

A Hot Topic: Feeling the Impacts of Extreme Heat



Sarah Marie Wiebe
Kirsten Mah

Research Report
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A Hot Topic Final Report

“Feeling the Heat of B.C.’s Climate Emergency:
Co-Creating Equity-Informed Emergency Planning and Climate Policy with Affected
Communities to Address Extreme Heat Exposure in the Capital Regional District.”
2023

**A partnership between the University of Victoria and
Capital Regional District Community Health Network**



**University
of Victoria**





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Our Team



SARAH MARIE WIEBE

Principal Investigator
Assistant Professor, School of Public Administration,
University of Victoria



KIRSTEN MAH

Co-investigator
Healthy Communities Planner
Capital Regional District



ALFONSINE LEYNES

Undergrad RA
BA student, Health Information
Science, UVIC



RILEY SONDERGAARD

Undergrad RA, BA student,
Geography and
Environmental Studies, UVIC



JUMAI EMENIKE

Graduate RA
MPA Student, School of Public
Administration, UVIC



LEXY STEWART

Graduate RA
MA student, Public Health & Social Policy,
UVIC



ERICA DOLMAN

Graduate RA
MPA Student, School of Public
Administration, UVIC



Project Summary


Our community-engaged research project brings together literature in equity studies, planetary health, intersectionality-based policy analysis and environmental justice to examine emergency management, planning and policy responses to extreme heat in British Columbia, with a specific focus on the Province's Capital Regional District.

To flesh out representations of vulnerability, articulated as priority populations or affected parties, we analyze extreme heat events and climate adaptation policies at local, regional, and provincial levels of government, and enrich these with the stories of those with lived experience. Specifically, from a community-engaged participatory research approach, the voices of those most affected by extreme heat are elaborated and discussed based on a mixed methods study (qualitative and quantitative methodologies), with a survey receiving 325 responses and 7 sharing circles to include the perspectives of priority populations such as seniors, especially those living in social isolation, newcomers, and those with perinatal lived-experience, such as pregnant and nursing people.

Our research approach advances an equity-informed lens anchored in a framework of policy justice to address extreme heat exposure, highlight the impacts of extreme heat exposure on vulnerable/priority populations in the region and further improve public engagement, emergency management, policy and planning in British Columbia. For more information, see our [Research Team Story Map](#).

Introduction: Why the Climate Emergency is a Hot Topic with Local Effects and Lived-Experiences


In the summer of 2021, British Columbia experienced a heat dome that caught many individuals, governments and non-government organizations off guard. Due to a changing climate, the 2021 Heat Dome is no longer an isolated event. In 2022, B.C. also experienced heat events where temperatures were at least 15 degrees Celsius higher than usual (PreparedBC, 2022). The impact of climate change is making extreme heat events the new normal and it is incumbent upon all of us to prepare for these events. One important aspect of that preparation is research that directly connects with those most impacted by these events to ensure interventions resonate with them.



The 2021 Heat Dome directly resulted in the deaths of 619 people (BC Coroners Service, 2022). These deaths were related to heat stroke and extreme heat's exacerbation of existing conditions such as respiratory illness and cardiovascular issues (WHO, 2018). Beyond the 2021 Heat Dome, it is estimated that extreme heat directly increases deaths in Canadian cities by 2-13% annually (Berry, P, Schnitter, R, 2022). Since the 2021 Heat Dome, much of the research and media attention has been focused on those who died while many interventions, such as heat pump subsidies, have been focused on those privileged enough to own a single-family home. We know that the experiences of the 2021 Heat Dome and other heat events is not confined to these two ends of the spectrum. There was significant suffering that fell between, especially among vulnerable populations such as seniors, those on certain medications and with certain medical conditions, as well as those living alone. To fully understand the impact of extreme heat, we must explore the broadness of experience and speak directly to those impacted to understand their stories and highlight their recommendations.

Knowing that we are facing more extreme weather events and understanding that they have the potential to have significant impacts on human health, it is imperative that we gain a comprehensive understanding of the impact of climate change on health by speaking directly with those most impacted. The importance of this research was identified by the Capital Regional District Community Health Network's (CRD CHN) Healthy and Safe Environment Subgroup. This group is made up largely of climate action planners from municipalities across the Capital Regional District. In 2022, they highlighted the need to hear directly from those most impacted to understand the full implications of extreme heat and other climate-related events. To conduct this research, they partnered with Dr. Sarah Marie Wiebe from the University of Victoria to develop a methodology that would allow vulnerable groups' voices to be heard. This report is the result of this research collaboration.

In addition to this research project, the urgency of extreme heat has resulted in a variety of projects being conducted within our Region to support local preparation. To avoid duplication and harness the impact of collaboration, we have ensured that we work closely with the other projects in our region. One example of this, is extreme heat mapping that is being conducted by various municipalities in our region.




This project focuses on identifying the heat vulnerability of physical spaces in terms of geographical features as well as demographic characteristics of those who live in those spaces. Our goal in collaboration is to harness the stories we have gathered through this research project to inform and bring to life the important information that is being mapped. This will give a human face to the experience and, hopefully, spur further action to support those most impacted by extreme heat.

The goal of our research is to support governments, service providers, health authorities and individuals to prepare for, respond to and recover from extreme heat events. We know that such events do not impact everyone evenly. Our goal is to capture experiences from across the spectrum with a specific focus on groups who are most vulnerable to negative health outcomes. By hearing directly from impacted individuals, we can elevate their voices and hear recommendations that will make a significant impact in their lives. This will allow us to ensure interventions resonate with those most impacted and will be accessible for individuals across our region.

Our Approach

Numerous studies have provided extensive evidence on the lived experiences of extreme heat and the existing inequities faced by vulnerable groups. Government action plans and guidelines have been developed to address these issues. However, there remains a considerable disconnect between the well-crafted action plans or policy briefs and the actual lived realities of citizens. The fundamental aspects of individual experiences and perspectives have not been adequately incorporated into policy planning, especially as it relates to the built environment. This research aims to bridge this gap by assessing how individual perspectives and lived experiences can inform and enhance heat planning and emergency preparedness in British Columbia.

To address the inequitable impacts of climate change, governments must respond with equitable interventions that address the needs of those most negatively impacted by climate change related events. Our research emphasizes an equitable, planetary health lens with an emphasis on intersectionality, design justice and participatory research— which means co-creating solutions with affected communities— must be part of the design of policy avenues for alternative healthier, more sustainable and decolonial futures (Academic Health Institutions’ Declaration on Planetary Health, 2023; Brousselle et al., 2022; Costanza-chock, 2020; ; Hankivsky & Jordan-Zachary, 2019; Hoogeveen et al., 2021; Levac & Wiebe 2020).




Without this participatory approach, those most vulnerable to the effects of climate change will continue to be left out of vital policymaking programs and processes. This would be a democratic failure and a failure of “knowledge democracy” specifically (Hall, 2014). Contributing to this scholarship, our deliberative approach to research involves co-creation with affected communities. Community-members have been involved in all stages of this research from design through to dissemination of findings.

Vulnerability

The Government of British Columbia identifies the most at-risk segments of the population as older adults, individuals living alone, those with pre-existing health conditions, individuals with mental health disorders, people who use substances, those in precarious housing situations, individuals working in hot environments, people who are pregnant, infants, young children, and individuals with disabilities or limited mobility (Government of British Columbia, 2023). A major component of public health efforts to protect people from extreme heat events centres on assessments of individual and community-level vulnerability. According to Akerlof et al., (2015), climate change vulnerability can be “deconstructed into three components: sensitivity, exposure and the capacity to adapt” (pg. 15, 420). The results of Akerlof et al.’s (2015) study reveal that certain groups with elevated susceptibility to health effects linked to climate change, along with increased exposure, already perceive themselves as more vulnerable compared to the public. Understanding how more vulnerable populations interpret risks related to climate change and extreme heat is extremely important when developing policies. However, this is not well understood, and more research evidence is needed to align these perceived risks with policy.

