

After the Flood

Community Response & Recovery

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April 2023



ACKNOWLEDGEMENTS

The authors would like to extend thanks to the hundreds of participants who were willing to share their experiences with us in this report. Your time and stories were invaluable to this research, and we appreciate the humility, vulnerability and strength demonstrated through your experiences. We would also like to thank Yoriko Davidson for her tireless efforts to make this research possible. We would finally like to thank Dr. Martha Dow for her constant support and direction.

Archway acknowledges this project has been made possible thanks to the support of the Ministry of Emergency Management and Climate Readiness and the City of Abbotsford.



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Introduction

Globally, natural disasters are increasing in frequency and severity.¹ This shift can be attributed to a variety of complex factors including a changing climate, populations growing in disaster-prone areas, inadequate infrastructure, and insufficient emergency management processes.² The sudden onset of the flood in November 2021 in Abbotsford, British Columbia forced residents, organizations, and governments to quickly mobilize in response to the needs of citizens and to prevent further damage. Fortunately, there were no reported human fatalities in Abbotsford as a direct result of the flood. That said, the Insurance Board of Canada estimates insurable losses at close to \$675 million dollars, with some estimates of the total cost of recovery from the flood being up to \$9 billion dollars.³ In a report released shortly after the flood, Public Safety Canada warned of the potential consequences if communities are unable to properly invest in preparedness and response measures.⁴

The November 2021 flood in Abbotsford was not unprecedented.⁵ The geographic area of Abbotsford and in particular the Sumas Prairie has had multiple well-documented flood events.⁶ The scope of this report is to reflect on and learn from the experiences of diverse groups of people who had some involvement in the flood response, either as an impacted person or helping those who were. Additionally, this report will highlight the key services that were accessed and discuss how these supports could be strengthened and improved by governments and service providers in preparation for future disaster events.

The November 2021 flood response saw many community members respond to the needs of the impacted communities. Most participants in this research project indicated that the community response to the flood was to be commended. In particular, those individuals who stepped up as community champions were highlighted, yet these individuals expressed that they did so out of necessity. Further, those who were impacted by the flood and its response face immense challenges which linger to this day, particularly with some of the systems through which they are trying to access funds that were pledged by the government.

It should be recognized that many of the participants in this report, as well as citizens of Abbotsford, are still responding to and recovering from issues resulting from the flood. As such, there have been understandable effects on their mental health and well-being, particularly for those that experienced evacuations and/or had their businesses or homes damaged.

This report identifies some of the groups who faced complex challenges, what some of those challenges were, specific services individuals identified that could have been improved, and changes and recommendations people who responded to or experienced the flood have suggested in order to strengthen the response to future disasters.



Understanding Abbotsford

02

Historical Context of Semá:th Xo:tsa (Sumas Lake)

When discussing the recent flood of the Sumas Prairie, it is important to take into consideration the history of this land before it was developed for agricultural purposes. Prior to colonization, this area was known as Semá:th Xo:tsa (Sumas Lake), a plentiful lake and wetland environment that was the backbone of the way of life for the people of Semá:th First Nation. In the early twentieth century, Semá:th Xo:tsa was drained as settlers expected these efforts to expose rich soil that could be used for agricultural purposes. Now, almost a century later, as the city witnessed the waters rise in Semá:th Xo:tsa once again, this history has reemerged in a new way. Conversations arose regarding the past, as well as the future of the land now referred to as the Sumas Prairie. Thus, the recent flood of the Sumas Prairie presents an opportunity for various levels of governments, Indigenous and non-Indigenous, to collaborate and ensure that Indigenous knowledge and values are included in the future decisions regarding this land.

Given that Sumas Prairie was not always dry land, it is unsurprising that the Fraser Valley has historically experienced multiple large-scale floods in the areas surrounding Abbotsford. Oral histories from the Coast Salish people discuss earlier large-scale floods in the area.⁷ Some of the most historically significant flooding events occurred in 1894, 1948, and 1990. The records of the 1894 flood are limited, yet it's estimated that this was one of the largest floods in the Abbotsford area.⁸ However, no estimated numbers of evacuations were found. In the 1948 flood, approximately 16,000 individuals were evacuated.⁹ Again, in November of 1990, the area around Abbotsford including the Sumas Prairie flooded due to the Nooksack River overflowing and heavy rainfall. In this flood, thousands of people were evacuated, and two individuals died.¹⁰ While this history does not lessen the tragedy of the 2021 flood, it does contribute to the narrative that will ideally fuel systemic changes.



Agricultural & Economic Factors

Abbotsford is an extremely productive agricultural community in Western Canada. Some sources assert that Abbotsford is the most productive farmed area in North America on a dollar per hectare basis.¹¹ Farming is a vital industry to the Fraser Valley, providing many with livelihoods as well as contributing to food security in North America and beyond. Much of the farming in Abbotsford takes place in floodplains nearby water sources, such as the Matsqui Prairie alongside the Fraser River, and the Sumas Prairie. As noted, efforts to drain Sumas Lake started in the early twentieth century, and now the region has transformed into one of the highest yielding agricultural areas in Canada. In 2022, the agriculture industry supported 23% of jobs in Abbotsford and \$3.83 billion dollars in economic activity.¹²

The strength of this industry, partially attributable to the city's proximity to the border, facilitates trade and transportation to the United States. Despite this successful industrial basis, an increasing number of individuals experience economic precarity due to inflation, food security concerns and housing costs, and when a disaster hits, those challenges are exacerbated.

The way policymakers respond to disasters and the resources and supports that are immediately accessible to people can change the long-term trajectory of community recovery. Thus, efficient and effective disaster response at all levels of government is critical.



Methodology

The purpose of this report is to examine the social impacts of the 2021 Abbotsford flood, the challenges faced by those individuals and organizations responding to the flood, and finally to provide recommendations based on the experiences of people impacted by the flood as well as service providers. The question of social impacts was examined through the administration of a survey targeting those directly impacted by the flood and qualitative interviews and focus groups with service providers and others involved in the flood response.

First, the survey collected demographic information to situate the survey. The majority of the survey addressed questions related to evacuation experiences and status, experiences with disaster aid (such as the Canadian Red Cross and Disaster Financial Assistance), items and services accessed, communication, and some physical, social, and mental health-related questions which drew upon scales such as the Brief Resilience Scale (BRS), the Impact of Event Scale (IES-R), and the Oslo Social Support Scale (OSSS-3).¹³ The survey was developed through extensive consultations with the community partner. The findings of the survey are included throughout the report and discussed in conjunction with the qualitative findings.

The survey was opened on December 5th, 2022, and closed on January 31st, 2023. To be eligible to participate in the survey, participants must have been aged 19 and older, Abbotsford residents, and accessed services due to the flood. The survey had 107 respondents.

While a questionnaire was deemed necessary, survey fatigue was a key consideration in the design of the instrument as feedback was provided that many impacted individuals were tired of filling out paperwork and sharing their often-traumatic experiences of the flood, particularly without feeling like any tangible change has, or will, come from this experience.

The qualitative analysis entailed six steps which were 1) familiarization with the data, 2) coding, 3) generating initial themes, 4) developing and reviewing themes, 5) refining, defining, and naming themes, and 6) writing up the findings.¹⁴

The qualitative portion of this project included 15 semi-structured interviews and five semi-structured focus groups. The interviews and focus groups were conducted with service providers and other individuals involved in responding to the flood including first responders, mental health professionals and others working with vulnerable populations such as youth and temporary foreign workers.

The researchers endeavoured to include as many voices as possible but this was made more difficult due to the ongoing class action lawsuit involving the City of Abbotsford, FVRD, and the Province of B.C.

“People are... frustrated with government systems and stuff and filling out forms and feeling like you're not going to get anything anyway. Even like this research... hopefully there's a good enough response from residents doing the survey, but that's tough because they've already been asked to participate in other things. And it's like to what end, you know, and in some ways, people are just tired.”

—Participant



Understanding Disaster Discourse

The way that a disaster is conceptualized and understood can transform the response and the long-term effects of the disaster.¹⁵ How a disaster is defined will differ depending on the nature of the event and the local context. As such, it is critical that disaster response and recovery is highly attentive to the specific and complex situational realities. This creates a challenging task for government agencies responsible for supporting communities following a disaster as there is no 'one size fits all' way to assist in disaster response and recovery. Relatedly, too often, injury and mortality statistics are not appropriately contextualized with researchers noting that "short-term assessments of mortality impacts of other similar disasters are potentially misleading if they fail to incorporate the longer-term impacts on population health."¹⁶



We were very fortunate in the atmospheric river event throughout the province that there were so few mortalities. That's a double edged sword unto itself. High mortality disasters get a lot of attention and a lot of sustained support and political support down the road, funding support down the road. High mortality disasters change future outlooks, they change policies. Low mortality disasters give us a sense of false confidence. It says we're already doing really good.

—Participant

It is critical for governments to listen to communities and collaboratively define what recovery should look like. Understanding communities' unique needs, challenges, and barriers is key for recovery.

It is well established that investments in preparedness and mitigation activities will ultimately reduce the future frequency and impacts of disasters regardless of the community. For example, Public Safety Canada determined that for every one dollar invested in mitigation efforts, approximately seven to ten dollars can be saved in post-disaster recovery.¹⁷ Thus, as critical as it is that governments support communities in disaster response and recovery, it is just as critical, if not more, to support communities in disaster preparedness and mitigation efforts.

"I think for people to pat themselves on the back and say, you know, we got through this, nobody died."

—Participant

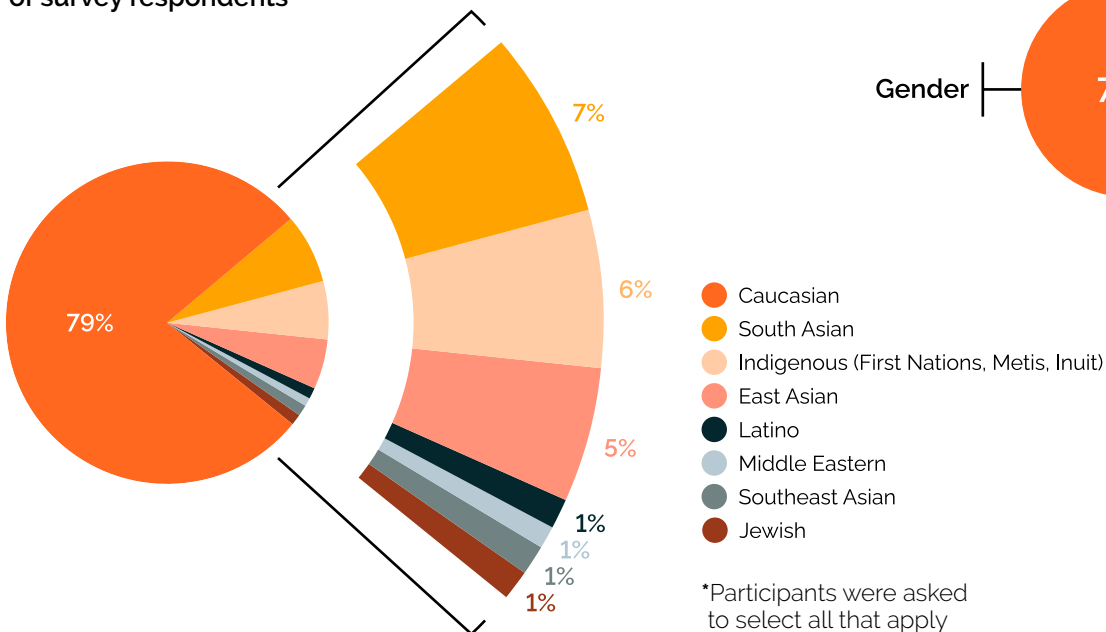
Key Survey Findings

04

Survey Demographics

The average age of the survey respondent was 38 years old (born in 1985), with 97% identifying as Canadian citizens. At the time of the flood, 65% identified as owning their own property, 28% identified as renting the property, and 7% said other/prefer not to answer.

Figure 1: Ethnic/racial background of survey respondents



Do you self-identify with having a disability?

No

Yes

87%

13%

Gender

Female

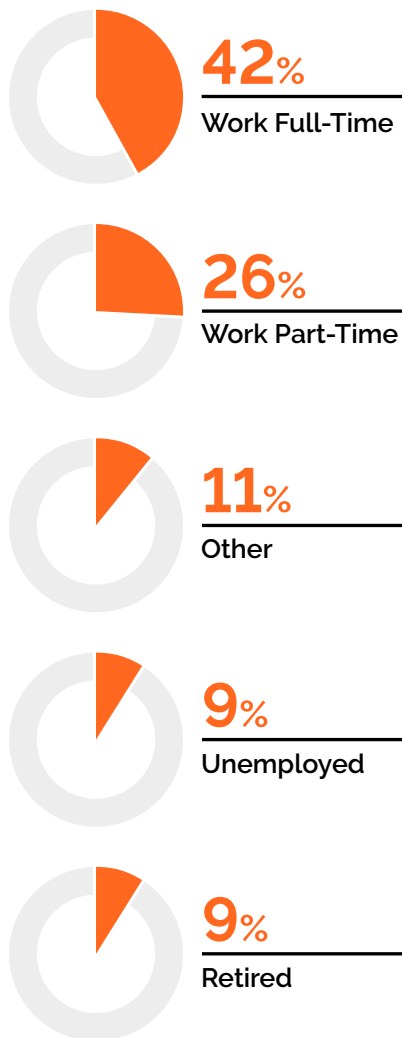
Male

74%

25%



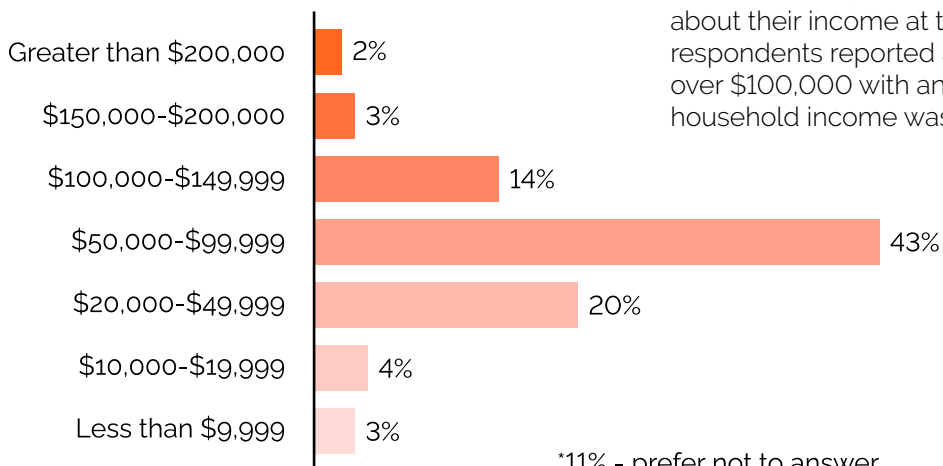
Figure 2: Current employment status of survey respondents



Currently, 80% of respondents live with family members and 13% live on their own. While 68% of respondents work full- or part-time, 11% of respondents replied "other" with some responses in the "other" category including "home maker", "stay at home mother" and "self-employed".



Figure 3: Survey respondents' yearly household income at the time of the flood



At the time of the flood the respondents worked in a variety of industries including agriculture (20%), education (9%), and healthcare (8%). When asked about their income at the time of the flood, 19% of respondents reported an annual household income over \$100,000 with another 27% indicating their household income was below \$50,000.

