TOWN OF CANMORE
AGENDA
Committee of the Whole
Council Chamber at the Canmore Civic Centre, 902 – 7 Avenue
Tuesday, June 20, 2023 at 1:00 p.m.

A. CALL TO ORDER AND APPROVAL OF AGENDA

1:00 – 1:05 **1. Land Acknowledgement**

2. Agenda for the June 20, 2023 Committee of the Whole Meeting

B. DELEGATIONS

1:05 – 1:20 **1. EPCOR Water Utility Technology Update (verbal)**

1:20 – 1:35 **2. EPCOR Water Ban and Restrictions Update (verbal)**

C. MINUTES

1:35 – 1:40 **1. Minutes of the May 16, 2023 Committee of the Whole Meeting**

D. STAFF REPORTS

1:40 – 2:00 **1. Canmore & Area Mountain Biking Association Update**

2:00 – 2:15 **2. Update on Emergency Response Plans for Extreme Heat and Wildfire Smoke**

Purpose: To provide Committee of the Whole with an update on the Municipal Climate Change Action Centre (MCCAC) grant funded Capital Project – Emergency Response Plans Extreme Heat and Wildfire Smoke (CAP 7264).

2:15 – 2:30 **3. Emergency Alert System (verbal)**

E. COUNCILLOR UPDATES

2:30 – 2:45 **1. June 2023 Councillor Updates**

F. ADMINISTRATIVE UPDATE

2:45 – 3:00 **1. June 2023 Administrative Update**

G. COUNCIL RESOLUTION ACTION LIST

3:05 – 3:10 **1. Council Resolution Action List as of June 9, 2023**

3:10 – 3:15 **H. CORRESPONDENCE**

1. **Letter from Council Re: CIB Housing Infrastructure Financing**
2. **Letter from Council Re: RCMP Retroactive Payments**
3. **Letter from Council Re: Provincial Downloading to Municipalities**
4. **Letter from Liricon and Plenary Re: Calgary Airport to Banff Passenger Railway**

I. IN CAMERA – None

3:15 **J. ADJOURNMENT**

Agenda prepared by: Allyssa Rygersberg, Deputy Municipal Clerk

TOWN OF CANMORE
MINUTES
Committee of the Whole
Tuesday, May 16, 2023 at 1:00 p.m.

COUNCIL MEMBERS PRESENT

Sean Krausert	Mayor
Wade Graham	Deputy Mayor
Tanya Foubert	Councillor (attended virtually)
Jeff Hilstad	Councillor
Jeff Mah	Councillor
Karen Marra	Councillor
Joanna McCallum	Councillor

COUNCIL MEMBERS ABSENT
None

ADMINISTRATION PRESENT

Sally Caudill	Chief Administrative Officer
Therese Rogers	General Manager of Corporate Services
Whitney Smithers	General Manager of Municipal Infrastructure
Scott McKay	General Manager of Municipal Services
Allyssa Rygersberg	Deputy Municipal Clerk
Sara Jones	Executive Assistant (recorder)
Andy Esarte	Manager of Engineering
Adam Robertson	Communications Advisor
Andreas Comeau	Manager of Public Works
Amy Fournier	Energy and Climate Action Coordinator
Caitlin Van Gaal	Environmental and Sustainability Supervisor
Caitlin Miller	Manager of Protective Services / Director of Emergency Management

Mayor Krausert called the May 16, 2023 Committee of the Whole meeting to order at 1:00 p.m.

A. CALL TO ORDER AND APPROVAL OF AGENDA

1. Land Acknowledgement

2. Agenda for the May 16, 2023 Committee of the Whole Meeting

13-2023COW Moved by Mayor Krausert that the Committee of the Whole approve the agenda for the May 16, 2023 meeting as presented.

CARRIED UNANIMOUSLY

D. STAFF REPORTS

1. Railway Avenue Central Concept Design Community Feedback

Administration provided Committee of the Whole with a summary of community feedback on the Railway Avenue Central Concept Design and an overview of the current project status.

B. DELEGATIONS

1. EPCOR 2022 Performance Report

EPCOR representatives, Artur Ishkulov, Canmore Site Manager, along with Dennis Letourneau, Manager of Operational Excellence supporting Southern Alberta, provided the Committee of the Whole with a 2022 Performance Report.