Numerous initial extreme heat policy initiatives centered around disseminating information about climate change. Unfortunately, these efforts often overlooked the populations most susceptible to the impacts of severe climate events. However, there has been a noticeable positive shift towards incorporating these marginalized groups within the realm of policy development. For example, one of the Government of British Columbia’s most recent publications, “Extreme Heat Preparedness Guide” identifies populations most at risk and provides specific solutions for many of these identified groups.



Many at-risk groups are considered more vulnerable for a variety of reasons. For instance, in Canada, extreme heat events are regarded primarily as an urban issue (Liang & Kosatsky, 2020). Evidently, most of the emergency response plans are urban centered because cities and metropolitan areas are prone to being urban heat islands, which is the phenomenon of experiencing warmer temperatures than surrounding rural areas, due to industrial and human activities (Liang & Kosatsky, 2020). Consequently, rural communities face unique vulnerabilities that are often overlooked, in terms of heat sensitivity and adaptive capacity which are also determinants of vulnerability.

McGill (2017) also cited that older adults may have pre-existing health conditions that make them more susceptible to heat waves and other extreme weather events that are becoming more common due to climate change. Similarly, low-income individuals may not have access to the resources needed to protect themselves from these events, such as air conditioning or emergency supplies (Liang & Kosatsky, 2020; McGill, 2017). Ultimately, there are many factors that compromise the health of our communities, particularly those most vulnerable. Therefore, understanding these differentiating impacts and mitigating these effects is essential to protecting our communities and preparing for future climate change-related events.

Extreme Heat and Planetary Health

Planetary health emphasizes the interconnectedness of human well-being, the health of animals, and the environment (Ebi et al., 2020; LeClair & Potter, 2022). It acknowledges that our own health is closely tied to the well-being of our planet (Ebi et al., 2020; LeClair & Potter, 2022). Regrettably, human activities have disrupted Earth's natural systems, causing harm to the air, oceans, and land. These disruptions not only threaten the existence of various species but also pose significant risks to human health (Ebi et al., 2020; LeClair & Potter, 2022).

Currently, the planet is experiencing an increase in the frequency and intensity of heat waves worldwide due to global warming (Sampath et al., 2023). This, coupled with the degradation of our ecosystems, introduces new health hazards, which can lead to food scarcity, physical and psychological suffering from extreme weather events, and the emergence of heat-related illnesses (Hampshire et al., 2022; Sampath et al., 2023). The escalating global temperatures are also responsible for more severe occurrences of forest fires, droughts, a decline in plant and animal diversity, reduced agricultural yields, and adverse health effects on animals (Hampshire et al., 2022; Sampath et al., 2023).




Intersectionality and Equity Dimensions of Heat

Versey (2021) contends that the impacts of climate change induced events (CCIEs), such as extreme heat and flooding, affect individuals differently depending on their proximity to power, adaptive resources, and social histories (Berry et al., 2018; Rind, 1999 as cited in Versey, 2021). Consequently, communities and individuals with fewer resources experience compounded vulnerability to climate-related risks. Populations who already grapple with social stressors, such as racism, sexism, and economic inequality face diminished resilience for CCIEs and lack the means for a complete recovery. This underscores the inadequacy of a general approach to addressing CCIEs as evidenced by research (Malin & Ryder, 2018; Miller et al., 2013 as cited in Versey 2021). Thus, there is a need for an intersectional lens that seeks to understand how systems converge to shape lived experiences and the stress burden of climate change on subgroups (Versey 2021).

Similarly, Amorim-Maia et al. (2022) assert that intersectionality transcends mere identity categories, extending to encompass political and structural inequities that fundamentally underlie climate vulnerability. They propose an intersectional climate justice framework centered on discerning differential vulnerabilities. This concept posits that vulnerability is not a discrete attribute confined to particular populations, but rather a product of compounded risks and multifaceted angles of social disparities (e.g., natural disasters, pandemics, gender, race, socioeconomic differences etc.). These dimensions can coexist and mutually exacerbate each other (Cardona et al., 2012; Soares et al., 2012; Thomas et al., 2019; Vancura and Leichenko, 2015 as cited in Amorim-Maia et al., 2022).

Extreme Heat in the Context of Multilayered Disasters

Research indicates that extreme heat events in BC are not isolated occurrences but rather unfolded within the backdrop of other disasters, amplifying their impact and severity (Health Canada, 2022; Yumagulova et al., 2023). The presence of the COVID-19 pandemic added a unique layer of complexity to the heat dome, as individuals were hesitant to seek relief in public spaces with cooling infrastructure due to concerns about contracting the virus, especially among the elderly, who share the same vulnerability status for COVID-19 (Health Canada, 2022; Yumagulova et al., 2022; Yumagulova et al., 2023). Additionally, the similarity of heat stroke symptoms with COVID-19 symptoms often led to confusion and poor management (Health Canada, 2022).



Moreover, certain Indigenous communities faced the dual challenges of the heat dome and subsequent drought, disrupting planting cycles and weakening their food systems (Yumagulova et al., 2023). This cascading effect was exemplified tragically in the village of Lytton, where scorching heat and arid conditions set the stage for the devastating wildfires they experienced. Furthermore, the wildfires resulted in air pollution, intensifying smog, and creating a co-exposure situation (Pascal et al., 2021). Individual perspectives revealed that smog warnings contradicted heat warnings, causing confusion (Yumagulova et al., 2022; Yumagulova et al., 2023). While people were advised to close their windows or stay indoors due to smog, heat warnings encouraged them to go outside or open their windows. The prolonged smoke from the Trozzo Creek wildfire, lasting seven weeks, added to the stress faced by households already dealing with extreme heat and evacuation challenges (Yumagulova et al., 2022).

Methodology

Community-Engaged Research


Guided by an equity-informed lens, our approach to this community-engaged research project seeks to co-create a methodology that is designed with the input of affected communities. As elaborated by member of the SHIFT Collaborative in their 2022 report, “Including lived experience in policy development allows for centering the voices of equity-denied priority populations and creating policies and solutions directly guided by them” (2022, p. 34). The aim is that what we learn through this research will be translated into actionable recommendations for local, regional, provincial, Indigenous, and federal decision-makers. Our starting point was connecting with service providers within the Capital Regional District via the Community Health Network. The Capital Regional District’s Community Health Network supports the activities of its 13 municipalities and 3 electoral areas to build healthy and safe environments across the region, a population of over 432,000 people.

In alignment with the SHIFT collaborative’s recommended framing, we are referring to these groups as priority populations, those who are often denied equity via the traditional and formal policy-making process (2022, p. 4). It is not our intention through this project to reframe specific target populations as vulnerable and in need of intervention. Rather, we aim to center the voices of those often excluded from the policy process to improve and inform community health outcomes.

Guiding Research Questions

In 2022, Kirsten Mah in her capacity as a Healthy Communities Planner with the Capital Regional District, reached out to the University of Victoria for research support on behalf of the Community Health Network’s Healthy and Safe Environments Subgroup. The Research Partnerships Team at the University of Victoria connected Kirsten and Sarah, an Assistant Professor with community-engaged research expertise based in the School of Public Administration. Together, we co-developed the following research questions with input from the Healthy and Safe Environments Subgroup:

- *How are local, regional, provincial, Indigenous, and federal governments preparing for extreme weather events in Canada?*
- *Who are the most vulnerable or priority populations to negative health impacts related to extreme heat events?*

- 
- *What does the experience of extreme heat look like for these groups?*
 - *What recommendations do they have for improving emergency planning, policy, and practice before, during and after extreme heat events?*

To address these questions, we sought and received funding from the Social Sciences and Humanities Research Council of Canada as well as the Michael Smith Health Research BC foundation.

Conducting Community-Engaged Research through Mixed Methods

Once we received funding, we recruited members of the research team and prepared our ethics application to the University of Victoria review board. We recruited undergraduate and graduate research assistants who reviewed literature related to equity, extreme heat exposure and planetary health. Together we compiled material to present to members of the Community Health Network in January 2023 at the Songhees Wellness Centre. In addition to community leaders, participants of our initial engagement session included individuals with lived experience, including people with disabilities, seniors and people experiencing homelessness, each of whom received an honorarium for their time.

