

UNHOUSED UNDER PRESSURE

Homeless communities are feeling
the full impact of the climate
emergency.

We need change now.



THE UNIVERSITY OF BRITISH COLUMBIA
Sustainability Hub

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Learn more about UGM's summer workshops here:

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EXECUTIVE SUMMARY

Climate change is widely regarded as the most significant threat of the 21st century.¹ In Vancouver, it has led to three main climate change impacts: heat domes, flooding and cold weather, and air pollution related to wildfires. The severity of these impacts will only increase in the coming years,² and it is impossible to address these acute challenges without also addressing homelessness and other compounding factors.

People experiencing homelessness in Vancouver’s Downtown Eastside (DTES) continue to face severe mental and physical health challenges, which are worsened by climate change impacts. The City of Vancouver has developed numerous plans to address the impacts of a changing climate, but these plans do not always consider the unique experiences and needs of people experiencing homelessness.

From a health equity perspective, we know that climate change can worsen underlying medical conditions, provoke substance use, and reduce access to material resources, while also compounding existing physical and mental health vulnerabilities. Exposure to climate change impacts in itself is unequally distributed, with people experiencing homelessness also facing the highest levels of exposure. Interventions at the municipal and community level must seek to address this inequity, considering both the immediate impacts of climate emergencies and the long list of additional factors that can compound the impacts of climate change.

This report has the following goals:

1. **Understand** the DTES community’s challenges, needs, and resources related to climate change impacts.
2. **Recommend** future policy commitments and actions the City of Vancouver can take to improve climate-related health equity for people experiencing homelessness in the DTES.

KEY FINDINGS

Compounding Factors

A review of community accounts and interviews with City staff have identified seven areas of focus when addressing climate change impacts for people experiencing homelessness in the DTES:

- Decreasing exposure
- Providing access to water
- Prioritizing accessible and welcoming emergency spaces
- Prioritizing portable solutions
- Empowering DTES networks
- Streamlining access to funding
- Increasing urban greening

Policy Recommendations

To effectively address these areas of focus, the City of Vancouver will need to build upon its current policy in the following ways:

Strengthening Commitments

- Commit to equity-driven interventions
- Strengthen commitments to provide housing and healthcare services
- Allocate resources for community-led collaborations in the DTES

Supporting Community-led Initiatives

- Empower and build capacity of DTES community networks
- Implement emergency plans with an equity lens
- Consider large-scale interventions from an equity perspective



INTRODUCTION

From extreme heat and air pollution to flooding and extreme cold, climate change impacts are becoming more frequent.

We can expect to see more climate-related threats to public health in the coming decades.² In 2018, the City of Vancouver disclosed significant climate-related financial risks³ and since then, the continued increase of climate-driven emergencies and their inequitable health impacts have sparked a new interest in climate equity among community members.⁴

Focusing on Vancouver's Downtown Eastside (DTES) neighbourhood, this report considers how people experiencing homelessness currently experience three major climate change impacts: extreme heat, air pollution, and extreme cold and flooding. Drawing on an analysis of local policy, grassroots initiatives, and related literature, the report discusses how to better distribute resources to improve climate-related health equity for people experiencing homelessness in the DTES.

CLIMATE CHANGE & HOMELESSNESS

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CONSIDERING HEALTH EQUITY

There is a gap across both academic literature and policy documents when it comes to the impact of climate change on those experiencing homelessness.

The first academic paper exploring the intersection of homelessness with four primary climate change impacts was published only in 2009.⁵ Because homelessness itself can affect personal health outcomes, it is essential to consider how these outcomes interact with climate change-related health outcomes.

The compounding nature of health outcomes makes it impossible to consider climate change and homelessness without also considering factors like gender, ability, Indigeneity, and underlying medical conditions.

Typically, the people facing the worst climate change-driven health outcomes are those who have barely contributed to, or benefitted from, the emissions causing the climate crisis⁴—women and girls are disproportionately impacted by the climate crisis globally,⁶ as are Indigenous people.⁷ Vancouver's highest emissions category is building-related emissions, yet people without housing are deeply impacted by these emissions and by the Urban Heat Islands (UHI) that radiate from these buildings.

Indigenous populations are disproportionately impacted by climate change.

This redistribution of harm is particularly obvious when considering Indigenous populations, who are overrepresented among Vancouver's unhoused population.⁸ Indigenous peoples have contributed less to climate change, and in fact hold valuable knowledge about climate adaptation and stewardship,⁴ yet are disproportionately impacted by its challenges across physical, social, and mental health outcomes.¹⁹



Health:

An individual's ability to adapt to their environment.

The above definition of health implicitly considers personal and community traits, as well as exposure to challenging circumstances, such as climate change impacts. This means if someone's circumstances are beyond adaptation, health is not within reach—"one cannot be healthy in an unhealthy society".¹⁰

In addition to the immediate impact of climate change and homelessness on someone's health, these health outcomes can impact that person's ability to weather climate change in the future.

This self-perpetuating cycle is referred to as "embodiment". Our bodies are shaped by the conditions of our existence, and in turn, can help us understand patterns of health inequity at the population level.¹¹ The most insidious compounding health outcomes often relate to mental health,¹ poverty, and social inequity.⁷

Because different bodies experience climate change impacts in different ways, any action to address public health in the face of climate change must consider how personal and neighbourhood context influence experiences with climate change impacts.¹² In the context of Vancouver's DTES, these personal and neighbourhood factors are intertwined with an individual's housing status or exposure to dangerous climate events.



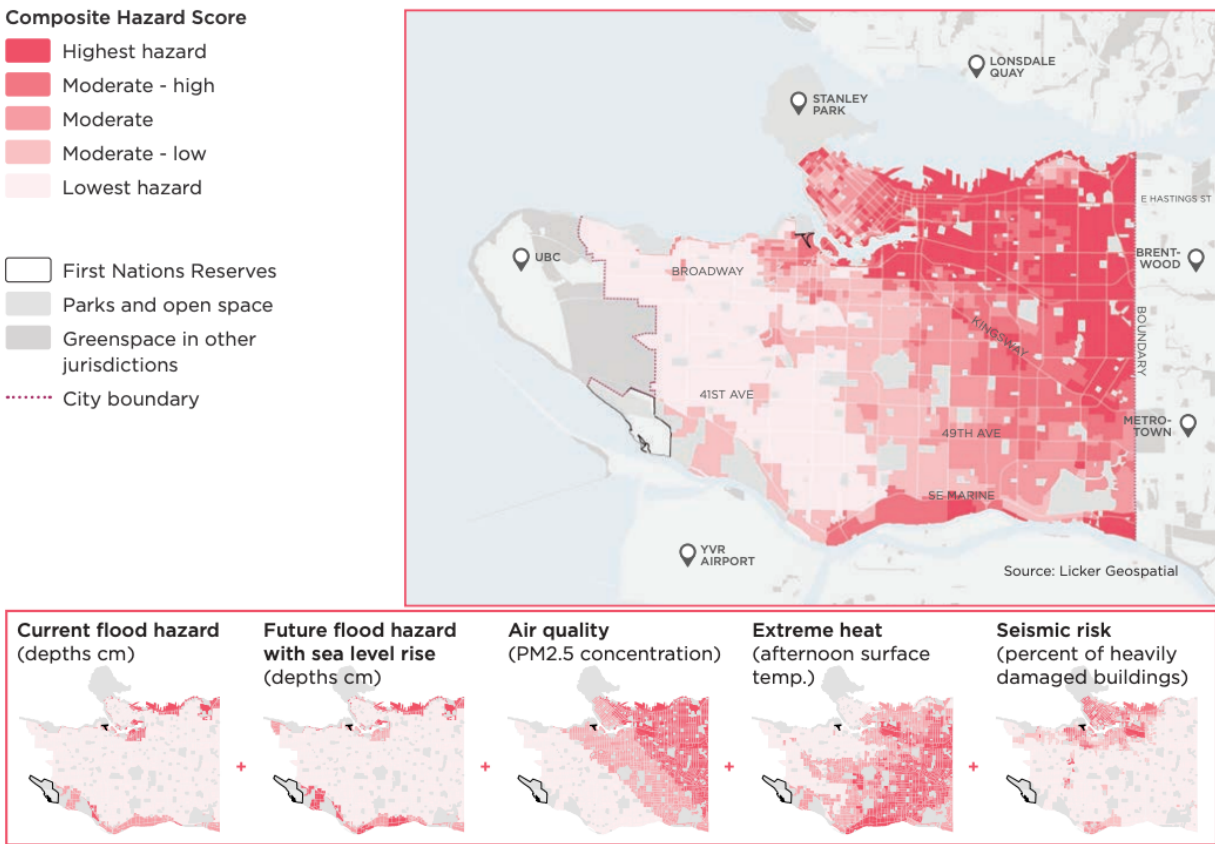
DOWNTOWN EASTSIDE CONTEXT

One of Vancouver's oldest neighbourhoods, the Downtown Eastside faces complex social challenges stemming from the city's housing crisis and the legacy of colonization. Housing prices in the DTES are some of the highest in North America. When compared to household income, the housing costs in this neighbourhood may be the most unaffordable in the world,¹³ which is reflected in the high number of DTES community members who currently experience homelessness.

