



Calgary Hailstorm Impact Study Report

2022



Contents

Acknowledgments.....	1
About.....	1
Intended Audience.....	1
Introduction.....	2
Methodology.....	2
The Hailstorm.....	3
Timeline.....	4
Hail in Canada.....	6
Results.....	7
Recommendations from Residents.....	14
Discussion.....	15
Conclusion.....	17
References.....	18
Appendix A.....	20
Appendix B.....	21
Appendix C.....	22
Appendix D.....	23

Acknowledgments

We would like to say a huge thank you to Amandeep, Crystal, Hannah, Khalil, Maria, Prakash, Rene, and Sue for participating in the Catalyst Steering Committee that guided this project. This group of individuals came together over Zoom and developed the most inclusive and accessible research design possible with the resources available. Their knowledge of and care for their community was at the heart of this project's success.

Big thanks to Susan Gwynn, our Community Research Assistant. This project quite literally would not have happened without Susan. Thank you, Sue, for all of your outstanding work and leadership on this project.

Thank you so much to The Co-operators for funding this project and for your commitment to community-based research.

Thanks to Kiima Bailey as well as the team at the Samaritan's Purse for providing backbone support to the Catalyst Steering Committee.

We would like to thank the many content experts from academia, the insurance industry, government, and disaster management sectors for their helpful insights.

Thank you to Action Dignity for sharing the results of the Action Dignity Community Needs Assessment Survey.

Thank you to the many community organizations that helped to promote the study and connect us with people in the community.

Thank you to Benton for designing our promotional posters, and to the Calgary Immigrant Women's Association Language Venture program for translating.

Thank you to our practicum student, Annie Gee for your work involving youth in this project.

Finally, thank you to all of the study participants who generously shared their stories.

About

This study was conducted in the traditional territories of the Niitsitapi (Blackfoot) and the people of the Treaty 7 region in Southern Alberta, which includes the Siksika, the Piikuni, the Kainai, the Tsuut'ina, and the Iyârhe Nakoda. We are situated on land where the Bow River meets the Elbow River, and the traditional Blackfoot name of this place is Moh' kins'tsis which we now call the city of Calgary. The city of Calgary is also home to Metis Nation of Alberta, Region 3.

This project was generously funded by The Co-operators.

This study is approved by the Ambrose Research Ethics Board, in accordance with the Ambrose Policy on Ethical Research Involving Humans and the Tri-Council Policy Statement (TCPS-2).

The Canadian Poverty Institute is an inter-disciplinary institute housed within Ambrose University that seeks to heal poverty through teaching, research and practice.

This report was written by Laura Nauta, Researcher with the Canadian Poverty Institute at Ambrose University. For more information, please email povertyinstitute@ambrose.edu.

Intended Audience

This report is available for anyone to read. You might be living in a community that was hit by the June 13, 2020 hailstorm, or another extreme weather event. You might work or volunteer in the insurance or disaster management industries, or government. You might work or volunteer in community with equity-deserving groups. You might be somebody that is interested in learning more about Community-Based Participatory Research.

Introduction

On June 13, 2020, a catastrophic hailstorm ripped through parts of east Calgary, Airdrie, and the surrounding farm-lands in Alberta, Canada. The storm is estimated to have caused \$1.2 billion in insurable losses and over 70,000 insurance claims, making it the costliest hailstorm, and the fourth costliest disaster in recorded Canadian history at the time¹. The context of this storm was unique as many people were already experiencing the financial and social impacts of the COVID-19 pandemic that led to, for example, job loss, food insecurity, and social isolation.

While this storm hit a wide breadth of communities in Alberta, this study focuses on the communities of Castleridge, Cityscape, Coral Springs, Cornerstone, Falconridge, Martindale, Monterey Park, Redstone, Saddle Ridge, Skyview Ranch, and Taradale, all of which are found in Calgary's northeast quadrant and north of McKnight Boulevard. A few participants were also from Whitehorn, which experienced overland flooding and some hail damage. These communities are highly diverse and represent a variety of languages and cultures, which adds to the overall strength and richness of Calgary's culture. In 2021, there were approximately 32,931 private dwellings in the communities north of McKnight Boulevard, which is the closest data set for 2020². In 2016, 81% of the residents identified as a racialized population³, and 2% with Indigenous identity⁴. Over half of the residents spoke a language that was not English at home and identified as Immigrants in 2016. The population was largely comprised of homeowners, and one-third of the population spent 30% or more of their income on shelter costs.⁵

The purpose of this research is to document the narratives from community members about the impacts of the hailstorm, and identify opportunities in insurance, community and government disaster responses to prepare for future extreme weather events.

The goals of this research are to:

- a) Engage residents in creating an accurate picture of the impacts of the June 13 hailstorm and the recovery response.
- b) Make available and accessible relevant information about the hailstorm to local organizations and community members to aid in advocacy efforts and planning.
- c) Assess the current recovery response with respect to accessibility and appropriateness in the current and expected future community context.
- d) Identify strengths and opportunities that contribute to current and future vulnerability, and the resilience of the disaster management responses in the community.

Study Design

Central to this study is the Community-Based Participatory Research (CBPR) approach. For this project, CBPR is defined as research in which the “community of interest (the community which the research is about) are viewed as “experts” on issues that affect them, and are enabled to take a leadership role in designing and conducting the research”⁶. CBPR has strong equity and social justice components, where communities that face inequalities and oppression take a leadership role in “defining and conducting research that is important to them”⁷. Figure 1 outlines the key values and principles that guided this project.

Figure 1: Key Values and Principles of CBPR⁸



This study started with hiring a resident who experienced the hailstorm to provide support as the Community Research Assistant. The primary roles of the Community Research Assistant were to lead the “Catalyst Steering Committee” and community engagement activities; this would ensure equitable and inclusive approaches to research and engagement.

1 Insurance Bureau of Canada, 2020.

2 Statistics Canada, 2021. Table 98-10-0014-01 Population and dwelling counts: Census metropolitan areas, tracted census agglomerations and census tracts.

3 Based on the Census definition of “visible minority”.

4 Based on the Census definition of “Aboriginal identity”.

5 The City of Calgary, 2016.

6 Access Alliance, 2011, p.4.

7 Access Alliance, 2011, p.5.

8 Adapted from The Wellesley Institute, as cited by Access Alliance, 2011, p. 12.

Spotlight Story:**Catalyst Steering Committee***Written by Susan Gwynn***Community Research Assistant**

After the storm, I was working with Samaritan's Purse to hear what the residents in northeast Calgary needed, wanted and deserved. We knew that any action had to be shaped in and by the community. Sometimes, things are done to and for northeast Calgary without any consultation. With that in mind, we set out to start identifying community members who had the time, energy and passion to sit on a committee. This would inform and guide us so that the voices of the communities impacted by the hailstorm would always be front and centre.

The desire of this group was not to fix what was done, but to build capacity and resiliency around what may come in the future. The information that we gathered through this research will be returned to the community so it can be used to guide the next steps in disaster resiliency. The end result is that we want to give this research back to the community so that they can take it and use it to move forward. We can't undo the past, but we can plan for the future.

More details about the project can be found in Appendix's A, B and C.

After learning about various research methods, the Catalyst Steering Committee designed the study using a mixed-methods approach in an effort to ensure that participants could engage in whatever way worked for them. Hosting a town hall forum was discussed, however the group decided to withhold from this method due to limited capacity and the limitations on public gatherings. The Catalyst Steering Committee decided that the study should include one-on-one interviews, an online survey, and a photovoice project. Unfortunately the photovoice project had low participation numbers and was not completed. Both the survey questions and the interview guide were developed in collaboration with the Catalyst Steering Committee. Between March and May 2022, 41 participants representing 37 households participated in one-on-one interviews or an online survey. Due to limitations related to the COVID-19 pandemic and rising cases in Calgary, interviews were all conducted via video conferencing with translators available as needed.

Using the snowball sampling method, people who lived in the northeast quadrant of Calgary at the time of the storm were identified as potential study participants. This type of sampling involves recruiting participants through the networks of existing participants, starting with the Catalyst Steering Committee members. The members received training on research ethics before the recruiting process began. Key informant interviews were conducted with stakeholders involved in the hailstorm response, which provided background information for the timeline of events.

The Hailstorm

Note: this background is a result of conversations with community members. It does not include all experiences or perspectives.

On June 13, 2020, Alberta experienced the costliest hailstorm in recorded history. Environment and Climate Change Canada (2020) described it as thus:

“As was frequently the case this summer, on June 13 warm, humid air was positioned over Alberta generating multiple rounds of severe thunderstorm cells. With colliding winds at various heights over southern Alberta, the resulting wind shearing kept the large, long-lived thunderstorms going. Around 7 p.m. MDT, a hail core scraped over northeastern Calgary, visibility dropped to half a kilometre, and the temperatures fell 5 degrees in less than six minutes. Hail the size of tennis balls and golf-balls ricocheted out of the sky propelled by wind speeds up to 70 km/h.

Pounding hail shook houses, broke windows and downed trees. Crashing hail dimpled vehicles and riddled house siding with millions of dents. The violent hailstorm smashed skylights, flattened flowerbeds and turned backyard vegetable gardens into coleslaw. Streets and intersections were flooded, and manhole covers were lifted. In its wake, slushy hail drifts 10 cm deep piled up along highways, and were still evident the next day. Power outages knocked out service to more than 10,000 customers. Train and bus services were suspended due to flooding. Outside the city, the massive hailstorm decimated hundreds of thousands of hectares of young wheat, canola and barley.⁹



Multiple accounts of the hailstorm reported that the storm came fast and hard, with little warning and time to prepare. Some participants described it as the scariest thing they had ever experienced. People used words such as chaotic, nightmarish, and traumatic to describe the event. For some, this was the first hailstorm they had ever experienced. They were new to Canada, or to the colloquial “hailstorm alley”, and did not previously know that this was a hazard in their community. For others, while this was not their first hailstorm, it was the most intense that they had seen.

⁹ Environment and Climate Change Canada, 2020

People who were home at the time described watching the storm with curiosity at first, and then with growing apprehension as it intensified. One participant described watching cracks form in their living room window, and running to press a mattress against it to protect their family from the shattering glass. Another described the “river of hail” flowing down their street as the drains clogged with ice and the street began to flood.

People who were not at home when the storm hit described being stranded in their vehicles, or trying to navigate transit routes home, due to flooded roadways. Some had to huddle down to protect themselves and their children from the smashing car windows. Upon returning home, one participant

described the scene as “apocalyptic. I left in the morning and everything looked fine and green and nice, and then I came back and it looked terrible”.

When the storm ended, residents came out of their homes to assess the damage and check on their neighbours. Multiple participants phoned their insurance company as soon as the hail started falling, knowing that this would be a significant disaster with many claims. Others did not know what they were supposed to do, or who to call for help. As they slowly began to clean up and rebuild, the full scale of the hailstorm was realized. As one participant noted, there was not a single household in their community that was not impacted in some way from this event.

Timeline¹⁰

Note: this is a high-level timeline of events and does not capture all of the actions related to the hailstorm. There have also been countless hours of work behind-the-scenes that is not public nor included here.