The purpose of this in-person meeting included gathering feedback on our research questions, mixed methods (quantitative and qualitative) research approach, as well as data collection instruments, which include a survey, interview guide and sharing circle formats. One of the key pieces of feedback we received centered around equity considerations that would make our research more accessible such as offering a living wage honorarium to interview and sharing circle participants. This step was integral to ensuring our research was trauma-informed and that the approach would resonate with those most impacted.

Much of the feedback entailed offering a diverse and multi-modal approach to the research design, such as a combination of methods for input including a survey and in-person discussions, with hybrid options. Another key piece of feedback we received was to produce funding that would be action-oriented for a variety of audiences and not just produce a static report. As such, we came away from this meeting with a plan to incorporate mixed media aspects to this topic, by the creation of interactive Story Maps which would have the capability to link to other projects, identify resources, host short briefing reports available for download and highlight both statistics across the region as well as stories.



Planning for Policy Justice: Listening, Witnessing, and Acting

Following the gathering of data, knowledge mobilization and calling in policymakers to witness, listen and hear from affected priority populations is an important outcome of this research. Once we have conducted and analyzed survey, interview and sharing circle results, we will conduct a second round of community conversations and report our findings to service providers and those with lived experience to understand if the information gathered reflects their experiences. A final engagement session will bring together the Planning Committee, Advisory Council, CRD, municipal decision-makers, health authorities, and emergency planners to share the findings and recommendations and develop plans for how municipalities will respond to the recommendations.

The final report will be shared with the CRD, its 13 municipalities and 3 electoral areas, Island Health, service providers and other relevant organizations to inform future preparation, adaptation and mitigation planning and policy development for extreme weather events and sections of the report will be continuously reviewed at the CRD's Healthy and Safe Environments Subgroup. We will also share the report directly with those who participated in sharing circles and publicly, so it is accessible to those who responded to our survey anonymously. This will ensure participants understand the impact of their feedback. We intend to build from these findings, secure more funding and examine other extreme weather events and their impact on vulnerable groups.



Demographics

Who we Heard

During the data collection phase of this project, we worked closely with non-profit service providers to promote the survey and coordinate seven sharing circles. Each sharing circle was organized in partnership with an organization that supports the target population we were hoping to speak with. In working with these groups, we took the view that it was a privilege to work with them and, therefore, we worked to accommodate their schedules and needs rather than imposing the research's priorities on them.

We worked with the Intercultural Association of Greater Victoria to host a sharing circle with one of their English language classes. Two community associations (Burnside Gorge Community Association and James Bay Community Project) hosted sharing circles at their regularly scheduled seniors' lunches. Finally, we worked with the Victoria Native Friendship Centre and Quadra Village Community Centre to recruit participants for the virtual perinatal sharing circles. For people who were not part of the existing groups we worked with, we hosted two sharing circles (one in-person and one virtual) that were open to all members of the community. In total, we conducted seven sharing circles. The final sharing circle took place in the Municipal Chambers in the City of Colwood and included public official presence such as planning staff and the local Fire Chief.

To promote our extreme heat survey, we also worked with community organizations to leverage existing relationships of trust and ensure that the information being provided would resonate with respondents. Members of the Community Health Network shared information about the survey via posters, social media, and their newsletters. We also reached out specifically to community associations and groups that worked with our three target groups (seniors, newcomers, and the perinatal experience). In total, we received 325 survey responses from people from all 13 of the region's municipalities and three electoral areas as well as eight First Nations. 15% of respondents identified as members of a racialized group and 11% of respondents identified as Indigenous.

Respondents

Below we have summarized the demographics of individuals who responded to the extreme heat survey to provide a better understanding of whom we heard from.

Where people live

The majority of responses came from people living in Victoria or Saanich (35% and 24%). We did receive responses from across the region including from eight First Nations, all three electoral areas and all thirteen municipalities.

Race

Fifteen percent of respondents identified as members of a racialized group. Of those, 56% of respondents identified as a member of an Indigenous group. As outlined in Figure 1, 56% of Indigenous respondents identified as being a member of a First Nation, 15% identified as Metis and 23% identified as Inuit.

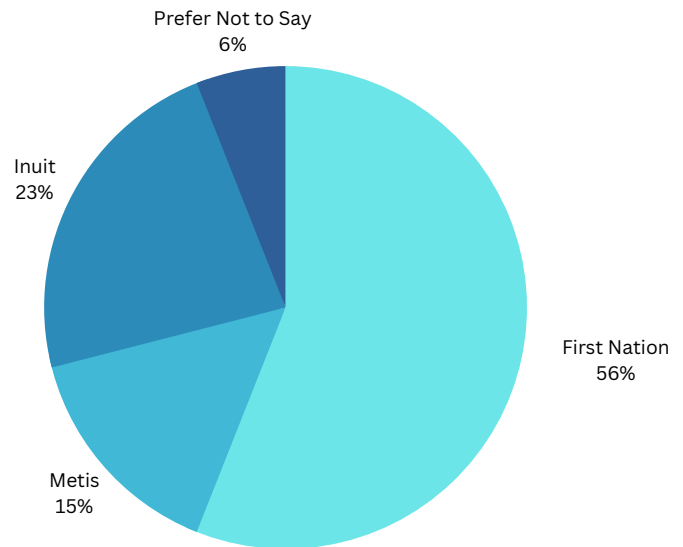


Figure 1: percentage of survey respondents by Indigenous group.

English Language Skills

One of our priority populations was newcomers as they face barriers in understanding emergency systems and many do not speak English which creates a barrier when emergency information is provided in written English. Because of this, we asked survey respondents to identify their level of fluency in English. 91% reported being fluent in English, five percent said they had a conversational level of English and four percent felt their command of English was basic.

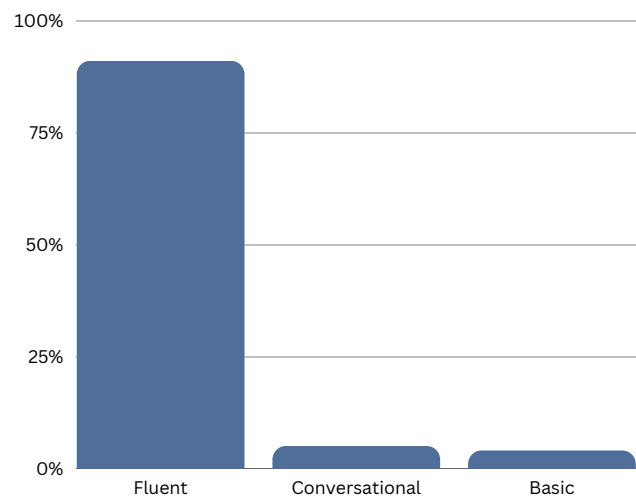


Figure 2: percentage of survey respondents by English language level.

Vulnerabilities

In our study, we identified three priority populations who were vulnerable to negative health outcomes associated with extreme heat and, in the case of the perinatal experience and newcomers, had not been fully explored in our region. As outlined in the graph below, 40% of our survey respondents were seniors, 19% were breastfeeding or pregnant during an extreme heat event and 10% were newcomers (immigrants, refugees and migrant workers) during extreme heat events.

In addition to these three priority populations, survey respondents also identified vulnerabilities associated with living alone, chronic mental or physical health issues, living with disabilities, experiencing housing instability or using substances. Many of the chronic health conditions listed involved past experiences of heatstroke, respiratory issues, medications that made it difficult for the body to cool itself and anxiety.