Widespread housing insecurity like that seen in the DTES contributes to a lack of power to self-advocate for policy directions, as well as a lack of autonomy over personal space, particularly among those living in SRO housing.¹⁴ Lack of investment in urban greenspace is also visible in the DTES, as the neighbourhood has the lowest tree canopy coverage in the city, with less than 5% coverage in the North DTES.¹⁵

Overall, the DTES community faces among the highest levels of overlapping hazards and risks of all of Vancouver’s neighbourhoods.²

The work Union Gospel Mission (UGM) does in this neighbourhood is necessarily multifaceted—improving access to food, providing shelter at a variety of levels, and improving mental health outcomes through counseling and programming. To support those experiencing homelessness in the DTES, climate policy must be similarly multifaceted, considering not only emergency responses, but also housing, urban greenspace, and opportunities for community-led capacity-building.



Overlapping hazards and risks (Vancouver Plan, 2022)



COMPOUNDING FACTORS

Climate change acts as a threat multiplier for personal challenges related to homelessness.⁷ The experiences of housed people and people experiencing homelessness can differ based on factors like gender, physical ability, and mental health.¹⁶ The following eight factors are of particular importance in the DTES context.

Underlying conditions

A pre-existing medical condition can impact how an individual experiences a climate event. For example, those with respiratory diseases are more vulnerable to the negative health impacts of air pollution.^{17 18} Similarly, those living with a chronic illness impacting their mobility or cognition may be less able to self-rescue in an emergency. It is important to note how underlying conditions intersect with equity-deserving groups—Indigenous people are at higher risk of developing chronic illness,¹⁹ while rates of respiratory diseases among those experiencing homelessness are double that of the housed population.⁵

Mental health

Mental health challenges can make it more difficult to respond to climate change impacts—climate disasters increase stress, which in turn impacts health outcomes.¹ Past traumatic experiences may make people uncomfortable sharing space in an emergency shelter, while medications and mental health services may be harder to access. The impacts of climate disasters and mental health challenges can further compound the existing challenges of homelessness.¹⁶

Physical ability

Those who struggle with mobility or other physical disabilities may find it more difficult to access emergency centres or community services. Particularly in the face of climate emergencies, people with physical disabilities can become dependent on staff or other community members.¹⁶

Gender

Gender can influence social outcomes and behaviours. Research has shown that women are more susceptible to extreme heat as they may be less in the habit of resting. In many cases, women and gender-diverse people are less respected and less financially independent than men, all of which play a role in an individual's ability to adapt to climate change impacts.²⁰

Substance use

Consumption of drugs or alcohol increases serious health risk in the face of climate events. Extreme temperatures and risk of overdose fatality are correlated due to both changes in use patterns and the direct impact of drugs on body temperature.^{21 22 23} Substance use also correlates with stress and mental health challenges—both of which can be aggravated by chronic stress related to climate change impacts and homelessness.^{24 25}

Social disinvestment

People experiencing homelessness often face a collection of related challenges such as poverty, malnourishment, lack of agency, and social stigma. Compared to homeowners or even renters, people experiencing homelessness have little control over their living spaces, including temperature regulation.¹² Social stigma and resulting disconnect with city staff can contribute to a lower sense of risk or urgency in the face of climate disasters.²⁶

Exposure to impacts

This factor refers both to the time an individual spends unsheltered and the exposure of their home neighbourhood to climate change impacts. Communities featuring less urban greenspace result in greater individual exposure to extreme weather, flooding, and pollution, which is further increased among individuals experiencing homelessness.²⁷

Compounding climate change impacts

When multiple climate change impacts occur at once, negative health outcomes can increase drastically. In particular, the joint impacts of extreme heat and wildfire smoke have been studied and are relevant to the DTES context.



COMMUNITY ASSETS & EXPERTISE

DTES members have access to knowledge, experiences, and community networks that can be valuable in weathering climate change impacts.

Policy-makers should acknowledge these community assets and find ways to support existing community-level solutions. According to community member accounts, a sense of community support is noticeable in the DTES during climate emergency events.

“People, when they’re put in a difficult situation, can be very honourable and compassionate. People that didn’t reach out before were making extra effort, checking in with people, because they knew they weren’t doing the best. I would see people going and buying cases of bottled water at London Drugs and then start handing out bottles to people on the block. Just doing a good deed. Just having that human touch – somebody that actually gives a darn – means the world to some people, because they don’t have anybody, or they isolate. To them that’s everything.”²⁸ –Julie Chapman

Levels of resilience in the face of climate emergencies may be higher among people experiencing homelessness, as a result of daily experience with weather-related setbacks and uncomfortable living conditions.¹⁶ DTES residents may hold an unusually strong ability to adapt to changing circumstances.

One DTES resident unable to go to work during the 2021 heat dome recalls when community members helped her sell chokers and medicine bags to make up lost income.

“They go, “OK, DJ, here you go. We made \$80 for you today.” “Excuse me? You actually came back with the money and receipts?” It blew me away. ... They go, “This way, then you know that you can depend on us, at any time. That you can trust us with your money.”²⁹ –DJ O’Brien

To honour lived expertise and community resources, policy-makers should take a “desire-based” approach to planning in the DTES: working with community members and service providers to imagine a future and identify desired tools to improve community health outcomes.^{30 31}

IMPACT 1: EXTREME HEAT

Extreme heat is an increasingly common experience in Vancouver. Heatwaves increase risk of dehydration and heat stroke, but appear as less immediate threats than more dramatic climate events.³² While population growth, urbanization, and global aging all interact to make more people more vulnerable to extreme heat, experts agree that heat-related health impacts are largely preventable when planning considers vulnerable communities.³³

Climate change is a primary cause of extreme heat events,³⁴ the frequency of which are increasing globally and in the lower mainland.^{35 36} The way an urban environment is configured can also contribute to extreme heat, particularly in neighbourhoods like the DTES with below-average tree canopy and greenspace. Replacing natural materials with engineered materials and relying on air conditioning contributes to the urban heat island impact, where dense urban neighbourhoods create and retain heat in an endless cycle.^{12 37} Those living in units with air conditioning may not notice these impacts, but those without housing certainly do.

LOCAL EXPERIENCES

Vancouver's 2021 heat dome lives vividly in the collective memory of DTES residents. With temperatures between 30C and 40C, it broke records across the province¹⁵ and led to 619 heat-related deaths¹⁹—a 440% increase in community deaths.³⁹ Residents in the city's least wealthy neighbourhoods recount feeling increasingly tired, weak, and lethargic, worrying what might have happened if they had laid down to rest and remained in their hot environment.¹⁴

During this event, people experiencing homelessness or living in insecure housing like SROs did not have the power to alter their spaces with air conditioners.¹² DTES residents reported limited access to water and cooling centres nearby,²⁹ with restaurants functioning as alternative cooling sites.³⁸ DTES resident Mike McNeely questions transportation equity, noting that some Vancouver buses are air conditioned, but many buses serving the DTES are not.³⁹

COMPOUNDING FACTORS

Exposure to impacts

Heat-related suffering is more common and pronounced in neighbourhoods like the DTES with limited greenspace, high density, and proximity to major roads.^{19 40 41} During the 2021 heat dome, deaths were higher in areas with Urban Heat Island effects.²³

Mental health

Heat waves can disrupt sleep and compromise individuals' mental health.⁴² The impact on mental health increases with each 1C increase, and is most pronounced for those already struggling with mental health—particularly related to substance use.⁴³

Underlying conditions

Over 80% of those who died in the 2021 heat dome were on three or more chronic disease registries.¹⁹ Medication used to treat these pre-existing medical conditions can pose a risk too, by compromising the body's ability to perceive and adapt to heat.¹⁸

Substance use

The risk of death from toxic drugs increases with hotter weather.^{21 23}

Gender

Women—and elderly women in particular—have a higher risk of experiencing heat-related health outcomes or fatalities than men do.^{20 41}

In a 2022 DTES survey, water distribution, cool kits, and wellness checks were rated the most useful heat dome interventions.⁴⁴



IMPACT 2: AIR POLLUTION

Air pollution may be caused by wildfires, building energy use, transportation, and industry. Both air pollution and irritants like pollen are expected to worsen due to climate change.⁴⁵ Airborne allergens and high levels of wildfire particulates frequently occur in summer during periods of extreme heat.²⁷

The summer of 2023 was BC's worst recorded wildfire season.²³ We are seeing an increase in the frequency and size of wildfire, and as a result, an increase in pollutants.¹⁷ As climate change impacts continue to increase, we will see more wildfires.