D. MINUTES

1. Minutes of the April 18, 2023 Committee of the Whole Meeting

14-2023COW Moved by Mayor Krausert that the Committee of the Whole approve the minutes of the April 18, 2023 meeting as presented.

CARRIED UNANIMOUSLY

E. STAFF REPORTS

1. 2023 Utility Master Plan Update

Steven Dawe, Lead Engineer, and Jamie Purdy, Senior Technician/Infrastructure, for CIMA+ provided the Committee of the Whole with a summary of the updated 2023 Utility Master Plan.

Meeting Break 3:09 – 3:20

2. Electric Vehicle Infrastructure: Best Practice Review and Recommendations

Administration provided the Committee of the Whole with a summary of the findings and recommendations from the Electric Vehicle Infrastructure: Best Practice Review and Recommendations report.

Councillor McCallum left the meeting at 3:54.

3. Renewable Energy Feasibility Study Results and Next Steps

Administration provided the Committee of the Whole with a summary of the Renewable Energy Feasibility Study and the proposed next steps.

4. Regional Emergency Management Bylaw

Administration presented a draft Regional Emergency Management Bylaw to the Committee of the Whole to collect feedback on the bylaw before a final draft is presented to Council for approval.

5. 2022 Year-End Fire Rescue Report

Administration provided the Committee of the Whole with a 2022 year-end review of Canmore Fire-Rescue.

E. COUNCILLOR UPDATES

1. May 2023 Councillor Updates

Written report, received as information.

F. ADMINISTRATIVE UPDATE

1. May 2023 Administrative Update

Written report, received as information.

Minutes approved by: _____ _____

G. COUNCIL RESOLUTION ACTION LIST

1. Council Resolution Action List as of May 8, 2023

Written report, received as information.

H. CORRESPONDENCE

1. Letter from Minister Dreeshen

Received as information.

2. Letter from Alberta Municipal Affairs

Received as information.

3. Marigold Library System Annual Documents

Received as information.

4. Letter from RCMP

Received as information.

I. IN CAMERA – None

B. ADJOURNMENT

15-2023COW Moved by Mayor Krausert that the Committee of the Whole adjourn the May 16, 2023 meeting at 4:54 p.m.

CARRIED UNANIMOUSLY

_____

Sean Krausert, Mayor

_____

Sara Jones, Executive Assistant

Minutes approved by: _____ _____

Briefing

DATE OF MEETING:	**June 20, 2023**	**Agenda #:** D-1
TO:	Committee of the Whole	
SUBJECT:	2023 Canmore and Area Mountain Bike Association (CAMBA) Update	
SUBMITTED BY:	Andreas Comeau, Manager of Public Works	

EXECUTIVE SUMMARY

The Town of Canmore and CAMBA began its partnership in 2017 which included a formal agreement and $50,000 in seed money. CAMBA works with administration to identify, design, build and maintain mountain bike trails within the Town of Canmore. CAMBA's update will provide a summary of their work in 2022 and details for proposed work in 2023.

BACKGROUND/HISTORY

CAMBA is a large, organized association of mountain bikers and trail enthusiasts who promote and advocate for trails in Canmore and the surrounding area. The Town of Canmore and the Rocky Mountain Heritage Foundation (RMHF) entered into an agreement with CAMBA on July 1, 2017 for five years that was extended for a further five year term that will expire in 2026. The agreement formalized the relationship between parties for the design, construction, and maintenance of trails on Town of Canmore and RMHF lands. The first trail built, called Fun Forrest, is located in Quarry Lake Park. Over the years, CAMBA has undertaken additional trail work including the Bow Valley Kids Trails and the Benchlands Drop Zone.

The initial $50,000 was intended as seed money, for which CAMBA would make its best efforts to match these funds through volunteer hours, donation of supplies and materials, sponsorships and other grants.

DISCUSSION

As part of CAMBA's agreement, they would provide Council and administration an annual update on their progress, funds used, trail usage, and share details for any proposed future work.

The partnership has been largely successful with an increase in new, exciting trails that are embraced by the broader community as demonstrated through trail counter data. CAMBA has leveraged the initial seed money to more than double the value of their trail work. They host well attended trail building sessions, providing all the safety and tool use training. In fact, we are now receiving requests from other Alberta communities to share the details of our partnership with CAMBA.

FINANCIAL IMPACTS

There are no financial impacts at this time. The initial $50,000 of seed money will likely be spent within the next few years therefore it would be prudent for the Town of Canmore and CAMBA to revisit the agreement with thought towards longer standing financial support.