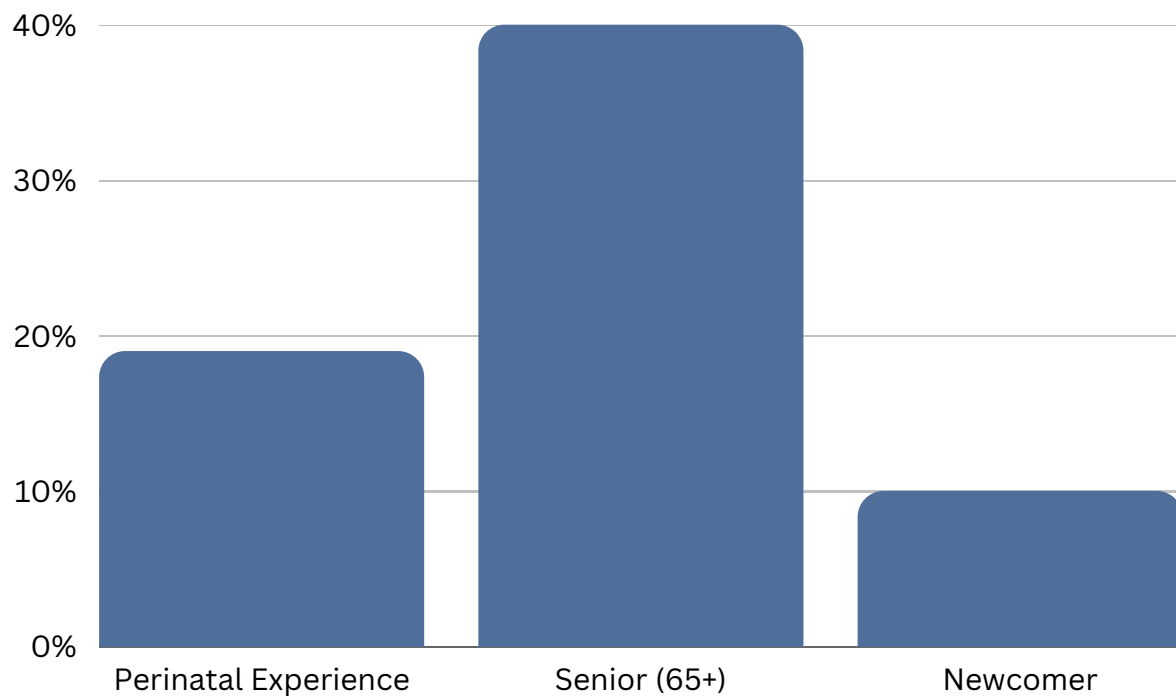


Figure 3: percentage of survey respondents that fell within our three priority populations.

Intersections

Many survey respondents had intersecting vulnerabilities. 19% of respondents identified as being both a senior and living in isolation. 12% of respondents reported being isolated and having a disability. 10% of respondents identified as being a senior and having a disability. It is important to examine these intersecting identities as they each have a compounding impact on how individuals experience extreme heat and can create a more extreme health impact.



Housing

Survey respondents were asked what type of housing and whether or not they own the housing they reside in. The most common type of housing was a single family, detached home (31%), followed by an apartment (28%). Other housing types that were identified included mobile homes, temporary shelters and outdoors.

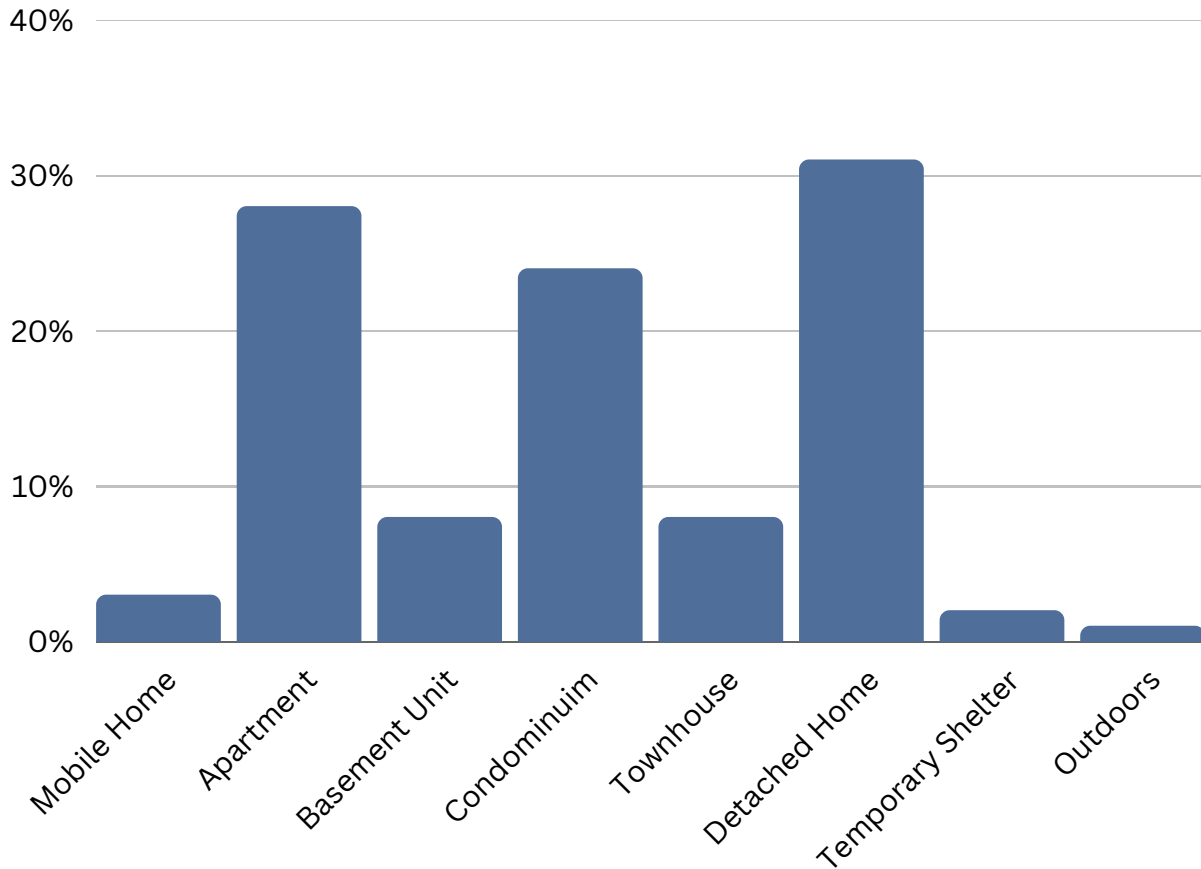


Figure 4: percentage of survey respondents by housing type.

Ownership

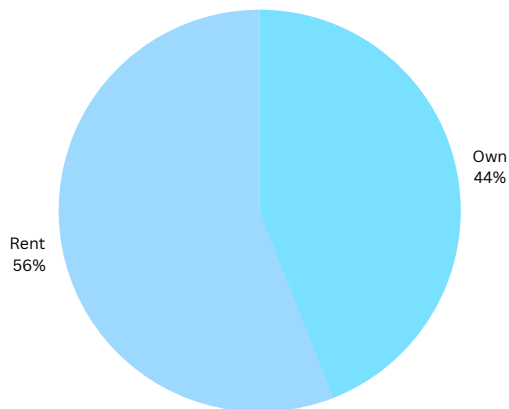


Figure 5: percentage of survey respondents by ownership status.

In addition to housing type, survey respondents were also asked whether they own or rent their home. The majority (56%) rent their home. It is important to understand housing type and ownership status as this impacts the interventions that individuals can take advantage of and can make living situations more vulnerable to excessive heat.