LOCAL EXPERIENCES

"You can smell the fire, even with the windows closed. I went through three puffers in one day. And that's way too much, the doctor said."²⁹
—DJ O'Brien, 2022

In recent summers, DTES residents of varying housing statuses have experienced the impacts of wildfire pollution. Julie Chapman remembers a "smokey smell in the air" and feeling soreness in her throat when outdoors. In spite of not having any pre-existing respiratory conditions, she felt a concerning "heaviness" in her chest.²⁸ Those with indoor housing would avoid leaving their SRO rooms, despite having no access to air conditioning during extreme heat.³⁹

For some, air pollution events impacted mental, physical, and emotional health, leading to "groggy" and "depressed" feelings that make it difficult to complete daily tasks needed for survival.²⁷

COMPOUNDING FACTORS

Compounding climate change impacts

The negative health outcomes of wildfire smoke and other pollutants increase with extreme heat. Heat exposure increases the body's intake of air pollution through both the lungs and skin.¹⁷

Underlying conditions

Those with respiratory conditions are more vulnerable to air pollution, with the risk most pronounced among elderly people and children.^{5 17}

"My allergies act up, and my breathing gets more difficult. Pollution is a deterrent, a negative influence, but I don't have a choice to change my behavior when I live out here. I'm just stuck with it. We all are."²⁷

Exposure to impacts

Since exposure to air pollution increases with time spent outdoors—particularly in urban environments²⁷—individuals experiencing homelessness have higher exposure to pollutants.⁴⁵

"I didn't even know what pollution was until I moved to the big city from the breathtaking rainforests of Haida Gwaii."⁴⁶ –Yvonne Mark

Social disinvestment

A study in San Diego showed correlation between housing status and emergency care visits. Individuals without housing were also more vulnerable to increases in the intensity of the pollution compared with those in housing.⁴⁷



IMPACT 3: COLD & FLOODING

Beyond snow and rain, Vancouver's winters come with flooding and bone-chillingly cold conditions. While temperatures in the DTES are higher than many other Canadian cities, it is important to consider extreme cold relative to the temperatures that people are familiar with and prepared for.

Vancouver winters are breaking records for snowfall and cold temperature,⁴⁸ while atmospheric rivers and snowstorms become more frequent and severe.²³ The city can anticipate a 0.89m - 1.03m sea level rise by 2100. By 2050, experts project warmer winters that will bring king tides and stormy weather—both of which contribute to flood risk.⁴⁹

LOCAL EXPERIENCES

In a piece published in Megaphone, long-time DTES resident Stephen Scott recounts how climate change impacts in the DTES have become more extreme since he moved to Vancouver in 1991—heavy rainfalls, flooding, cold weather, and snow are among the weather patterns that have become more frequent in recent years.⁵⁰ Anxieties around extreme cold and flooding among DTES residents increase with the news of nearby disasters, with individuals concerned about the future of their community, their pets, and their survival.^{26 50 51}

“Winter came, with the first white Christmas in many years, and cold weather with lots of snow. Wow what a year! I hope 2022 will be better, but with climate change anything is possible.”⁵⁰ –Stephen Scott

COMPOUNDING FACTORS

Mental health

Cold and wet weather can make it more difficult for individuals experiencing homelessness to keep active and connect with their community, as the best way to stay dry is often to remain in one spot.²⁶ This isolation and boredom is detrimental to mental health.

Physical ability

Those with physical disabilities may be less able to independently escape flooding or cold weather, and may be more reliant on emergency service providers.¹⁶

Exposure to impacts

Those living outdoors are more vulnerable to health risks associated with cold weather.^{5 26}

Substance use

There is a higher risk of overdose death correlated with cold weather.²²

Social disinvestment

The ability for a body to adapt to wet cold conditions is hindered by malnourishment.⁷ People experiencing homelessness often occupy "marginal areas that are more vulnerable to environmental hazards" like flooding.⁵

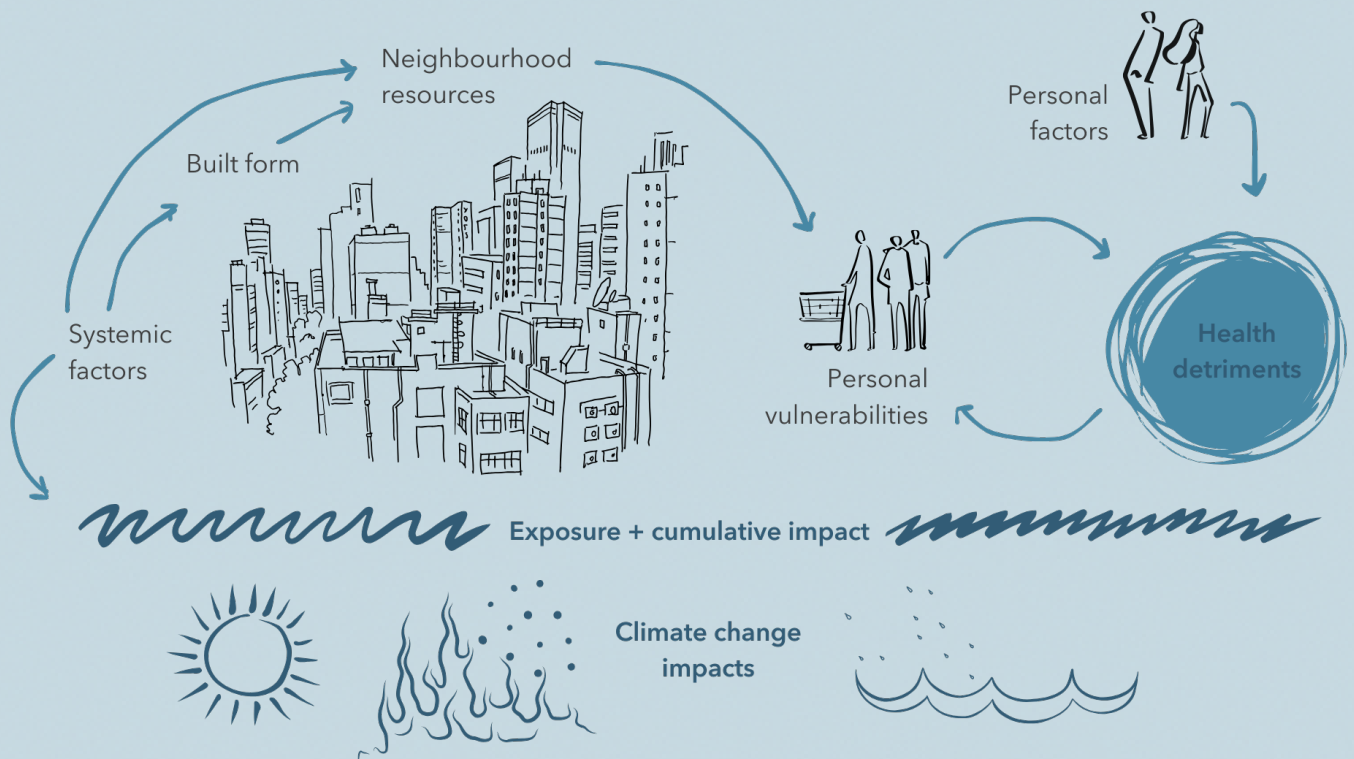


HEALTH PATHWAY SUMMARY

People experiencing homelessness in the DTES may face health detriments as a result of the interaction between climate change and numerous other compounding factors.