Evacuation & Flood Response

Results indicated that 77% of survey participants had to evacuate their homes because of the flood. If evacuated, the most common ways that people in the survey learned that they needed to evacuate were from emergency personnel coming to the door (37%) and word of mouth (28%).

It is worth noting that in the space for "other", many participants indicated that they learned they needed to evacuate because of rising water levels— "water entering the home", "water surrounding house and flooding inside home", and "water was flowing like a river into our yard". One in five (20%) survey respondents identified that they experienced illness or injury as a result of the flood or clean up.

Of those who evacuated, 21% indicated that they immediately evacuated to Tradex and/or the Abbotsford Recreation Centre (ARC). Of those who did not evacuate to Tradex and/or ARC, 86% went to the homes of friends or family. 51% of respondents who evacuated indicated that they spent their own money on temporary accommodation.

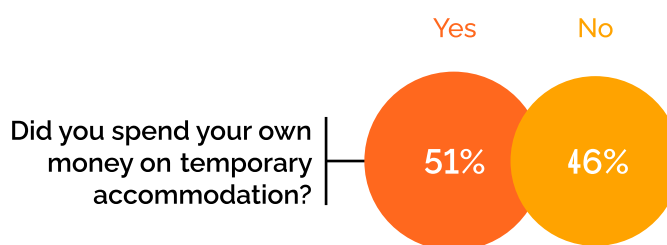
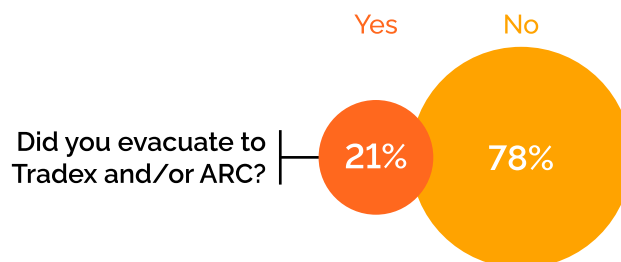
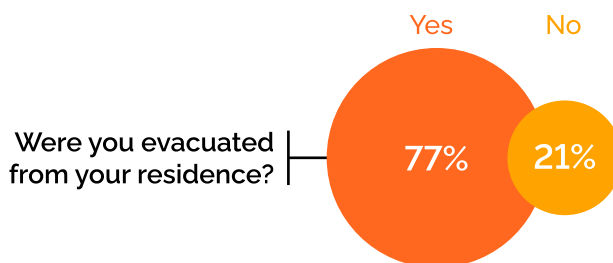


Figure 4: How survey respondents learned they needed to evacuate

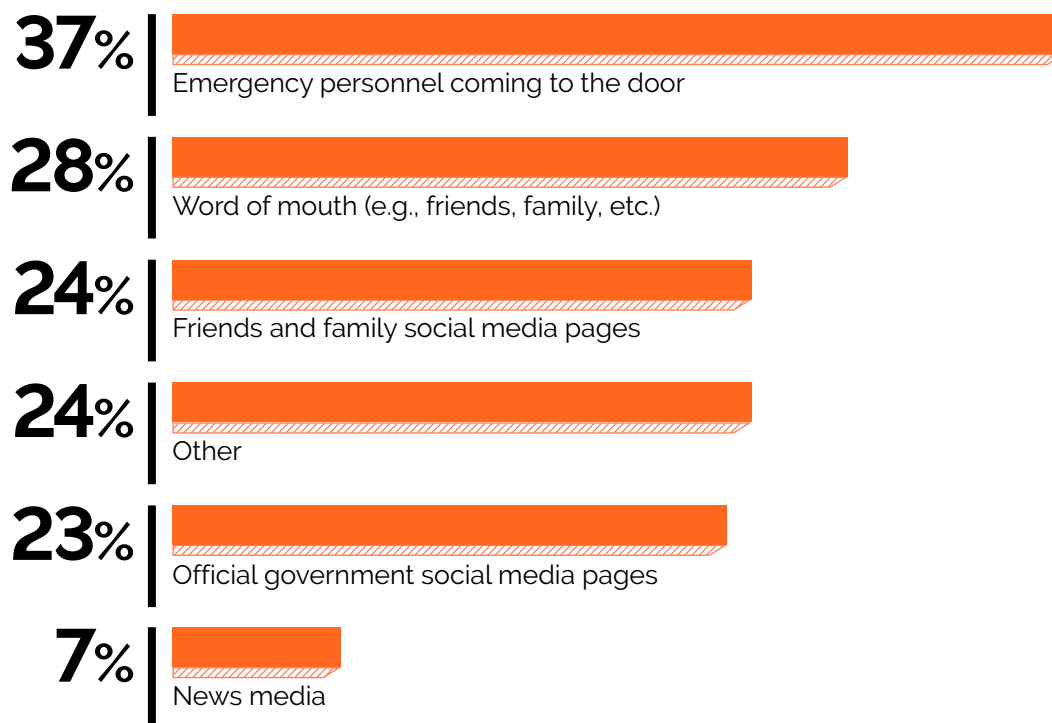
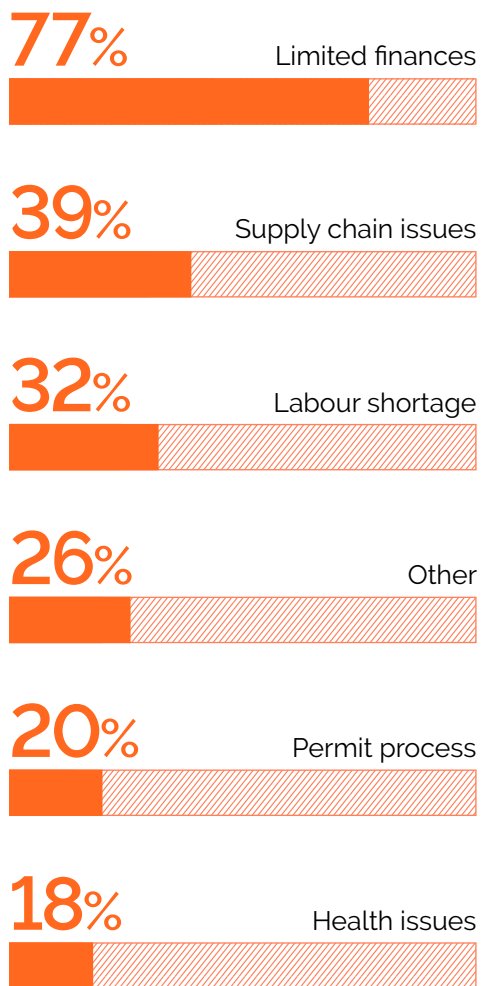
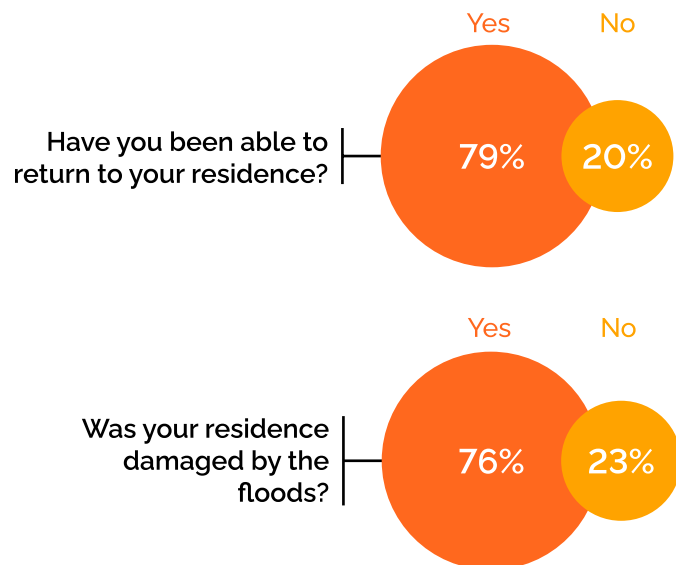


Figure 5: Barriers survey respondents faced when returning to their flooded residence



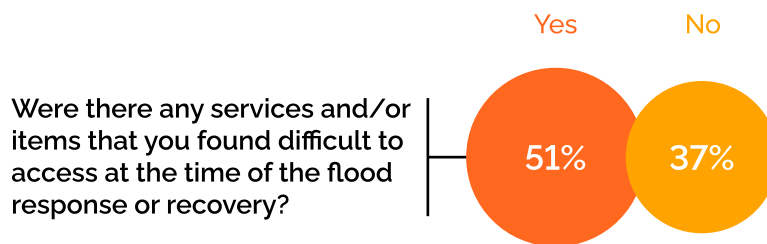
Of those who were evacuated, 79% of respondents were able to return to their residence, whereas 20% had not returned to their homes at the time of the survey. The key barriers that evacuated residents identified facing when trying to return to their flooded residence were limited finances (77%), supply chain issues (39%), and labour shortage (32%). In the space for "other" people mentioned: "An emotional process we did alone", "mental health" and "PTSD".

In response to the question "Was your residence damaged by the floods?", 76% of all respondents answered yes.



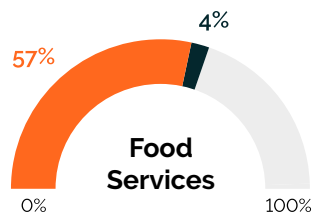
Services Accessed & Barriers Faced

Some services were accessed immediately in response to needs directly after the flood, and others were more necessary later in the recovery process. It is critical for governments to consider how to phase response and recovery to be best prepared for what is required at each stage of the emergency management process.¹⁸ Not surprisingly, accessibility was an issue with 51% of respondents indicating that there were services and/or items that they found difficult to access.



KEY SERVICES AT RESPONSE PHASE

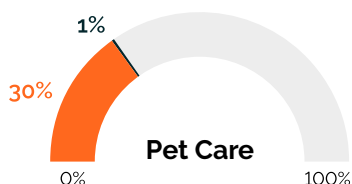
- Did Access
- Still Accessing



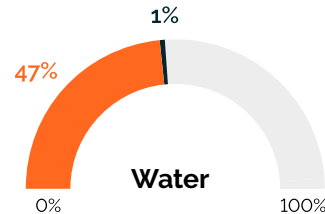
57% of survey respondents accessed food services after the flood, with an additional 4% of respondents indicating they are still accessing this service.



53% of respondents accessed clothing services after the flood.



30% of respondents used pet care after the flood.



47% of survey respondents said they accessed clean water after the flood. The water was turned off in the Sumas Prairie for a period of time, and this was particularly impactful for the farmers who stayed on their properties and needed water for their animals.¹⁹ Additionally, contaminated water was an ongoing concern as transportation issues made it difficult to get water into these areas. This resulted in serious concerns such as water born illnesses, contamination, and the lack of clean water for animals.



50% of survey respondents accessed personal hygiene services after the flood.

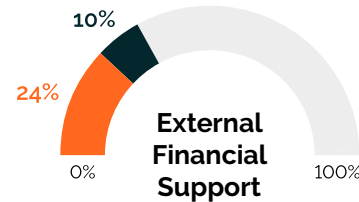
KEY SERVICES AT RECOVERY PHASE

According to survey respondents, services that were being continually used in the recovery phase are clean up and rebuilding labour services, mental health services, restoration/cleaning materials, and external financial support.

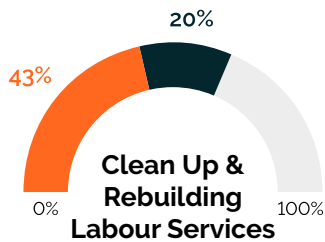
● Did Access
● Still Accessing



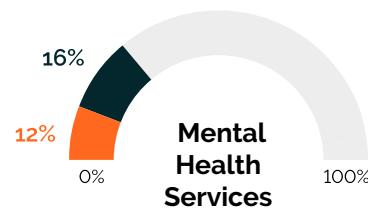
52% of respondents indicated they used restoration/cleaning materials after the flood. At the time of the survey, 11% of respondents indicated that they were still accessing these services.



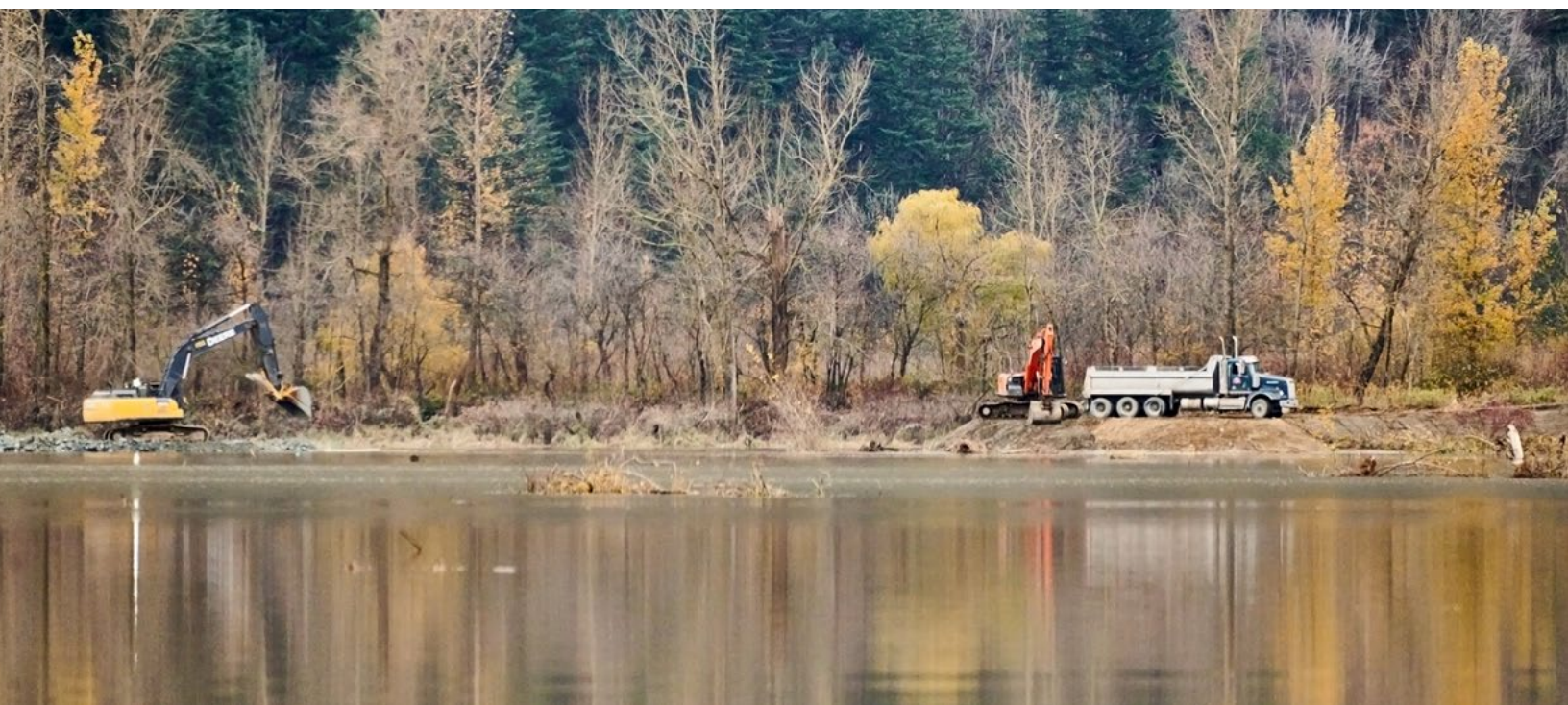
24% of respondents indicated they used external financial support. At the time of the survey, 10% of respondents indicated that they were still accessing these services.