Income

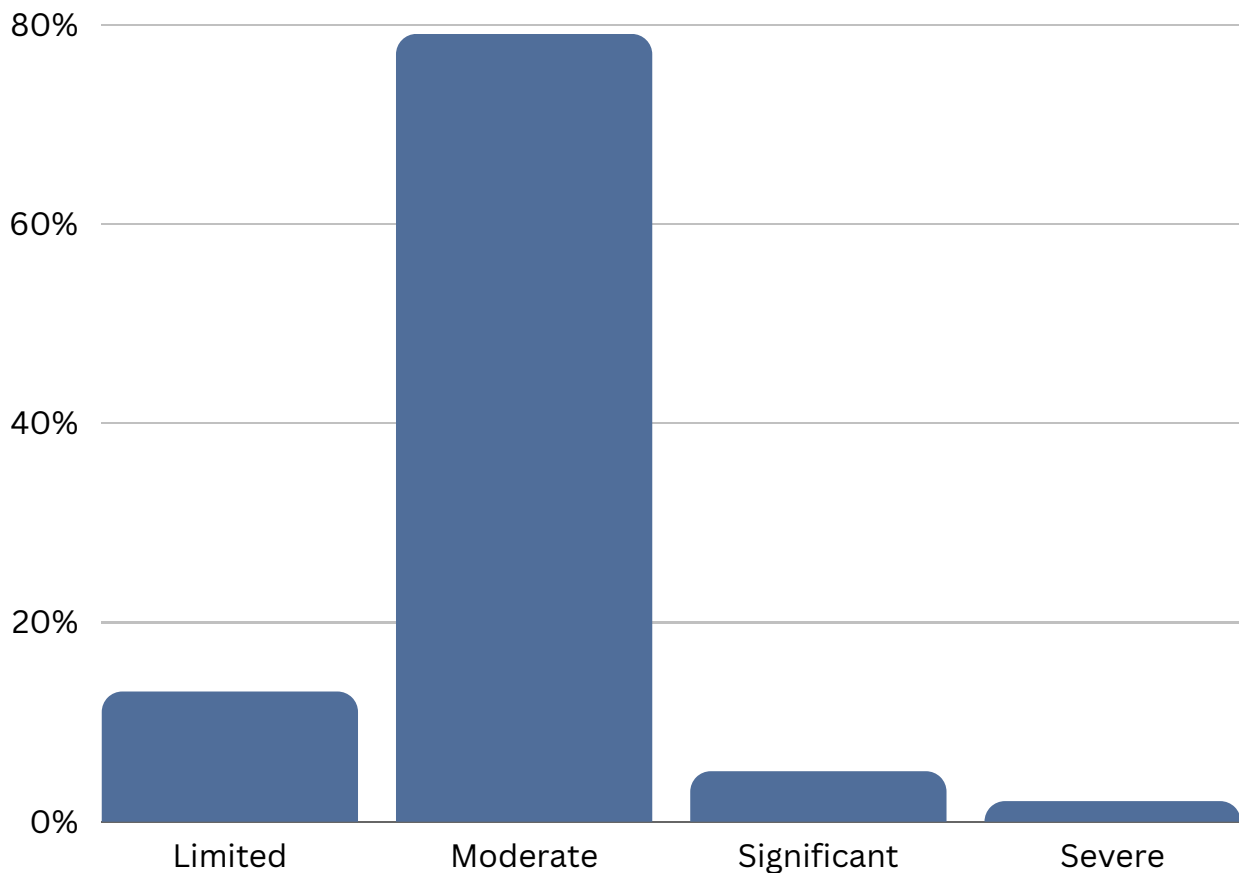
One vulnerability that came up frequently in the sharing circles was income status. Numerous participants identified lack of money as a barrier to purchasing cooling systems, curtains and transportation to cooling centres. In addition to those in our sharing circle who identified themselves as low income, 40% of respondents to our survey identified as being low income.

Employment

26% of survey respondents identified that their jobs put them at risk of extreme heat exposure. Some were at heightened risk because they work outdoors while others work in situations, such as kitchens, where the heat can get very warm and cooling systems are not able to keep up. 22% of survey respondents reported that their employers made no modifications to support them during extreme heat events.

Impact of Extreme Heat

62% of survey respondents reported that their health was negatively impacted by extreme heat exposure. The majority of survey respondents felt the health impact they experienced as a result of extreme heat was moderate (79%).



Findings

Hi, my name's Daniel! I moved to Victoria in February 2021 from Mali to live with my daughter and her husband

One day in Victoria BC...

Hey dad, just letting you know it's going to be very hot here for awhile

I'm not worried, back home it sometimes gets up to 45 degrees!

Several hours later...

It's so hot, it feels hotter than in Mali because no one has A/C here. I'm not sure what to do

Later that afternoon...

Where can I find information? I don't know how to use the computer and can't understand some of what is being said on the radio

Maybe I should go to the doctor but I don't know where to go and I don't know how much that costs

I'm glad you are feeling better after drinking all that water. We should eat something cold for supper too

I agree. I don't feel like cooking in the heat

Later that night...

I live close to Beacon Hill Park so I like coming here to sit in the shade in the afternoon and early evening

It's so hot, I'm having a hard time sleeping

Fall of 2021...

I'm glad we finally installed A/C!

Same here! After months of searching we were finally able to find one for sale

Summer of 2022...

I'm glad we have A/C now, but running it has been expensive

And it only cools one room too...

To help newcomers in the future, the government should provide information in a variety of languages and offer more free, outdoor places for refuge (e.g., outdoor pools). The transit system should also be improved so that we can access cool spaces more easily.

Thanks for Reading!



Survey Results

In the survey, the majority (62%) reported having experienced negative health impacts from extreme heat with 79% of those people reporting the impact to be moderate. In addition to their own health outcomes related to extreme heat, a number of respondents also expressed concern for their pets' health despite the fact that this was not a direct question in the survey. Another theme that arose frequently was the impact medications have on individuals' capacity to regulate their own body temperature. This was noted by a number of individuals as a factor that made them vulnerable to extreme heat. In addition to physical vulnerabilities, individuals identified external barriers that kept them from responding to extreme heat. One main barrier was lack of resources such as inability to afford a cooling system and supply chain issues that resulted in a lack of available fans. Another barrier many people faced was strata and landlord rules that kept them from installing cooling systems and window coverings. Barriers associated with public spaces include lack of transportation to access spaces, fear of exposure to COVID, mental health barriers that keep people from leaving the home, lack of seating and cooling center rules around pets and evening hours.

Sharing Circle Findings


We held seven focus groups and consulted with members of the community to obtain their input on extreme heat events in the CRD. We worked closely with community organizations locally to convene conversations and hear their perspectives about living with extreme heat events. Main themes included communication, community collaboration and support, and strategies for social change. We introduce these themes here then move to specific recommendations.

Communication: what broke down and what could be improved?

Many community-members discussed the inaccessibility of heat related information before, during, and after the extreme heat event. Information regarding the event was difficult to locate, fragmented, and inconsistent. A newcomer to Canada expressed a lack of resources to provide this information to their community: *"I don't know how to do [during an EHE] because I'm newcomer... I don't know where is the water park. I don't know where I can go..." (In-Person Sharing Circle 1, May 2023).*

During a perinatal sharing circle held virtually, one participant shared that they *"didn't know what to do to keep [themselves] safe"* and that they *"really felt quite let down by the resources that were available in [their area]" (May 2023).*

The consensus was that the provincial and local government and service providers did not have a uniform and streamlined approach that was easily accessible to all members of the community leading to further suffering of vulnerable populations in the CRD.



To streamline information, one of the suggestions that emerged from several sharing circles was the creation of an app that provides residents of the CRD with the tools and information they need to prepare for, withstand and recover from extreme heat events. As noted by a person who is a member of the perinatal population at the time of the 2021 heat dome: *“information about cooling stations, misting stations, and other cooling infrastructure would be really useful for the public to access during heatwaves”* (Perinatal Sharing Circle, May 2023).

Community Collaboration and Support: cultivating care and connection during climate emergency events

During the 2021 heat dome the community banded together reminiscent of community support and collaboration that occurred during the COVID-19 pandemic. Community members reflected on their community and how that improved their experience of the heat dome: *“I think about my friends and family that called to check in on me regularly, and my landlords who lived in the house where we were”* (Perinatal Sharing Circle 1, May 2023).

A similar sentiment expressed by a participant noted: *“I have a wonderful son who showed up one day and said, “Mom, I’m coming to see you.” I said “Oh, great.” And he arrived with an air conditioner.”* (James Bay Sharing Circle, June 2023).

Community members showed up for their neighbours in ways that fostered a sense of safety and care such as dropping off food and offering their cooler spaces to those who needed them most: *“[My neighbour] asked, “is there anything you want from Thrifty’s?” And I said, “no, thank you. I don’t need anything.” And she said, “I didn’t say need. I said want.” And I said, “well, I could kill for a pre-cooked chicken breast and a salad.” And she said, “right. Consider it done. And outside my door was a big salad big enough for three nights and whole chicken which was wonderful”* (James Bay Sharing Circle, June 2023).