March 15, 2020 City of Calgary declares a State of Local Emergency in response to COVID-19 pandemicⁱ

June 13, 2020 Hailstorm

Week One • June 13 – 19, 2020

Calgary Emergency Management Agency (CEMA) coordinates responsible City of Calgary agenciesⁱⁱ

Hailstorm Action Committee formedⁱⁱⁱ

Large garbage bins set up by City of Calgary for broken glass, siding and shingles^{iv}

Samaritan’s Purse volunteer teams cleaning up debris^v

Community Clean-up led by Ward 5 office^{vi}

Insurance Bureau of Canada releases insurance information for those impacted^{vii}

Week Two • June 20 – 26, 2020

Calgary Emergency Management Agency (CEMA) Community Support Event at Genesis Centre, approximately 200 - 300 residents attended^{viii}

Hailstorm Action Committee letter to province, requesting the set-up of a disaster relief fund^{ix}

Action Dignity survey to assess the impact of the storm by the communities affected, findings reveal 88.5% of participants reporting an increase in stress and mental health issues related to the hailstorm^x

Funding through the Disaster Recovery Program (DRP) is announced from the province for flood-damaged homes. Hail damage is not covered as insurance is considered “reasonably and readily available”^{xi}

July 2020

Discussions between Samaritans Purse, Community Hubs – Trellis and City of Calgary Community Social Workers on emergency and disaster recovery preparedness supports for residents^{xii}

Hailstorm Action Committee letter to Federal government requesting Disaster Financial Assistance Arrangements^{xiii}

Hailstorm Action Committee follow-up letters to province, requesting a) a round table of municipal and provincial representatives to develop a plan to support residents; b) an application to the federal government for Disaster Financial Assistance Arrangements; c) assistance with advocating with insurance companies^{xiv}

Online town hall meeting, facilitated by Action Dignity^{xv}

Notice of Motion from Ward 5 Councillor George Chahal calling for immediate support for residents and incentives for using hail resistant materials^{xvi}

¹⁰ References available in Appendix D on page 23

July 2020 (cont'd)

City of Calgary building and demolition fees waived^{xvii}

July 22 – Hailstorm Action Committee convoy and rally at Alberta Legislature, raising awareness and expressing concerns over lack of response from the Province^{xviii}

August 2020

Hailstorm Action Committee launches campaign to identify victims worst hit^{xix}

Mayor Nenshi writes to Prime Minister Trudeau and Premier Kenney at the direction of Calgary City Council to request assistance^{xx}

Demonstration at McDougall Centre in Calgary calling on more help from the Province and coordination between all three levels of government and the community^{xxi}

September - December 2020

October – Community Social Workers identified and collaborated other City departments supporting the Hailstorm recovery^{xxii}

October 12 – Mayor Nenshi, Councillors Chalal, Demong, Chu, Carra, and NDP MLA Irfan Sabir tour and call for action from all orders of government^{xxiii}

October 14 – First snowfall^{xxiv}

October 25 – 40% Calgary hailstorm claims still outstanding^{xxv}

November – North of McKnight Community Hub (Community Social workers and site lead) meet with Samaritans Purse to discuss impacts of the hailstorm and identify supports for recovery^{xxvi}

November 26, 2020 - March 31, 2021 – Hailstorm Property Tax relief program application available for 2020 or 2021 property taxes online. 86 applications received, 56 approved

December – Samaritans Purse Disaster Needs Assessment^{xxvii}

December 31 – City assesses 7500 homes still damaged^{xxviii}

2021

January 26 – Emergency Preparedness presentation by CEMA^{xxix}

March 16 – Notice of Motion – Calgary Building Services, Planning and Development presented a report to the City of Calgary Priorities and Finance Committee (PFC). Specific impacts in the northeast areas and longer term actions identified with the industry^{xxx}

Spring/Summer Emergency Preparedness and Insurance Bureau of Canada's (IBC) hail preparedness campaign (CEMA)^{xxxi}

May 17 – Launch of the Climate Ready Home Guide^{xxxii}

June 1 – Resilient Roofing Rebate Program (CoC) launched. The Resilient Rebate Roofing program provided rebates for eligible homeowners that had 2020 hail damage (proof required) as long as they were in good standing with their property tax roll, and installed a Class 4 impact-resistant roof in compliance with the program^{xxxiii}

City of Calgary hosts webinars to educate homeowners on how to hire licensed contractors as many "contractors" were going to homes promoting their services but were not licensed^{xxxiv}

June 2021 – Community clean-ups across northeast communities and additional large item disposal for household disposal from hailstorm^{xxxv}

2022

January 1 – Resilient Roofing Rebate expanded city-wide, supporting over 1600 households^{xxxvi}

May 10 – City Counsel votes to end Resilient Roofing Rebate Program once remaining funds have been allocated^{xxxvii}

Background: Hail in Canada

Hailstorms are significant, costly and dangerous hazards, causing billions of dollars in damages across Canada to agriculture and property.^{11 12 13} Hailstorms are “rare extreme events”¹⁴ with high impacts, which makes it difficult to predict future risk. However, there are observable trends to note.

The Insurance Bureau of Canada deems insured losses catastrophic when they total \$25 million or more.¹⁵ Since 1983 (figures in 2020 dollars plus loss adjustment expenses), Canada experienced close to \$10.7 billion in insured losses related to hailstorms.¹⁶ Over the last three decades, the Prairie Provinces have seen a concentration of losses in Alberta, however this is in part related to its higher population when compared to Saskatchewan and Manitoba.¹⁷ In 1999, the Institute for Catastrophic Loss Reduction (ICLR) published a report on Canadian hail climatology examining hail frequency data from 1977-1993.¹⁸ They concluded that there was a significant increase in hail frequencies in Alberta alone after 1982, noting the influences of topographical features like the Rocky Mountains.

As a result of dramatic increases in Canadian hail damage claims in recent years, an updated hail climatology report was published in 2018 to understand current trends in hail frequency.¹⁹ The analysis used data from 1977-2007 which was obtained from all hail observing stations across the country at Environment Canada weather and climate stations. The trend analysis of number of hail days found that from 1977-2007 there was no change in hail frequency for Ontario and decreasing frequency in Manitoba and Saskatchewan. Alberta, however, experienced a statistically significant increase in hail frequency. Hail is a “significant hazard for Canada, causing damage to agriculture and property, but is very unequally geographically and temporally distributed”;²⁰ despite hail events taking place across Canada, southern Alberta experienced storms resulting in the greatest damages.



11 Etkin & Brun, 1999.

12 Etkin, 2018.

13 Raupach et al., 2021.

14 Etkin, 2018, p. 2.

15 Insurance Bureau of Canada, 2021.

16 Figure aggregated from Insurance Bureau of Canada, 2021.

17 Sauchyn et al., 2020.

18 Etkin & Brun, 1999.

19 Etkin, 2018.

The report concluded with recommendations for further detailed research of hail frequency trends, and correlations with larger scale climate drivers.

Climate Change

*Canada's changing climate is causing deep and lasting impacts on our society, economy and environment. Higher temperatures, shifting rainfall patterns, extreme weather events and rising sea levels are just some of the changes already affecting many aspects of our lives. Changes in climate will persist and, in many cases, will intensify over the coming decades. Understanding these impacts is necessary to reduce risks, build resilience and support sound decision-making.*²¹

Hailstorms are used here as an example of an extreme weather event. A recent review of current knowledge of the effects of climate change on hailstorms found that “hailstorms are dangerous



and costly phenomena that are expected to change in response to a warming climate.”²² Severe convective storms, (or severe thunderstorms that are accompanied by hail, heavy rain, tornadoes, or lightning), are the “parent weather phenomenon responsible for producing most damaging hail”.²³ The way in which hazards (such as hail) will respond to the projected increase in the numbers of days when severe thunderstorms are favoured in North America remains unclear.²⁴ An analysis of hail data for North America projected that in general, dryer and cooler regions will see the largest increase in hail threat, while warm and moist regions will likely see decreased hail threat.²⁵

There are uncertainties of key hail-forming processes, and further research is needed to further understand the complexities of a warming climate on hail frequency, intensity, and size.²⁶ These uncertainties are a result of many factors, including “many unstudied regions, a lack of long- term observational data, gaps in process- level understanding complicated by interactions between hail- relevant atmospheric variables and limited hail modelling”.²⁷

A concern is that as the climate changes, hail will become a greater issue because of the frequency of severe thunderstorms increasing alongside further urban development and exposure.²⁸

20 Etkin, 2018, p. 19.

21 Warren & Lulham, 2021.

22 Raupach et al., 2021, p. 1.

23 Mahoney, 2020, p. 17.

24 Brimelow & Burrows, 2017, as cited by Raupach et al. 2021.

25 Brimelow & Burrows, 2017, as cited by Raupach et al. 2021.

26 Mahoney, 2020; Wellmann et al., 2020, as cited by Raupach et al., 2021.

27 Raupach et al., 2021, p. 10.

28 Etkin, 2018.

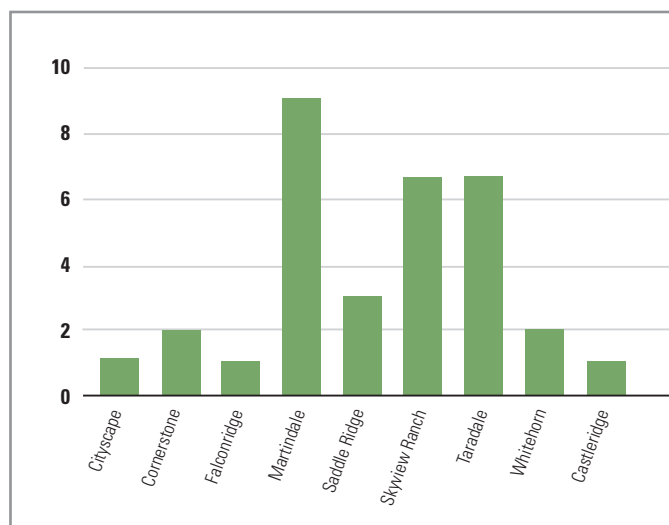
Results

Just as every person impacted by the hailstorm has their own unique story about the experience, so did the participants in this study. These results show themes from the interview conversations and survey responses, along with examples from the participants themselves.

About the Participants

There were 23 survey respondents and 14 interviews conducted throughout the course of this study, with a total of 41 participants representing 37 households. All questions were optional.

Figure 2: Community of Residence on June 13, 2020



Housing status and family composition:

77.1% of participants identified as homeowners at the time of the storm, 20% renters, and 2.9% landlords, with two participants skipping the question. While available Census data is outdated, this is relatively consistent with the 2016 Municipal Ward 5 housing tenure statistics, which includes the majority of communities of interest.²⁹ Two participants skipped this question. 57% of households that participated identified as a couple with children, with the remaining 43% identifying as multi-generational households, lone parents with children, living alone, couple without children, and roommates. Two participants skipped this question.

Income:

Survey participants were asked about their household income at the time of the storm. 45.5% of participants reported a household income of more than \$75,000/year, 27.3% between \$50,000 and \$75,000, 18.2% between \$25,000 and \$50,000, and 9.1% less than \$25,000/year. One participant skipped this question. Three quarters of survey and interview participants stated that their income in 2020 was derived from employment, and one quarter had no income, pension/retirement income, self-employment, or government benefits as a primary income source. Four participants skipped this question.