43% of respondents indicated they used clean up and rebuilding labour services. At the time of the survey, 20% of respondents indicated that they were still accessing clean up and rebuilding labour services.



12% of respondents indicated that they used mental health services. At the time of the survey, 16% of respondents were still accessing mental health services.





Additionally, survey participants were asked to "briefly describe the services/items you needed and the challenges you faced accessing them". Some of the themes that emerged were issues with financial aid, including the Canadian Red Cross funding and Disaster Financial Assistance, medication, transportation, lodging, waste, communication, cleanup, rebuilding, and mental health. Additionally, survey respondents indicated agricultural support such as livestock feed and transportation, as well as employment assistance for farm labor were services that they experienced some challenges in accessing.

"Money... Anything government or Red Cross related was very difficult, the hubs and churches and community supports were what kept everyone going."

—Participant

"It was difficult to access a physician to get emergency medication. I was only able to do this since I have a physician friend. Housing was also a challenge since due to my disability I needed a full kitchen to cook meals. Therefore the hotel rooms provided by Red Cross that only had kitchenettes were not an option. My youngest and I moved [multiple] times."

—Participant

"We could not get out of our location for 12 days during the flood as we live on the mountain side. We had to walk out on the tracks to have food/dog food delivered to us."

—Participant

"Because my property wasn't damaged, I was not eligible for financial assistance, even though all of my projects were under water and flooded. I was not able to return to work for months after I returned home. I had to go into massive debt to get by."

—Participant

"Finding a place to rest our heads at night, food, we were limited on money so that was hard."

—Participant

"We needed someone to come to our home to show us what needed to be done... not one restoration company would come."

—Participant

"We didn't know there was help at the Tradex right away. There was no communication."

—Participant



Preparedness

There are many concerns when it comes to disasters that are relevant, important, and should be addressed by policy makers, governments and the social sector. The key themes presented in this report were identified by participants as critically important in strengthening disaster response and recovery particularly in the Abbotsford context. Many of the themes identified by the participants are connected to the priorities of Public Safety Canada when it comes to emergency management during a disaster. These include "disaster prevention and mitigation activities" (such as strengthening infrastructure), enhancing "disaster response capacity and coordination" and "strengthening recovery efforts."²⁰

Disaster preparedness should be a critical component of any organization's plan, particularly when the organization is socially oriented and may need to respond to community needs.²¹ When asked about disaster preparedness, many participants indicated that they, as individuals or their agencies, could be more proactive in preparing for future disasters. That said, many of the agencies did identify that they had procedures in place which contributed to their disaster preparedness and response. Some participants expressed an interest in learning more about the ways in which their organization could be more prepared for future disasters.

"How can we be prepared for future emergencies? What can we do ourselves to make sure that we are not impacted as much?"

—Participant



Additionally, some participants discussed the critical role that community members themselves play in assisting one another in responding to disasters. Research supports these comments revealing the critical role that informal social networks play throughout disaster response and recovery.²²

"It can't be 100% the individual's responsibility, but I think... a good place to start is individual preparedness, and preparedness amongst close knit groups... like neighbors and such. There will be times that... emergency service providers are not able to reach people in a timely manner so establishing neighbour, neighbourhood support for individuals to check up on those that they might see as needing assistance or might be a little more vulnerable."

—Participant

The Flood Response & COVID-19

Response efforts to the 2021 flood need to be understood within the context of COVID-19 with particular attention to those working throughout the immediate response to the flood. Participants acknowledged both the opportunities that arose from the COVID-19 context and the challenges that the pandemic presented to the flood response. Some participants stated that due to the immediate nature of responding to the needs of those impacted by the flood, COVID-19 was not a top concern, nor were COVID-19 protocols a high priority.

"COVID was out the window at that point."

—Participant

"We didn't even think about COVID for three weeks."

—Participant

"We all washed our hands and put on masks, we all took turns eating in different spaces, but as far as what we did and how we did it, it didn't drastically change our reality of this specific response."

—Participant

One positive by-product of the pandemic that aided the response was that many organizations were technologically prepared to facilitate meetings virtually. This was particularly beneficial because many organizations faced transportation issues due to road closures, specifically the closure of the Trans-Canada Highway.

"One thing that was definitely a benefit of COVID is we were able to do a lot of these things with the...committees and stuff, we're able to do a lot of that through Zoom, that would help us to move fast."

—Participant

"I was still able to do most of my work, connecting to our servers and doing the things that were required remotely. And had we never done that, I don't know, it would have been a huge mess."

—Participant

For those who work in emergency response, the pandemic had meant that first responder organizations were often operating at limited capacity.²³ Participants stated that this resulted in the suspension of different working groups or tables, since organizations were prioritizing dealing with the impacts of the pandemic. Additionally, participants recognized that organizations had shifts in leadership or staffing as well during the pandemic, and so there was an impact on networking and knowledge regarding who was fulfilling key roles. These pre-disaster realities related to the pandemic impacted the flood response. One key lesson learned regarding operating a flood response during a pandemic is that the adverse impacts on networking may have contributed to a less coordinated response. It was apparent from the experience of participants that there is value in these working groups and meetings, as they allow for networking which facilitates a smoother emergency response.²⁴

"COVID had a part to play in this certainly as far as planning, contacts, that sort of thing."

—Participant

Finally, it is imperative that emergency management policymakers take into account the ways in which barriers experienced by community members amidst the pandemic were compounded by the flood. Research indicates that when a disaster hits, those already struggling often face issues that severely aggravate their circumstances.²⁵ Additionally, policy makers must account for those with existing mental or physical health issues that are then exacerbated by a disaster and in the case of the 2021 flood further compounded by the pandemic.²⁶

"We used to sit [at] a table on a monthly basis. We knew each player...I think there was so much knowledge there, but that kind of went away."

—Participant

"We were already dealing with the isolation of COVID. And then on top of it, I'm now not only isolated because there's not things that are open, but I'm also physically isolated, and things were just opening up, definitely compounding."

—Participant

"We saw this with COVID and other disasters too, basically the discrepancies of adversity, they get ramped up, like those increased dramatically."

—Participant



07

“The Outpouring of Generosity” Support & its Sources

Abbotsford, like many communities, has substantial socio-economic diversity.²⁷ Some citizens have a greater ability than others to support those facing economic and social challenges through financial donations. This is demonstrated in part with the observation that Abbotsford-Mission is the most charitable metropolitan area in Canada for the 18th year in a row, and this was evident throughout the food response.²⁸

Many participants expressed that an overwhelming abundance of aid was contributed to the flood response, from both formal organizations and grassroots community groups and spanning from local to international. Participants explained that much of the most useful aid came from the generosity of the community with some suggesting that the community was best positioned to identify what specifically was needed.

This section of the report will examine the community response from the business, organizational and grassroots levels. It will also discuss some of the key issues and considerations related to aid for future disasters identified by participants.

Businesses

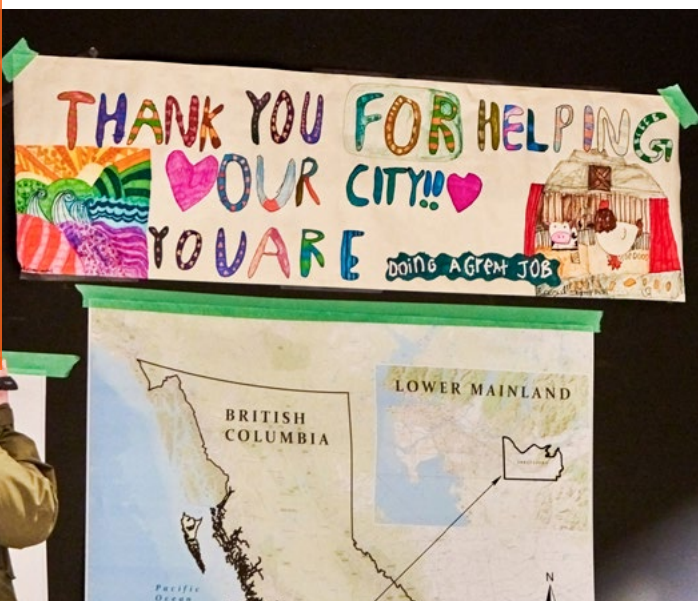
Many participants commended the businesses that supported the flood response. Participants commented that often businesses were more equipped than the general public to be able to meet industry standards, such as vehicle rental legalities or adhering to safe food preparation. Businesses played a vital role in the flood response with efforts to support the immediate needs of those impacted by the flood.

“We were working with restaurants. Every morning, we were rotating between [fast food company] and [fast food company] and so they would bring in breakfast sandwiches and coffee and that kind of stuff. That was all coordinated through the [organization]. So, we knew where it was coming [from and] how it was being delivered and prepared. Every day we would phone them up, tell them, and it was all free. They never charged us for it. We would just tell them [we’ve] got 50 people overnight, this is what we need and then they would provide. It was all coordinated, and there were different restaurants that stepped to the plate for supper or lunch.”

—Participant

“The event showed a great display of community effort. People helping people whom they didn’t know for entirely selfless reasons.”

—Participant



Participants acknowledged how quickly the private sector responded to the flood, despite how the private sector itself was also impacted, as well as the long-term support that these types of responses were able to provide. Support organizations generally spoke favorably about their experience working with businesses.

"The model [we] have with them is they will return their profits. So, they, all of the vendors, have been incredibly, incredibly helpful, giving the very best deals. And the only problem they're running into is [the] supply chain. People have ordered things but can't get them yet."

—Participant

It is important to acknowledge that businesses and organizations were cognizant of the fact that their employees who were unable to work needed reliable income. Some businesses and organizations continued to pay employees in these circumstances despite the financial challenges they themselves may have been facing.

"[We were] recognizing that these people are dependent on being able to come to work and the stability that work provides, and that it was also nearly three weeks or four or five weeks, I guess before Christmas, and then if they weren't working, how are they going to have a paycheck, right, like considering all of those pieces."

—Participant

“So it was definitely individuals and small businesses that were the first to step up. And that I think were the ones that lasted the longest.”

—Participant



Non-Profit & Charity Organizations

The various community organizations had different strengths, approaches, and capabilities in responding to the flood. Some organizations were directly affected by the flood themselves, but the majority were affected by either having service delivery heavily disrupted, seeing an increase in service demand, and/or pivoting services in order to best serve the immediate needs of flood impacted individuals.

One participant identified that the flood actually forced their organization to expand their donation system in order to keep up with the demand and identified this as one positive outcome of the flood response.

So, the [organization name] has a very tiny staff, and they deal in, you know, a dozen or 20 transactions in a year. [At the time of the flood] we were getting a donation every 20 seconds... So [the organization name] today is the benefactor of... a more streamlined [donation] process from start to finish."

—Participant



At the initial onset of the flood, many organizations had to navigate new challenges, such as the sudden large influx of donated items. Given that many major transportation routes were shut down, many companies who had food or other perishable goods to deliver were looking for ways to offload these goods that would be helpful to the flood response.

"Hey, I've got two semi-trucks full of lettuce. Can you take it?"

—Participant

"[We] just became really busy planning, reallocating."

—Participant

Additionally, many organizations did not have the administrative capacity to respond to all the inquiries that were pouring in regarding how they could best support flood affected individuals. Participants noted possible recommendations for future disaster response related to administrative capacity.

"Maybe a benefit for the future would be having people who could hop on quickly to help with administrative work or help with getting back to people."

—Participant

While initially these organizations were mostly responding to their regular clientele in addition to some new requests, it was apparent that people affected by the flood needed to be reached out to, rather than expecting them to reach out themselves. These organizations that found themselves inundated with donations used local connections to ensure that aid was most effectively distributed to the people who needed it and could use it.



"We sometimes would go to [the church], just down the road. They said nearly half the congregation, or a lot of people [who] attended the church actually were people in that area that was flooded. And so, they ended up becoming a service for us to... reallocate food because they had direct contact with all these people."

—Participant

Organizations were also aware that areas in British Columbia were cut off from supply chains and wanted to outsource the food as effectively as possible. Thus, being creative in the response and getting food to those in need became a new and complex responsibility.

"It really became about... outsourcing. All this food [was donated and] we just really had to outsource it as much as possible to people who [we] knew or worked directly with. I mean, we were catching helicopters that were going to Boston Bar and just trying to [get them to] take as much food as [they could and we were] putting [food] in these big trucks."

—Participant

Additionally, participants working to distribute material aid were quite mindful of the fact that if this disaster had happened in a densely populated location, rather than the relatively dispersed agricultural area of Abbotsford, the need for material aid could have been much greater.

"I think if we had an earthquake or another disaster that hit, say, the Clearbrook area, that would have been a completely different situation. I think we would have been a lot more overwhelmed."

—Participant

A participant that worked primarily in food aid delivery mentioned that "some kind of forecasting feature would be very helpful" to help them make the best use of the food aid that they were receiving. For example, organizations wanting to ensure they were responsible with the food were challenged by the unpredictability of the amounts and type of food being donated. This is a key issue that should be taken into consideration to better prepare for future disasters. It was also apparent that clear communication with the public regarding the current needs of evacuees can help mitigate some of the challenges faced in relation to donated items. An example of showcasing to the community what donations were needed can be demonstrated through the Abbotsford Food Bank website (**see Figure 6**), which shared with community members what items were most needed, including culturally appropriate food options, as well as what items were not needed.



FIGURE 6: FLOOD RESPONSE: ABBOTSFORD FOOD BANK²⁹

MOST NEEDED ITEMS

The items we rely on to be there for our community

Grocery Store Gift Cards
(suggested increments of \$25 for consistency)
(New Item!)

Frozen Meat (including Halal Meat) (New Item!)
Please drop off directly to Food Bank (33914
Essendene Ave)

Fresh Produce (New Item!) Please drop off
directly to Food Bank (33914 Essendene Ave)

Cooking Oil (Canola/Olive/Avocado) (Highly
Needed Item!)

Canned Vegetables/Legumes

Canned Meat

Rice

Dry Red Lentils, Chickpeas or Kidney Beans

Indian Tea

Dry Pasta

Tomatoes/Pasta Sauce

Cereal

Kraft Dinner

Atta (South Asian Wheat Flour)

Besan (Chickpea Flour)

NOT CURRENTLY NEEDED

Bottled Water

Toilet paper

White or Brown sugar

Salt

Meal Helpers

Beans/Ravioli/Chili

Dry Soup

Crackers

Canned Fruit

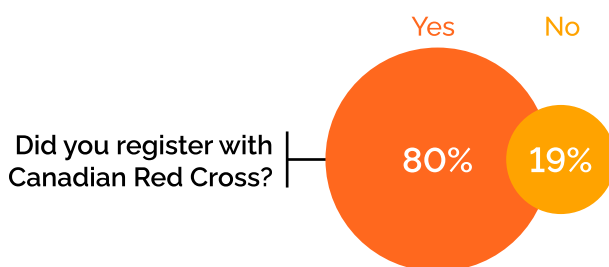
Canned Soup

Provision of Government Aid: Canadian Red Cross & Disaster Financial Assistance

The Canadian Red Cross and Disaster Financial Assistance (DFA) were two of the major financial aid avenues that assisted those impacted by the 2021 Abbotsford flood. Although the aim of these resources was to provide financial assistance, many participants expressed challenges and concerns regarding accessing these aids.