Another participant also mentioned: *“I’ve offered to like friends that I know that don’t have outside space or shade that live in apartment buildings or other moms that live in townhouses or apartments or things like that, you know, come over and play in the pool and hang out in our backyard any time”* (Perinatal Sharing Circle 2, May 2023). Community members stood by one another and shared their resources in a way that cultivated care and safety through and uncertain and anxiety-inducing period.



Strategies for Social Change: recommendations for policymakers

Community members had a wealth of adaptative techniques and recommendations for local policymakers in preparation for future extreme heat events that ranged from the creation of an app that included information on climate emergency events to providing free air conditioning for the elderly. A topic mentioned consistently was strata laws that prevent renters and owners from installing air conditioners and heat pumps in their units: *“I wish that the government would be able to communicate things like strata... and get them to understand how important it is to allow people to find ways to cool their homes” (Virtual Sharing Circle 1, June 2023).*

Also, regarding the instalment of heat pumps: *“people will stay at home and I think that will reduce the impact on our local services” (In-Person Sharing Circle, June 2023).*


Improved and diverse ways to communicate with the community about climate emergencies were cited frequently such as, *“go to peoples’, seniors, and people with disabilities’, go into their apartments in their units, and invite you, made available to them, and to show them how to cool their apartments. Simple strategies... closing your windows in the morning to keep the cool in” (In-Person Sharing Circle, June 2023).*

Community members also suggested the development of workshops on how to prepare, deal with, and recover from extreme heat events: *“Workshops or some kind of action group [on dealing with EHEs] would go and talk to tenants when they’re invited to do so” (In-Person Sharing Circle, June 2023).*

Community Voices, Perspectives, Responsibilities and Recommendations

In addition to understanding participants’ experiences of extreme heat, a significant focus of this research was recommendations they have for service providers and governments to better support individuals in the face of extreme heat events. Many of these recommendations correspond with the barriers people faced in responding to extreme heat events. For example, a recommendation that came up frequently focused on the responsibilities of strata councils and landlords. It was recommended that multi-family buildings be required to offer a cool space somewhere in the building and that they not be allowed to create barriers that keep people from installing cooling systems and window coverings. In a similar vein, employers should be required to make accommodations for employees during extreme heat events.

As for direct government responsibilities it was identified that subsidies for cooling systems are too complicated and are not applicable to multi-family buildings. The subsidies are also too limited for people living on low incomes. Regarding public cooling centers, it was recommended that these be offered day and night so people have



a cool place to sleep and that they allow pets to attend. Finally, a common recommendation that came up in the survey responses and sharing circles was a recommendation that the government identify a list of vulnerable individuals and buildings and create a system to check in on them during extreme heat events. One way this could be done would be by supporting the development of mutual aid networks. As outlined above, the experiences and recommendations identified through this study will be reported back to decision makers at our September 2023 action planning session. They will be asked to respond to the recommendations and develop a plan for moving forward. Each recommendation will include short, medium, and long-term suggestions.

Summary and Next Steps: What We Heard, What We Learned

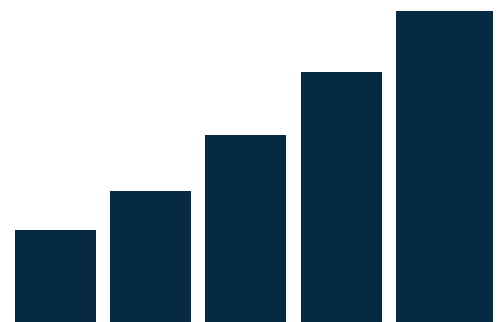
The extreme heat events of summer 2021 caught many governments off guard resulting in much suffering and many deaths. The ultimate aim of this research is to inform and equip governments within the capital region to understand what is on the horizon and to be prepared. Initial outputs of this research will be a report that includes recommendations for supporting vulnerable groups in extreme weather events, a report-back session with service providers, Island Health, the 13 municipalities, CRD and 3 electoral areas, and continuous conversations informed by the research at the Healthy and Safe Environments Subgroup.

The outcomes of this research will be policy and planning that supports vulnerable groups to prepare for, respond to and recover from extreme weather events. The longer-term objective of this research is to expand beyond extreme heat to research priority populations associated with a range of weather events. This research will be used to impact policy, program and planning to ensure that affected priority populations are supported to adapt and respond to such events.

Relationship-building and iterative engagement is central to our equity-informed methodology and includes connecting with potential research collaborators locally from within the Capital Regional District, and Regional Emergency Management Partnership and across British Columbia to include Emergency Management BC and the Climate Action Secretariat. Such connections are integral to this research as these organizations all work with the CRD to help build healthy and safe environments in the region and will be able to provide insights into what information should be gathered and how it can be used to influence policy and planning.

As the impacts of climate change take greater effect, governments are being caught off guard. There is much to learn from international examples for how to weave together climate change, equity, and governance (Office of Climate Change and Health Equity, 2023; Islam & Winkel 2017).

The heat wave of 2021 led to 619 deaths and incalculable suffering (BC Coroners Report 2022 PreparedBC 2022). To lessen harm associated with increasingly frequent environmental hazards, governments and service providers must understand how these events impact individuals, especially those at heightened risk for negative health impacts. Stories and recommendations must come directly from those affected to ensure solutions and support will have the greatest impact. This research project connects with those with lived experience of environmental hazards and shares their stories and recommendations with planners and decision makers in the CRD, BC and across Canada.





Recommendations

The heat wave of 2021 led to 619 deaths and incalculable suffering (BC Coroners Report 2022 PreparedBC 2022). To lessen harm associated with increasingly frequent environmental hazards, governments and service providers must understand how these events impact individuals, especially those at heightened risk for negative health impacts. Stories and recommendations must come directly from those affected to ensure solutions and support will have the greatest impact. This research project connects with those with lived experience of environmental hazards and shares their stories and recommendations with planners and decision makers in the CRD, BC and across Canada.


Landlord and Strata Obligations

“I think there’s a greater number of renters than there are homeowners. And if you are a renter, good luck in talking to your landlord to install an air conditioner.” (Perinatal sharing circle, May 2023)

Over half of the survey respondents (52%) and many of the sharing circle participants reported that they live in multi-unit buildings (condominiums or apartments). 43% of respondents reported that they rent their home. This is an important perspective to capture as 39% of the heat-related deaths investigated in the Coroner’s Report were of people who lived in multi-unit buildings, and we know that housing type significantly impacts the indoor temperature. Many of the recommendations we heard in our research focused on the role strata council rules and rental agreements played in inhibiting their capacity to respond to the heat and enhancing their suffering.

One area where strata and landlord rules caused challenges are related to the installation of cooling systems. We heard from condominium owners that their buildings had bylaws banning heat pumps and that the threshold to amend those bylaws (in some cases 75% of owners’ voting in favour) were too high to overcome. They suggested that threshold to amend strata bylaws be reduced to allow for a simple majority of owners to vote in favour, especially when those bylaws pertain to emergency mitigation tools.

Renters also faced barriers when trying to install cooling systems and window coverings, especially those with lower incomes. Many respondents who rent said that their rental agreements ban them from installing cooling systems, even temporary ones, because of aesthetic desires and impacts on the building’s power system. Additionally, one respondent reported that she was unable to afford curtains or a cooling system and instead installed cardboard in her windows. Her landlord told her this was not aesthetically pleasing and forced her to take it down.



We recommend that landlords not be able to ban cooling systems and other mitigation tools for aesthetic reasons during heat emergencies. Because of the very tight rental market in our region, many renters reported being afraid to complain or challenge their landlords for fear of losing their housing and being unable to find and/or afford a new home. This shows how our emergency management systems must work closely with other systems such as housing to put protections in place for renters and work to alleviate the housing crisis our province is currently experiencing.


In addition to recommendations focused on amending landlord and strata rules, respondents also felt strongly that multi-unit buildings should be required to offer a cool space within the building itself. Participants acknowledged that not every building has a shared social room but that at least the hallways be cooled so that residents can find some respite. This recommendation responds to the many barriers individuals and families face in trying to access municipally provided cooling centers. People face mobility issues associated with age and disability as well as the heat that makes moving around outdoors nearly impossible. Requiring cool spaces in each multi-unit building would create a more equitable cooling center system as it would reduce barriers to access centrally provided cooling centers.