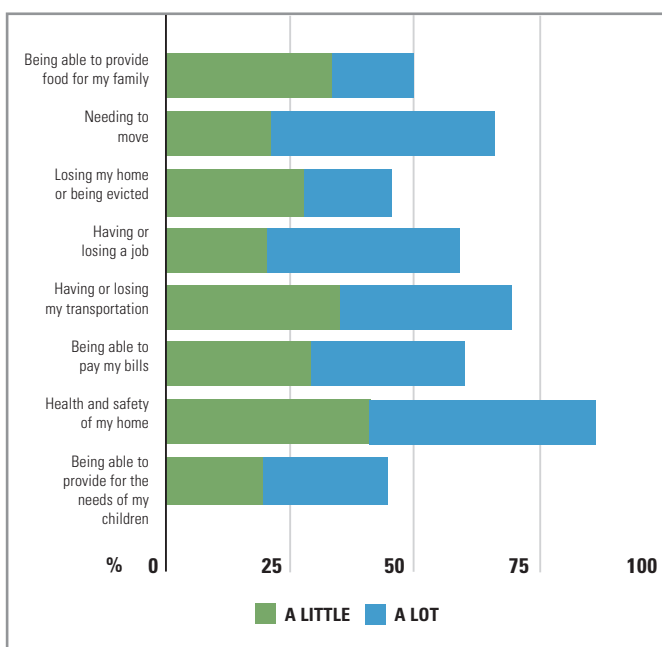
²⁹ The City of Calgary, 2016.

Mental and Emotional Health Impacts

“So, I am here in Canada for six years now, so this happened in 2020, like it was pretty new to me. My first ever hailstorm experience as such. And when I had to experience it, I don’t know what size it was, the trampoline, everything was full of this tennis-ball sized hails. And it was so scary. We were all at home when that happened, my two kids and my husband, and it was like somebody was throwing bullets at you, lot of sound. That was a scary experience, especially with the kids. I was wondering what’s going to happen? I never had such an experience, so it was very traumatic that point in time.”

When asked about how the hailstorm impacted their emotional health on a scale from 0 (no impacts) to 5 (big impacts), survey responses showed an average score of 3.52, with 5 being the most common score. Figure 3 shows the worries that participants experienced since the hailstorm. Multiple participants mentioned the cascading impacts of the economic recession, the COVID-19 pandemic, and finally the hailstorm. One participant described the storm as “the nail in the casket. It really affected all of our mental health because already we’re struggling with employment and worrying about getting sick, and homeschooling, and now a hailstorm”. Another explained that “it was a huge mental stress; in addition to the job losses, the pandemic, it was huge. It was a big blow to the community”.

Figure 3: Percentages of respondents reporting worries about any of the following since the storm



“It just compounds, compounds, compounds on everything that’s going on. For a long time, it was just hard to see people smiling and you know, getting back to their normal selves.”

Mental and emotional health were impacted to varying degrees in the short-term after the hailstorm, as well as in the long-term nearly two years later. At the time of the hailstorm, some feelings that people used to describe the event were fear, stress, helplessness, and uncertainty. Multiple participants used the word traumatic to describe the hailstorm, especially in reference to the ongoing risk of storms in their community.

Short-term, participants noted that the stress of navigating insurance, hiring contractors, and repairing or replacing their vehicles was significant. They talked about feeling stressed, worried, and anxious about themselves, their family and friends who were also involved, and their community. While not all participants noted long-term impacts on their mental and emotional health, there were some who were still experiencing effects nearly two years later. One participant explained that “it did have a huge psychological effect, and I’m not sure if we’re going to know the true results of that for the next ten years, but it will come out how it affected individuals”. Key long-term impacts that participants discussed were high levels of hyper vigilance and self-described obsessive checking of the weather forecast, and a constant sense of worry that this would happen again.

Some participants who experienced delays in their repairs noted that looking at the physical damage everyday delayed their psychological recovery from the event. They were greeted by the damages every day when they returned home. One participant, who was the last on their street to be repaired, noted that, “some of these houses just looked totaled and trashed, but people still had to live there and they still had to live their lives like nothing had happened.” Another talked about how, as the storm happened during the COVID-19 pandemic, they were supposed to be staying in their home. They noted that this was difficult as their “sanctuary” was destroyed in a matter of minutes.

When asked about the impacts on the mental and emotional health of children, the results were mixed. While some participants noted that their children were able to recover quickly from the event, others expressed concern for their children’s mental health. Parents noted that they had observed increased hypervigilance and anxiety from their children about stormy weather. One parent noted that “my daughter used to never be afraid of storms but now if she even sees the clouds

getting darker she runs home and she wants to be home. I have all these pictures and videos of when she was little and her just standing in the doorway bright eyed and smiling, and now she just hides from them”. Parents expressed feelings of helplessness and uncertainty, not knowing how to help their children to navigate their emotional responses to stormy weather since the hailstorm. They spoke about the lack of control that they felt as parents, especially as they were approaching yet another storm season this year.

“ I guess it was a scary reminder that no matter how much I do, the world can change it in a heartbeat. That I don’t like; that sucks big time. And it’s hard, it’s hard not to want to run and get her when I see the clouds forming too now.”

Spotlight Story: The Youth Experience

Written by Annie Gee, BSW Practicum
Student with Dalhousie University

On the day of the hailstorm, Priya (name changed for confidentiality) and her family were celebrating a family members’ birthday. Priya and her other siblings were playing Uno together. While playing, the siblings got very loud and competitive as they usually do. However, they realized that it was also getting louder outside as it started to rain and hail heavily. They stopped playing briefly to look out the window. Priya was worried about her house flooding because watching the storm reminded her of the flood in Calgary in 2013. As she continued to watch the storm with her siblings, she started to become scared. It was “scary but cool at the same time”.

When the storm was over, Priya and her family went outside to look at the damages. She described it as coming into a “zombie apocalypse”. She saw the damages everywhere including the outside of her own home. Priya had never noticed that their doorbell was in a horizontal orientation before the hailstorm. When her house was repaired after the storm, her doorbell was repositioned into a vertical orientation. She reflected that this is now one of the “scars” that she sees outside her home.

Every day, she is reminded of the hailstorm when she comes home from school because she sees her doorbell in a new orientation. She is also reminded of the hailstorm as she celebrates her family members’ birthday each year. As Priya is getting older, she wants to understand how the hailstorm affected her family financially. When the hailstorm happened, Priya was young and was not aware that her family was impacted by the storm. Now, she tries to speak to her parents about the cost of repairs, but her parents tell her not to worry.

Every day serves as a reminder to Priya about the June 2020 hailstorm. However, she is resilient and tells herself that “change is a part of life” and she has “forced [herself] to get used to it”.



Natural Supports Provided an Important Buffer

“The hailstorm gave neighbours the opportunity to actually talk to one another. It was an ice-breaker moment where we shared our disbelief of the damage caused by the hailstorm.”

Many participants brought up the strengths of their community and the supports of neighbours, family and friends. Immediately after the hailstorm, people came out of their homes to assess the damage and check in on one another. Support was given to one another in the way of cleaning up debris, taping up homes, boarding windows, and sharing experiences of navigating the insurance system. There were also reports of people delivering lunches to their community, or offering their trucks and vans for dump runs.

When asked what strengths emerged in the community during this time, many participants stated that the people were the biggest strength that they saw. One participant reflected, “I think we did fairly well as a community, we kind of united, we kind of got each other’s backs, to say don’t worry. We’re all going through this together, we’ll get through this.” Participants who had lived in the community for a longer length of time appeared to have strong connections with their neighbours, and some had friends or family who were also impacted by the hailstorm. They explained that, if there was a silver lining from this event, it would be that it brought people together after a long period of isolation due to the pandemic.

The following two figures highlight sources of help, and type of help received.

Figure 4: Where did you go for help?

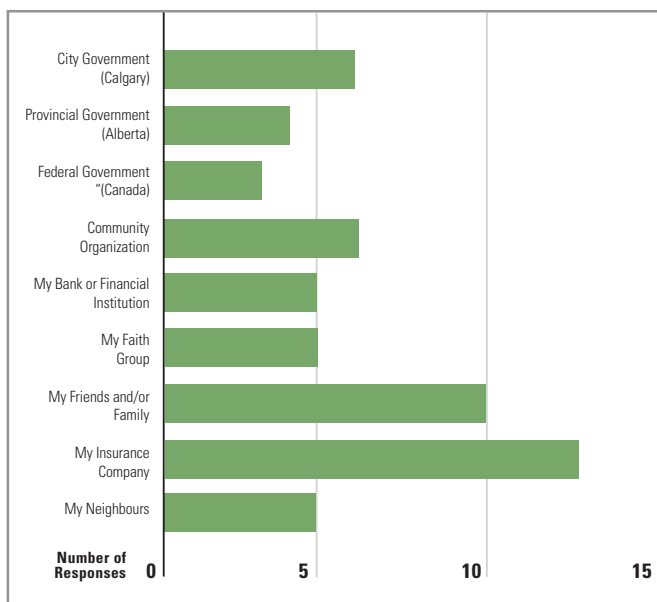
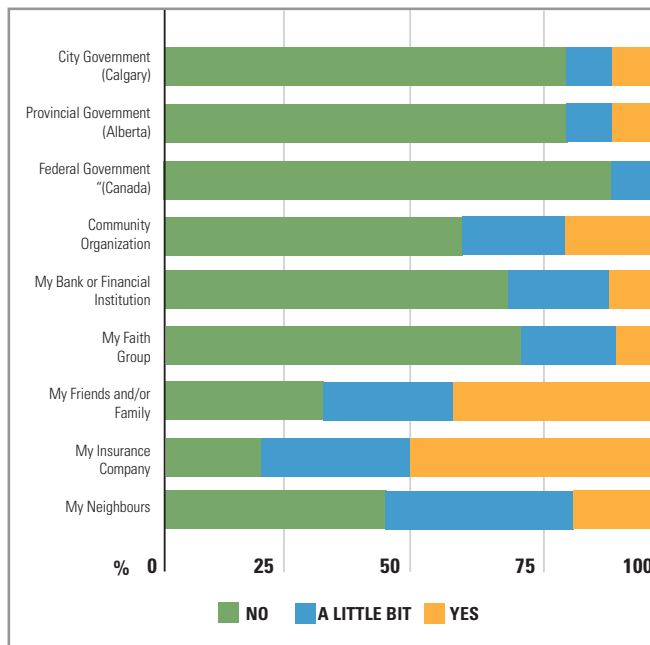


Figure 5: Did you get the help that you needed?



When asked “where did you go for help” (multiple selections allowed), survey results showed that many respondents approached a variety of sources for help after the storm. However, approaching somebody for help and receiving the needed help are different. When asked “did you get the help that you needed”, many respondents selected “yes” or “a little bit” of help from their friends and/or family.