For people to recover in an efficient way, the government sources who have offered funding must ensure that funding allocation is prioritized. Not only can clear, efficient, and timely funding reduce the stress on people impacted by disaster, it also allows them to move into the next phase of recovery. People need to know their eligibility as well as the amount they will be receiving in a timely manner to make decisions about their futures. Clarity on eligibility and amount of support coupled with timely receipt is integral to recovery as it returns agency to people at a critical time in their lives.

Figure 7: Survey respondents who registered with Canadian Red Cross



“ [The hub] can help you with this administrative nightmare which is every different agency asking for all the same information and channeling it off into a different direction.

—Participant

“ So we had people who ended up going months without receiving the supports that they might have been entitled to getting.

—Participant

CANADIAN RED CROSS

The Province of British Columbia established a partnership with the Canadian Red Cross to provide immediate assistance to those impacted by the flood. Of note, 80% of respondents indicated that they registered with the Canadian Red Cross. The initial Red Cross funding was designed to respond to the immediate needs of those impacted by the flood, and it has also continued to provide support beyond that initial period. In the immediate aftermath of the flood, many flood affected individuals received \$2,000 from the Red Cross.³⁰ Some households experienced difficulty accessing the Red Cross funding due to a variety of bureaucratic and seemingly ill-conceived barriers.

“So when I went, I could sign up for the initial \$2,000, but I had been home for maybe five days now. They said ‘Sorry, because you’ve already gone home, we can’t help you.’ You had to go to the Red Cross before you went home so then they would compensate you. If you went after and said, ‘well, these are the dates I was there,’ they would not compensate you or give you any help whatsoever, whether it was jackets or food or the certificates. I didn’t need those, but if you went [to get help from the Red Cross] after you went home, they refused [you].”

—Participant



"Red Cross. Probably the same story you have already heard. Phone lines down. Not knowing they were at the Tradex. Once finding out where they were after returning home, they said 'sorry we cannot help you. You needed to come to us BEFORE you went home.' Did not have a clue that this was a thing. Very frustrating."

—Participant

"There were a few things. We received the initial \$2,000 from the Red Cross; however, lost everything other than our bedrooms to the floods. When I asked for additional funding they said that since we could sleep in our home, we were not eligible for more funds."

—Participant

"If you've got this insurance, then we can't give you from the Red Cross. If you got from Red Cross, we can't give you DFA, you know? It was so much of that red tape that people were just exhausted on top of being emotionally destroyed, right? So, it was difficult, rather than, 'let's see what we could do to make this as easy for you.'"

—Participant

In addition to the frustrations expressed around the distribution of the initial \$2,000, the Red Cross also employed a voucher system that limited how much individuals and families could spend on categories such as clothing, food, hygiene, etc. This system was challenging for both store staff and people impacted by the flood as it required individuals to complete calculations while in the checkout line to ensure compliance with the Red Cross allotments. Additionally, these vouchers could only be used in one visit, which forced individuals to purchase as much as possible to maximize the voucher's use. Many of the frustrations expressed were associated with these rigid spending categories and the short window to use vouchers.

These issues were compounded by the difficulties faced by those attempting to contact the Red Cross for assistance with navigating the voucher system.

"We did receive food vouchers; however, we had to use them by December 16th. We did not have anywhere to put the food as we did not have any appliances (fridge or freezer) or kitchen to store them. We were also told we could only buy food, not toothbrushes, shampoo, etc. So that was frustrating."

—Participant

Limiting individuals to allotted amounts for certain categories further removes agency from individuals to make the best choices for their families and can potentially hide what real needs may have existed for people impacted by the flood.

"Some of the Red Cross workers would be like, 'No, you have to stick to it.' And then some would be like, 'No, we'll cover it'... It was a little frustrating in the sense that I thought they could have done a better job of maybe just giving the victims the money that they needed and let them spend it how they thought they needed to spend it."

—Participant

While many significant challenges were experienced by the individuals directly impacted by the flood, it is important to also acknowledge the experiences of those responding to and supporting people impacted by the flood. For example, grocery store employees were faced with the difficult task of informing individuals in crisis that they would be unable to purchase the essentials they needed.

"It was actually traumatic. The whole experience because you had a lot of people that were just very frustrated and... people breaking down in the tills and saying they didn't know what they were going to do... I think it was very overwhelming."

—Participant

"We did have a lot of cashiers that would just pay for people's groceries. Because they didn't want them to go without so [they just paid]."

—Participant

Some suggestions drawn from the research would include having someone from the Red Cross set up at the grocery stores where individuals were able to use these vouchers. That way, the Red Cross could support the individuals working at the grocery store who were responsible for managing a cumbersome process. Another suggestion was to provide individuals and families with gift cards. People were already figuring out ways to circumvent the limitations imposed by the vouchers to get what they needed, so having a reloadable, virtual gift card that could be remotely accessed would have reduced barriers and stress for all involved and helped to restore a much-needed sense of agency among those most directly impacted.

"We had people crying in the lane, in the tills, and the checkouts, and then you feel awful because you're the one telling them they can't do it. But it's not because we don't want to do it... It was because the company wouldn't get compensated properly."

—Participant



DISASTER FINANCIAL ASSISTANCE (DFA)

According to the Province of British Columbia, "after a disaster, the provincial government may declare the event eligible for Disaster Financial Assistance (DFA)", which is designed to provide "financial assistance... for each accepted claim at 80 percent of the amount of total eligible damage less \$1,000, to a maximum of \$400,000. Once declared, the DFA program may provide applicants with financial assistance to restore uninsurable losses that are essential to [a] home, livelihood or community service."³¹ Essential is a key term in this statement. As one participant noted, "what one family thinks is essential but what the government thinks is essential is completely different."

According to a letter written to Mayor Henry Braun from the Minister of Public Safety and Solicitor General of British Columbia Mike Farnworth, as of July 18, 2022, \$13.4 million dollars in disaster financial assistance had been distributed by Emergency Management British Columbia (EMBC), and only one-third of the individuals had received payment. It is clear from the numbers above that individuals were waiting for long periods of time to receive their DFA payments. An advisory panel report examined the DFA system and the recommendations provided overlap heavily with the ones identified in this report.³² It would be useful for those organizations that are working in emergency response to review these recommendations to be prepared for the new process.

Please note that this report uses the term Emergency Management British Columbia (EMBC) rather than the new name, Emergency Management and Climate Readiness, since this was the title of the organization at the time of the flood.

"So they might be in... a recovery phase and wanting to move forward with their lives but they can't because they're still waiting on this application, or this grant, or this from the government. So when everybody talks about, like, oh, we're into recovery and resiliency... we're not because we still have all of these families that are... in limbo, waiting to see... am I remortgaging my house? Or do I have to go borrow money from my in laws? Or am I selling because I'm bankrupt from like, recovering all my belongings and repairing my house?"

—Participant

"The [DFA] application process stressed out a lot of people because it wasn't just something simply, like... calculate or list what you lost. It was how many volunteer hours? And who were those people and write down their names and what date did they help you volunteer? Then it was, did you have any emergency procedures in place? Do you have insurance? Who helped you? Did you rent things? What did you lose? Itemize like even one pair white socks, one pair of blue socks, one pair of red socks? Like you would itemize every single item per room per dresser, per shelf or whatever. And then I know it's a government thing, because it's a standard model across BC because we have natural disasters, obviously, in different places but that definitely needs to be looked at."

—Participant

"I helped a lot of the families with [the DFA application], and most of them [were] at my house for at least four to five hours and that was after they had tried on their own to fill out this paperwork."

—Participant

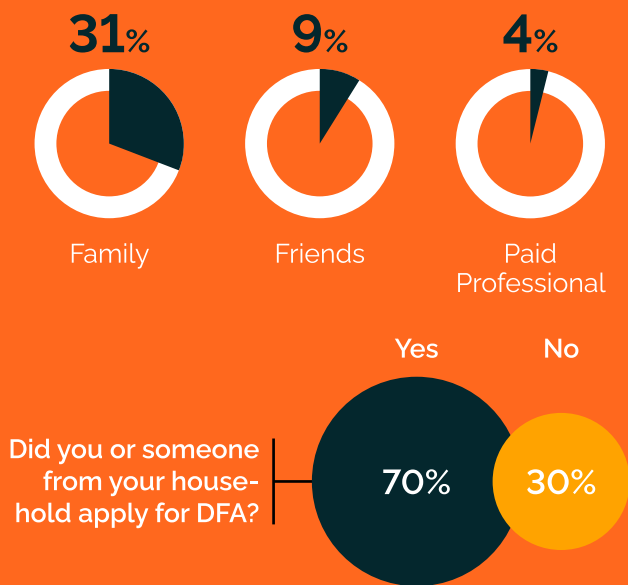


One key way that organizations can effectively support those who suffer post-disaster is to ensure that they provide support throughout the process of filling out these applications and forms, rather than putting the onus on individuals and families already experiencing a stressful and traumatic event. The issue is that these application processes were demoralizing for many and caused further stress for those impacted by the flood. Enabling families to determine their individual and essential needs is key in providing people with agency, particularly in situations where this agency is compromised.



DISASTER FINANCIAL ASSISTANCE SURVEY RESPONSES

70% of survey respondents who answered the question indicated that they or someone from their household applied for Disaster Financial Assistance (DFA). For those who applied, when asked if anyone helped them with the application process (and select all that apply), 31% of respondents said family members helped them, 9% indicated friends, 12% indicated community support personnel, 4% indicated paid professionals and 44% indicated "Other". In this "Other" section, many respondents indicated that they completed the process by themselves.



When asked to "please briefly describe the services and items you needed and the challenges you faced accessing them," respondents had the following to say about the DFA process:

"Absolutely no help from the Disaster Financial Assistance. I thought they were there to help but they have not helped myself, my landlord or anyone on our property yet they were given millions of dollars to do so. Why didn't they help???"

—Participant

"DFA was very confusing, still waiting on response for the farm owner portion of what we did. It seemed that unless you fit into a certain box (homeowner on an acreage) you didn't get accepted. Farms with renters on site land people whose income is high but cashflow was limited [were] not considered."

—Participant

"Now, when you are talking to somebody about it, it's actually quite shocking that you go through that devastation, and then you have to go and try and basically plead for why you want to buy something else that you actually need, rather than something that you don't need."

—Participant

"They're in survival mode, they're worrying about their stuff and their animals are dying, and they're shooting them, and the barn is completely flooded... And we're saying you have to go here and fill out this form. That I think is actually cruel. And I'm pretty passionate about that part. I think we need to, we need to fill out the paperwork for each one of the farmers. [An organization] actually went to farmers, filled it out on their behalf and then the people gave them an informed signature and that's what I heard was the most helpful."

—Participant

In conclusion, organizations, as well as the grassroots hubs, did attempt to support those who were going through the process of accessing financial support. The processes and experiences of government aid systems should be analyzed to be prepared for the next disaster. Most recently, in the 2023 Budget released in March 2023, the Government of Canada pledged over \$50 million dollars to modernize the DFA.³³ Additionally, the findings in this report strongly align with the recently released recommendations on the DFA program by Public Safety Canada.³⁴



Grassroots & Community-Based Initiatives

One of the main sources of strength and support for people impacted by the flood came from grassroots and community-based initiatives. Two of the key community-based initiatives identified in this research were the community hubs that were created by members of the farming community and religious organizations run by, among others, the Sikh and Christian communities.³⁵

"Whether people see it or not, the church has such an important part to play in community recovery and renewal. And it's been beautiful to watch churches... invite people and not asking for anything in return."

—Participant

"And I told her... interestingly, Abbotsford... is moving quite quicker than in Merritt. You know what she said, 'Oh, yeah, it's probably because of the churches.'"

—Participant

Grassroots disaster response initiatives are an effective spoke in any disaster management plan.³⁶ Research indicates that grassroots responses are effective in part because they involve community members who are situated in geographic and social proximity to the disaster zone and consequently have prior knowledge of the area and community members impacted. Additionally, grassroots responses can be extremely nimble, since they do not face the same types of restrictions that businesses, governments, or organizations must navigate. In the Abbotsford context, some of the grassroots community hubs were able to be so effective because they did not have the same regulations regarding what they were and were not allowed to do with financial gifts. Many of the participants who were community champions acknowledged that this contributed to their ability to mobilize quickly.

"I personally, mostly worked with, like individuals and businesses that I knew. So, because I'm just a person and not a charity, I didn't have any red tape."

—Participant

"[As] soon as we hear that there's a hub and it'll happen if there's ever this problem, again, you're going to get the same thing, people are going to start going in one place. That's where we need to be, and right away, then we hit the ground running with somebody that's actually providing meaningful support."

—Participant

"I don't want to judge anybody and you don't want to make anybody feel uncomfortable, and you want to help them. And I think just like not knowing your name and not knowing anything about you... making everybody feel so comfortable in like taking things or grabbing items off the shelf really helped, instead of 'can I get your name? And what part of your house flooded? Where did you live? How many people in the family?'"

—Participant

The people involved in the hub noted that their efficiency and effectiveness in aid distribution was also partially attributable to the fact that many of the community hubs had open door policies and a no-questions-asked ethos. The purpose of these hubs was to distribute resources and aid to anyone who identified themselves as in need. As such, their aim was not to oversee the responsible use of these resources. However, all participants interviewed that were part of the community hub responses indicated that they were pleased with community members' responses in taking only what they needed and not exploiting the generosity and goodwill of this system.



"And of the [number of] people, we had one person who was attempting to get funds that they weren't entitled to, [all] the others totally legitimate."

—Participant

"And I think it went fairly well. There was maybe one or two people that in the end, we were like, they weren't as bad as we thought they were, but they still were flooded, they still needed the help... I'm happy with that."

—Participant

Many participants who were directly involved in the flood response discussed how their business and social networks provided opportunities for these grassroots hubs to best respond to the needs of those impacted by the flood. Since they were known in their communities, they were able to connect with the right individuals in order to provide aid.

"I own my own business and so I have a lot of clients. And so, posting... that this was kind of a hub or a central location for everybody who had been flooded, that could come, eat, or get work gear, etc. It just kind of... kept evolving. Like we started with just food and then by day two, it was like, well, now... we need boots, we need raincoats, we need shovels, we need muck out gear, we need volunteers, we need food to feed the volunteers. I'm not sure how my brain did it, but we were like two weeks ahead of ordering stuff that we needed for like the next phase of the crisis response."

—Participant

It is evident that these community champions that facilitated the operations of these community hubs were integral in the flood response. As such, the ways in which community champions opened their homes was noticed by both community members and organizations alike. As mentioned, these community champions often drew on their existing connections leveraging their knowledge of the community to support those who were flood impacted.

"I would say that there [were] a few champions and... grassroots areas where that really like popped up."

—Participant

Further, these community champions discussed how they did not plan to move into these roles of coordinating support at the community level. Instead, they simply identified a need in their community and based on their circumstances within the community were able to create the space and bring together the resources needed to respond.

"So [it] was not something that was ever like planned or intended, it was just like, oh, I'm just going to support my friend and see where this goes."

—Participant

My Flood Family: Community Strength in the Face of the Flood

Many participants both identified the community strength and support that was demonstrated throughout the flood. They noted that although the flood of 2021 was a time of significant loss and trauma, the best of humanity was also revealed in the ways that neighbours and citizens came together in an effort to support one another through this time of crisis. In particular, some participants noted the unbelievable community cohesion and bonds that developed during the flood, and in many cases continue to this day.