When **systemic factors**, **physical design**, **neighbourhood characteristics**, and **personal vulnerabilities** co-occur with **climate change impacts** and disproportionate **exposure**, an individual may experience **health detriments**, as illustrated below. These determinants often lead to increased personal vulnerabilities, perpetuating a cycle of health inequity.

This cycle can be interrupted if interventions effectively target systemic factors, physical design, neighbourhood resources, and exposure.





POLICY ANALYSIS

See Appendix for complete policy table analyzing the Focus Areas and Foundational Plans.

JURISDICTION

The City of Vancouver has the jurisdiction to address the climate crisis in the DTES—as well as the capacity to effect real change.

According to the Vancouver Charter, City Council has the ability to determine which services it provides. The City has access to local insights and community resources that will be vital in addressing issues related to housing, climate action, and public health.

While the federal government's decision to download the administration of housing programs to the lower levels of government was ill-conceived, it would be disastrous for Vancouver to now refuse to participate in housing planning, as was proposed in the 2024 Vancouver Mayor's Budget Task Force Report. The publication suggests that the City's main spending should not overlap with the "core jurisdiction" of another level of government, but it is clear that the issues facing the DTES—climate change, homelessness—can only be addressed with a significant inter-jurisdictional approach. When climate change and homelessness intersect, they feed into multiple health pathways, cross disciplinary bounds, and require collaborative policy solutions.⁵²

Compared with other levels of government, municipalities are best equipped to engage with the community, understand existing solutions, and identify needs.

Community-based initiatives and insights from those with lived experience of homelessness are among the most valuable resources in addressing the impacts of the climate crisis on public health.^{52 53}

The City of Vancouver cannot assume that services previously delivered at the municipal level can be adequately delivered or funded by service providers like UGM or other levels of government. Municipal response to climate change impacts in the DTES must expand, with a focus on the most vulnerable members of the community.^{19 20 54}

FOUNDATIONAL PLANS

Vancouver's Climate Change Adaptation Strategy was the first of its kind in Canada. It followed in the footsteps of national and provincial plans (BC Climate Leadership, 2016; Pan-Canadian Framework in Clean Growth and Climate Change, 2015), which took international agreements as their foundations (Paris Agreement, 2015; UN Sustainable Development Goals, 2015; UN New Urban Agenda, 2017).

Vancouver's climate commitments are laid out in a series of plans dating back to 2010.

Vancouver's Urban Forestry Strategy (2010–2020) prioritizes the DTES with the goal of doubling street tree density in the neighbourhood by 2030.

The **DTES Local Area Plan (2013–2043)** was prepared in collaboration between the City and the DTES community. Its focus is on housing and public spaces, with some specific reference to climate change. It calls on the City to invest in parks and improve tree canopy in the neighbourhood.

The **Greenest City Action Plan (2011–2020)** set targets for city-wide climate action, including the target that all Vancouver residents live within five minutes of greenspace by 2020.

The **Healthy City Strategy (2014–2025)** plans to improve health outcomes through partnerships, research and training, infrastructure, policy, funding, and programs. Its goals include equitable access to healthy environments and access to housing.

Vancouver's Climate Change Adaptation Strategy (2018) commits to increasing capacity to shelter unhoused people during extreme weather events, increasing city-wide tree canopy, and minimizing heat-related health outcomes population-wide. It also talks about scaling up community programs and offering structural and financial support to community-led initiatives.

Vancouver's Climate Emergency Action Plan (2020–2030) commits the city to 100% renewable energy by 2050, through initiatives related to carbon capture, active transport, and buildings.

The **Clean Air Plan (2021)** identifies action related to buildings, transportation, agriculture, industry, and partnerships to improve air quality in Vancouver.

The **Vancouver Plan (2022)** lists climate protection as a key focus for the future, and proposes extending the City's commitment to the Climate Emergency Action Plan beyond 2030. It calls out the disproportionate impacts of the climate crisis felt by the communities with the fewest resources, and commits to prioritizing the needs of these communities.

The **Resilient Vancouver Strategy (2019)** seeks to increase community preparedness, adaptability, and collaboration within the city, in an effort to better weather shocks like climate-related disasters.

Community-Led Extreme Heat Resilience (2022) collects lessons learned from the 2021 heat dome and offers 18 recommendations for future initiatives and partnerships to improve health outcomes among vulnerable residents.

2010

2012

2014

2016

2018

2020

2022

2024

FOCUS AREAS

Municipal policies should align with what DTES residents need, support existing community-led initiatives, and prioritize the needs of those experiencing homelessness and compounding vulnerabilities.

According to community accounts and interviews with City staff, the following key areas should be the focus when addressing climate change impacts for people experiencing homelessness in the DTES.

1. Decreasing exposure

- Measures to battle housing insecurity
- Indoor spaces better equipped for climate change impacts

2. Providing access to water

- Easily accessible water fountains and distribution

3. Prioritizing accessible and welcoming emergency spaces

- Culturally sensitive programming in emergency centres
- Generous and predictable operating hours
- Transportation to emergency centres
- Services also available in outdoor spaces when applicable

4. Prioritizing portable solutions

- Cool kits
- Portable air filters

5. Empowering DTES networks

- Resources to increase community capacity
- Support for initiatives like wellness checks
- Community involved in disaster planning

6. Streamlining access to funding

- Grants of varying sizes with low-barrier application and eligibility requirements

7. Increasing urban greening

- Tree canopy and green spaces in DTES
- Native plants prioritized in urban greening projects

GAPS AND CHALLENGES

Vancouver's strategies on climate action and public health consider the seven Focus Areas, but some shortcomings remain.

Lack of consideration for housing insecurity

Interventions often fail to consider people experiencing homelessness and housing insecurity.

→ Access to drinking water is a key concern for people experiencing homelessness during extreme heat, but continues to be a concern in the DTES.

→ In spite of BC Hydro offering to distribute 8,000 AC units by 2025, landlords have been able to prevent tenants from installing these units.¹⁴ SRO tenants in particular have little power to negotiate with landlords.

Social stigma

People experiencing homelessness also face considerable stigma in their daily life that impacts how they access public spaces.⁵³ They may feel unwelcome in emergency shelters or cooling stations hosted in spaces like public parks, community centres, and libraries.¹²

Appropriate resource allocation

Given the high concentration of people with vulnerabilities related to climate change impacts in the DTES, more resources need to be allocated toward climate emergency responses and preparedness in this community.

Large-scale urban greening projects are a main focus of City strategies. While certainly worthwhile, it is important to note that their benefits are less immediate compared to portable, community-level initiatives like Cool Kits. Connecting existing community networks to expand community-led initiatives can make the most of allocated money and material resources.

Lack of emergency preparedness

When the 2021 heat dome hit, Vancouver was not sufficiently prepared with emergency measures. Especially among those without reliable internet access,¹ there was and continues to be a lack of information about emergency centres and services. In a city of this size, collaboration—both across departments and between government and the community—is important, if also challenging.³⁰

RESPONSES TO CLIMATE CHANGE IMPACTS

Current measures

Still needed

1. Decreasing exposure

- Plansto increase tree canopy in DTES
- Better access to housing
- Controlled spaces for air filter to work best
- Consider location of AC-equipped busses

2. Access to water

- Water deliveries to SROs
- New drinking fountains
- Mapping of resources
- Additional misting stations and drinking fountains
- Water bottle distribution on street

3. Accessible, welcoming emergency spaces

- Pilot providing travel to centres
- Welcoming to all people
- Opening hours communicated offline
- Familiarity, somewhere people can have a purpose
- Space for carts, belongings, pets

4. Portable solutions

- Cool Kits provided by City, VCH, neighbourhood houses
- Personal cooling devices issued as medical devices to people experiencing homelessness¹⁹
- Hosting workshop and providing supplies for DIY air filters
- Air filters covered under healthcare like personal cooling devices¹⁹
- Air filters be claimed as medical expenses on tax return



Current measures**Still needed****5. DTES networks**

-
- | | |
|---|---|
| <ul style="list-style-type: none">→ Community wellness checks→ Adopt a Catch Basin program—less than 10% of the catch basins in the DTES are currently adopted (Olympic Village has over 40% adopted)⁵⁵ | <ul style="list-style-type: none">→ Leverage networks to distribute water and portable cooling/ filtration devices→ Involve vulnerable communities in identifying issues and improving public health→ Building group narratives can help people weather periods of extreme hot or cold⁵⁶ |
|---|---|

6. Access to funding

-
- Allocate more of the municipal budget towards supporting community-led climate-emergency responses
 - Simplify application requirements for grants supporting this work

7. Urban greening

-
- | | |
|---|---|
| <ul style="list-style-type: none">→ Commitment to underserved neighbourhoods, where benefits can be most felt | <ul style="list-style-type: none">→ Remedy lack of canopy in DTES |
|---|---|



RECOMMENDATIONS

As the climate crisis evolves, community organizations, such as UGM, and DTES residents continue to identify needs and helpful interventions. In turn, Vancouver must find new ways to support the DTES community's response to the climate crisis. In some areas, the City is called to strengthen policy commitments. In others, it must action existing commitments in order to support community-led initiatives.