Jurisdiction and Responsibility: These recommendations related to landlord and strata responsibilities fall largely within the jurisdiction of the Government of BC's Ministry of Housing who sets standards for landlord responsibilities and outlines how strata bylaws are to be developed and changed. It is recommended that the Ministry of Housing work inter-ministerially and with affected communities to amend safety standards for rentals and amend requirements for changing bylaws when they related to emergency response and mitigation. Other interested parties who should be engaged in this conversation include the Tenant Resource and Advocacy Centre, Condominium Homeowners Association of BC, and Landlord BC. However, when determining next steps, it must acknowledge that these interventions are often the difference between life and death.

Support for Pets

*"At the time I was also very concerned about my service dog, trying to keep him cool, and the stress of that exacerbated my pain. He passed away several weeks later, the heat dome wore him out and he declined dramatically after that to the point he couldn't carry on."
(Survey respondent, June 2023)*

The plight of pets during extreme heat events was also frequently raised in surveys and sharing circles even though we did not ask directly about this. A number of respondents reported that their pets ended up passing away as a result of the stress related to the 2021 heat dome.



Pets that were noted included dogs and cats but also horses. People did not know how to properly care for their pets and were not sure where to take them. Participants recommended that information be shared broadly about how to support your pet during a heat event. It was requested that this information be specialized for different types of pets including larger, outdoor animals such as horses. Since the 2021 Heat Dome, considerable work has been done in this area by the [BC SPCA](#) and other organizations. However, the fact that many respondents seemed to be unaware of this work indicates that regionally we must do a better job of sharing the work that has been done.


Another recommendation related to pets is that they be offered cooling centers as well or be invited into the existing cooling centers. Many people reported that they did not go to a cooling center because they did not want to leave their pets. Others said they could not access a hotel because they were unable to find pet-friendly rooms during the heat event. It is recommended that municipalities offer cooling centers that are inclusive of pets and determine the best ways to manage human and pet needs as many humans ignore their own need for cooling because they are unable to also meet their pets' needs.

Work around recommended supports for pets is well underway, however, it is important that this information be shared with those who experience extreme heat events with their pets. In the communications category of recommendations, there are some suggestions about how to get information out to more people and it is important that information related to pet wellness be included. In response to cooling centers for pets, cooling centers are municipally organized which means that this recommendation falls under their jurisdiction. In responding to this recommendation, it is important to note that these spaces must remain safe for human visitors so a clear understanding of which spaces and parts of those spaces that will have pets in them be provided. It is also important to outline guidelines for those pets such as being leashed or in a kennel. This will ensure people who have allergies or trauma related to different animals are able to still seek refuge in cooling centers.

Public Spaces

"... Places you can sit in the shade. Yeah, we don't have many outdoors. We have zero outdoor swimming pools. But, that would be great." (Intercultural Association Sharing Circle, May 2023)

Many respondents touched on the importance of publicly available cool spaces such as cooling centers, parks, and shopping malls. Within this category of recommendations, we will examine three separate but overlapping areas where people seek refuge: public




indoor spaces, private indoor spaces and public outdoor spaces. Overall, the recommendations for all three of these spaces centered on the need to make them more accessible to more people.

Public indoor spaces: When it comes to public indoor spaces, the recommendations discussed ways to improve municipally provided cooling centers. Many respondents faced barriers in accessing these spaces such as lack of transportation to get to them, inability to bring in their pets or belongings, fear surrounding COVID-19, and the limited hours of the cooling centers. It was recommended that these spaces allow people to bring their pets and belongings (for those experiencing homelessness) and that they extend their hours to allow people to sleep there overnight. Many people said that the heat impacted them the most at night when they could not sleep. Another recommendation focused on the physical accessibility of the cooling centers. It was recommended that there be more and that there be more spread out across the region and that transit be more frequent and freer so that people can access the cooling centers. Another recommendation was that municipalities leverage existing spaces such as recreation centers and libraries and provide free access during extreme heat events. These changes will make cooling centers more accessible, but an important additional step is to have cool spaces in multi-unit buildings so that those with the highest mobility challenges are able to access cool spaces where they live.

Indoor private spaces that are open to the public also have a role to play in offering respite to people during extreme heat events. These spaces include places like shopping malls and grocery stores. One of the most frequently cited barriers to using these spaces as a cool space was that there was not enough seating, and they are generally set up to encourage people to move around and shop. Participants recommended that these spaces offer more benches and other seating so that seniors and people with disabilities can sit down on them. Participants also recommended that people be allowed to spend additional time in these spaces during extreme heat events without being moved along by security. These spaces are privately owned and operated so there is not a central authority that can compel them to act on these recommendations, however, it would be worthwhile to share these findings with them and establish lines of communication between private resources and municipal governments to coordinate during extreme heat and other emergency events.

Outdoor public spaces: The final cool space that was brought up in this research was outdoor public spaces such as parks. It was identified that many parks lack appropriate shade, do not have functioning water fountains, and often lack benches for people to rest on.



Participants recommended that the removal of trees in parks and along streets be halted as respondents felt that this has accelerated in recent years due to the intense demand for housing. Respondents also requested that drinking fountains be made functional again as some were closed in response to the COVID-19 Pandemic and others have fallen into disrepair. On top of drinking water, participants recommended that more misting stations and splash pads be offered so people can cool themselves and their children. Finally, as with spaces such as shopping malls, parks have insufficient seating in shaded areas. Increased seating below trees would allow people with disabilities and seniors to seek respite more comfortably in parks. These modifications are local government roles as they oversee the parks. Some of them would be relatively easy to implement such as re-activating existing drinking fountains while others, such as splashpads would require significant development. Taking an equity-based lens to park development is key so that we consider the needs of groups such as seniors when identifying bench placement.

Resource Access

In response to the 2021 Heat Dome, there have been a series of subsidies offered to homeowners to help them install heat pumps in their homes. Additionally, the Provincial Government recently announced that vulnerable individuals will be provided with air conditioning units. These are great steps towards ensure the most vulnerable have access to the resources they need, however, research participants identified some barriers with these programs and highlighted other resources that would have supported them better during the 2021 Heat Dome.

Some of the main barriers people faced in accessing the resources they needed to keep their homes cool and protect themselves during extreme heat events include: the cost of cooling systems and window coverings, the ability to install supports, the energy costs associated with running cooling systems and supply chain issues related to the intense demand. The current heat pump subsidies are not available to multi-unit buildings and many strata councils have bylaws that specifically ban their installation. Both barriers mean that people living in multi-unit buildings are barred from accessing this important tool. Participants recommended that subsidies be made available to multi-unit buildings and as stated above, strata bylaws be made easier to amend. On a related note, respondents felt the subsidies are not enough for many people to be able to access heat pumps, especially those living on low incomes, and should be increased to be more supportive. For low-income households, BC Hydro subsidies should also be offered to help offset the cost of running cooling systems. There have been significant steps taken to help households access cooling systems that help keep their homes at a reasonable temperature, however, these approaches appear to lack an equity-informed approach that leaves many of those most vulnerable (low income and multi-unit buildings) still unable to access these important tools.



Employer Responsibilities

“My job is at a cafe that while it had AC, the heat dome event was hotter than the system could handle with ease. 25–30 in cafe, potentially hotter in areas close to ovens and other heat-producing machinery.” (Survey respondent, June 2023)


26% of survey respondents reported that their job made them vulnerable to extreme heat. Of them 31% said their employers made no efforts to support them during extreme heat events. While many people think that only outdoor workers are vulnerable, our survey respondents demonstrated that heat vulnerability at work is much more diverse. One respondent indicated that their work in a café had air conditioning, but it was not sufficient to keep them cool, especially around ovens. Another respondent works with people out in the community so was sometimes exposed to extreme heat when working with people who were unsheltered. In response to these challenges, it was recommended that employment standards compel employers to make accommodations for their staff during extreme heat events such as adjusting hours, providing more breaks, and providing cold water. As the impact of heat affects different sectors differently, the responses must be industry specific.