"I remember, there was so many people that we kind of still work with almost now from that time. So that was like a really good outcome"

—Participant

"The community is what carried people along."

—Participant

"Most of us wouldn't have traded that time... It was an amazing time, community wise, like, I'm sure you can see that in me... It's a subject that I feel passionately about and, you know, I feel passionately about my neighbors. I never felt that before."

—Participant



At the end of the survey, participants were asked to reflect on the following question:

"Given your flood experience, what strengths in the Abbotsford community (both individual and collective) did you see come out of the flood?"

"An amazing community! The strength of people! The care and compassion that people showed. Offering help when their own lives were destroyed. The community came together and pulled through together."

—Participant

"Honestly we cannot fault the love, strength and support shown to us by family, friends, neighbours and our wonderful Sumas Prairie community. We absolutely could not have coped without all these wonderful folks."

—Participant



Communication

“Social Media Did Us Really Well”

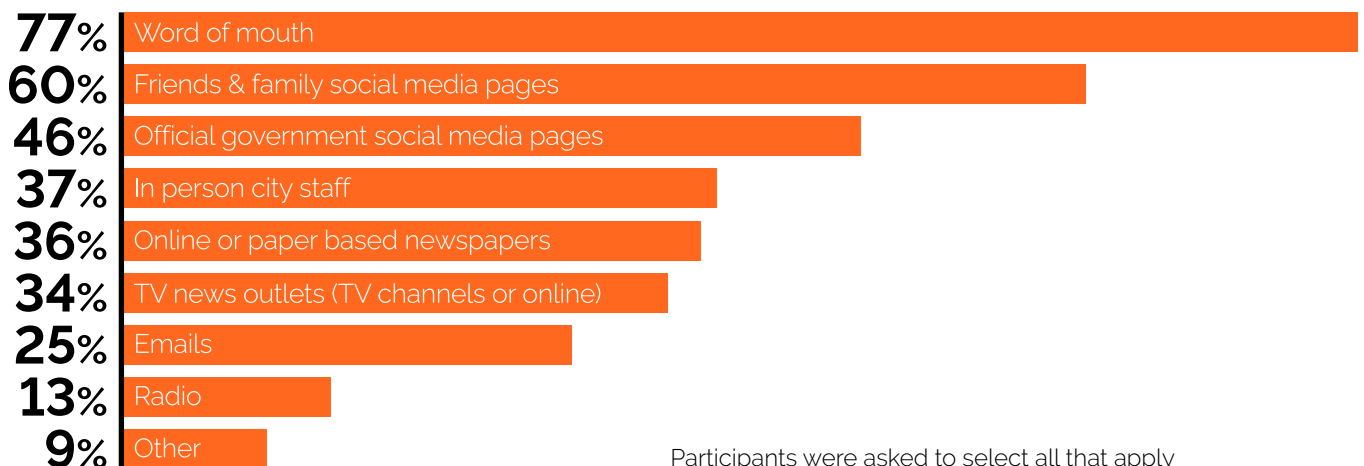
One of the key concerns that emerged from the research related to communication. What information and how it is communicated during a disaster is critically important and can have a profound impact on how people experience a disaster.

It was apparent that both word of mouth and social media played a significant role in the flood response, which is common in a disaster of this magnitude. In responding with all that apply, survey respondents indicated that they accessed their information about the flood in English (99%), Punjabi (8%) and Spanish (1%). Various research studies in the last decade have provided clarity on the use of social media for gathering and disseminating information during disasters. Communication via social media has many advantages over traditional communication methods during a disaster. These advantages include bridging communication between the public and response organizations through various applications and enabling quick dissemination of information to a broad audience.³⁷ Implementing social media in emergency management can be complex as its use will differ depending on the emergency's type, severity and scope. Furthermore, each actor uses digital media differently in crisis communication.

Research highlights that individual communities use social media to create groups, using applications like Facebook and Twitter to inform their local community and the public about flooding in their area.³⁸ Connectivity tools were also incredibly valuable as authorities communicated with each other and with the grassroots organizations that significantly supported the community. Additionally, it is well established that the need to communicate and interact with others escalates during disasters and emergencies.³⁹ Social media can play a crucial role in meeting this need.

When asked to identify all the modes used to obtain information about the flood and flood response, respondents reported that the top six methods of communication were word of mouth (77%), friends and family's social media pages (60%), official government social media pages (46%), in person city staff (37%), newspapers (36%) and television (34%).

Figure 8: Methods survey respondents used to access information about the flood response or recovery



Participants were asked to select all that apply

Focus group and interview participants echoed the importance of social media as an information sharing tool and as a tool to connect them with people who were in need. People working in disaster relief as well as community leaders had trusted social media savvy individuals and groups that assisted them in validating the information that was spread. Some respondents discussed the challenges of misinformation spread through social media. It is important that governments take initiative to respond to people's inquiries on different social media platforms. Additionally, one participant noted that governments can provide citizens with some comfort amidst a traumatic experience by providing proactive and consistent communication, even when there is no new information to share. Additionally, consistency in information sources can help to provide stability and build trust in government during a natural disaster situation.⁴⁰

"We saw the presence of Mayor Braun. Mayor Braun was not the message creator, I'm assuming, but Mayor Braun was on the media or was a present media face every day. Same time every day you could turn on the news and you could know that Mayor Brown was going to speak to the media. That's a really great feature."

—Participant

It is important for agencies to take a crisis informed communication approach in understanding what citizens need to know when implementing a disaster management communication plan.⁴¹

"Sometimes there's hesitancy in local government to speak if we don't know information... [but] If we give you information, even if that information is 'I don't have any information to report this time. We will report back to you at six o'clock tomorrow morning', that's information and you can hold on to that, but in the void of accurate official information... the void is filled with misinformation and disinformation and anger and frustration and a belief that your government is hiding things from you instead of a belief that your government is trying to learn what's going on in their jurisdiction."

—Participant



One of the challenges of many disasters, including the flood in 2021, is the multi-jurisdictional nature of the situation. Thus, a common barrier experienced in many disasters is the lack of centralized information available to the public as well as those responding.

"There wasn't enough information being shared... from different government bodies... So a lot of the evacuation [we] just didn't know what to do next, kind of sit and wait."

—Participant

"If the platform was empowered to centralize all of the official sources and there was a daily public spokesperson in a multi-jurisdictional disaster, that reduces the traumatization and the impacts on the evacuees."

—Participant

Effective communication is a key part of any disaster response. Indeed, having a communications coordinator who understands how to interface effectively with people who are experiencing a disaster requires a specific skillset.⁴² Participants indicated how important it is for local governments to provide consistent, timely, informative updates to provide comfort for those impacted by disasters, as well as their family and friends. Key components of effective disaster communications include taking the human perspective, monitoring the citizen's dialogue, and enhancing trust.⁴³ Additionally, research indicates that "honesty, candor, and openness" are some of the most important ingredients of effective disaster communication.⁴⁴ In contrast, the absence of formal communication from the government can lead to miscommunication and misinformation filling the void that is left.⁴⁵

"The communication department of the [organization], the function let's say... lacked training and understanding of humanitarian aspects."

—Participant

"Governments speak to an audience, they're not accustomed to dialoguing with the audience. When you are a person who is impacted by a disaster, and dealing with your own trauma, you're looking for dialogue, you're looking to be able to receive information, understand how it applies to you, understand the future outlook of that information, and start to kind of plan ahead, because when you can plan ahead, you can start to anticipate what your own personal family recovery might look like."

—Participant



"The art of crisis communications is very much an art. And there is not a lot of training made available in the local government world, or even in the disaster response world for crisis communications training."

—Participant

As the flood disrupted transportation and in the context of COVID-19 where contact outside one's immediate household was limited, the opportunities for helpful information sharing were further deteriorated, particularly for older adults. As discussed, the survey found that during the flood, word of mouth was the most used method of accessing information about the flood (77%).

"Many of the older adults would rely on word of mouth from their own communities."

—Participant

"[There was] a little bit of a lack of information sharing there when they previously relied on getting all their information from word of mouth."

—Participant

Community champions, organizations, and those impacted by the flood themselves identified how important social media was in communicating with evacuees, coordinating with citizens looking to donate or volunteer to the flood relief efforts, and connect with others working in their communities.

"There was a lot of grassroots volunteer efforts right away. And so in those early days of the floods, like the first couple of weeks, we were paying attention to social media."

—Participant

As discussed, receiving communication and updates as an evacuee amidst a disaster is essential and consequently language barriers can quickly become key concerns in disaster response. As such, understanding the need for adaptation to specific language and cultural needs is imperative.

"There was some work around, you know, even just communication as a lot of Indo Canadian farmers, [we wondered] 'were they getting the information that they needed, in the language that they're able to understand?'... When things are moving fast in those recovery days, you know, it's hard to keep up if there is a language barrier."

—Participant



"There's a cultural language barrier. We heard over and over again, from our South Asian farmers that, you know, they felt that people did not reach out to them a whole lot at the beginning, that they didn't get a lot of information at the beginning."

—Participant

It would be worthwhile to further explore how accessing necessary information and documentation in one language over another could impact one's experience and flood recovery journey.

"So you're living in even more uncertainty, and then you're hearing all the stories from other people standing beside you saying 'oh you should go here' or 'no this is what's going to happen' and then [you hear] contradictory things... 'You can use this for that', [and] somebody else [says] 'No you can't you're not allowed', and 'you can go through your insurance', 'No, you can't'... How do you really know what's going on? People are going on social media giving misinformation."

—Participant

Having a centralized communication centre would be helpful for both the organizations working in the flood response area as well as citizens who may need support after the flood.

"I don't know if the government or whoever was leading this could have just like a mass website that like, everyone [could] just point to this one location that this is the most updated information."

—Participant

Communication Within and Between Agencies

The connections and working relationships among agencies was identified as an area that could be strengthened. Participants expressed that disciplinary and bureaucratic silos often lead to inefficient use of resources and a lack of coordination, particularly in times of disaster. Many participants understood that effective communication and information sharing was crucial to effectively completing their duties and best supporting individuals with a clear acknowledgement that information is power.

Effective information sharing will allow support service organizations to be better equipped to facilitate a coordinated response. Organizations should be doing what they are best at and respond in the areas of their expertise. This is enhanced when a coordinated response occurs.

It was clear that confidentiality clauses limited agencies' ability to assess the extent of the needs of impacted individuals and share relevant and timely knowledge with one another. Agencies could not easily exchange their client information, which resulted in frustration for government agencies, community organizations, and individuals affected by the flood. Having a process set up that centralized the information would ease the burden on service providers by reducing the need to follow up and allow for centralized tracking of who and where resources were being allocated. Having an emergency plan and proactive privacy policies that allow agencies to easily share relevant information pertaining to individual needs during an emergency is key.





"There was no central repository of information for anybody that needed help. And so everybody had their own lists. And, you know, for confidentiality reasons, they couldn't share that which I understand. But... in my opinion, it would be nice... for the province to sort of take control of this, and to... have some kind of a list that people could say, 'Yes, share my information with any, you know, these kinds of organizations or anybody that's offering services'... Even a name and contact email or phone number... Whoever is maintaining this database also can keep track of what services this person is getting. So that they know, like, this person is getting nothing and this one's... able to get in touch with all kinds of services, they're getting a lot of help, and these people are not getting any help."

—Participant

"In the next state of an emergency, if this organization, for example, is dealing with, okay, 'we're gonna buy everybody a new fridge.' I don't think anybody else in the process should look at fridges or get fridges, you know what I mean? Like, okay, they're the fridge people let them deal with fridges. And that way they can take note of who got one and whatever."

—Participant

Additionally, some participants identified that existing culture and communication challenges within responding agencies created barriers to an effective disaster management response. One participant discussed how the hierarchies in the organization they worked for created challenges and a resistance to share information that would have made their job in the flood response much easier.

"My recommendation would be for the [organization] to create a culture of transparency [and] inclusion. I feel as though it was a culture that lacked the ability to communicate... I was not a manager within the organization. I was not heard or listened to. And then the other piece was... a lack of understanding of the humanitarian aspect of any disaster response. So the [organization] was very focused on infrastructure. And so there was no priority put on the humanitarian aid required. So because of that, a lot of the communication was happening in terms of infrastructure, what needed to be done, those people were in the know, but information... coming down from the [organization] to support people just kind of lacked."

—Participant



Resiliency, Relationships, & the Right Person at the Right Time

Both the United States Federal Emergency Management Agency and Public Safety Canada identify the phases of emergency management as prevention and mitigation, preparedness, response and recovery.⁴⁶ Understanding which phase of the emergency management cycle a community is currently in is key to ensuring that citizens feel that their community is addressing the appropriate needs at the appropriate time in the appropriate way.⁴⁷

Participants stressed the importance of a phased approach to recovery when effectively addressing the needs of citizens. The public as well as the private sector can help assuage some of the mental health challenges faced by reconstructing infrastructure in a timely manner.⁴⁸ Participants spoke about the importance of ensuring that infrastructural concerns are addressed, as this indicates to citizens that the governmental bodies are planning for future flood events. In addition to the physical infrastructure recovery, consideration for the social, emotional, economic and mental well-being aspects of recovery should be prioritized.

"And then the other thing for government I would say would be [to] get the infrastructure back up, like, we still have roads that are closed. There's no reason for it, the bridges are in place. It's just the approaches that are gone and we can't get them."

—Participant



Additionally, participants involved in emergency management stressed the importance of phased recovery. Employing a model of phased recovery allows for progress to be identified and can reveal where headway has slowed. Updating citizens on progress from an infrastructural as well as social level can promote buy-in from community members. Along with phasing recovery, understanding recovery priorities is imperative to disaster management. By doing both, governments are able to tailor the recovery to local priorities as well as show how the response is moving from one phase to another.

"[Another city] started with the primary question, right? What does recovery mean to us? What is it? And so using that, [that city] then guided their sectors of recovery: people, environment, economy, rebuild, and mitigation... Again, the gap when you have one word (recovery) that means so many different things in so many different walks."

—Participant





In the public sphere, there has been a heavy emphasis on building back with resiliency, and so the concept of resilience is a key feature of Public Safety Canada's Emergency Management Strategy 2023.⁴⁹ While this is a valuable concept, the focus on resilience can also obscure some of the systemic issues that need to be addressed at an intergovernmental level. Resilience is not supposed to be a permanent state, but rather resilience should be a trait that a community is able to utilize if necessary. Additionally, it is important that the affected communities have opportunities to celebrate their ability to be resilient, while also making progress towards disaster preparedness and mitigation.

Another way to strengthen responses to disasters is to value relationship building. It is important that governments understand the important role that those in leadership in both government and community organizations can play in promoting collaboration and partnership. While provincial and federal governments often see frequent turnover, municipalities have the potential for more sustained connections, so building those relationships ahead of a disaster can be critical to effective response.

"Yeah, seeing them the first time during the emergency, it's not the best time to make those connections. It needs to be done ahead of time."

—Participant

"The only reason why I believe the [things] got set up as quick as it did is because [I've] already built all those relationships throughout my... years in emergency management."