STAKEHOLDER ENGAGEMENT

CAMBA currently has over 1,000 members, each of whom are stakeholders in the addition and use of trails within the Town of Canmore. The Rocky Mountain Heritage Foundation are also stakeholders for the work undertaken within Quarry Lake Park, which is now complete.

ATTACHMENTS – N/A

AUTHORIZATION

Submitted by:	Andreas Comeau Manager of Public Works	Date:	June 8, 2023
Approved by:	Sally Caudill Chief Administrative Officer	Date:	June 9, 2023

BRIEFING

DATE OF MEETING:	**June 20, 2023**	**Agenda #:** D-2
TO:	Committee of the Whole	
SUBJECT:	MCCAC Grant Funded Emergency Response Plans for Extreme Heat and Wildfire Smoke	
SUBMITTED BY:	Caitlin Van Gaal, Supervisor of Environment and Sustainability Caitlin Miller, Manager of Protective Service	
PURPOSE:	To provide Committee of the Whole with an update on the Municipal Climate Change Action Centre (MCCAC) grant funded Capital Project – Emergency Response Plans Extreme Heat and Wildfire Smoke (CAP 7264).	

EXECUTIVE SUMMARY

Administration received grant funding through the Municipal Climate Change Action Centre's (MCCAC) ($76,100) Climate Resilience Capacity Building Program in the fall of 2022. This funding was to complete the development of two Emergency Response Plans (ERP), one for Extreme Heat and one for Wildfire Smoke. Administration contracted All One Sky Foundation (AOS) in the fall of 2022 to complete this work. From January to April 2023, AOS completed research into the climate projections for Canmore, conducted a best practice review of emergency response plans from other leading jurisdictions, and held a series of public engagement activities. Public engagement consisted of an online public survey, a public open house, and two public workshops focused on Health and Wellbeing and Wildlife Behaviour. AOS also conducted two internal workshops focused on Buildings and Facilities and Emergency Response Plan Review. The results of this research and public engagement have been compiled into two ERPs for Extreme Heat and Wildfire Smoke and one final report summarizing all research and findings. The final report, including the ERPs, is included as Attachment 1.

Since the completion of this work, administration has moved forward with implementing the two ERPs. Both ERPs have been presented to the Canmore Emergency Management Agency (CEMA) and incorporated into the Municipal Emergency Management Plan (MEMP). Administration has conducted a pre-event kick off meeting for the Extreme Heat and Wildfire Smoke ERPs and a tabletop run through of the Extreme Heat ERP.

RELEVANT COUNCIL DIRECTION, POLICY, OR BYLAWS

- 2010: Environmental Sustainability Action Plan (ESAP) (309-10)
- 2016: Climate Change Adaptation Background Report and Resilience Plan (282-2016)
- 2018: Climate Action Plan (269-2018) and greenhouse gas (GHG) reduction targets, which
- 2019: Council declared a State of Climate Emergency (207-2019).
- 2023-2026 Council Strategic Plan

BACKGROUND/HISTORY

The Town of Canmore's Hazard Identification Risk Assessment (HIRA) review conducted through CEMA identified several natural hazards and risks to the community, civic infrastructure, and business continuity. The highest ranked natural hazards identified through this process are wildfire, steep creek flooding, and watercourse flooding. These top natural hazards all have an associated ERP that sits within the Town's MEMP. The next highest ranked natural hazards are extreme heat and wildfire smoke. These hazards are emerging risks to the Town and are being exacerbated by climate change. Due to these two hazards being relatively recently identified as areas of concern to the Town, ERPs were needed to help direct and support staff and CEMA in responding to extreme heat and/or wildfire smoke events.

In Spring 2022, the MCCAC announced a funding opportunity for climate resilience capacity building. The Town was successful in its grant application and was able to go to Request for Proposals in the Fall of 2022. Administration attended Council on November 1, 2022 to request that "*Council approve a new 2022 capital project for the development of two Emergency Response Plans for Extreme Heat and Wildfire Smoke in the amount of up to $80,000 funded form the Municipal Climate Change Action Centre - Climate Resilience Capacity Building Program*". Following this administration was able to successfully contract AOS to complete this work.