STRENGTHENING COMMITMENTS

Commit to equity-driven interventions

Prioritize interventions that are most important to people experiencing homelessness—even if not all housed people can benefit from these interventions. Specifically, prioritize:

- **Providing access to water**, which is underemphasized in many plans
- **Distributing portable solutions** through DTES networks, such as personal cooling devices, portable air filters, and water bottles
- **Addressing stigma** that people experiencing homelessness face when accessing public emergency centres and greenspaces

Strengthen commitments to provide housing and health services

To fully address exposure to climate change impacts and severity of health outcomes, homelessness and access to services must also be addressed.

- **Focusing housing efforts on social housing and below market rentals** to make shelter more accessible to the City's most vulnerable groups, reducing individual exposure to climate change impacts
- **Improving protections for SRO tenants** so that tenants are empowered to take advantage of programs like the BC Hydro AC incentive
- **Increasing public health investment in the DTES** in order to expand flexibility of service and operating hours, improving individuals' abilities to seek medical help during extreme weather events

Allocate resources for community-led collaboration in the DTES

While most municipal plans and strategies include generalized commitments to collaboration, it is important to detail what collaboration should look like in the DTES. In order to support the work that DTES residents and organizations are already doing, commitments should include:

- **Offering funding opportunities** for community-led initiatives that are easy for community groups to access
- **Committing to large-scale initiatives** such as community-led greening with native plants

SUPPORTING COMMUNITY-LED INITIATIVES

Empower and build capacity of DTES community networks

Action existing commitments to collaborate with community by:

- **Providing resources** to increase community capacity and compensate community members for their work
- **Offering municipal resources to support community initiatives**—it takes time to build trust, so offering support to community groups is an efficient way to begin collaborating
- **Involving the community in desire-based planning and monitoring**, with a focus on bringing people experiencing homelessness into the conversation

Implement emergency plans with an equity lens

When realizing commitments to provide emergency measures, prioritize making these measures accessible for people experiencing homelessness, particularly in the DTES.

- **Making emergency spaces more accessible** by releasing timely operation updates both online and offline, and by expanding the provision of transportation to the centres
- **Making emergency spaces more welcoming** by fitting them into people's daily patterns, including providing food and offering culturally relevant activities
- **Making information widely available** to ensure community members know how and where to access life-saving resources during climate events

Consider large-scale interventions from an equity perspective

In realizing climate adaptation commitments, consider the impact on people experiencing homelessness. Ensure interventions maximize health benefits for the DTES community while minimizing unintended exclusion or negative consequences for vulnerable groups.

- **Considering impacts of greenspaces**—how they can offer climate adaptation and mental health benefits without causing “green gentrification” or excluding community members from public spaces
- **Exploring building requirements**—how to ensure that tenants experiencing housing insecurity can benefit from building retrofits and related programs



CONCLUSION

As the impacts of climate change continue to worsen, it is imperative that municipalities prioritize people experiencing homelessness, in the form of both policy commitments and tangible action. Climate change compounds existing health disparities, in great part because those without access to shelter face disproportionately high levels of exposure during extreme heat, cold and flooding, and air pollution events.

In Vancouver, interventions must move beyond solutions that work for housed people to consider the unique needs of people experiencing homelessness in the DTES. Many current and proposed interventions require autonomy over one's space, which is not the reality for many. Interventions must also consider social feasibility—for example, interrogating what makes an emergency space truly accessible to all. By engaging DTES community members in the planning and provision of climate emergency interventions, the City can ensure its actions are efficient, inclusive, and truly effective.

Climate change and homelessness are linked—the impacts of climate change in the DTES cannot be sufficiently mitigated without also improving access to housing. Moving forward, it will be imperative that the City provide housing services and other equity-driven interventions. If the City commits to a holistic approach, addressing systemic and neighbourhood-level factors while building community capacity, it will be possible to truly improve climate-related public health outcomes for those experiencing homelessness in the DTES.

END NOTES

1. Mukherjee, D., & Sanyal, S. (2020). Trauma-Informed Approach to Climate Change. In W. Leal Filho, J. Luetz, & D. Ayal (Eds.), *Handbook of Climate Change Management: Research, Leadership, Transformation* (pp. 1-15). Springer International Publishing. https://doi.org/10.1007/978-3-030-22759-3_172-1
2. Vancouver Coastal Health & Fraser Health. (2021). *Community health and climate change: Mapping exposure, sensitivity, and adaptive capacity to four health-related climate hazards*.
3. Director of Finance. (2018). *2018 Statement of Financial Information*. City of Vancouver. <https://council.vancouver.ca/20190402/documents/a2.pdf>
4. Porter, L., Rickards, L., Verlie, B., Bosomworth, K., Moloney, S., Lay, B., Latham, B., Anguelovski, I., & Pellow, D. (2020). Climate Justice in a Climate Changed World. *Planning Theory & Practice*, 21(2), 293-321. <https://doi.org/10.1080/14649357.2020.1748959>
5. Ramin, B., & Svoboda, T. (2009). Health of the Homeless and Climate Change. *Journal of Urban Health*, 86(4), 654-664. <https://doi.org/10.1007/s11524-009-9354-7>
6. Naswa, P. (2020). Interlinkages between gender and climate justice: Challenges and ways forward. In *Climate Justice: Navigating the Discourse*. <https://forum-asia.org/?p=33019>
7. Bezgrebelna, M., & Kidd, S. (2022). Climate change and homelessness: Considerations of intersections and the cost of living crisis. *European and Global Perspectives*.
8. Health Sciences Association of British Columbia. (2023). *2023 Indigenous Homeless Counts*. https://hsa-bc.ca/_Library/2023_HC/Homeless-Count-Infographic-2023.pdfINDIGENOUS
9. Balawag, G., Biangalen-Magata, H., Bugtong-Biano, M., & De Chavez, R. (2020). Climate justice and Indigenous peoples. In *Climate Justice: Navigating the Discourse*. <https://forum-asia.org/?p=33019>
10. The Lancet. (2009). *What is health? The ability to adapt*. *The Lancet*, 373(9666), 781. [https://doi.org/10.1016/S0140-6736\(09\)60456-6](https://doi.org/10.1016/S0140-6736(09)60456-6)
11. Krieger, N. (2005). Embodiment: A conceptual glossary for epidemiology. *Journal of Epidemiology and Community Health*, 59(5), 350-355. <https://doi.org/10.1136/jech.2004.024562>
12. Hamstead, Z. A. (2023). Critical Heat Studies: Deconstructing Heat Studies for Climate Justice. *Planning Theory & Practice*, 24(2), 153-172. <https://doi.org/10.1080/14649357.2023.2201604>
13. Peck, J., Siemiatycki, E., & Wyly, E. (2014). Vancouver's suburban involution. *City*, 18(4-5), 386- 415. <https://doi.org/10.1080/13604813.2014.939464>
14. Stern, R. N. (2023). "We knew it was coming, we just didn't know what it would be like to live it": *The extreme weather worlds of senior tenants in Vancouver, British Columbia* [University of British Columbia]. <https://doi.org/10.14288/1.0437201>
15. Cheng, Z. (2019). *Growing an equitable and resilient urban forest*. UBC Sustainability Scholars. <https://sustain.ubc.ca/about/resources/growing-equitable-and-resilient-urban-forest>
16. Vickery, J. (2018). Using an intersectional approach to advance understanding of homeless persons' vulnerability to disaster. *Environmental Sociology*, 4(1), 136-147. <https://doi.org/10.1080/23251042.2017.1408549>
17. Grigorieva, E., & Lukyanets, A. (2021). Combined Effect of Hot Weather and Outdoor Air Pollution on Respiratory Health: Literature Review. *Atmosphere*, 12(6), Art. 6. <https://doi.org/10.3390/atmos12060790>