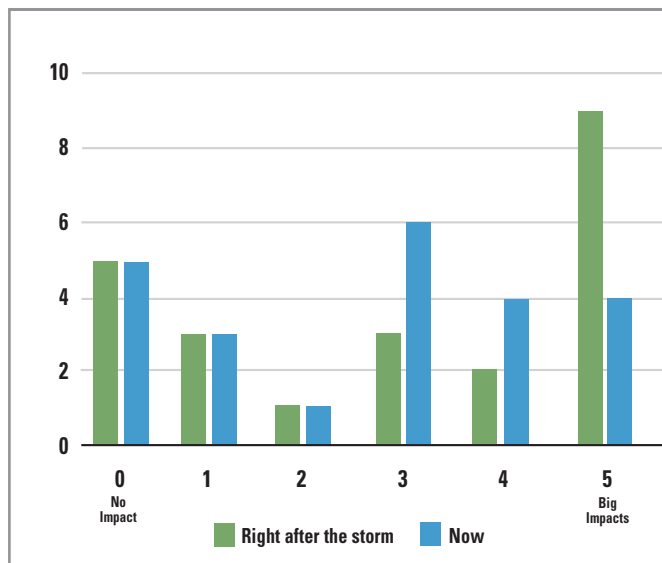
Despite the strong natural supports noted by many participants, this experience was not universal. Some respondents expressed a desire to see more connection in the community, and felt like they did not have support as everyone was dealing with their own situation. Social isolation was raised as a concern by some participants, especially single, older adults who were living alone, or people who were new to the community or country. One participant explained that “because I’m an immigrant here, I don’t have any relatives, so whatever you have to deal you have to deal alone.”

One participant, who works with older adults, explained that because of the lockdown and heavy reliance on technology to communicate, it was difficult to check-in with older adults. While some were living in multi-generational homes, others lived alone and had to navigate rebuilding by themselves. “I had seniors call me and simply cry. They were simply scared so there was a big toll on the mental health issue, especially those living alone”. This links back to the previous discussion on the compounding impacts of the COVID-19 pandemic and the hailstorm on resident’s mental health and wellbeing.

Financial Impacts: Short- and Long-term

“The pandemic hit the community, the entire world, and people were laid off. They had survival jobs, and then they end up with depreciation costs which they are not able to replace the stuff, like the shingles and the siding. And then they end up not able to repair their property. And then when the winter was there, there were houses, there were people who were shivering. You know? Then, on top of that, the utilities show up. So it was a lot of things affected the community, just as a result of the hailstorm, there were repercussions and side effects.”

Figure 6: Financial Impacts



Survey participants were asked to rate their financial stability right after the storm, and their financial stability now. An average score of 2.91 with the most common score of 5 was selected for financial stability right after the storm. An average score of 2.57 with the most common score of 3 was selected for financial stability now. Nearly half of survey respondents reported that they needed financial help to manage and recover after the storm. This aligns with findings from research conducted by Action Dignity in June - July 2020 that reported 45% of 238 participants needed financial supports³⁰. While there are many factors impacting financial stability, these numbers provide insights into how residents perceived their financial stability. Interview and survey results revealed a diverse range of stories with regards to the financial impacts of the storm. Not all participants reported that they experienced negative financial impacts; many had a situation before the storm that allowed them to have a reserve of savings built up, or steady income sources to help buffer the unexpected costs associated with the hailstorm.

However, survey and interview responses revealed that this was not the experience of many households. Participants who were already in a precarious situation due to limited incomes such as pension or AISH, or who had lost or reduced employment, were already struggling financially before the hailstorm. Having a reserve of money saved for emergencies was non-existent or insufficient for some participants. They noted that the costs that they had to pay went beyond just paying for their deductibles.

The extra financial costs that participants struggled to pay added up; and some examples were:

- Paying for storage fees during repairs, especially for people living in flooded basement suits
- Dump and gas fees for disposing of debris
- Losing gardens, which were an essential food source
- No or insufficient coverage for flood-damaged possessions for renters
- High deductibles and depreciation values
- Insufficient automobile insurance
- Discrepancies between the final cost of repairs compared to the payouts provided by insurance
- Rent being raised by landlords to cover costs
- High prices of building materials

Some participants took out loans to pay for their deductibles and other costs, and are as a result still recovering financially. One participant explained, “short term, we couldn’t go without a vehicle so we had to figure it out real fast, and then like I mentioned the debt that came along with it. Long term, we had to figure how we’re going to pay that debt, so had to cut costs from things that were already cut.”

One extreme example was from one participant who, prior to the storm, was behind on their mortgage and insurance payments, and, as a result of the hailstorm, they are now homeless with their child: “I lost everything. I will never recover.”



³⁰ Action Dignity, 2020.

Spotlight Story:
Food Security

Every year, Anita (name changed for confidentiality) grows a beautiful garden of tomatoes, peppers, herbs, cucumbers, rhubarb, carrots, potatoes, and more. Anita’s household takes what they need, and then they distribute the rest to people in the community. It is a big source of food for Anita’s family. Not only that, Anita proudly makes canned goods to give as presents at Christmas.

At the time of the hailstorm, Anita was out with her family getting groceries. When they saw the clouds rolling in, Anita thought that they should head home; storms can get big in northeast Calgary. As the wind picked up, Anita thought of the months of hard work and money that they had invested in their garden. Anita had hail covers ready as protection, but she was not able to reach her house in time because of flooding in the neighbourhood. When they finally made it home, hail and wind had destroyed everything in the garden. There was no way to save anything.

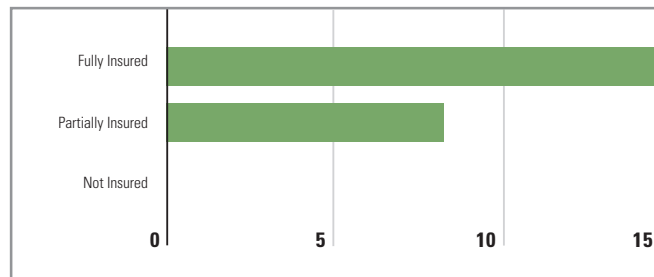
This had financial ripple effects into the next year. Money was already tight for Anita, but every year she used seeds saved from the previous year’s harvest. Because her garden was destroyed in 2020, she had to purchase seeds in 2021. Her produce for the year, including canned Christmas gifts, was gone, which brought another unexpected expense to her budget. When reflecting on her experiences of the hailstorm, Anita said, “My garden. I think that is the biggest one that hurt me, it makes me cry. It was sad not to be able to share.”

Insurance Access was Complex

“ Everything comes down to money, you know? If you have the money, things will be done. If you don't have the money, or if you're limited, then it's hard to do things.”

The overall theme that emerged from the interviews and survey responses was that, while most participants had insurance coverage in place, there were many nuances and complexities that they faced. This led to frustrations and challenges with repairing their properties, along with many positive experiences. All of the individual experiences that were reported by study participants are not captured here, rather high level themes. In this very small sample, all of the study participants had some level of insurance in place which is not representative of the whole community, as seen in Figure 7.

Figure 7: Insurance uptake



Some participants shared positive experiences while navigating the insurance system. They expressed empathy for the volume of claims and the strain that insurance providers would have been experiencing during this time. Multiple participants, in particular those who called their insurance provider as the storm was happening, had adjusters at their house the night of the storm, some in the middle of the night, who were assessing the damage. Some praised their providers for being reasonable and open to negotiating the deductible amounts, or explaining the nuances of their policy to them.

One participant explained, “I never understand what they’re saying. Too many big words for me. Even when I call, I always have to get them to explain it to me even if it’s a refresher; they never make any sense. Usually they’ll give you a half decent explanation, especially if you get a nice person they’ll help you through a lot of it.” Some participants who were able to bill the repairs directly to their insurance company found it to be an easier process than taking the payout and handling the repairs themselves.

Participants expressed a wide variety of challenges with accessing insurance, highlighting the fact that, despite this being an insurable event, the recovery experience was complex. The key challenges that participants experienced were high deductibles and premiums, depreciation and insufficient coverage, and communication issues.

Some participants were already in the position of making difficult choices about where their limited income needed to go, such as feeding their children or paying for utilities. Due to these preexisting financial hardships, they had claims denied as they were behind on their insurance for their home or vehicles. Others did not have the buffer of savings to pay for their deductible, as discussed in the financial impacts section of this report.

Communication issues were brought up multiple times by participants. Some participants reported waiting up to two months to hear back from their insurance company after their initial call. Some stated that they would try to call or email multiple times a week with no response due to the high volumes of claims.

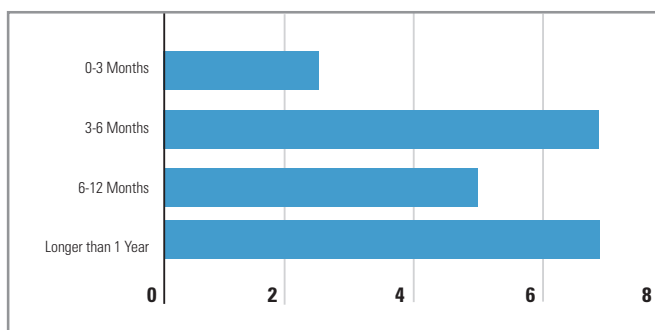
For participants who had made a previous claim in 2016 from another hailstorm, some encountered challenges as a result. For example, one participant explained that their roof had been partially repaired, rather than the whole roof, so the value of their roof was assessed as an older roof. They expressed frustration as homes with fully replaced roofs in 2016 were considered new. Another had not finalized their repairs until 2018, and then two years later experienced this hailstorm again.

Many participants discussed the experiences of new Canadians and Immigrants, especially related to language barriers and the fine print of policies. One participant explained, “I’m sure, many of those insurances things you don’t understand [even if you speak English], and you’re not a lawyer. Fine print, nothing. Many people did not speak English, or very poor English, so when they call the insurance companies, the only thing they say is yes, yes, yes.” Another noted that “they were really scared to communicate, they were not able to understand, and they wanted somebody to communicate for them which was not accepted by the insurance agencies. So there were lots of problems going on”.

There were many complexities with repair times, as is seen in Figure 8; many participants reported that they were delayed because of supply and labour shortages. Others reported that they had received a payout that was lower than the actual replacement cost of fixing their home, and they had to take out loans or delay repairing their home as a result.

The experiences of renters was unique, as some did not feel like they had control over the pace of repairing the home. “It’s frustrating, but as a renter you don’t have much say. You can bug them to get the things fixed and get things done, but how they decide to do it; it’s totally out of my hands”. Landlords also had their own unique challenges, some having multiple properties and insurance companies to navigate.

Figure 8: Rebuilding Time



Residents Wanted More Support from the Government

“Even if it is technically insurable, there are loopholes in that.”

A strong theme that emerged from both the survey and interview participants was that they felt like the government, at all three levels, could have done more to support them financially as well as social/emotionally (see Figures 4 and 5). While this was not expressed by every participant, there were strong themes that emerged especially with regards to financial supports for residents who were already struggling as a result of the current economic context. Some participants acknowledged that, in their experience, there were limits to what the insurance system was able to support, and that they were frustrated and hurt by the lack of response or recognition from the provincial and federal governments for hail damage. While the Disaster Recovery Program (DRP) was activated for households that were affected by flood damages, many participants expressed disappointment that it was not expanded to the hail damage given the unique economic context.

Some participants expressed feelings of abandonment by the government and the broader community, in ways that went beyond financial assistance. They discussed seeing the “hands-on” response and coordination during the 2013 floods in Calgary, and noted that they did not experience that during their recovery. They recalled seeing people who were not damaged by the 2013 flood coming to help clean out basements, fundraising events, and media attention to rally support. They also talked about seeing places for people to come and get help that were set up in the flooded communities, but that they did not see that in their community after the hailstorm.