DISCUSSION

As noted in Attachment 1, extreme heat and wildfire smoke in particular, are emerging as key climate change-related risks for communities in Alberta. An example of this was noted with the 2021 heat wave and the recent impacts of the wildfire smoke from the north-central Alberta wildfires. Research from the World Weather Attribution Network found that the 2021 heat wave was 'virtually impossible' (a 1:1,000-year event) without human-induced climate change but could start to occur every 5-10 years with just 2°C of global warming.

Project Goals

As noted above, the primary goal of this project was to develop ERPs for extreme heat and wildfire smoke, and to address the following:

1. Heat and Smoke Impacts: Identify and characterize public health and safety risks and vulnerabilities from extreme heat and wildfire smoke (Section 3 of Attachment 1).

2. Heat and Smoke Trends and Projections: Review the frequency of extreme heat and wildfire smoke events historically and understanding future climate projections for Canmore (Section 4 of Attachment 1).

3. Cooling and Clean Air Centres: Provide guidelines for cool and clean air centres (Section 5 of Attachment 1).

4. Heat and Smoke Emergency Response Plans: Review and summarize best practices for emergency response planning (Section 6 of Attachment 1).

5. Long Term Actions: Provide recommendations for long-term preparedness measures that could be implemented to prevent and prepare for extreme heat and wildfire smoke events (Section 7 of Attachment 1)

Key Findings for Each Project Goal

1. Heat and Smoke Impacts

The findings from this project concluded that, as experienced during the heat wave of 2021, extreme heat can have very serious health consequences, including dehydration, heat stroke, and accelerated impacts from chronic (respiratory and cardiovascular) diseases – all leading to increased hospitalization and sometimes death. In addition to the impacts of extreme heat on public health, high temperatures can lead to many other localized impacts including: increased water temperatures; increased deterioration of concrete in roads, sidewalks and buildings (joint sealing / cracking) from thermal expansion and retention; stress on energy transmission and distribution systems increasing the chance of power outages; and overloading of ventilation and air conditions systems in buildings due to increased energy usage for space cooling. Heat waves also stress wildlife, leading to behavioural change, illness and death. This is significant for human-wildlife coexistence.

Similar to extreme heat, wildfire smoke can cause significant health impacts and negatively affect buildings systems. For buildings, wildfire smoke infiltration through windows, doors and openings can increase loads on ventilation systems and worsen indoor air quality. From a human health perspective, wildfire smoke can irritate the lungs, cause inflammation, and alter immune function, particularly in high-risk populations such as those with pre-existing health conditions, people who are pregnant, infants and children, outdoor workers, and the elderly. In addition, persons who are homeless and/or living in poorly ventilated homes are at increased risk.

2. Heat and Smoke Trends and Projections

The observed maximum daily temperature (daily high) and minimum daily temperature (daily low) over the period 1890-2022 has been trending upwards. Daily lows have been increasing at a higher rate (about 0.20°C per decade) than daily highs (about 0.12°C per decade). Over the entire time series, the hottest daily high recorded at 37.8°C (on 29.06.2021); the warmest daily low was 16.9°C (on 23.09.2011 and 10.08.2021). By the 2050s (the 30-year period 2041-2070), the annual average daily high is projected to rise by 4.4°C; the annual average daily low is anticipated to increase by 3.7°C. This means that Canmore can expect to see daily temperatures above 30°C on average 10 times per summer, up from the historic trend of three times per summer between 1985 and 2014.

There are no current studies of the impact of climate change on future smoke-$PM_{2.5}$ levels in Canada. Studies have however linked historic increases in the area burned with higher concentrations of $PM_{2.5}$, as well as associated increases in adverse public health outcomes. With current trends in the total area burned in Canada expected to increase with climate change, it is reasonable to expect that $PM_{2.5}$ levels attributable to wildfire will likewise increase. A study by Wotton et al. (2017) made the following projections for the 2080s under a high emissions pathway:

- A 48% increase in the expected number of wildfire growth days per season;
- A 148% increase in the number of days per season when airtankers are no longer effective (fire intensity exceeds capacity of suppression resources).

3. Cooling and Clean Air Centres

Cooling and clean air centres are one measure to support a community during extreme heat or wildfire smoke events. Buildings must have certain features to support critical functions for the hazard they are providing refuge from, in this case air cooling and cleaning are directly connected to a building's HVAC systems. Providing refuge for the community should also extend to the accessibility features of the building, as well as a variety of amenities and services. Through the development of a checklist, included in Attachment 1, it was determined that the Canmore Recreation Centre and Elevation Place, at this point, have the best (although limited) capacity to act as a cooling or clean air centre. It was noted, however, that neither facility has a back up power supply should there be power disruptions at the same time.