18. Gronlund, C. J. (2014). Racial and Socioeconomic Disparities in Heat-Related Health Effects and Their Mechanisms: A Review. *Current Epidemiology Reports*, 1(3), 165-173. <https://doi.org/10.1007/s40471-014-0014-4>
19. Egilson, M. (2021). *Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in B.C. in Summer 2021*. Chief Coroner of British Columbia. <https://www2.gov.bc.ca/gov/content/life-events/death/coroners-service/death-review-panel>
20. Van Steen, Y., Ntarladima, A.-M., Grobbee, R., Karsenberg, D., & Vaartjes, I. (2019). Sex differences in mortality after heat waves: Are elderly women at higher risk? *International Archives of Occupational and Environmental Health*, 92(1), 37-48. <https://doi.org/10.1007/s00420-018-1360-1>
21. Bohnert, A. S. B., Prescott, M., Vlahov, D., Tardiff, K. J., & Galea, S. (2010). Ambient temperature and risk of death from accidental drug overdose in New York City, 1990-2006. *Addiction* (Abingdon, England), 105(6), 1049-1054. <https://doi.org/10.1111/j.1360-0443.2009.02887.x>
22. Goedel, W. C., Marshall, B. D. L., Spangler, K. R., Alexander-Scott, N., Green, T. C., Wellenius, G. A., & Weinberger, K. R. (2019). Increased Risk of Opioid Overdose Death Following Cold Weather: A Case-Crossover Study. *Epidemiology*, 30(5), 637. <https://doi.org/10.1097/EDE.0000000000001041>
23. Chief Medical Health Officer. (2023). *Protecting population health in a climate emergency*. Vancouver Coastal Health. <https://www.vch.ca/sites/default/files/2024-02/vch-climate-change-health-report.pdf>
24. Nowell, M., & Masuda, J. R. (2020). "You need to just provide health services:" navigating the politics of harm reduction in the twin housing and overdose crises in Vancouver, BC. *International Journal of Drug Policy*, 82. <https://doi.org/10.1016/j.drugpo.2020.102774>
25. Brady, K. T., & Sinha, R. (2005). Co-occurring mental and substance use disorders: The neurobiological effects of chronic stress. *The American Journal of Psychiatry*, 162(8), 1483-1493. <https://doi.org/10.1176/appi.ajp.162.8.1483>
26. Every, D. (2016). Homelessness and severe storms and floods: A case study of the June 2016 East Coast low (2016.238). *Bushfire and Natural Hazards CRC*. www.bnhcrc.com.au/sites/default/files/managed/downloads/every_2016_homelessness_and_the_june_2016_ecl_final.pdf
27. Hardenbrook, R., DeMarco, A., & Rose, J. (2022). A Narrative Political Ecology Approach to Unsheltered Homelessness and Episodic Poor Air Quality along an Urban Riparian Corridor. *Society & Natural Resources*, 35(11), 1152-1169. <https://doi.org/10.1080/08941920.2022.2098437>
28. Chapman, J., Holman, S. & Fionda, F. (2022). *You can't ignore it because you're in it*. Climate Disaster Project. <https://climatedisasterproject.com/testimony/you-cant-ignore-it-because-youre-in-it/>
29. O'Brien, DJ. & Holman, S. (2022). *I was hard for anybody to take care of themselves*. Climate Disaster Project. <https://climatedisasterproject.com/testimony/it-was-hard-for-anybody-to-take-care-of-themselves/>
30. Kidd, S., & Bezgrebelna, M. (2022). *Climate Change and Homelessness: A global response framework*. Global Climate-Homelessness Initiative Group. <https://www.homelesshub.ca/resource/climate-change-and-homelessness-global-response-framework>
31. Tuck, E. (2009). Suspending Damage: A Letter to Communities. *Harvard Educational Review*, 79. <https://doi.org/10.17763/haer.79.3.n0016675661t3n15>
32. Keller, R. C. (2015). *Fatal Isolation: The Devastating Paris Heat Wave of 2003*. University of Chicago Press. <http://ebookcentral.proquest.com/lib/ubc/detail.action?docID=2027228>

33. Ebi, K. L., Capon, A., Berry, P., Broderick, C., de Dear, R., Havenith, G., Honda, Y., Kovats, R. S., Ma, W., Malik, A., Morris, N. B., Nybo, L., Seneviratne, S. I., Vanos, J., & Jay, O. (2021). Hot weather and heat extremes: Health risks. *Lancet* (London, England), 398(10301), 698–708. [https://doi.org/10.1016/S0140-6736\(21\)01208-3](https://doi.org/10.1016/S0140-6736(21)01208-3)
34. Philip, S. Y., Kew, S. F., van Oldenborgh, G. J., Anslow, F. S., Seneviratne, S. I., Vautard, R., Coumou, D., Ebi, K. L., Arrighi, J., Singh, R., van Aalst, M., Pereira Marghidan, C., Wehner, M., Yang, W., Li, S., Schumacher, D. L., Hauser, M., Bonnet, R., Luu, L. N., ... Otto, F. E. L. (2022). Rapid attribution analysis of the extraordinary heat wave on the Pacific coast of the US and Canada in June 2021. *Earth System Dynamics*, 13(4), 1689–1713. <https://doi.org/10.5194/esd-13-1689-2022>
35. Kinney, P. L. (2018). Temporal Trends in Heat-Related Mortality: Implications for Future Projections. *Atmosphere*, 9(10), Art. 10. <https://doi.org/10.3390/atmos9100409>
36. Bunker, A., Wildenhain, J., Vandenbergh, A., Henschke, N., Rocklöv, J., Hajat, S., & Sauerborn, R. (2016). Effects of Air Temperature on Climate-Sensitive Mortality and Morbidity Outcomes in the Elderly; a Systematic Review and Meta-analysis of Epidemiological Evidence. *EBioMedicine*, 6, 258–268. <https://doi.org/10.1016/j.ebiom.2016.02.034>
37. Salamanca, F., Georgescu, M., Mahalov, A., Moustouli, M., & Wang, M. (2014). Anthropogenic heating of the urban environment due to air conditioning. *Journal of Geophysical Research: Atmospheres*, 119(10), 5949–5965. <https://doi.org/10.1002/2013JD021225>
38. Luciano, A., Chwelos, A., Holman, S. & Sherlock, T. (2022). Oh my God this isn't normal. Climate Disaster Project. <https://climatedisasterproject.com/testimony/oh-my-god-this-isnt-normal/>
39. McNeely, M., Holman, S. & Fionda, F. (2022). *I was losing it just because of the heat*. Climate Disaster Project. <https://climatedisasterproject.com/testimony/i-was-losing-it-just-because-of-the-heat/>
40. Graham, D. A., Vanos, J. K., Kenny, N. A., & Brown, R. D. (2016). The relationship between neighbourhood tree canopy cover and heat-related ambulance calls during extreme heat events in Toronto, Canada. *Urban Forestry & Urban Greening*, 20, 180–186. <https://doi.org/10.1016/j.ufug.2016.08.005>
41. Henderson, S. B., McLean, K. E., Lee, M. J., & Kosatsky, T. (2022). Analysis of community deaths during the catastrophic 2021 heat dome: Early evidence to inform the public health response during subsequent events in greater Vancouver, Canada. *Environmental Epidemiology*, 6(1), e189. <https://doi.org/10.1097/EE9.0000000000000189>
42. Löhmus, M. (2018). Possible Biological Mechanisms Linking Mental Health and Heat—A Contemplative Review. *International Journal of Environmental Research and Public Health*, 15(7), Art. 7. <https://doi.org/10.3390/ijerph15071515>
43. Liu, J., Varghese, B. M., Hansen, A., Xiang, J., Zhang, Y., Dear, K., Gourley, M., Driscoll, T., Morgan, G., Capon, A., & Bi, P. (2021). Is there an association between hot weather and poor mental health outcomes? A systematic review and meta-analysis. *Environment International*, 153, 106533. <https://doi.org/10.1016/j.envint.2021.106533>
44. Downtown Eastside SRO Collaborative Society. (2022). *SRO Extreme Heat Preparedness and Response Initiative*. <https://srocollaborative.org/wp-content/uploads/2023/05/HeatEvaluationReport.pdf>

