverse functional needs.

Implications of widespread issues with access to safe and accessible housing on emergency responses were raised. It is also important to recognize the needs of rural communities and implications of access, or lack thereof, to transportation.

6. Discussion

We learned through the survey, from both emergency managers and people with disabilities, that top concerns with return to community relate to addressing damage and debris. Concerns about access to utilities were raised, including necessities such as food and water. Respondents with disabilities noted that repair work is a concern, and caregivers identified specific concerns for managing repairs while providing caregiving support. Emergency manager respondents recommended that specific criteria be identified for emergency personnel to determine that a residence is operational (e.g., access to utilities, free of hazards) must be known, including access to supplies and supports (e.g., food, transportation, mental health services, support workers). There are also considerations for any medical equipment and assistive devices that impact safe return to community for people with disabilities, as well as service animals and their needs.

Planning for safe return for a community is comparable to preparing to evacuate, where advance preparation is paramount. Members of the public, especially those with disabilities and caregiving responsibilities, should know as much as possible about what they can expect upon return to the community, including what supports will be available and who will be responsible for specific duties.

Insurance was a common consideration raised by our survey respondents. Some people with disabilities noted they were comfortable with their insurance coverage and felt fortunate to have financial resources to help recover from an emergency. Respondents confirmed their reliance on insurance to recover and replace lost or damaged property. Knowledge about what specific policies cover is important, as coverage changes depending on the emergency (e.g., fire damage compared to flood damage) and the majority of policyholders are unaware of the nuances of their coverage. It was also raised that people have varying degrees of insurance coverage and may not be able to pay out-of-pocket expenses (e.g., insurance deductibles). The academic literature shows that there are many different forms of insurance and not all of them meet the needs to recover from every disaster. Although past disasters have shown insurance payouts can be slow and the claims process cumbersome, insurance coverage is a powerful tool for recovery. Respondents recommended that advanced preparation and knowledge about the insurance process would be beneficial, as well as support to navigate insurance claims following an emergency. Support for caregivers while they navigate the insurance process was also recommended. Specific consideration is also necessary for processes to replace medical equipment and assistive devices.

Much of the focus has been on setting standards to make emergency management processes more accessible. Information gathering and behaviour change are also necessary. Survey respondents noted that training, particularly in emotional support and trauma-informed approaches, is important. Not only was the issue of having sufficient staff and volunteer capacity to support return and recovery raised, but also the importance of capacity for emotional, psychological, and trauma-informed support. Community organizations, such as disability organizations, should be involved well in advance of an emergency to address any gaps and improve training.

Survey respondents raised mental health services and social supports as important considerations. The scholarly literature shows that increases in mental health issues follow a

disaster, specifically PTSD. The literature suggests that prolonged suffering from PTSD can have long-term health, economic, and psychological impacts.

7. Areas for further research

Since many people have not experienced an evacuation, strategies to prepare for many first-time evacuees will be important for return and recovery. Communities should be engaged in advance of an emergency to prepare, but many challenges can arise with first-time evacuees even with advance preparation. In particular, preparation and knowledge about insurance and disaster-relief funding processes would be beneficial, as many people may not be aware of the specifics of their coverage or how their coverage varies according to the disaster. Support to navigate insurance and relief-funding processes following an emergency is also recommended. People with disabilities and caregiver respondents recommended provision of caregiving services to enable caregivers to complete return and recovery tasks (e.g., repair work, insurance processes, clearing damage or debris).

Further, much of the scholarly literature focuses on countries other than Canada, particularly the US. There is especially a gap in identifying specific considerations for people with disabilities and caregivers in the return and recovery phase of an emergency evacuation.

Further research is also needed on the reasons why people decide whether or not to return from an evacuation.

Increases in disasters have intensified discussions of voluntary registries of vulnerable persons., where volunteered information is collected and accessed for emergencies. Many emergency managers may not be aware of the access needs within their communities, who would be the most vulnerable in an emergency, and where those people would be. Vulnerable persons registries are a tool to help address this, but there are many challenges regarding information management, communication, and governance. There are Canadian and international jurisdictions using these registries to look to.

Other areas of future study include improved engagement with people with disabilities in advance of an emergency, the role of community bonds and social capital in building community resilience, specific considerations for caregivers, and comparisons between urban and rural communities.

Research into appropriate context and best practices to enable evacuation training, especially in a way that addresses potential panic, is necessary. Additional research in this area will be necessary as impacts of severe weather and climate change become more significant, recognition of the importance of accessibility progresses, and rights for people with disabilities advance.

Appendix A: Definitions

Build Back Better (BBB) refers to "the use of the recovery, rehabilitation and reconstruction phases to improve physical, social, and economic resilience" (United Nations Office for Disaster Risk Reduction 2023; Hofmann 2022).

Disability is defined in the *Accessible Canada Act* as "any impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment — or a functional limitation — whether permanent, temporary or episodic in nature, or evident or not, that, in interaction with a barrier, hinders a person's full and equal participation in society" (Government of Canada 2019).

Normalization is defined by the Government of Canada as "the process of removing the effects of external influences from a set of data to improve consistency and comparability. For example, adjusting data for inflation or the value of money over time" (Treasury Board of Canada Secretariat 2023).

Resilience refers to a range of systems that are able to remain stable when facing shocks and stresses, recover following an event, and adapt to new circumstances (Hofmann 2022). There are many definitions of resilience across many schools of thought, and we use the above definition for the purposes of this paper.

Recovery refers to the restoring of livelihoods and health, including economic, physical, social, cultural, and environmental assets, systems, and activities, of a disaster-affected community (Kushma 2022, xx)

Trauma-informed and violence-informed approaches recognize the connections between violence, trauma, negative health outcomes, and behaviours. These approaches aim to increase safety, control, and resilience for people seeking services in relation to experiences of trauma and/or who have a history of experiencing trauma or violence (Public Health Agency of Canada 2018).

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