Communication

“An app with information about cooling stations, misting stations, and other cooling infrastructure would be really useful for the public to access during heatwaves.” (Perinatal Sharing Circle, May 2023)

The overarching recommendation when it comes to communication is that diverse communication options should be pursued so that diverse audiences can be reached. This included print media, social media, websites, television, radio, and in-person, as well as the creation of a new extreme heat preparedness app. Participants recommended that governments rely on existing information pathways and relationships to disseminate information. For example, information could be sent home with students to share with their parents as well as through public services such as recreation centers, healthcare facilities and in utility bills. Following the 2021 Heat Dome, some municipalities have sent extreme heat information to homeowners through utilities bills, however, this only reaches those in the privileged position of owning a home. Because each method of communication has gaps in its reach, many different approaches should be pursued.

One theme that came up frequently was the idea that an app should be created that provides diverse information including tips to take care of oneself during a heat event, information about subsidies, maps for where cooling centers and misting stations are and tips for caring for pets. It should also include information about the weather so that people know when to anticipate events.




Participants suggested that rather than creating a whole new app, some of this additional information could be embedded in existing weather apps and that every government website should include warnings ahead of events. Another component of diversity that was brought up frequently was the language that is used and accessibility of communication tools. When it comes to language, many recommendations were made around offering information in a variety of languages. It was also suggested that the level of the language be tailored to the audience. For example, creating heat information guides specifically for children. Beyond the language used, concerns were also raised about other literacy barriers such as computer literacy. Not all people know how to use computers, nor do they have access to computers. Additionally, newcomers may not know where to get radio or television news that is local to their area. These challenges reinforce the recommendation that diverse communication pathways must be pursued to ensure as many people as possible are reached.

Communicating about extreme heat events is a collective responsibility. Centrally created documents have been disseminated by the Government of BC as well as a number of municipalities in our region. However, through this research we have identified that not that many people know about these documents and that they are not relevant to many people (e.g., do not offer enough free options, are not specific to their community, focus on people who own their homes). To remedy this, we recommended that governments work more closely with service providers to leverage their existing relationships to share this information. It would also be valuable to include more vulnerable voices in the development of these documents to ensure they resonate with them.

Vulnerable Individuals

In our data collection phase, we hosted sharing circles with three priority populations (newcomers, seniors, pregnant and parenting people) who are particularly vulnerable to the impacts of extreme heat, however, we know that vulnerability is not limited to these three groups. Through our literature review (see above), we found a wide range of people who are vulnerable to negative health outcomes associated with extreme heat and in our research survey respondents added additional pieces that make them vulnerable such as the medication they are taking and their personal history of heat stroke. The Heat Death Review Panel identified several common characteristics amongst those who died during the 2021 Heat Dome including: living alone, having certain medical conditions, being over the age of 70 years, living in deprived neighborhoods and lacking a cooling system. We also know that social isolation is a key factor in increasing a person's vulnerability to a host of events.



With these characteristics in mind, we can identify individuals who are most vulnerable to extreme heat events, and we created a list be created that captures the contact information for these people so that they can be checked on during extreme heat events. Respondents did not identify who should develop this list or how it could be done, however, Island Health has begun working on assessing the vulnerability of their homecare clients for just this type of response. Respondents recommended that these lists be kept so that governments and service organizations can check in on these people via phone or in-person during emergencies. Another response approach that was highlighted is systems of mutual aid. Rather than having service providers check in on individuals, communities could grow networks of neighbours who build relationships and feel comfortable checking in on others during emergencies. Some respondents said they would have liked to have checked in on neighbours but were not sure if this would be welcome. By providing incentives for groups of neighbours to build their own mutual aid networks, the burden of checking in on vulnerable individuals can be taken off government and service providers and spread more evenly in the community. Some municipal governments already offer training and other incentives to help establish systems of mutual aid, but it was recommended that this be made available across the Region.

Recommendation	Details	Responsibility
Landlord and Strata Obligations	<ul style="list-style-type: none"> • Cooling space in multi-unit buildings • Strata bylaws should be easier to change to allow heat pumps • Strata bylaws and rental agreements should not be able to ban cooling systems and window coverings for aesthetic purposes during extreme heat events 	Government of BC
Pet Supports	<ul style="list-style-type: none"> • Pets should be allowed in cooling centres and other cool places during extreme heat • Pet owners need to be provided with tips of how to care for their pets 	Municipal Governments SPCA
Public Spaces	<ul style="list-style-type: none"> • Indoor Public: cooling centres need to be open longer, allow pets and be in more places. Transportation to them needs to be free and more accessible. Existing spaces should be leveraged for cooling centres (e.g., libraries, community centres) • Outdoor Public: water needs to be available in parks for drinking and playing in. There needs to be more tree shade with benches below them. • Indoor Private: malls and other private indoor cool spaces need to provide seating for seniors. 	Municipal Governments Private Companies
Resource Access	<ul style="list-style-type: none"> • Subsidies need to be larger for low-income households and should apply to multi-unit buildings. • Vulnerable individuals should be given free A/C units and BC Hydro credits to run them. 	Government of BC Municipal Governments
Employer Responsibilities	<ul style="list-style-type: none"> • Employment standards should require employers to adjust hours and provide cold water to employees during extreme heat events. 	Government of BC
Communication	<ul style="list-style-type: none"> • Information should be shared for specific groups (e.g., pregnant people, pets) and in a variety of languages/levels so that all people can access it. • Information should be delivered in a variety of formats including pamphlets that leverage existing channels such as schools and an app that includes information such as cooling centre locations. 	Municipal Governments Service Providers School Districts
Vulnerable Individuals	<ul style="list-style-type: none"> • Vulnerable individuals and buildings should be identified ahead of time and there should be a system that checks on those individuals via phone and in-person. • Support should be provided to create systems of mutual aid so that neighbours know and are able to check on vulnerable community members. 	Island Health Municipal Governments Service Providers



Conclusion

Planning and Emergency Preparedness: A Call to Action

Government response in British Columbia has primarily focused on vulnerability mapping and the implementation of Heat Alert and Response systems (HARs) to monitor and communicate temperature warnings to the public (Public Safety and Solicitor General, 2022; Deegan et al., 2022). Government websites at both the municipal and provincial levels provide comprehensive heat guides and action plans that acknowledge and identify vulnerable groups, offering cooling recommendations for indoor and outdoor settings, along with guidelines for staying indoors or seeking outdoor respite (Government of BC, 2023). However, an evaluation of public engagement in planning, based on a report by the BC Climate Secretariat and other consultations conducted after the 2021 heat dome event, reveals a disparity between well-written government action plans and the lived experiences of citizens (Yumagulova, 2023).

One notable gap is the absence of specific policy legislation or mandated obligations for the built environment. While the government's cooling tips suggest accessing public places with cooling infrastructure, such as malls or libraries, as alternatives for individuals without air conditioners, the limitation lies in the availability of cooling options outside of regular office hours, particularly considering elevated nighttime temperatures. Additionally, rental tenants lack the agency to install air conditioners, and certain bylaws restrict the use of heat pumps. These limitations disproportionately affect low-income residents who cannot afford these cooling solutions. While legislation requires property owners to provide heating infrastructure for residents during winter, similar requirements for cooling during summer temperatures have not been implemented. Although the BC Housing Extreme Heat and Wildfire Smoke (EHWS) action plan mentions incorporating risk mitigation into building design, new construction, and retrofits (BC Housing, 2022). However, there is no clear consensus on the roles of various stakeholders and how these plans will be effectively implemented.

In the face of growing climate challenges, extreme heat events in BC have become the new normal. It is crucial for governments to go beyond temporary emergency quick fixes and focus on building adaptive capacities of communities, especially vulnerable populations. Recognizing the complex interplay of social, economic, and environmental factors that shape the heat burden and experiences of individuals is essential for effective heat planning and emergency preparedness. To achieve this, intersectoral collaborations and community-based consultations are necessary to develop equitable and sustainable solutions that address the needs of all stakeholders.

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