45. Schwarz, L., Nguyen, A., Castillo, E. M., Brennan, J. J., Chan, T., Aguilera, R., Gershunov, A., & Benmarhnia, T. (2022). The effect of ambient air pollution and wildfire smoke on emergency department visits for persons experiencing homelessness in San Diego, California. *ISEE Conference Abstracts*, 2022(1). <https://doi.org/10.1289/isee.2022.O-OP-116>
46. Mark, Y., (2022). *My Childhood*. Megaphone. p. 17.
47. MacMurdo, M. G., Mulloy, K. B., Felix, C. W., Curtis, A. J., Ajayakumar, J., & Curtis, J. (2022). Ambient Air Pollution Exposure among Individuals Experiencing Unsheltered Homelessness. *Environmental Health Perspectives*, 130(2), 027701. <https://doi.org/10.1289/EHP10414>
48. Carrigg, D. (2023, April 4). *Weather: Vancouver breaks winter snow record*. Vancouver Sun. <https://vancouversun.com/news/local-news/weather-vancouver-breaks-winter-snow-record>
49. City of Vancouver. (n.d). *Climate change infographics*. <https://vancouver.ca/images/cov/icons/climate-change-infographics.pdf>
50. Scott, S., (2022). *What's Next?*. Megaphone. p. 22
51. Thompson, P., (2022). *Priorities*. Megaphone. p. 27
52. Bessel, D. R. (2019). Community-Based Strategies to Address Homelessness. In H. Larkin, A. Aykanian, & C. L. Streeter (Eds.), *Homelessness Prevention and Intervention in Social Work: Policies, Programs, and Practices* (pp. 149-169). Springer International Publishing. https://doi.org/10.1007/978-3-030-03727-7_7
53. Glazier, S. (2021). *A new way forward: Post-pandemic community recovery plan for the downtown eastside*. UBC Sustainability Scholars.
54. Chrisinger, B. W. (2023). Getting to Root Causes. *Journal of the American Planning Association*, 89(2), 160-166. <https://doi.org/10.1080/01944363.2022.2041466>
55. City of Vancouver. (2024). *Adopt a Catch Basin*. <https://vancouver.adoptacity.co/>
56. Hall, A., & Endfield, G. (2016). "Snow Scenes": Exploring the Role of Memory and Place in Commemorating Extreme Winters. *Weather, Climate, and Society*, 8(1), 5-19. <https://doi.org/10.1175/WCAS-D-15-0028.1>

APPENDIX – POLICY TABLE

	Vancouver's Urban Forestry Strategy	DTES Plan	Healthy City Strategy	Climate Change Adaptation Strategy	Resilient Vancouver Strategy	Climate emergency action plan (summary)	Clean Air Plan (2021)	Vancouver Plan	Community-led Extreme Heat Resilience
Decreasing exposure									
Equip indoor spaces for climate change impacts		9.3.6 Encourage SRO upgrades to semi or self-contained units while securing affordability through Housing Agreements. Consider providing City grants to non-profit owned or operated buildings and work with a private lender to establish a loan fund that can be accessed by private owners.		B.6 Consider updating the Vancouver Building By-law to cap the amount of summer solar heat gain in residential units. B.7 Research opportunities within existing buildings to require consideration of solar heat gain. B.8 Work with partners to research opportunities to include thermal comfort as part of Certified Rental Building Program and also work to increase the capacity of landlords to address thermal comfort in their buildings. C.11 Complete an assessment of non-market housing buildings with the goal of identifying short- and long-term cooling options. Address air filtration where possible.	3.1 Improve building performance to protect lives, decrease displacement and accelerate recovery following earthquakes 3.2 Plan, design and upgrade civic facilities to serve the current and future needs of our diverse communities and changing environmental conditions			L2.3.10 Durability and adaptability. Detail, design, build, and renovate for durability and adaptability of the built environment to address resilience and future needs. 3.2.1 Promote flexible building use/reuse and reduce the need for demolition. L1.9.4 Develop City policies and leverage partnerships with Provincial and Federal governments to adapt buildings to climate change and reduce seismic risk. Promote reinvestment and renewal of existing rental housing stock without displacement of low income, elderly, or other equity-denied persons.	Funding for Mechanical Cooling (air conditioning or heat pump upgrades) for non-profit facilities and community spaces: Several partners mentioned that their spaces were hot during the heat events, and that they were only able to partially cool them through the use of fans. In some cases, organizations had to cancel programming due to unsafe indoor temperatures. Funding to purchase fans was also mentioned by several neighbourhood houses.
Housing security measures		6.5.5 Prioritize the area for implementation of actions and strategies related to social housing, local economic development, community health and well-being needs and issues	A Home for Everyone: a range of affordable housing choices is available for all Vancouverites.						
General								L1.9.3 Ensure new development responds to and helps reduce our risks from earthquakes, air pollution, extreme heat, and flooding, particularly in those areas with higher hazard risk.	
Water									
Access to (drinking) water		16.1.1 Pursue opportunities for additional drinking fountains or bottle filling stations, such as in parks, public spaces, plazas, along bike-ways and greenways, and as part of new developments, when opportunities arise.							

	Vancouver's Urban Forestry Strategy	DTES Plan	Healthy City Strategy	Climate Change Adaptation Strategy	Resilient Vancouver Strategy	Climate Emergency Action Plan	Clean Air Plan (2021)	Vancouver Plan	Community-led Extreme Heat Resilience
Urban greening									
Tree canopy	<p>Action 3. Develop forest canopy targets by land-use type or neighbourhood, in coordination with other Planning policy updates and sustainable site design goals.</p> <p>Action 8. Increase street tree planting in the Downtown Eastside, Marpole, False Creek Flats, and other priority neighbourhoods with below average urban forest cover.</p> <p>Action 16. Increase tree planting to create cool streets and parks where vulnerable populations are at risk from urban heat.</p> <p>Action 18. Plant trees to strategically improve air quality, especially as buffers between residential areas and truck routes or arterial streets.</p>	<p>12.4.1 Maintain and enhance the street tree canopy by adding street trees, selecting species that do not negatively impact the streetscape, street surface and underground infrastructure, focusing on the following priority areas:</p> <ul style="list-style-type: none"> • Gaps where trees have been removed and not yet replaced • Residential streets with lower tree densities • Major streets with lower tree densities. 	<p>Vancouverites have the right to a healthy environment and equitable access to livable environments in which they can thrive.</p>	<p>NA.7 Collaborate with and support Downtown Eastside Business Improvement Area's (BIA) and community stewardship of street trees in line with the Urban Forest Action Plan action of doubling the street canopy in this area.</p>				<p>4.2.1 Establish a healthy, city-wide ecological network through transforming road space, parkland acquisition, and naturalization of parks and other City-owned public property. Increase the urban forest canopy and expand the blue green network.</p> <p>4.2.4 Retain and grow a healthy and resilient urban forest, using City tools such as zoning, servicing and subdivision bylaws, and upgraded street designs to provide more space for permeability, quality soil, and increased tree canopy across the city.</p>	
Green-spaces		<p>12.1.2 Expand neighbourhood green and open space, as opportunities arise, to ensure greater access to nature and parks space.</p>		<p>C.15 Design public spaces and bike routes with natural or built shade.</p>				<p>L2.3.1 City in nature, nature in the city. Foster a greater connection to the land through building and site design that provides space for nature, reflects local landscapes, and celebrates views and connections to Vancouver's beautiful natural setting.</p> <p>4.4.3 Ensure the ecological network is equitably distributed, and natural areas are accessible to every resident in Vancouver, while also balancing recreational, cultural, and environmental needs.</p> <p>9.3.3 Explore how the existing street network can create more space for people-first uses and natural habitat.</p> <p>9.5.1 Integrate natural assets and ecosystem services into the public space network to increase neighbourhood resilience and improve the city's ecological health.</p>	<p>Increased shade, green spaces, and water fountains would help with outdoor cooling and water access in South Vancouver</p>
Native plants in urban greening	<p>Action 13. Plant trees to enhance bird and pollinator populations, including expanded use of native trees in park and street tree planting.</p>	<p>15.3.1 Encourage stewardship of trees, green spaces and green storm water infrastructure, e.g. rain gardens, and bioswales. Plant shade trees where appropriate and species that are hardy to changing climate conditions.</p>						<p>9.5.2 Design public spaces to be responsive to the natural environment, and recognize the Nations as leaders of environmental and ecological protection.</p> <p>9.5.4 Enable residents to connect through sharing and growing food by creating food and medicine gardens and outdoor picnicking facilities in public spaces.</p>	