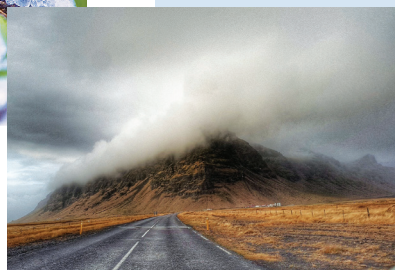
Interview participants expressed feeling like they were not part of the broader Calgary community during the hailstorm recovery, and like they were left to fend for themselves. Some participants felt like trust between the community and the government had been broken down, and that there were lasting impacts as a result. Some participants speculated that there was a racial component to the lack of response, and wondered about what the response would have been like if a different part of the city had been hit by the hailstorm rather than the highly diversified communities in northeast Calgary. One participant explained, “Maybe the monetary loss, we can mend it. But the government hurt our feelings. We are in Canada, we are Canadian, but for the flood it’s the ‘Calgary’ flood, and for the hailstorm it’s the ‘Northeast’ hailstorm.”

While some participants expressed gratitude for the City bringing garbage bins to their communities, they wished that there was deeper help provided. One participant noted that they did their best to clean up their community, but that the scale of the debris and glass in their community was impossible for individuals with brooms to clean up. Many participants noted that they didn't want financial help, rather support with cleaning up the mess to increase perceptions of safety and community well-being. Interview participants expressed a desire to have more check-ups to see how they were doing, especially for vulnerable or isolated residents. Some noted that they did see some politicians visit their community on the news, but that they would have appreciated a more coordinated effort to support with the clean-up and other needs that emerged.

"They should have come and looked more. A quarter of the city was blasted, be aware of it, be helpful, don't say you'll do something and then we never hear about it again".

Most participants reported that they had knowledge of the supports that were put in place after the hailstorm, such as the Resilient Roofing Rebate through the City of Calgary. However, some noted that since it was not rolled out until a year after the storm, they had already replaced their roof and did not upgrade it. Some participants said that, had they known that there was a rebate available sooner, they would have upgraded their roof. Some participants noted that they explored the option of upgrading their roof, but that they received quotes that were much higher than the rebate would cover.

There was broad acknowledgement that participants would have liked to upgrade their roofs, and that it would have provided more peace of mind for future hail events.



Spotlight Story

Hailstorm Action Committee

The neighborhoods that were impacted by the hailstorm have a long history of community organizing and coming together to support one another. After the hailstorm, a group of volunteers organized to advocate for the supports that they knew were needed by residents in their community. Within a month, they had gathered the support of residents in the community and approximately 30 community organizations, faith groups, and community associations.

In the weeks following the hailstorm, the Hailstorm Action Committee met with the City of Calgary and learned more about the roles of the three levels of government related to disaster recovery. They wrote letters to the provincial government requesting a) a roundtable of municipal and provincial representatives to develop a plan to support residents; b) an application to the federal government for Disaster Financial Assistance Arrangements; and c) assistance with advocating with insurance companies.

On July 22, they organized a peaceful convoy and demonstration at the Alberta Legislature to raise awareness and express their concerns over the lack of response from the Province. They also gathered in August at the McDougall Centre in Calgary calling on more help from the Province and coordination between all three levels of government and the community.

"One of the requests was that we want to sit on the table with the City Counsellor, who was ready to meet us, a few members from the Hailstorm Action Committee, some from the provincial government, and some from the federal government. Now, let's sit at the table and work out a solution. And honestly, they didn't even entertain us with that. And if at the table they said sorry guys, we can't help you, we would have stopped, but honesty goes a long way and they weren't honest with us."

Some members of the group expressed disappointment at the lack of acknowledgement of their efforts and validation of their concerns. They grew exhausted from the circles that they had to go in, and lack of responses while trying to get support for the most vulnerable in their community.

Recommendations from Residents

Participants were asked to reflect on what would have been more helpful for them, and what might help them to feel more prepared for another extreme weather event. This does not include a discussion of feasibility; it is meant to be an opportunity for various stakeholders to hear the experiences of those with lived experience.

Insurance

Help understanding insurance policies: Multiple participants suggested that it would be helpful to have more clarification and support to understand what is and is not included in their insurance policies, required documentation, and the “fine print”. This was noted as something that would be especially helpful for first time home buyers, people who had not experienced a hailstorm before, renters, and people for whom English was not their dominant language. Interpretation services were suggested, not only for insurance documents but for direct contact with insurance companies.



Central phone number: Multiple participants noted that they struggled to navigate the insurance system, and that they were not sure who to call. They stated that one point of contact or a central phone number would have been very helpful, especially with multi-language support included.

Outreach and communication: A suggestion emerged that insurance providers could contact their clients directly to see what sort of help they needed and what their options were. They explained that this would be helpful as they were already dealing with the trauma of the event, cleaning up debris, and preventing further damages to their home.

Reasonable deductibles, premiums, and depreciation values: A common source of stress for many participants was the cost of paying their deductible and depreciation values as well as increased premiums. Due to the complexity of these values, there were not any suggestions about how to improve this, but it is important to note that this was a significant issue that was raised.

Government

Listen to the voices of the community: Many participants stated that they felt like the government did not listen to their needs. They suggested that the government make a better effort to center the voices of those with lived experience, and act on the concerns that people are raising.



Garbage bins: While many participants expressed gratitude for the bins delivered by the City of Calgary to the community, there were some who did not see any in their community despite living in hard-hit neighbourhoods. It was suggested to increase the amount of bins available to ease the burden

of arranging for a vehicle to transport debris to the dump, and dump fees. It was also suggested that there could be more communication about bin locations.

Outreach and support with clean-up: While a few participants noted that they knew about the CEMA Community Support Event at the Genesis Centre, participants suggested a more coordinated effort to support with clean-up and outreach from the City of Calgary. Some participants also suggested that more efforts be made to check in on vulnerable residents, such as older adults, people with disabilities, and other isolated residents.

Better coordination between municipal, provincial and federal governments: Study participants who were involved in advocacy expressed frustration as they tried to navigate the roles and responsibilities of the three levels of government with regards to disaster relief.

Financial assistance: Participants expressed concerns that a storm being deemed an insurable event should not mean that the government does not help residents recover. They highlighted that the unexpected costs associated with an extreme weather event can be catastrophic for a household and have many compounding impacts on their financial resiliency, which is something that the government has a responsibility to help buffer. They noted that there are limits to what insurance can cover, and that they need the provincial government to take some ownership of the financial burdens that this places on residents. Some suggestions were interest-free loans or broadening the eligibility of the Disaster Recovery Program.

Subsidies for hail-resistant upgrades: Participants noted the importance of home upgrades, however the cost of such upgrades were challenging for many of them. They suggested that the Resilient Roofing Rebate program be reinstated, as well as subsidies made available to help with the other upgrades such as siding.

Regulation on the cost of insurance: Participants expressed concerns about the increases to their insurance premiums and deductibles, and suggested more regulations with regards to this issue.

Workshops or community engagement about climate change and extreme weather: Some participants expressed concerns about the changing climate and increasing extreme weather events. They suggested more community engagement to help their community understand the risks, as well as supports that they could access. This would also help them to understand the role of the government in disaster mitigation and recovery.

Community Organizations

Support from community organizations outside of the affected communities:

Some participants noted that they were concerned about the local community organizations' ability to support residents as they themselves had been impacted by the hailstorm. They suggested that support could be coordinated from outside of the impacted communities.

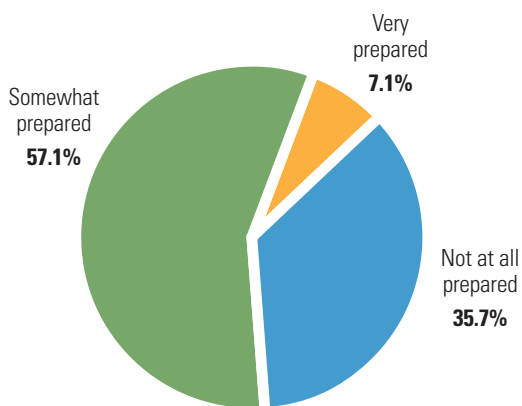


Mental health supports: Some interview participants pointed out that their interview for this study was the first time that they had talked in depth about the impacts of the hailstorm on their lives. They suggested that more local, culturally-appropriate mental health supports should be available. One participant suggested creating support groups where they might talk about their experiences with other residents.

Translation and system navigation: Many participants suggested providing more supports with low-cost or free translation and advocacy support as they navigated rebuilding activities. They also recommended organizing volunteers to support people who had their vehicles destroyed, but still relied on a vehicle to get to medical appointments and groceries.

Disaster preparedness plan: Some participants expressed concerns for future extreme weather events (see Figure 9), and suggested neighbourhood-level disaster preparedness plans that could be coordinated by community associations. Multiple participants recommended that The Genesis Centre should continue to serve as a hub where people can access supports and information.

Figure 9: How prepared do you feel if a storm or other emergency should happen in the future?



Discussion

Below is a discussion of the key themes and recommendations from the research and related literature.

Vulnerability

Disasters are not natural; it is the social, political, and economic context that enables an environmental hazard (e.g., a hailstorm) to become a disaster.^{31,32}



An oversimplified example is this: imagine a massive hailstorm that hits the middle of an empty, uninhabited field, resulting in no damages or loss of life. This is merely a natural hazard. However, if the same hailstorm hit a densely populated urban area and surrounding farmlands, households might experience billions of dollars in damages as well as disruptions to their lives and livelihood. The natural hazard became a disaster due to the destruction experienced by humans.

As climate change amplifies the frequency and intensity of extreme weather events, existing vulnerabilities are exposed and intensified. The effects of climate change and extreme weather do not exist on their own; they intersect with attributes and identities that leave individuals and communities vulnerable.³³ Context and history are critical to understanding vulnerability and marginalization.

Defining Vulnerability

While all populations can be affected by extreme weather, these events disproportionately impact people and communities experiencing vulnerability.³⁴⁻⁴³ The term vulnerability “encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.”⁴⁴ It is important to understand vulnerability in its many forms when planning and decision-making; below is a discussion on physical and social vulnerabilities.

Physical Vulnerability

Physical vulnerability involves the physical nature and exposure to a hazard.⁴⁵ For example, some communities might be exposed to tornados and severe storms, while others might be exposed to earthquakes or hurricanes. Calgary is situated in the colloquial “hailstorm alley”, meaning that it experiences a high amount of hail when compared to other communities in Canada.