4. Heat and Smoke Emergency Response Plans

A best practice review of how other jurisdictions prepare for and respond to extreme heat and wildfire smoke was completed as a part of this project. The results of this best practices review, the analysis of climate trends and projection, and the results of the public and internal engagement formed the content of the two ERPs. From this review there were 10 key aspects included to ensure a successful ERP:

1. The identification of a lead body to identify and engage stakeholders and to coordinate and direct the response if an alert occurs.
2. The establishment of partnerships with the necessary stakeholders to successfully implement the plan and mitigate adverse health consequences.
3. Clearly delineated roles and responsibilities, including how Town efforts will be coordinated with other partners and stakeholders.
4. An overview of potential health risks posed by extreme heat and wildfire smoke events affecting the community.
5. The identification of at-risk populations and locations within the community.
6. A description of the alert protocol and triggers for activation, escalation and deactivation.
7. The identification of preparedness, response, and recovery actions and plans to mobilize individual and community action.
8. A communications plan(s) embedded within the ERPs to alert the community of a pending event and what actions to take.
9. The identification of long-term preventative actions to reduce heat-health and smoke-health risks and to broadly increase community climate resilience.
10. Real-time health surveillance and post-season evaluation.

5. Recommended Long Term Actions

The adverse health impacts of exposure to primarily high temperatures and smoke are not limited to conditions that trigger a warning or emergency. Daily temperatures and smoke that do not activate the ERP can still result in excess morbidity and mortality. To address these risks, it is recommended that preventative

actions are taken to minimize urban heat island effects, reduce the exposure and vulnerability of at-risk populations, and strengthen broader community resilience to climate change. A co-benefit of these strategies is they tend to also reduce GHG emissions or enhance carbon sequestration and storage. A detailed list of recommended long-term actions is presented in Table 9 of Attachment 1.

Next Steps:

- The completed ERPs have been presented to CEMA and incorporated into the MEMP and will inform future budget plans.
- Impacted members of CEMA met on May 18, 2023, to begin the pre-event activation for both the extreme heat and wildfire smoke ERPs. This means that the Town will begin to ramp up communications notifying the public on how to prepare for a potential extreme heat or wildfire smoke event. This meeting coincided with the wildfire smoke event and coordinated messaging and actions took place to address potential community needs. No additional resources were required during this event, but Elevation Place and Canmore Recreation Centre were available for public use for cool, clean, air.
- Administration completed a tabletop exercise on June 19 to familiarize themselves with the extreme heat ERP.

ANALYSIS OF ALTERNATIVES

N/A

FINANCIAL IMPACTS

This project was fully funded by the MCCAC Climate Resilience Capacity Building Program. Any related follow up actions will be brought to Council for approval as part of a future budget process.

STAKEHOLDER ENGAGEMENT

The following engagements sessions took place over the Winter/Spring of 2023:

- Online Community Survey – January 14 – February 12, 2023 (70 respondents)
- Community Open House – January 25, 2023
- Workshops and Meetings:
    - Wildlife Behaviour – February 22, 2023 (14 attendees from Human Wildlife Coexistence Roundtable Technical Committee)
    - Health and Wellbeing – February 27, 2023 (13 attendees from key community organization)
    - Buildings – February 13, 2023 (internal Facilities staff)
    - Emergency Response Planning – March 9, 2023 (Town's Senior Leader Team)

ATTACHMENTS

Attachment 1 - Adapting to the Risks of Extreme Heat and Wildfire Smoke

AUTHORIZATION

Submitted by: Caitlin Van Gaal
Supervisor of Environment and Sustainability

Date: May 23, 2023

Approved by:	Caitlin Miller Manager of Protective Services	Date:	May 26, 2023
Approved by:	Andreas Comeau Manager of Public Works	Date	May 29, 2023
Approved by:	Scott McKay GM of Municipal Services	Date:	June 1, 2023
Approved by:	Whitney Smithers GM of Municipal Infrastructure	Date:	June 1, 2023
Approved by:	Sally Caudill Chief Administrative Officer	Date:	June 9, 2023

Adapting to the Risks of Extreme Heat and Wildfire Smoke in Canmore

FINAL REPORT

Date: April 28, 2023

Prepared by:

All One Sky FOUNDATION

In partnership with:

Associated Engineering

TRI THE RESILIENCE INSTITUTE

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1. BACKGROUND

There is unequivocal evidence that our climate has warmed over the last century and will warm further in the future. Projections indicate a hotter, and generally wetter future climate, with an increase in the frequency and intensity of some extreme weather events. Floods, fires, droughts, storms and heat waves are all projected to become more frequent and severe. The impacts of these events affect every aspect of our lives, including our economy, the natural environment, buildings and infrastructure, as well as our culture and quality of life. With further climate change anticipated, there is a growing need for communities to understand, prioritize, and efficiently manage these increasing physical risks, including through emergency response and management measures.

Extreme heat and wildfire smoke in particular, are emerging as key climate change-related risks for communities in Alberta. For example, research from the World Weather Attribution Network found that the 2021 heat wave was 'virtually impossible' (a 1:1,000-year event) without human-induced climate change but could occur every 5-10 years with just 2°C of global warming[1]. As experienced during the heat wave of 2021, extreme heat can have very serious health consequences, including dehydration, heat stroke, and accelerated impacts from chronic (respiratory and cardiovascular) diseases – all leading to increased hospitalization and sometimes death. Heat waves also stress wildlife, leading to behavioural change, illness and death[2]. In addition to the impacts of extreme heat on public health, high temperatures can lead to many other localized impacts including: increased water temperatures; increased deterioration of concrete in roads, sidewalks and buildings (joint sealing / cracking) from thermal expansion and retention[3]; stress on energy transmission and distribution systems increasing the chance of power outages[4]; and overloading of ventilation and air conditions systems in buildings due to increased energy usage for space cooling.

Similar to extreme heat, wildfire smoke can cause significant health impacts and negatively affect buildings systems. For buildings, wildfire smoke infiltration through windows, doors and openings can increase loads on ventilation systems and worsen indoor air quality. The implications of this are an increased need to change and/or upgrade filters and ventilations systems, increased system maintenance, and increased energy use as mechanical systems must work harder to filter smoky air. From a human health perspective, wildfire smoke can irritate the lungs, cause inflammation, and alter immune

[1] See: https://www.worldweatherattribution.org/western-north-american-extreme-heat-virtually-impossible-without-human-caused-climate-change/

[2] See for example: https://www.nationalgeographic.com/animals/article/extreme-heat-triggers-mass-die-offs-and-stress-for-wildlife-in-the-west, or https://www.sierraclub.org/sierra/climate-fueled-heat-waves-spell-danger-for-wildlife

3 See: Standards Council of Canada (2019). CSA S478:19. Durability in buildings. [Appendix E (informative) - Climate change effects on the durability of building materials and building elements.]

[4] See: Canadian Electricity Association, 2016. Adapting to Climate Change: State of Play and Recommendations for the Electricity Sector. https://www.electricity.ca/wp-content/uploads/2016/02/Adapting_to_Climate_Change-State_of_Play_and_Recommendations_for_the_Electricity_Sector_in_Canada.pdf

function, particularly in high-risk populations such as pre-existing health conditions, people who are pregnant, infants and children, outdoor workers, and the elderly[5]. In addition, persons who are homeless and/or living in poorly ventilated homes are at increased risk.

The primary goal of this project was to support the Town of Canmore in developing emergency response plans (ERPs) for extreme heat and wildfire smoke as part of the Municipal Emergency Management Plan. In addition, the project scope included:

1. Identifying and characterizing public health and safety risks and vulnerabilities from extreme heat and wildfire smoke and impacts to the most vulnerable members of the community, including those with low income, seniors, children, persons with disabilities, and those with pre-existing chronic health conditions, as well as transient populations (Section 3);
2. Reviewing the frequency of extreme heat and wildfire smoke events historically and understanding future climate projections for Canmore (Section 4);
3. Providing guidelines for cool and clean air centres (Section 5);
4. Reviewing and summarizing best practices for emergency response planning (Section 6); and
5. Providing recommendations for long-term preparedness measures that could be implemented to prevent and prepare for extreme heat and wildfire smoke events (Section 7)

2. APPROACH

The approach to this project included three key aspects:

- Research and analysis by the project team to provide the foundational elements for the ERPs and recommendations.
- A community survey to elicit public input on the local risks of extreme heat and wildfire smoke, and how to better prepare.
- A series of meetings and workshops with Town staff and local stakeholders

Each aspect of the method is discussed below.