	Vancouver's Urban Forestry Strategy	DTES Plan	Healthy City Strategy	Climate Change Adaptation Strategy	Resilient Vancouver Strategy	Climate Emergency Action Plan	Clean Air Plan (2021)	Vancouver Plan	Community-led Extreme Heat Resilience
Accessible and welcoming emergency spaces									
Welcoming, safe spaces			Safety and inclusion: Vancouver is a safe city in which residents feel secure	C.13 Choose several pilot cooling facilities to be designated clean air shelters for use during poor air quality events during the summer. Evaluate how they are used and program needs moving forward.	1.3.C Apply an intersectional lens to revise emergency and resilience education and engagement materials			<p>9.1.3 Explore opportunities to integrate the hənqemínem and Skwxwú7mesh languages in public spaces, including naming spaces, as led by the Nations.</p> <p>9.1.4 Work with urban Indigenous communities and organizations to support their public space priorities, and work with the Nations to ensure that local protocols and procedures are followed, where they deem appropriate.</p> <p>9.4.3 Incorporate weather protection, weathermitigating elements, and appropriate programming for rain/winter and summer/ heat conditions.””</p> <p>9.5.3 Explore the use of public spaces as response hubs, to support Vancouverites in times of earthquakes, flooding, or other natural disasters.</p>	Engage partner cultural organizations to provide activities at Cooling Centres: To ensure that Cooling Centres are welcoming and safe places for equity denied residents to seek refuge from the heat, it is important to work with organizations such as the Vancouver Friendship Centre and other cultural partners to provide culturally relevant and safe programming at Cooling Centres.
Availability of civic spaces				<p>C.6 Integrate with the Resilient Vancouver work on facilities to begin a cross-disciplinary conversation about using our facilities and community centres to collectively support people in increasing and different ways—extreme weather, heat, poor air quality, etc,. Continue to engage regional partners to this end as well.</p> <p>C.13 Choose several pilot cooling facilities to be designated clean air shelters for use during poor air quality events during the summer. Evaluate how they are used and program needs moving forward.</p>	1.2.C Train and support staff at community centres and libraries to participate in community disaster resilience		5.1.3 Protect against Wildfire Smoke Impacts.	<p>7.1.2 Identify strategic opportunities to make space for new community-serving uses (e.g., within new developments on Cityowned or private sites) in areas where known service gaps exist.</p> <p>7.3.1 Ensure the equitable delivery of services by protecting, renewing, and upgrading facilities and assets (e.g., community centres, recreational facilities, and public washrooms) in alignment with growth and the goals and targets detailed in VanPlay.</p>	Clarity of Messaging around Heat Wave Activations and Cooling Centre Triggers: More clarity on the distinction of the different levels of heat waves and how that affected the activation of cooling centres
Taxis to emergency centres		11.3.3 Support a review of affordable transit options.						<p>5.3.2 Identify and address the needs of equitydenied groups in transportation planning, design, and operations; improving access to destinations and opportunities.</p> <p>9.4.1 Establish accessibility as the baseline for public spaces.</p>	

	Vancouver's Urban Forestry Strategy	DTES Plan	Healthy City Strategy	Climate Change Adaptation Strategy	Resilient Vancouver Strategy	Climate Emergency Action Plan	Clean Air Plan (2021)	Vancouver Plan	Community-led Extreme Heat Resilience
DTES networks									
Build community capacity	Action 39. Provide funding, staff support, and resources for stewardship organizations to undertake urban forest projects and programs.		Cultivating connections: Vancouverites are connected and engaged in the places and spaces that matter to us.	E.17 Continue to work with partners and expand networks. Collaborate with Vancouver Coastal Health on a forum for regional adaptation practitioners and with the Resilient Vancouver Strategy team on a regional hub for practitioners.	1.4.B Create a Capacity Building Action Plan and Non-profit Partnering Framework			1.3.1 Work with non -profit providers, Provincial and Federal governments to provide a diverse range of housing options, emergency services, and supports to people experiencing and at risk of homelessness. 9.6.1 Partner with community organizations, non-profits, event organizers, and local businesses to co-manage public spaces in their neighbourhoods; and develop outreach, education, and communication tools, as part of an inclusive public space management approach.	More information on best practices around peer-to-peer support: our neighbours are first responders. Place-based and peer-to-peer support networks often identify issues before formal First Responders are called in (e.g., neighbours helping neighbours on the same apartment building floor) can be expanded upon and supported by community organizations.
Empower community in planning for disaster		8.3.6 Work with community groups to identify actions to decrease the risk of heat related illness. Actions could include identification of community or building cool refuges, volunteer heat registries, patrols and improving access to drinking water.		C.1 Work with partners Vancouver Coastal Health, Evergreen, social housing providers and others to develop short-term and longer-term strategies for health and safety during heat waves in non-market housing and the surrounding neighbourhoods.	1.2.B Support a community-led Downtown Eastside Neighbourhood Disaster Response and Recovery planning process 2.1 Elevate the voices of underrepresented groups to improve resilience outcomes			9.2.1 Meaningfully engage equity-denied groups to better understand their experiences of public spaces, and prioritize their preferred uses and perceptions of safety in public space planning and design.	

	Vancouver's Urban Forestry Strategy	DTES Plan	Healthy City Strategy	Climate Change Adaptation Strategy	Resilient Vancouver Strategy	Climate Emergency Action Plan	Clean Air Plan (2021)	Vancouver Plan	Community-led Extreme Heat Resilience
Portable solutions									
Cool kits and DIY air filter									<p>Cooling Supports and First Aid for Residents Utilizing Active Transportation: In neighbourhoods where many residents are using active forms of transportation (like walking and biking), there is a need to provide cooling supports and first aid for heat illnesses. First Aid training for staff and volunteers of non-profits has been requested as a way to support members of the community utilizing active transportation who may become stranded along their route due to health impacts from heat exposure.</p> <p>Assistance with procurement of key cooling supplies and services prior to heat events: in preparation for the upcoming 2023 Heat Season, several community partners requested that City of Vancouver assist in procurement of supplies [to avoid lack of supply at stores]. Supplies could include large amounts of bottled water, air conditioning units, fans, Cool Kit supplies, and more.</p>
Access to funding resources									
Simplify funding process					1.2.A Launch and scale the Resilient Neighbourhoods Program with a toolkit and grants			L1.9 Ensure future public investments are distributed more equitably among Vancouver neighbourhoods and help reduce our risk from shocks and stresses	Increased Funding Amounts & Sustained Funding for Resilient Neighbourhoods Partners: Staffing and the ability to extend hours of operations were consistently listed as challenges in supporting residents through heat events. Cedar Cottage Neighbourhood House also pointed to the need for sustained funding in supporting popular cooling actions such as the Cool Kits.
Stated prioritization of climate and health equity									
Overarching commitments			Human services: Vancouverites have equitable access to high-quality social, community and health services.			In 2021, we will establish a target for how much carbon Vancouver will capture and investigate the best pathways to get us there.	<p>5.1.1 Strengthen Relationships with First Nations on Air Quality Issues.</p> <p>5.1.2 Integrate Health Impact Assessments into Major Projects.</p> <p>5.1.5 Enhance Social Support Programs to Consider Air Quality Impacts.</p> <p>6.1.10 Bylaw and Regulation Development."</p>	<p>3.3.3 Focus on people and communities disproportionately impacted by climate change and environmental degradation in area-based planning to understand cascading impacts and improve conditions.</p> <p>3.3.4 Consider public health impacts of a changing climate in the development and renewal of the built environment; new development should respond to, and help mitigate air pollution, extreme heat, and flooding, particularly in areas with higher hazard risk.</p>	