31 Cannon, 1994; Cutter et al., 2008; Cutter & Finch, 2008 as cited by Davies et al., 2018.

32 Haque & Etkin, 2012.

33 Kaijser & Kronsell, 2014; Moosa & Tuana, 2014; Iniesta-Arandia et al., 2016, as cited by Sauchyn et al., 2020.

34 Benevolenza & DeRigne, 2019.

35 Davies et al., 2018.

36 Deria et al., 2020, March 8-20.

37 Hallegatte et al., 2020.

38 Hutchins et al., 2018.

39 Lejano, 2019.

40 Sauchyn et al., 2020.

41 Schmeltz et al., 2013.

42 Shonkoff et al., 2010.

43 Wright & Nance, 2012.

44 IPCC, 2014, as cited by van der Geest & Schindler, 2017, p. 29.

45 Cutter, Mitchell, & Scott, 2000, as cited by Wang et al., 2019.

Approaches to lowering physical vulnerability could include building codes and standards, rebates such as the Resilient Roofing Rebate, as well as community and home maintenance measures.⁴⁶ However, there is a social component to physical vulnerability; for example, while the higher-income population might invest in resources to improve their recovery after an event, lower-income populations might not be able to afford the costs of repair, reconstruction, or relocation.⁴⁷

Social Vulnerability

People can experience vulnerability because of “prejudice, discrimination, and stigma due to their socio-economic status, race/ethnicity, gender, age, cognitive and/or physical ability, etc.”⁴⁸ This is experienced at an individual/household level, as well as at a broader community level. However, it is important to keep in mind that communities are not uniform; there are vast differences in levels and causes of vulnerability within communities themselves.⁴⁹

The recently released *Prairie Provinces; Chapter 4 in Canada in a Changing Climate: Regional Perspectives Report (2020)* explored the importance of using an intersectional approach⁵⁰ to understand vulnerable social groups. This approach helps to highlight the complexities of systemic inequities, such as the legacy of colonization, patriarchal structures, ableism, poverty, and racism. Climate change and the resulting increases in frequency and intensity of extreme weather events “may exacerbate existing societal inequities, especially among Indigenous peoples, women, people of low socio-economic status, youth and the elderly”.⁵¹ However, Sauchyn et al. (2020) cautioned that:

“While there is value in understanding which factors render various social groups more or less vulnerable to climate change, it is important to avoid portraying all members of such groups as inherently and consistently vulnerable and lacking the ability to respond to risks.”⁵²

Understanding physical and social vulnerability can help to realize sensitivities to hazards, and what effective disaster preparation, responses and recovery might look like.^{53,54} However, “current steps taken during severe weather events are critical to assisting vulnerable populations...[but] these do not address systemic equity and poverty issues which are inherently needed for climate justice”.⁵⁵

People who are characterized by the causes of vulnerability have important perspectives and crucial insights to contribute, and should be meaningfully included in decision-making processes and planning for extreme weather events and climate change adaptation.^{56,57,58} We strongly recommend that decision-makers meaningfully include Indigenous and local knowledge in decision making. The risk of excluding the community can inadvertently rebuild the structures of vulnerability.^{59,60}

Impacts of Severe Weather Events

Severe weather events can have many lasting consequences and impacts on the lives and livelihoods of people, often extending far beyond the event. The trauma, stress and anxiety of severe weather events can exacerbate or develop into mental, emotional, and physical health concerns, leading to increased demands on health care systems.⁶¹⁻⁶⁴ Communities might experience damage to housing, shelter, food security and infrastructure, as well as disruptions to social networks and cultural impacts.⁶⁵ People who live in “low-income countries and poor people living in affluent countries tend to suffer disproportionately from environmental disasters”,⁶⁶ The financial strain of severe weather events is felt acutely by people who are experiencing poverty, as they tend to lose a larger portion of their wealth and have a lower ability to financially recover.⁶⁷



Resilience

Resilience is a common word that is used when discussing disaster planning and recovery. One way of thinking about resilience is that it “is not about returning to or maintaining an ideal state. Rather, it is a dynamic process of honouring and integrating diverse solutions and approaches that build on community strengths and enable transformative, equitable change”.⁶⁸ Resilience involves a complex interplay between the individual people (e.g., personal financial stability and natural supports) and the community/systems that cause people to be more vulnerable as discussed previously.⁶⁹

Approaches to community resilience involve not only describing a community’s vulnerability, but assessing its strengths. Community resilience can be viewed as a process rather than an outcome, incorporating collaboration and partnership to mitigate against the shocks of extreme weather events.⁷⁰ Community strengths, such as social cohesion, strong social networks, affordable housing, food security, trusting relationships, cultural traditions and diversity, all provided a buffer to individuals against the negative health impacts of disasters.⁷¹



46 Council of Canadian Academies, 2022.

47 Deria et al., 2020.

48 Benevolenza & DeRigne, 2019, p. 268.

49 van der Geest & Schindler, 2017.

50 “Intersectionality” is a term that was coined by Kimberlé Crenshaw in 1989 to describe how a person’s identities, such as race, class, sexuality and gender, combine to create different forms of privilege and discrimination (Cooper, 2015).

51 Sauchyn et al., 2020, p. 6.

52 Sauchyn et al., 2020, p. 41.

53 van der Geest & Schindler, 2017.

54 Wang et al., 2019.

55 Krista de Vera, 2020, p. 62.

56 Hallegatte et al., 2020.

57 Schmeltz et al., 2013.

58 Whyte, 2014 as cited by Sauchyn et al., 2020.

59 Bhatt & Reynolds, 2012.

60 Haque & Etkin, 2012.

61 Benevolenza & DeRigne, 2019.

62 Early Sifuentes et al., 2021.

63 Hutchins et al., 2018.

64 Szoller, 2019.

65 Szoller, 2019.

66 Davies et al., 2018, p. 1.

67 Hallegatte et al., 2020.

68 Early Sifuentes et al., 2021, p.1.

69 The Canadian Poverty Institute, 2019.

70 Nuwayhid et al., 2011 & Chandra et al., 2010, as cited by Plough et al., 2013.

71 Early Sifuentes et al., 2021.

Insurance

Insurance is a known method for reducing risk, improving resilience, and promoting recovery in the event of extreme weather. It can offer financial protection, aid in rebuilding and recovery, and promote risk reduction before and after an event.⁷² In the United States and Canada, there are well-developed insurance systems in place; in Canada, hail is covered under most home insurance policies.⁷³ However, there are many complexities around insurance uptake and access; research has shown that some populations are less likely to have insurance or appropriate insurance, such as lower-income households.⁷⁴ There can also be challenges with communicating information about hazards; this information is not always accessible to the public, available, and “readily understandable without specialized knowledge or expertise.”⁷⁵



For a detailed scan of insurance models and projects with a focus on inclusivity and affordability, please visit the companion report, *Literature Review and Promising Practices Scan*.

Public Private Partnerships

Insurance is not the only way to build resilience, and the complexity of disaster risks warrants a complex response.⁷⁶ The recently published *Building a Resilient Canada* report examined the ways in which Canada can improve resiliency to climate-related hazards by better integrating climate change adaptation and disaster risk reduction.⁷⁷ One of their key findings was that there is a need for “flexible funding, financing, and insurance arrangements that support proactive investment.”⁷⁸ They recommended that insurance policies, public funding, and private investment can play a role in supporting action. As low frequency, high impact events become more common, there have been calls for whole of society approaches to mitigate and manage loss that includes government, civil society, the private sector, and households.^{79, 80}

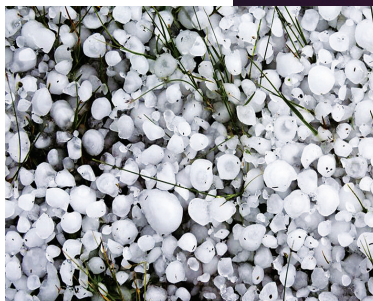


An example of a key public resource that helps to buffer the impacts of extreme weather events is The Disaster Recovery Program (DRP), which provides financial assistance to residents of Alberta for uninsurable losses and damage caused by emergencies and disasters. A municipal government must apply to the provincial government for the DRP, and then residents can apply for the financial assistance. In the case of the June 13, 2020 hailstorm, damages caused by overland flooding were eligible for DRP assistance, while hail damage was not as it is considered insurable.⁸¹ In the policy, it states that a disaster will qualify if insurance is “not reasonably or readily available for the type of disaster.”⁸² We recommend further research and clarification into the language behind this policy using an equity and inclusion approach.

Conclusion

A disaster can be a focus event (or triggering event), which is a sudden event that makes decision-makers aware of a problem that demands policy intervention.⁸³ It can exacerbate existing vulnerabilities and highlight a path forward into increased resilience. The catastrophic hailstorm on June 13, 2020 highlighted systemic inequities that people face every day. Disasters are not just about money and who pays for the recovery; the broad impacts of this event were felt financially, emotionally, mentally, and physically.

The supports that society puts in place to buffer the impacts of extreme weather and climate change need to take this into account holistically. There is an opportunity here to reflect on the lessons learned from this event and to amplify the strengths that already exist in our communities and in the lives of those with lived experience.