—Participant

ON RESILIENCE:

"Resilience is a short-term condition where one stretches themselves until problems can be resolved. The idea that resilience is a permanent state is a myth... Failing to address structural problems while labeling the people enduring such problems as resilient is gaslighting. Government, at all levels, must respond differently. They must absorb the lessons that have been offered time and time again. Recovery must center communities that have been left behind in previous efforts."⁵⁰

—Ashley Shelton,
Executive Director of the Power Coalition

"And I think that we're pretty lucky here in the Fraser Valley that you know, where communities were able to work together and band together, but that's not necessarily true everywhere."

—Participant

Part of this strength is likely attributable to the strong history of religious groups as well as non-profit organizational work in the Fraser Valley. That said, COVID-19 contributed to the disconnect between different agencies. The value of existing relationships cannot be overstated. Additionally, it was valuable for those in the social sector to utilize their connections with those in government to strengthen the approach to addressing the needs of those impacted by the flood. Many participants pointed to the issues that were exacerbated regarding tables that did not meet regularly before the flood event. Participants identified that moving forward, strengthening the social sector is crucial to the effectiveness of any future disaster response.

"We can both learn from one another, we can understand better how the... system works and they can understand better what the potential is for the social sector to come alongside them."

—Participant

A common theme that emerged is the importance of the unique individuals who populate these systems, as their ability to respond effectively is often drawn from their networking abilities as well as their experience. Consequently, robust systems need to be created and sustained that capitalize on individual and systemic strengths, otherwise the loss of individuals from key positions may jeopardize the broader response.

Additionally, one of the most overwhelming responses heard throughout the multiple interviews and focus groups was the importance of having someone with the right skills and experience responsible for coordinating response and recovery efforts at a municipal level. This individual would be responsible for coordinating disaster response between various municipal departments, social and relief organizations, and coordinating with the provincial and federal governments to best support citizens during and post disaster. Further, when the community is not responding to a disaster, this position would coordinate aspects of emergency management, specifically related to preparedness and mitigation.



"So we didn't even know actually who was the local emergency manager."

—Participant

In many municipalities throughout British Columbia, this type of position has been funded and implemented. This position is often known as a municipal emergency manager; however, a similar position exists in some municipalities with a different title. Some examples of municipalities throughout British Columbia that have implemented this type of position are Kamloops, Kelowna, and Vancouver.

"And it really comes down to having the right people in the right place at the right time."

—Participant

For organizations and governments in the future, looking at how to leverage those individuals who are equipped with the right skills and knowledge is critical. It is important to understand that most people are not equipped, trained or skilled at dealing with emergencies on a day-to-day basis, and that is why it is important to value, recognize and utilize the individuals who have these skills and defer to their expertise in moments of crisis.

09

Addressing the Unique Needs of Particular Communities

The United Nations Office on Disaster Reduction defines vulnerability as “the conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards. It is a measure of how well prepared and equipped a community is to minimize the impact of, or cope with, hazards.”⁵¹ While the flood’s impact was extensive, there were specific groups that were impacted more severely than others. It is important for those working in disaster response and recovery to consider how best to support individuals across a spectrum of impact severity.

Like any disaster, the 2021 Abbotsford flood revealed the varied needs and experiences of diverse populations within communities. These diverse circumstances, specifically the inequities that some populations face, are amplified in disasters. One participant stated that, “the discrepancies of adversity, they get ramped up [and] they increase dramatically.” Some key populations that were identified as having unique concerns that needed addressing throughout the flood and in recovery include those with language barriers, temporary foreign workers (TFWs), farmers, and the unsheltered population, among other groups.

“There's lots of vulnerable people in any type of disaster response.”

—Participant

“So even outside of the flood, tragedy is still striking people and life is still going on.”

—Participant



Temporary Foreign Workers

Temporary Foreign Workers (TFWs) play a key role in the productivity of the agricultural sector in the Fraser Valley. In 2021, there were a total of 10,266 TFWs working in the agricultural sector in British Columbia.⁵² TFWs were already experiencing unique challenges due to multiple factors including their residential status, language barriers, and COVID-19, and the flood further exacerbated these challenges.

TFWs faced significant precarity when it came to the flood. Not only did they have limited social safety nets, but they also had greater difficulty accessing disaster response funding. One of the initial challenges faced was that the Red Cross system was not designed to account for TFWs. For example, there were often many living in one home, and consequently deemed ineligible for the DFA and Red Cross money. Since initially the Red Cross eligibility criteria did not account for the unique living conditions of TFWs, they faced added uncertainty. Additionally, TFWs faced language barriers, particularly in trying to access services as it was often difficult to find translators particularly in times of crisis. Finally, difficulty accessing banking contributed to the challenging situation.

The flood particularly impacted the TFWs since they often came to B.C. alone and many do not have family or other social supports on which they can rely. Some TFWs lost their documents in the flood which exacerbated the challenges that they faced, particularly since for many it was the end of the season, and they were planning to return home.



“Probably the biggest [concern] was the migrant workers. [They] definitely had a language barrier, they were probably the most [in] need of help. They were away from home, and [had] no job because of the flood, and really didn't know where they were going next. So, I think... probably the biggest [group] to look after was migrant workers.”

—Participant

“We had [TFWS] who applied to the Red Cross aid, [but] the workers [had] to set up all the online banking, because this [aid] was provided to the worker only [through] two options. One was a debit card. The worker can use [this] here in Canada, but cannot cash them... only use [to] go to buy items or something like that. When I explained to the worker, this is one of the options of how to get the \$2,000, many of the workers mentioned to me, 'I really need to send money back to my family. Yes, for me, there's no option to spend \$2,000 just in a month.' Workers usually spend very little money here inside of Canada, just to buy groceries and that's it, and the rest of the money is sent back to their country and helping the family. And... the second option was [to] provide... online banking information, but we realized at this time, maybe, I don't know, 90% of the workers don't use online banking.”

—Participant

Additionally, TFWs are responsible for remittances, so not only did the flood impact them directly, but the inability for TFWs to send remittances home also impacted their families in their countries of origin. Most TFWs only live on a small portion of their income and send the majority of it home, so it is essential for policy makers to understand the significance of these unique challenges.

"The other piece of migrant workers was that they weren't qualifying for the money from the Red Cross... Because the Red Cross money that they were distributing, which was like \$1,000, from Red Cross [and] \$1,000 from the government was supposed to go to each household. Well, migrant workers typically are living, not as individuals, they are living in kind of group housing that's being provided by the farm owner. And so it was a question of how do they access any of these, like they've lost personal belongings and what have you."

—Participant

"I had not worked with foreign workers before. And I didn't understand the legislation behind that program. And so, the type of services we were providing them were equivalent to everyone else in the centre. What I didn't know was how vulnerable they were."

—Participant

It must be understood that the "mental health of farmers and that of the migrant farm workers they hire are linked."⁵³ The flood has disrupted labour flows, impacted property as well as caused emotional trauma for both farmers and TFWs. The connection between these two groups is important for policymakers to take into account. The pre-existing systemic issues associated with the TFW program were significantly exacerbated and exposed by the flood.

Participants shared how the Latino community was particularly helpful in providing some appropriate cultural and language support (such as food and activities during their stay at Tradex). Additionally, the flood provided an opportunity for successful advocacy to improve aid systems to better account for the needs of TFWs in future disasters.



Unsheltered Population

Individuals who are unsheltered have heightened vulnerabilities in the face of disasters such as the flood of 2021. Some factors that contribute to the disproportionate impacts that unsheltered populations face are greater exposure to the elements, a lack of access to resources and support services, and the stigma associated with homelessness.⁵⁴

Many participants, particularly those working in community organizations, identified the unique needs of the unsheltered community. Many areas where unsheltered individuals tend to congregate were flooded resulting in displacement. One participant noted that, with public transport not running, unsheltered individuals without a personal vehicle "no longer have a means of navigating the city." Therefore, in addition to service delivery being disrupted, individuals experienced transportation challenges getting to key areas such as banks to access funds. Additionally, unsheltered people tend to rely on routine visits from service providers, which allow these social service workers to check in on them and see if they can provide support. The relocation of the unsheltered population and the transportation disruptions made these visits more challenging.

"Camps and such have become accustomed to routine service providers which is really helpful to establish some sort of schedule so [unsheltered people are] aware of when outreach supports are dropping by. If there is a disruption in that, and like, people are short staffed, or they don't have the harm reduction materials or donated materials to stop by on regular occasions, they need that support."

—Participant

This can further entrench individuals and as already discussed throughout the report, those who were already facing issues before the flood were often the ones who suffered the most due to compounding issues.⁵⁵

Additionally, for some unsheltered people, the flood event destroyed their possessions. During the interviews it was acknowledged that the Cabin, a day shelter, was opened ahead of schedule to respond to the flood and provide support for those who are unsheltered.

Farmers

As a backdrop to the flood, research has established that "the pandemic has negatively impacted the mental health of farmers in Canada and in ways that differ from the general population."⁵⁶ Understanding the needs of the farming community, and how to best address these needs is crucial to a robust response to any future floods, particularly given that many of the areas in Abbotsford that are prone to floods are farms. Throughout the interviews, different perspectives as to how to best address the unique mental health issues of farmers were discussed.

Particularly for farming communities, there is a stigma about accessing mental health support. A 2019 Senate report addressing mental health and farming revealed that "this situation is hardly reassuring given how reluctant farmers are to talk about mental illness... [t]he perception remains that mental health challenges are one's own and not to be discussed openly."⁵⁷

By continually affirming the resilience of farmers, governments may run the risk of further contributing to farmers feeling the need to rely only on themselves to deal with the outcomes of the flood rather than reaching out to the available help and resources. This is particularly true for accessing mental health support. For example, six months after the flood, Lana Popham, the B.C. Agriculture Minister at the time, commented that "If farmers wear their hearts on their sleeves. They're in so much pain. There's this absolute resilience that's in their blood and it's remarkable."⁵⁸

The continuing stigma associated with accessing and even talking about mental health can pose particular challenges in the farming community. Many participants who work closely with farmers identified that it is of critical importance that those working with farmers meet farmers in the way they are most comfortable with. Additionally, the approach of formal counselling sessions may not be as accessible with farmers. Instead, they may feel more comfortable with group counselling or more informal sessions. One method that has seen some efficacy is group sessions in an in-home setting by a trained professional, as well as virtual sessions where people can have more anonymity. Policymakers, particularly in a disaster setting, should consider funding tailored mental health responses that use the modalities that will be most helpful and effective for the targeted group. Many participants indicated that virtual sessions seem to be an effective way to address some of the mental health concerns.





"[Farmers] are very proud people and they rely on themselves for anything and everything. And I heard it from, directly from farmers, 'would I do a session with you guys? Not a chance, because everybody knows [me]...' So we do online sessions [and] nobody will turn on the camera, and they take their names off. I mean, we invite them but [for example] we had a town hall the first night to do a critical incident stress debrief, brought in some professionals and [number of people] came in. They were all farmers... and the reason they came was because they knew their employees were going to be there... [The farmers] were not feeling heard, the struggles and the problems and the challenges they have... I mean, I'm not a counselor, but the number of times that I've listened, and the same with the people that have been describing that they just need somebody to listen and be heard in almost in a social setting, so that it's not 'I'm not talking to you because I need mental health support, I'm talking to you because we just unloaded a truck together and, you know, this is really bothering me.'"

—Participant

"A lot of farmers are very stoic, and they're not going to ask for help. So I think the resources almost need to come to them or be like right there in their face [and] so so easy to access that it's not a barrier to them... because they're not going to go out looking for and they're not going to be advertising that they're having sleepless nights and don't know where things are all going, in that they've lost a family farm and you know, all that kind of thing."

—Participant

There is a societal stigma associated with accessing help in general, and for farmers, this appeared to be particularly true when it came to accessing foodbanks and other forms of material aid. Participants discussed how farmers tend to be self-reliant people, and so it is important to take this into account when designing systems and programs so they can best reach the people who need support.

"It's not like, 'Can I have some food?' Which is embarrassing for a lot of people, and a lot of people won't go to the food bank, because 'No, I don't need the food bank.' So you know, it's a hard barrier to overcome."

—Participant

Participants repeatedly indicated that farmers often stopped themselves from asking for aid because they always thought that there was someone who could use it more. Participants discussed that they had to convince farmers that these goods were intentionally donated to support those impacted by the flood and their families.

"A lot of people think, 'Oh, well, I can't go to a food bank. Because... I can buy my groceries, you know, so I'll just buy my groceries, give [the food to] somebody else who needs it more.'"

—Participant

"Yeah, we get that so often. Just in general, where people are like, 'Oh, I don't want to take a spot from someone else.' It's like, no... we can help everybody."

—Participant

Farmers faced additional challenges presented by transportation disruptions and disposing of dead animals. It is also valuable to note that many farms are family businesses, and thus where family is often a network to draw from in a time of disaster, this can stretch familial resources as multiple members of one extended family may be needing to obtain social support.

Other Affected Groups

One key group that was revealed as facing unique challenges were children and youth. It is of critical importance for parents, teachers, and others working with youth to incorporate best practices to support those who may have faced a natural disaster. Youth and children who experience disasters are more likely to have anxiety disorders later in life, and so understanding the importance of unique approaches to support children, youth, and their families through a disaster is essential to mitigate some of these potential future issues.⁵⁹

Those who were renting properties in the flooded areas faced unique struggles with accessing funding and precarity when it came to accessing housing. In the immediate aftermath, it was apparent that the system was not necessarily designed to consider that multiple families may be residing on one property, and this caused additional stress for families trying to access funding or find accommodation. Renters also may have had more difficulty as they often needed landlord support or endorsement when filling out documentation, and landlords themselves were often occupied with their own recovery.



I think that there could be something in value if parents were interested in how to talk to your children when disaster happens, and the very word disaster indicates that it happens overnight.

—Participant

“Obviously the Abbotsford community is the only help that many of us had. We were living in a farming community but [we] were renters so felt removed from the community. It wasn’t our place to access the food etc for the farmers. After 14 months and approximately 25 emails [DFA] is still denying us any financial help because we did not have our [current] address on our driver’s license when the flood happened as we had only moved in 6 weeks prior. We lost 2 vehicles and everything we owned.”

—Participant

“And then renters also, that was a concern, because the renters weren’t necessarily going to be able to receive the same supports at first... if the owner of the property went in and claimed it, then the renters wouldn’t be able to claim it.”

—Participant

The specific needs of older adults were also a concern raised by those working in flood relief. These individuals often have unique health or mobility needs, which may pose challenges in situations such as waste removal. Additionally, transportation to medical appointments and meal deliveries were also hindered by the flood. It is important to include timely communication and social supports during and after disasters to have these needs adequately addressed.

“If it’s a senior in their home or something... who is gonna come in and help them remove all of this stuff?”

—Participant

Other Issues & Concerns

10

Waste Response

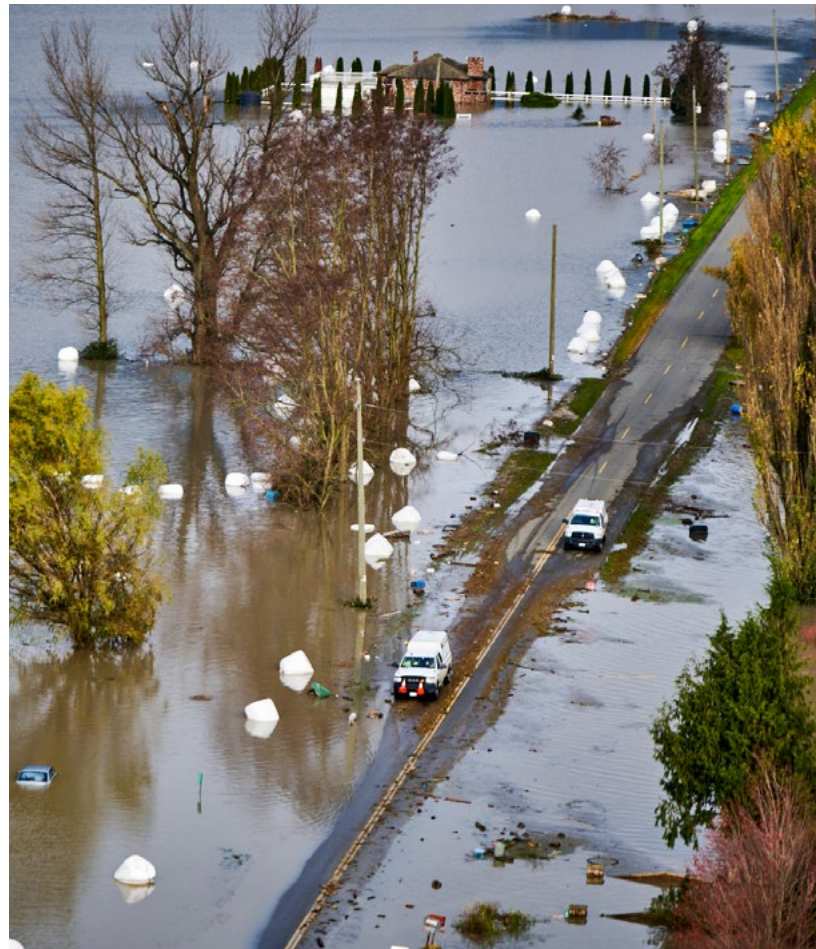
One of the needs that emerged quickly after the flood was the need for an efficient system to deal with the waste collected from the flood. Due to the scale of the flood, it was unsurprising that some of the waste transfer stations faced access issues due to their physical location. One participant noted that it was their social capital that enabled them to direct people to the appropriate places to dispose of their waste and help provide logistical support to make this happen.

"The biggest service we provided was a transfer station for people to bring their... garbage. This was a significant help to our community because all the transfer stations were either closed or not open to the public. I think for future consideration a plan needs to be put into place whereby people can easily drop off their garbage."

—Participant

Many participants identified that it quickly became apparent that cleaning up after the flood was going to be a challenge. The scale and nature of the devastation meant that some type of well coordinated arrangement to remove refuse in a timely and orderly manner needed to be established.

Since effective refuse removal is contingent on a multitude of systems across municipalities and private businesses as well as involving the transportation system, it is imperative for any future refuse removal plan to consider an array of strategies that could be utilized to effectively remove the required waste. There were also challenges with inaccurate information about where to dispose of the waste (particularly given that much of the waste during the flood was contaminated or hazardous) and this caused frustration for participants working in the waste sector and citizens alike.



"Just really ensuring that people had a good understanding of [the fact that] this waste actually is contaminated... We don't know what was in that water and that it can't come to a facility like this."

—Participant

The timely, efficient, and safe removal of waste should be strategized thoroughly and be integral to any type of disaster management approach a city chooses to develop.

Transportation & Critical Infrastructure

It is important to address the key transportation issues that arose from the flood, particularly with respect to the closure of the Trans-Canada Highway. First, the closure of the highway led to the issue of stranded travelers which was identified as a major concern, particularly by those who were involved at the emergency reception centres. Stranded travelers were a group that disaster response aid had not adequately accounted for in the immediate funding relief available. People who were stranded were not initially provided the same level of assistance or aid as those who had to evacuate. Having all these people in one location, but not being able to provide each group of people access to the resources they needed was frustrating for both emergency management staff as well as those impacted by the flood.

"So of course, we had... three atmospheric rivers... but we also had stranded travelers. And their needs were very, very different. So supporting those impacted by the floods, and supporting those stranded travelers with different needs, in one centre, at the same time, was quite challenging. I don't know how else you would say that. So, for instance, people who were stranded were denied services from EMBC."

—Participant

One participant identified that it is important for municipalities to look at current traffic flows and patterns, test those results within a disaster scenario, and ensure that all available transportation routes are maximized.⁶⁰ Additionally, participants raised the issue of navigating decision-making regarding inter-jurisdictional transportation issues that affected different government bodies, emergency responders and medical services.



There was frustration about agreements between the province and the municipality, as well as some of the decision-making around the placement of the tiger dam, and how that impeded response and recovery efforts. Also, participants discussed the staffing issues they faced due to the closure of the highway in particular, and how this closure impacted staffing schedules.

"I think we have to come up with a better robust plan for moving staff around. When something like that happens, you see the actual sheer volume of staff that we have that can be isolated and how important it is to try and get them to work."

—Participant

Finally, there were groups that were cut off completely due to the flood owing to their location, including the Sema:th First Nation. For future flood preparedness, it would be important to have conversations about where transportation issues pose the greatest risks, and work alongside those in the community to have plans prepared.



Mental Health & Mental Health Supports

The stressors on mental health for people impacted and those responding to a disaster are well documented.⁶¹ The survey findings demonstrate the importance of providing ongoing mental health services in any disaster response, with the understanding that people may not access these services until later in the disaster recovery process.⁶² Both the quantitative and qualitative research findings in this study highlight the significant mental health concerns arising from the flood.

Following disasters, many people experience feelings of distress and an increase in negative emotions. Research shows that disasters may put those affected in a state of despair and shock.⁶³ This experience can be sudden and traumatic, disrupting the individual's daily functioning and bringing loss for themselves, their families, and their communities.



“ You have to grieve, it's perfectly acceptable for you to grieve, this is a horrible loss.

—Participant

Many people who experience a significant loss in a natural disaster may also experience a loss of identity. This can affect one's ability to cope when faced with this significant shift. Those affected may deny or minimize the loss and try to escape from reality, making the individual more vulnerable to stress, anxiety and other maladaptive reactions. Many of these symptoms may not arise until months, even years, after the disaster.⁶⁴ The research on mental health after disasters provides the perspective of the everyday needs of those impacted; however, an individual's capacity while encountering negative situations can be severely affected, preventing them from reaching out for the support they need. Mental health and wellness support must continue to address both individual and the community needs by creating opportunities for continued support for an extended period following a disaster.

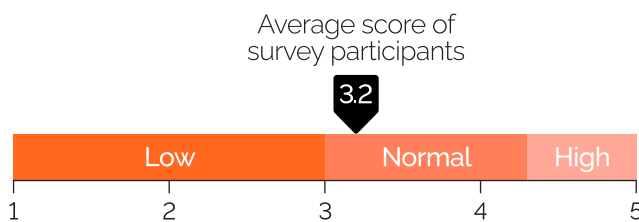
“ The important thing [that became obvious was] just the different mental health challenges like the psychological challenges and anxiety and all that kind of stuff that came from it. It was a very difficult time for a lot of people that were involved... both the people who were working there and all the different organizations that were trying to help. It was a very stressful time for everyone.

—Participant

The survey administered in this project included key questions relating to mental health. As discussed in the service section, people impacted by the flood are continuing to utilize mental health services. This speaks to the need for continued support specifically in the Abbotsford context to ensure citizens are well on their way in the recovery journey.

Additionally, the survey administered the Brief Resilience Scale which is designed to "assess] the ability to bounce back".⁶⁵ The average score for participants who answered the questions was 3.2, which is on the lower end of the scale for normal resilience (3—4.3 is the "normal resiliency" range).

Figure 9: Brief Resiliency Scale



“I think [you cannot] understand the importance of having psychosocial support during an event like this if you haven't gone through it.

—Participant

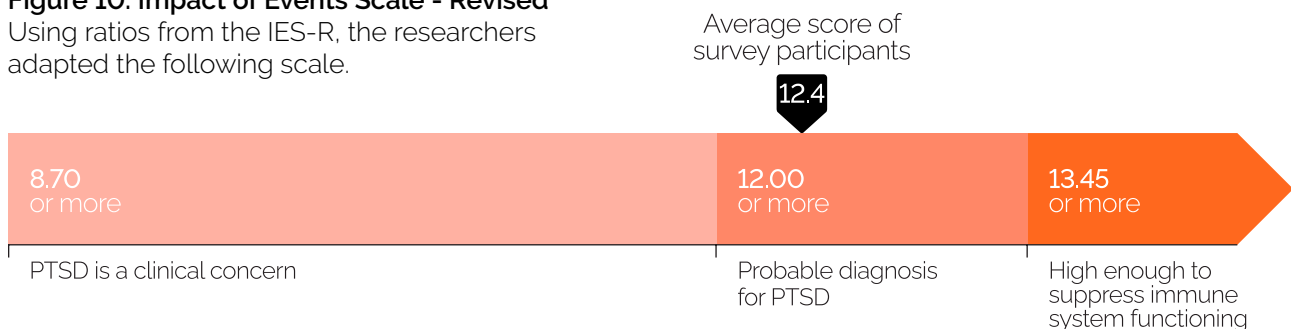
“We tried reaching out in all kinds of different places, and there was some uptake, but not nearly as much as we thought. So really, most of our time was spent to try and find people who maybe want to engage with counseling, rather than doing the actual counseling, because it was too early.

—Participant

Also in the survey an adapted Impact of Events Scale (IES-R) was administered, which allows researchers to examine levels of PTSD after a major event. The IES-R is very helpful in “measuring the effect of routine life stress, everyday traumas and acute stress” related to an event such as a disaster.⁶⁶ In the survey, the number of questions were reduced and adapted to better fit the context of the flood and measure how participants scored on subjective distress caused by traumatic events. The average of the scores was 12.4. According to the adapted scale in this survey, it was determined that the average participant would identify as having a probable diagnosis of PTSD in relation to the flood event.⁶⁷ This is unsurprising given the magnitude of the flooding event. These types of findings should prompt governments to pay close attention to providing targeted mental health support for people impacted by the flood, and other disasters that may occur in the future.

Figure 10: Impact of Events Scale - Revised

Using ratios from the IES-R, the researchers adapted the following scale.





As noted, there is a significant body of research linking the impacts of natural disasters with mental health concerns. Some of the key mental health issues linked to disasters include substance abuse, sadness, depression, hyperactivity, social isolation, feeling confused, appetite change, difficulty with sleep, and post-traumatic stress disorder (PTSD).⁶⁸ Specifically, researchers assert that “flooding can pose substantial social and mental health problems that may continue over extended periods of time.”⁶⁹ This evidence means that it is important for policy makers to understand how phasing the approach to mental health services is important to ensuring the target audiences are being reached through policy priorities.

“[People were] emotionally in a different place after what happened. They were very scared, not knowing when they can go back... what’s going to happen with their money, there wasn’t much clarity, when they’re going to go back to work, all those things were creating a lot of anxiety and fear. In some of the clients, not all of them, but some of them for sure had a lot of anxiety as to what was happening. Because, you know, you just take a whole bunch of people who don’t know the language, and you throw them in some sort of big... shelter. And, you know, it’s confusing.”

—Participant

“I even have like sleeping and antidepressant [pills], just to help sleep, especially when it rains.”

—Participant

Farmers themselves are particularly prone to mental health challenges like anxiety and depression and may find themselves at higher risk of suicide and burnout because of this.⁷⁰ Some ways that communities can help support farmers at risk are to ensure services are tailored to farmers and equally well promoted in the community.⁷¹

“So people are out there, businesses are out there that want to help... So don’t be afraid to ask for it. And that’s what people said they learned after time, that they had to put their pride aside because they really needed the help. And they learned that they could ask and accept the help. A lot of them felt very guilty for accepting the help.”

—Participant



“A lot of people in emergency service management positions transition out of their positions, they leave their positions after events. So that’s very common... The organization didn’t take into account the psychosocial impact of an event, or had any services available to their staff for after the event.”

—Participant

There were organizations that proactively tried to ensure that debriefing and mental support was provided to their employees. Emergency responders and those working directly with people impacted by the flood may already be at heightened risk given the nature of their work, and a disaster may exacerbate those very real issues making attention to these individuals a priority.⁷²

As one participant indicated, “Debriefing should be a very normalized process.” EMBC acknowledges how important debriefing is, including the concept on their website.⁷³ It is important to note that on the website, there is no discussion about mental health being a component of debriefing. These processes were present in some organizational plans, but not incorporated in all. Many organizations which did conduct a debriefing did so because the particular leader understood the importance of debrief for the team to learn from the event and to aid in mental health support of their staff. Debriefing was key to learning lessons and making sure staff feel cared for and willing to participate in the next response. Debriefing helps avoid burn out and shows appreciation for staff working in difficult circumstances.

“Yeah, in this instance, for this event, our organization actually was very proactive, and our senior leadership... made a choice to bring in a professional clinician and have that professional clinician join us for our morning briefings, introduce themselves daily, talk about what services they might be able to provide, explain the space that they would be in and when they weren’t talking one on one with someone with a closed door and a comfortable environment they were mingling in the space and that was really beneficial to a lot of staff.”

—Participant

It is imperative that organizations who are working in the mental health space with those who may have unique needs such as cultural or language requirements are able to obtain adequate funding to meet these needs in the community. Stigma, language barriers and trouble navigating the healthcare system can present notable barriers to managing mental health. Many mental health services attempt to use an unfamiliar clinical approach with migrants, missing important cultural, spiritual or religious factors that could be important in understanding their experience.⁷⁴ Research shows that culturally sensitive and targeted mental health services prove to be more beneficial and yield additional positive mental health outcomes. Mental health services and organizations are more likely to give information on paper or send information via email; however, a verbal exchange (i.e., over the phone or face-to-face) is the most effective way to provide information regarding services to newcomers.⁷⁵ Additionally, research suggests that media geared towards ethnic minority groups may be a more effective way to reach specific populations, given language barriers.⁷⁶



"We have capacity [to offer language services]. We have some people [who speak] Punjabi. So that works. But it's, at that time, we also had somebody who spoke Farsi, but it's depending on who [is] available. We're seeing it actually right now as an increase in need with more refugees."

—Participant

"When you all of a sudden put these [disasters] on the radar of people who are not trained in that and don't deal with it day to day, you're really amplifying the stress that they carry. And I've found that often people [responding to disaster] will just grin and bear it, they'll shut up and take it. They'll just do it because it's the right moral and ethical thing to do and they won't self-advocate for mental health supports because they don't know what they're supposed to be feeling. They don't know if what they're feeling is normal. And they don't know what resources are and would be available to them."

—Participant

"Then the migrant workers, that's a whole other group, and then the language capacity. So you now you have like barrier on top [of] barrier."

—Participant

As discussed in the findings above, mental health support is a significant need in the community, specifically post disaster. The flood happened about 18 months prior to this report, and the residual effects of the flood, particularly on mental health, are lingering. Evidence shows that after a natural disaster event, suicides peak at around 2 years post-event.⁷⁷ As Abbotsford approaches this milestone, decision-makers should consider how to mitigate this increased risk through funding targeted programming and support for effective and appropriate care. Additionally, as other social issues such as housing and food security may be exacerbating the struggles that people are facing because of the flood, it is imperative that governments act to ensure that the long-term effects of disasters are considered and planned with respect to funding sources.