72 Kousky, 2019.

73 Insurance Bureau of Canada, 2021.

74 Kousky, 2019.

75 Council of Canadian Academies, 2022, p. xx.

76 Council of Canadian Academies, 2022.

77 Council of Canadian Academies, 2022.

78 Council of Canadian Academies, 2022, p. xx.

79 Council of Canadian Academies, 2022.

80 Kleffner & Kelly, 2022.

81 Government of Alberta, 2022.

82 Government of Alberta, 2022.

83 Atkinson, 2019.

References

- Access Alliance. (2011). *Community-Based Research Toolkit: Resources and Tools for Doing Research with Community for Social Change*. Access Alliance Multicultural Health and Community Services. https://accessalliance.ca/wp-content/uploads/2020/07/CBR_Toolkit_1_Jan2012.pdf
- Action Dignity. (2020). *The NE Calgary Hailstorm Response*. Internal policy brief: unpublished.
- Atkinson, C.L. (2019). Focus events and public policy. In Farazmand, A. (Ed.), *Global Encyclopedia of Public Administration, Public Policy, and Governance*. https://doi.org/10.1007/978-3-319-31816-5_274-1
- Benevolenza, M.A. & DeRigne, L. (2019). The impact of climate change and natural disasters on vulnerable populations: A systematic review of literature. *Journal of Human Behavior in the Social Environment*, 29(2), 266-281. <https://doi.org/10.1080/10911359.2018.1527739>
- Bhatt, M.R. & Reynolds, T. (2012). Community-based disaster risk reduction: Realizing the primacy of community. In C.E. Haque, & D. Etkin (Eds.), *Disaster risk and vulnerability: Mitigation through mobilizing communities and partnerships* (pp. 71-90). McGill-Queen's University Press.
- Bernhardt, A., Kousky, C., Read, A., & Sykes, C. (2021). *Community-based catastrophe insurance: A model for closing the disaster protection gap*. Marsh & McLennan; Wharton Risk Management and Decision Processes Centre. [https://www.marshmclennan.com/content/dam/mmc-web/insights/publications/2021/february/Community--Based--Catastrophe--Insurance--\(Final\).pdf](https://www.marshmclennan.com/content/dam/mmc-web/insights/publications/2021/february/Community--Based--Catastrophe--Insurance--(Final).pdf)
- Cooper, B. (2015). Intersectionality (abstract). In Disch, L. & Hawkesworth, M. (Eds.), *The Oxford Handbook of Feminist Theory*, 385-406. DOI: 10.1093/oxfordhb/9780199328581.013.20
- Council of Canadian Academies. (2022). *Building a resilient Canada*. The Expert Panel on Disaster Resilience in a Changing Climate, Council of Canadian Academies. <https://cca-reports.ca/wp-content/uploads/2022/01/Building-a-Resilient-Canada-web-EN.pdf>
- Davies, I.P., Haugo, R.D., Robertson, J.C., Levin, P.S. (2018) The unequal vulnerability of communities of color to wildfire. *PLoS ONE*, 13(11), 1-15. <https://doi.org/10.1371/journal.pone.0205825>
- Deria, A., Ghannad, P., & Lee, Y-C. (2020, March 8-20). *Analyzing vulnerability of lower income communities to natural disasters*. Construction Research Congress 2020. Temple, Arizona, United States. <https://doi.org/10.1061/9780784482858.082>
- Early Sifuentes, J., York, E. & Fultineer, C. (2021). *Social resilience and climate change: Findings from community listening sessions* [meeting abstract]. Oregon Climate and Health Program, Oregon Health Authority, Portland, OR, United States. <https://www.thelancet.com/action/showPdf?pii=S2542-5196%2821%2900087-5>
- Earthquake Insurance. (n.d.). Jumpstart. Retrieved January 4, 2022, from <https://www.jumpstartinsurance.com/earthquake-insurance>
- Environment and Climate Change Canada. (2020, December 16). *Canada's top 10 weather stories of 2020*. Government of Canada. <https://www.canada.ca/en/environment-climate-change/services/top-ten-weather-stories/2020.html#toc12>
- Etkin, D. (2018). *Hail climatology for Canada: An update*. Institute for Catastrophic Loss Reduction. <https://www.iclr.org/wp-content/uploads/2018/03/hail-climatology-for-canada-an-update.pdf>
- Etkin, D. & Brun, S.E. (1999). A note on Canada's hail climatology: 1977-1993. *International Journal of Climatology*, 19 (1357-1373). [https://doi.org/10.1002/\(SICI\)1097-0088\(199910\)19:12%3C1357::AID-JOC422%3E3.0.CO;2-B](https://doi.org/10.1002/(SICI)1097-0088(199910)19:12%3C1357::AID-JOC422%3E3.0.CO;2-B)
- Government of Alberta. (2022). *Disaster financial assistance and recovery support*. Government of Alberta. <https://www.alberta.ca/disaster-assistance-and-recovery-support.aspx>
- Hallegette, S., Vogt-Schilb, A., Rozenberg, J., Bangalore, C., & Beaudet, C. (2020). From poverty to disaster and back: A review of the literature. *Economics of Disasters and Climate Change*, 4, 223-247. <https://doi.org/10.1007/s41885-020-00060-5>
- Haque, C.E. & Etkin, D. (2012). Introduction. In C.E. Haque & D. Etkin (Eds.), *Disaster risk and vulnerability: Mitigation through mobilizing communities and partnerships* (pp. 3-23). McGill-Queen's University Press.
- Hutchins, S.S., Bouye, K., Luber, G., Briseno, L., Hunter, C., & Corso, L. (2018). Public health agency responses and opportunities to protect against health impacts of climate change among US populations with multiple vulnerabilities. *Journal of Racial and Ethnic Health Disparities*, 5, 1159-1170. DOI 10.1007/s40615-017-0402-9
- Insurance Bureau of Canada. (2020, July 22). *Insurers supporting Albertans through hailstorm recovery*. Insurance Bureau of Canada. <http://www.ibc.ca/ab/resources/media-centre/media-releases/insurers-supporting-albertans-through-hailstorm-recovery>
- Insurance Bureau of Canada. (2021). *2021 Facts of the Property and Casualty Insurance Industry in Canada*. http://assets.ibc.ca/Documents/Facts%20Book/Facts_Book/2021/IBC-2021-Facts.pdf
- Kleffner, A.E. & Kelly, M. (2022, January 5). *Insurance isn't enough: Governments need to do better on natural disaster resilience*. *The Conversation*. <https://bit.ly/3fKd21P>
- Krista de Vera, M. (2020). Vulnerable communities and municipal climate change policy in Toronto. In P.E. Perkins (Ed.), *Local activism for global climate justice* (pp. 58-70). Routledge.
- Kousky, C. (2019). The role of natural disaster insurance in recovery and risk reduction. *Annual Review of Resource Economics*, 11, 399-418. <https://doi.org/10.1146/annurev-resource-100518-094028>

- Kousky, C., Wiley, H., & Shabman, L. (2020). *Can parametric micro insurance improve the financial resilience of low-income households in the United States?* Wharton Risk Center, University of Pennsylvania. <https://riskcenter.wharton.upenn.edu/wp-content/uploads/2021/01/Proof-of-Concept-report-2020.pdf>
- Lejano, R.P. (2019). Climate change and the relational city. *Cities*, 85 (25-29). <https://doi.org/10.1016/j.cities.2018.12.001>
- Mahoney, K. (2020). Extreme hail storms and climate change: Foretelling the future in tiny, turbulent crystal balls? In Herring, S.C., Christidis, N., Hoell, A., Hoerling, M.P., & Stott, P.A. (Eds.), *Explaining Extremes of 2018 from a Climate Perspectives* (pp. 17-22). Bulletin of the American Meteorological Society. <https://doi.org/10.1175/BAMS-D-19-0233.1>
- Plough, A., Feilding, J.E., Chandra, A., Williams, M., Eisenman, D., Wells, K.B., Law, G.Y., Fogleman, S., & Magana, A. (2013). Building community disaster resilience: Perspectives from a large urban county department of public health. *American Journal of Public Health*, 13:7, 1190-1197. doi: 10.2105/AJPH.2013.301268
- Raupach, T.H., Martius, O., Allen, J.T., Kunz, M., Lasher-Trapp, S., Mohr, S., Rasmussen, K.L., Trapp, R.J., & Zhang, Q. (2021). The effects of climate change on hailstorms. *Nature Reviews Earth & Environment*, 2 (213-226). <https://doi.org/10.1038/s43017-020-00133-9>
- Recoop Disaster Insurance. (n.d.). Recoop Disaster Insurance. Retrieved January 20, 2022 from, <https://www.recoopinsurance.com/>
- Sauchyn, D., Davidson, D., & Johnston, M. (2020). *Prairie Provinces; Chapter 4 in Canada in a Changing Climate: Regional Perspectives Report*. Government of Canada. <https://www.nrcan.gc.ca/sites/nrcan/files/earthsciences/Prairie%20Provinces%20Chapter%20%E2%80%93%20Regional%20Perspectives%20Report.pdf>
- Schacht, J. & Gbadamosi, E. (2021, November 29). Building resilience for low-income New Yorkers post-disaster. *Government Technology*. <https://www.govtech.com/public-safety/building-resilience-for-low-income-new-yorkers-post-disaster>
- Schmeltz, M.T., González, S.K., Fuentes, L., Kwan, A., Ortega-Williams, A., & Pilar Cowan, L. (2013). Lessons from Hurricane Sandy: A community response in Brooklyn, New York. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 90(5), 799-809. doi:10.1007/s11524-013-9832-9
- Shonkoff, S.B., Morello-Frosch, R., Pastor, M., & Sadd, J. (2010). The climate gap: environmental health and equity implications of climate change and mitigation policies in California—a review of the literature. *Climate Change*, 109(S1), 485-503. DOI 10.1007/s10584-011-0310-7
- Statistics Canada. (2021). Table 98-10-0014-01 Population and dwelling counts: Census metropolitan areas, tracted census agglomerations and census tracts.
- Szoller, D. (2019, October 1). The social cost of climate change impacts on the vulnerable. *Climate Scorecard*. <https://www.climatescorecard.org/2019/10/the-social-cost-of-climate-change-impacts-on-the-vulnerable/>
- The Canadian Poverty Institute. (2019). *The financial security and resiliency of Canadians living in poverty*. Internal report to The Co-operators: unpublished.
- The City of Calgary (2016). *The City of Calgary Ward 5 Profile*. City of Calgary. <https://www.calgary.ca/csps/cns/social-research-policy-and-resources/ward-5.html>
- van der Geest, K. & Schindler, M. (2017). *Handbook for assessing loss and damage in vulnerable communities*. United Nations University Institute for Environment and Human Security (UNU-EHS). https://collections.unu.edu/eserv/UNU:6032/Online_No_21_Handbook_180430.pdf
- Warren, F.J. and Lulham, N. (2021). Introduction. In Warren, F.J. & Lulham, N. (Eds.), *Canada in a Changing Climate: National Issues Report* (pp. 14-25). Government of Canada. https://www.nrcan.gc.ca/sites/nrcan/files/pdf/National_Issues_Report_Final_EN.pdf
- Wiley, H. (2022, January 5). The first multi-peril disaster insurance product – a Q&A with Darren Wood of Recoop. *Wharton Risk Management and Decision Process Centre*. <https://riskcenter.wharton.upenn.edu/lab-notes/recoop/>
- Wright, B. & Nance, E. (2012). Toward equity: Prioritizing vulnerable communities in climate change. *Duke Forum for Law & Social Change*, 4(1), 1-21. <http://scholarship.law.duke.edu/dfsc/vol4/iss1/1>
- Wang, Z., Lam, N.S.N., Obradovich, N., & Ye, X. (2019). Are vulnerable communities digitally left behind in social responses to natural disasters? An evidence from Hurricane Sandy with Twitter data. *Applied Geography*, 108, 1-8. <https://doi.org/10.1016/j.apgeog.2019.05.001>

Appendix A Hailstorm Poster

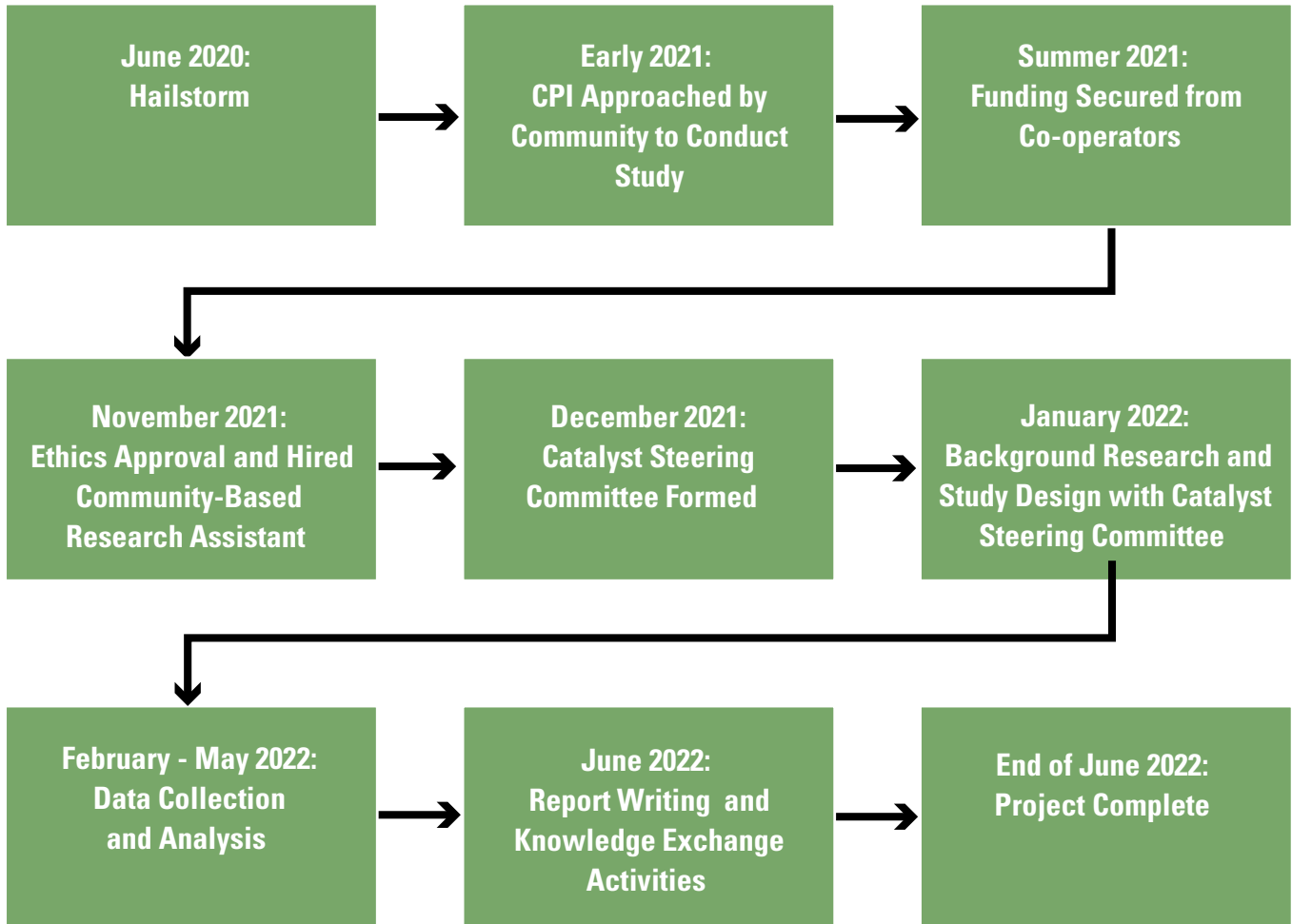
Hailstorm Participation Poster, designed by community member and available in five languages