Gendered Dynamics

In general, women tend to have a deeper understanding of the effects of flooding events.⁷⁸ Researchers found that “women demonstrated more household-caring attitudes and behaviors and were more prone to report a willingness to help flood victims at reception centers.”⁷⁹ This was evidenced in the emergence of the community hubs and movements which sprung up and were primarily led by female members of the communities. These women understood that their effectiveness was significantly aided by the limited financial regulations they had to work around as well as their social and business connections.

On the other hand, some female participants who were working in formal organizations (and particularly ones that had entrenched bureaucracies and hierarchies that are generally part of an emergency response) described a different experience. One female participant indicated that she “was not heard or listened to”, and connected this to the fact that she was female.

Many of the people who are involved and manage emergency responses are male, and so the dynamics of operating as a woman in this environment can pose particular challenges. Those who were in leadership roles during the flood response discussed the nature of these gendered issues within an emergency response context. These gendered dynamics need to be examined as many of the community hubs were spearheaded by women as they successfully leveraged their community connections and capital, whereas women working more formally in the field of emergency management felt their expertise or knowledge was undervalued.

Key Recommendations

The following key recommendations are based on the experiences of those impacted by the flood or involved in the response and designed to support the development of future emergency response and recovery plans. They are specific to the context of the Abbotsford flood, but also guided by general effective practices when it comes to emergency management. These recommendations should be considered as integrally connected to each another in design and implementation and would be most effectively adopted contemporaneously to maximize impact on disaster preparedness, response and recovery.

IMMEDIATE RESPONSE

1. The municipality should employ an Emergency Manager, who will be the nexus for any community response, and should adequately resource that position.
2. The Emergency Manager should prioritize multi-sectoral relationship building using a community map to identify strengths and gaps to co-create a disaster response.
3. Staffing levels should be determined by the Emergency Manager to account for potential contingencies.
4. A community specific and evidence-informed after-action report template should be designed with clear lines of accountability.
5. Non-governmental organizations should have prominent and accessible spaces within the emergency operation centres.
6. Governments should account for the immediacy of disaster responses to mobilize support as quickly as possible within the initial 72-hour window.
7. Local staff should have the capacity to make eligibility decisions based on "on the ground" information that at times may not be accommodated by the available policies and procedures.
8. Governments should strengthen inter-municipal and inter-provincial emergency connections to maximize the mobilization of trained and qualified staff, in part to more effectively relieve local staff.

SYSTEM NAVIGATION

9. System navigation should be made easier by redesigning and streamlining the mechanism for immediate funding and any disaster financial assistance scheme.
10. BC Hydro should establish account relief policies and client friendly mechanisms for billing reversals.
11. Government should establish the capacity (e.g., a navigator) to support community organizations in the distribution of resources in ways that adhere to the Canadian Revenue Agency restrictions and other regulatory parameters.
12. Appropriate staffing of system navigators with local knowledge should occur, to work both efficiently and thoroughly to provide those impacted with financial funding and other services as quickly as possible.
13. System navigators should have access to a central repository database of information shared by different agencies.
14. Disaster Financial Assistance eligibility should be flexible and case specific emphasizing thorough and timely assessments and limiting repetitive, stressful and time-consuming paperwork for impacted individuals.
15. The Disaster Financial Assistance system should be redesigned to incorporate the diversity and complexities of flood experiences through more expansive eligibility criteria.

16. The use of government sponsored disaster aid voucher programs should be supported by system navigators able to troubleshoot any issues for impacted people and store staff.
17. Intergovernmental attention should be directed to the common disconnect between established policies and their implementation in a crisis context.
18. An evidenced informed needs assessment system, to ensure efficient allocation of resources, should be developed that can be rapidly administered at an emergency reception centre.

PHASED RECOVERY

19. All levels of government should be prepared to design and implement the mechanisms necessary for a phased recovery that accounts for local context.
20. All levels of governments should work with communities as well as the private sector to ensure that flood proofing is incorporated in existing and planned infrastructure.
21. Governments should conduct public consultations on a timeline that accounts for where the community is at during each stage in the recovery process.
22. The delineation of responsibilities should be clearly articulated in policies and ongoing internal and external communication should differentiate between immediate response and long-term recovery.

COMMUNITY MAPPING

23. Community asset mapping should be conducted regularly at the individual, neighbourhood, and organizational level in relation to disaster preparedness, response and recovery.
24. Key staging areas for first responders should not be located in vulnerable disaster zones.
25. Emergency plans should include guidance for extraordinary circumstances such as pandemics or co-occurring disasters.
26. The private sector should be involved in the community mapping process in order to maximize the potential for businesses to mobilize when a disaster occurs.



INFORMATION SHARING

27. A central repository should be established that allows agencies to access key information about affected individuals.
28. The early warning systems between municipalities, provinces, and Washington State should be strengthened.
29. Clear and comprehensive protocols guiding media practices at the reception centres should be established to protect those occupying the emergency reception space.
30. The evacuation plan for Sumas Prairie should be reassessed accounting for animal care and evacuation. This plan should be co-created with the public and emergency services sector, as well as relevant agricultural bodies.
31. Government staff should be trained on the need to share information with non-governmental actors and the importance of inter-and intra-governmental knowledge sharing.
32. Confidentiality protocols should be established to facilitate appropriate information sharing between governments and agencies.
33. Protocols should be established to encourage timely access to information for cross jurisdictional disasters.
34. A disaster response and recovery communication strategy that is crisis informed should be implemented. This strategy should incorporate multiple languages and accessibility considerations.
35. Effective strategies to educate the general public on the hazards in the disaster zone should be designed.
36. Clear and accessible guidelines for the easy and safe removal of hazardous or dangerous materials for those involved in flood response should be established.

INFORMATION SHARING (CONTINUED)

37. The public should be educated about the Ready Alert system.
38. A food and other aid forecasting system should be designed to provide organizations with guidance on what needs are most apparent and how to best allocate donated resources.
39. A centralized phone system should be established to respond to evacuation requests and to avoid miscommunication and duplication of services among responders.
40. Members of the public living and working in hazardous areas should be provided with 72-hour emergency preparedness kits and preparedness information in relation to a multiplicity of disasters.

MENTAL HEALTH CENTRED APPROACH

41. The debriefing of staff and those working directly and indirectly with impacted individuals should be systemic, normalized and prioritized.
42. Appropriate training and resourcing for mental health professionals to mobilize and support responders during disasters should be provided.
43. A coordinated mental health strategy should be developed that recognizes the multi-sectoral experiences, non-linear trajectories, and long-term pathways of grief and growth in both the individual and the community.
44. Sustained funding for mental health outreach should account for immediate and long term needs (2+ years).



LOCAL REALITIES

45. Any future disaster response plan should incorporate the diverse and rich knowledge of Indigenous communities.
46. Disaster response and recovery plans should account for a significant population of temporary foreign workers and the associated language and cultural needs for these individuals.
47. Staff working in the recovery space should understand the unique challenges of the agricultural sector.
48. Planning and recovery efforts should account for the vulnerabilities of specific communities.
49. The transboundary initiative addressing flood prevention and response regarding the Nooksack River should be transparent and prioritized.
50. A coordinated policing strategy to address potential threats such as looting should be developed with attention to evacuees' understandably heightened concerns with respect to their property.

INFRASTRUCTURE

51. Access point vulnerabilities for waste management and other key municipal services should be addressed in community mapping exercises.
52. Rebuilding permit processes should be expedited to support timely recovery.
53. Emergency reception centre spaces should be designed with evacuees at the forefront and incorporate areas that accommodate different needs and preferences.
54. A disaster waste removal plan should be designed to ensure waste removal sites are strategically located.
55. Strategies for transporting evacuees to an emergency reception centre post evacuation should be adequately resourced.



FUNDING

56. Governments should provide the payments they offer in a timely manner.
57. Eligibility for disaster funding should be low barrier and flexible through unconditional cash transfers or virtually reloadable gift cards.
58. Immediate funding should be provided to community organizations to hire additional specialized staff to ensure administrative tasks are being accomplished in the most efficient and effective manner.
59. The gendered nature of care provision in emergency responses should be acknowledged through appropriate and targeted resourcing across responding agencies.



Conclusion

There is an abundance of research that has been conducted on emergency management and response and yet the research to implementation gap continues to be at the heart of many after-action assessments. It is hoped that the voices captured in this report contribute to enhanced preparedness that in turn reduces negative individual and community health consequences, lessens the damage caused by a disaster, and consequently reduces the complex burdens of response and recovery.



AREAS FOR FURTHER RESEARCH

Additional areas to explore in greater depth include:

The impacts of disaster on climate anxiety in children and youth and potential protective strategies.

The relationship between filed and anticipated lawsuits and service provider debriefing and after-action reporting.

The impact of litigious environments on the mental health of those impacted and those responding to the disaster.

An examination of patterns and motivations associated with relocation out of the flooded areas post disaster.

The varied effects of the flood on individual preparedness.

The gendered dynamics of disaster response and recovery.

A longitudinal analysis of the impact of the flood on farmers and the broader food security ecosystem.

The role of social media in disaster response and information sharing.

An exploration of policy-based challenges associated with a shift from the current paper-based system of disaster relief to a virtual platform.

Final Quotes

"We plan even for livestock, reefer trucks and everything was in our plan in the 2007 flood scenarios... because we have so many farms... I think like it was a pretty in depth plan. I know [fellow participants] were kind of there and even the simulations, you know... I mean, we identified Nooksack and how the river would come from Riverside but I think our hands were tied from this southern border."

—Participant

"One thing we learned too, is that the City of Abbotsford doesn't have like an emergency manager position and other communities do, like Mission does, but Abbotsford does not."

—Participant



"If [cross border communication was] strengthened, this could lead to more time for folks when they need to evacuate. Many people identified that had they been given ample time to evacuate, or if they had not been forced to evacuate, perhaps they would have been able to mitigate the losses they incurred."

—Participant

"It's very important, I think that you monitor people to make sure that they aren't overdoing it. I know in my early days, that you sort of didn't want to leave the site, because you want to save people sort of thing. But it's really important that, hey, after eight hours or 12 hours, whatever shifts you put in, get out of there, and there's a tendency [towards] people wanting to stay. So it's important that they monitor that people aren't overdoing it."

—Participant

"I think there [must] be a better way and easier way of maybe having a little bit more resources for people coping with that because a lot of people will come in very emotionally distraught and upset."

—Participant

"I probably did not look after my staff the way I should have."

—Participant

“ But it was the road that was the barrier, and it was that this property is accessible, by one way in, one way out and that's the dangerous piece.

—Participant

“Usually non-profits, they operate by the skin of their teeth anyway. It's not like you have the luxury of having people sitting around waiting for a disaster. And then with COVID, I think everybody was in that boat... It was... the perfect storm.”

—Participant

“How do you create structures that can help direct people? So I thought of what you were saying like asset mapping, having a stakeholder map. I think it's so important... in an emergency to have a point person who holds a lot of information and then can disseminate it quickly and understand like what the assets are, what the potential conflicts are... who the stakeholders are for example.”

—Participant

“ And I guess that's where my biggest frustration was. [Some organizations] had the information and couldn't share with anybody... [I] understand privacy, but it was to me like, well, you can't even give us any kind of numbers... give us some kind of forecasts, like how many people, do some polling and find out from people.

—Participant



“ We can do all the contingency plans we can but really at the end of the day, we just need a system that will work for the majority of people and help alleviate some of the learnings that we did here.

—Participant

“But it definitely felt like the employees that were on the ground doing the work weren't being supported, which did affect all of our mental health, like trying to show up and be positive and still serve all of our clients and learning all this new information and being on top of everything, and then it didn't feel like we had the support of leadership at that time.”

—Participant

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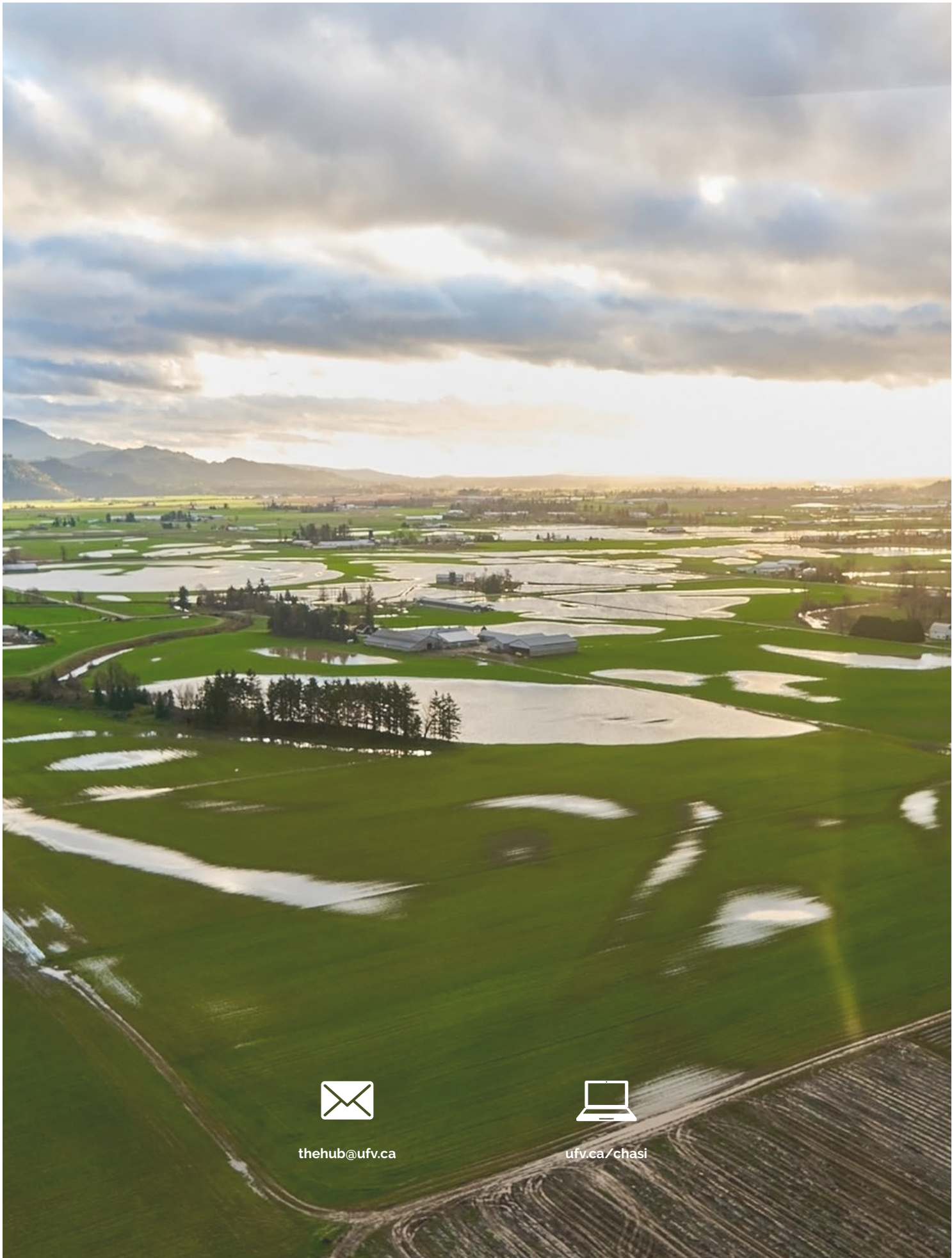
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12 or more--> Probable diagnosis for PTSD...
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