We are working with the community to learn about how the June 13, 2020 hailstorm impacted them. This research is led by a group of people who live in NE Calgary.

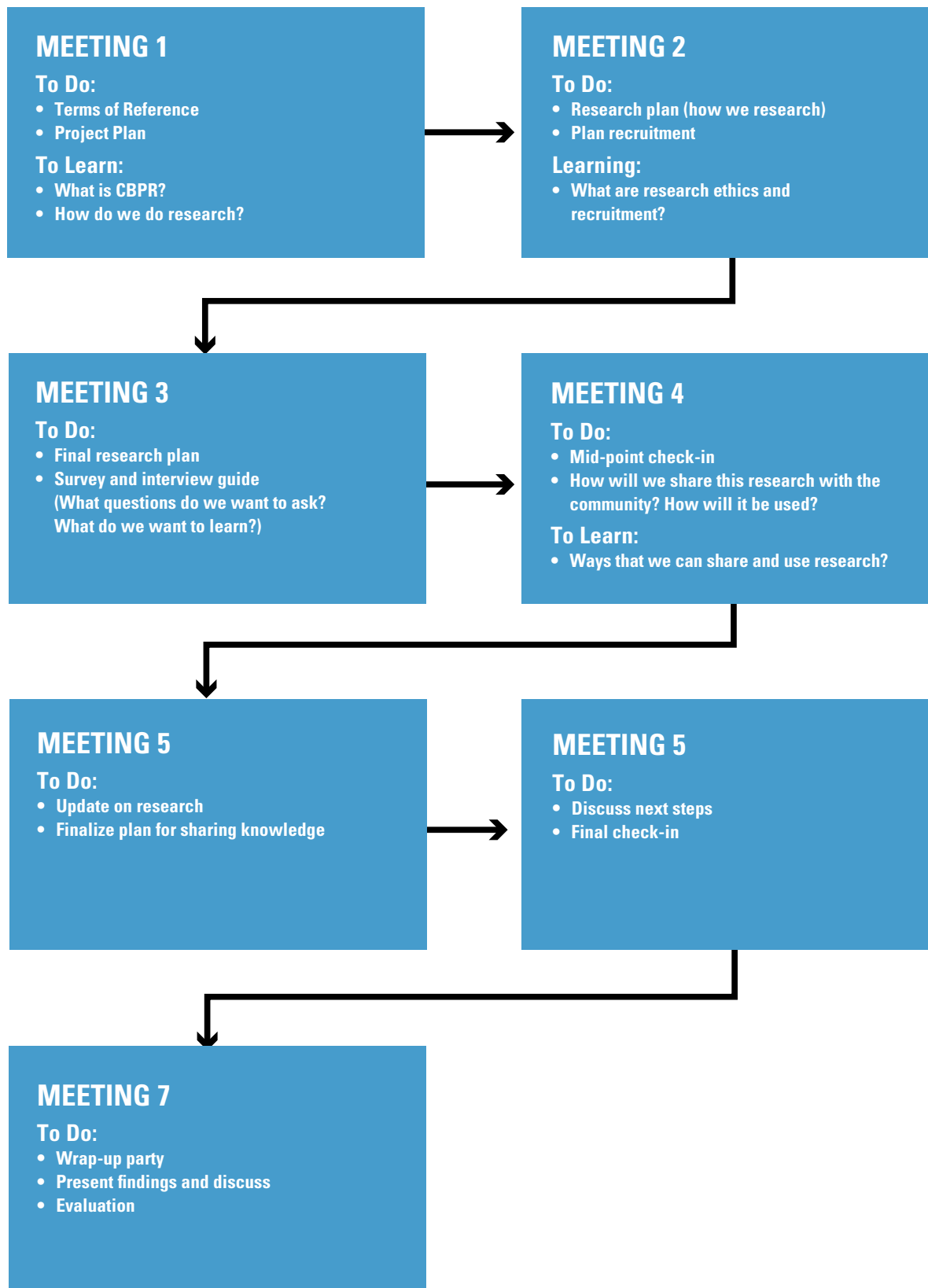
Two ways to share your story:
Survey link: <http://bit.ly/hailsurvey>
One-on-one interview
Questions? Email CPI_Research@ambrose.edu



Appendix B Study Timeline



Appendix C Catalyst Steering Committee Activities



Appendix D

List of Sources for Hailstorm Timeline of Events

- i City of Calgary. (2020, March 15). City of Calgary declares State of Local Emergency. The City of Calgary Newsroom. <https://newsroom.calgary.ca/city-of-calgary-declares-state-of-local-emergency/>
- ii City of Calgary, personal communication, April 25, 2022.
- iii Hailstorm Action Committee member, personal communication, February 23, 2022.
- iv Cai, L. (2020, June 17). Garbage Collection after Hailstorm. Settlement Calgary. <https://settlementcalgary.com/2020/06/17/garbage-collection-after-hailstorm/>
- v Samaritan's Purse Calgary, personal communication, March 17, 2022.
- vi Community member, personal communication, May 31, 2022.
- vii Insurance Bureau of Canada. (2020, June 15). Insurance Information for Those Impacted by Calgary Hailstorm. IBC-BAC. <http://www.abc.ca/ab/resources/media-centre/media-releases/insurance-information-for-those-impacted-by-calgary-hailstorm>
- viii City of Calgary, personal communication, April 25, 2022.
- ix Hailstorm Action Committee member, personal communication, February 23, 2022.
- x Action Dignity. (2020). The NE Calgary Hailstorm Response. Internal policy brief: unpublished.
- xi Government of Alberta. (2020, June 25). Disaster Funding for Flooding in Calgary and Area. Alberta. <https://www.alberta.ca/release.cfm?xID=7269140897D2F-F2D5-2C7B-B63FAB06F09D3C90>
- xii City of Calgary, personal communication, March 21, 2022.
- xiii Hailstorm Action Committee member, personal communication, February 23, 2022.
- xiv Hailstorm Action Committee member, personal communication, February 23, 2022.
- xv City of Calgary, personal communication, March 21, 2022.
- xvi City of Calgary. (2020, July 20). Notice of Motion Re: Disaster Relief and Mitigation. City of Calgary. <https://pub-calgary.escribemeetings.com/filestream.ashx?DocumentId=157433>
- xvii City of Calgary, personal communication, May 24, 2022.
- xviii McGarvey, D. (2020, July 22). Calgary residents travel to Edmonton to demand help recovering from devastating N.E. hailstorm. CBC. <https://www.cbc.ca/news/canada/calgary/northeast-calgary-hailstorm-alberta-kenney-1.5657965>
- xix Hailstorm Action Committee. (2020, August 7). Calgary Hail Storm [Facebook page]. Facebook. Retrieved March 21, 2022 from <https://www.facebook.com/yychailstorm/posts/hailstorm-action-committeefor-immediate-releaseaugust-7-2020-hailstorm-action-co/129306302194095/>
- xx Smith, M. (2020, August 11). 'We are feeling hurt right now': Northeast Calgary residents keep pushing for hailstorm relief. Calgary Herald. <https://calgaryherald.com/news/local-news/we-are-feeling-hurt-right-now-northeast-calgary-residents-keep-pushing-for-hailstorm-relief>
- xxi Smith, M. (2020, August 11). 'We are feeling hurt right now': Northeast Calgary residents keep pushing for hailstorm relief. Calgary Herald. <https://calgaryherald.com/news/local-news/we-are-feeling-hurt-right-now-northeast-calgary-residents-keep-pushing-for-hailstorm-relief>
- xxii City of Calgary, personal communication, March 21, 2022.

- xxiii MacVicar, A. (2020, October 12). Calgary council urges action for hail-damaged northeast as winter approaches. Global News. <https://globalnews.ca/news/7393380/calgary-council-hail-damage-northeast-winter/>
- xxiv Newsroom Staff. (2020, October 14). Calgary wakes up blanketed in first snowfall of the season. Calgary Herald. <https://calgaryherald.com/news/local-news/calgary-wakes-up-blanketed-in-first-snowfall-of-the-season>
- xxv Dao, C. (2020, October 25). 40% of Calgary hailstorm claims still outstanding: Insurance Bureau of Canada. Global News. <https://globalnews.ca/news/7421317/claims-outstanding-calgary-hailstorm/>
- xxvi City of Calgary, personal communication, March 21, 2022.
- xxvii City of Calgary (2020). 2020 Hailstorm Property Tax Relief Program Terms and Conditions. <https://www.calgary.ca/content/dam/www/cfod/finance/documents/Hailstorm-program-Terms-and-Conditions.pdf>
- xxviii City of Calgary, personal communication, March 21, 2022.
- xxix Toy, A. (2021, January 14). City of Calgary issues property assessments following June hailstorm. Global News. <https://globalnews.ca/news/7577075/calgary-2021-property-assessment/>
- xxx City of Calgary, personal communication, March 21, 2022.
- xxxi City of Calgary, personal communication, March 21, 2022.
- xxxii City of Calgary, personal communication, March 21, 2022.
- xxxiii City of Calgary, personal communication, April 25, 2022.
- xxxiv City of Calgary, personal communication, May 12, 2022.
- xxxv City of Calgary, personal communication, April 25, 2022.
- xxxvi City of Calgary, personal communication, March 21, 2022.
- xxxvii City of Calgary, personal communication, April 25, 2022.
- xxxviii City of Calgary, (n.d.). Hail storms in Calgary. City of Calgary. <https://www.calgary.ca/pda/pd/home-building-and-renovations/hail-in-calgary.html>



**CANADIAN POVERTY
INSTITUTE**

**The Canadian Poverty Institute
150 Ambrose Circle SW
Calgary, Alberta T3H 0L5
PovertyInstitute@ambrose.edu
www.ambrose.edu/cpi**