2.1 Research and analysis

A comprehensive review of literature and best practices on heat- and smoke-related impacts and risk management actions was completed to inform this project. The goal of this research and analysis was to inform development of the ERPs and recommendations for long-term preparedness in Canmore. The review focused on:

[5] See: https://www.canada.ca/en/environment-climate-change/services/air-quality-health-index/wildfire-smoke/wildfire-smoke-health.html

- Climate change and health adaptation, focused on heat and air quality;
- Development and implementation of health-heat and health-air quality alert and response systems in Canada (including best practice guidance);
- Heat and air quality (smoke) risk mitigation options, including building-level guidelines and adaptations; and
- Communication of health-heat and health-air quality risks to the public.

Sections 3 through 7 of this report incorporate results of the research and analysis completed.

2.2 Community Survey

A community survey was conducted to better understand community perspectives related to exposure, vulnerability and mitigation actions for extreme heat and wildfire smoke. The survey was administered through the Town of Canmore's community engagement platform (Bang the Table), and a community open house on January 25th 2023, was used to launch and promote the survey. The community survey ran from January 14th 2023 to February 12th 2023, and received 70 valid responses. The survey instrument is included as Appendix C, and an assessment of the survey results is provided in Appendix D.

2.3 Workshops and meetings

A series of workshops and meetings were held with Town of Canmore staff and other local experts, focused on wildlife behaviour related to heat and smoke, health and well-being, buildings, and emergency response planning. A synthesis of 'what we heard' at each session is provided below.

2.3.1 Wildlife behaviour

On February 22nd, 2023, a virtual workshop was hosted with the goal of gaining a better understanding of how extreme heat and wildfire smoke impact human-wildlife conflict in Canmore and how to best mitigate it. 13 people attended the workshop (Appendix G). These attendees represented several important local organizations that study and manage wildlife in Canmore and the Bow Valley.

2.3.1.1 Extreme heat

Participants anticipate that extreme heat could have significant negative impacts on food sources for many species in the Bow Valley. These events could also lead to higher metabolic requirements. Less food availability and higher need could lead to increased encounters and conflict in town. Increased temperatures would cause wildlife to relocate to cooler areas and seek out bodies of water. There will also be an increase in human traffic to these areas, thus increasing the likelihood of conflict. Extreme heat events are anticipated to increase stress for many wild species. When human-wildlife encounters occur under these conditions there is a possibility that there could be more conflict.

Workshop participants anticipate that extreme heat will impact species such s fish and amphibians, larger species, and less mobile species or animals with small home ranges. Bears were highlighted as a species of specific concern, as a decrease in food availability would lead them to seek food in town – leading to more conflict.

During the discussion, several key knowledge gaps were identified. Participants pointed to a lack of data that correlates extreme heat with increased human-wildlife conflict. There is also a lack of understanding of the effect that existing wildlife corridors have on mitigating impacts to wildlife during extreme heat events.

Participants recommended that, in extreme heat events, human use restrictions could help mitigate human-wildlife conflict. Active monitoring of wildlife locations and behaviour and closures of areas with high wildlife volumes were suggested. Enforcement of these area closures will be important during these events to ensure minimal conflict. There is a need for increased public education on the impacts that extreme heat events have on wildlife and how to adjust human behaviour to avoid conflict. Due to the wildlife that move through Canmore belonging to a larger ecosystem, participants recommended a coordinated approach throughout the Bow Valley.

Participants had several recommendations that would help build long-term resilience. Habitat improvement was highlighted. Some pointed to a need to ensure that wildlife corridors remain functional for wildlife movement. Potential permanent closures in some of these corridors were suggested. Long-term co-existence between humans and wildlife, particularly with added stressors such as extreme heat events, will require making choices with wildlife in mind rather than due to fear of fines. Enforcement and education could bring about this culture shift.

2.3.1.2 Wildfire smoke

There is less known about how wildfire smoke impacts wildlife behaviour. The two main impacts that workshop participants identified were Increased stress and decreased visibility leading to an increase in wildlife encounters on trails and the possibility of increased wildlife collisions on the highway.

Due to the effects that smoke has on breathing, participants anticipate that species that often run or move around a lot either in predator-prey relationships or for mating will be most affected. The impact on flying insects was also questioned, as it could lead to decreased food sources for bird species.

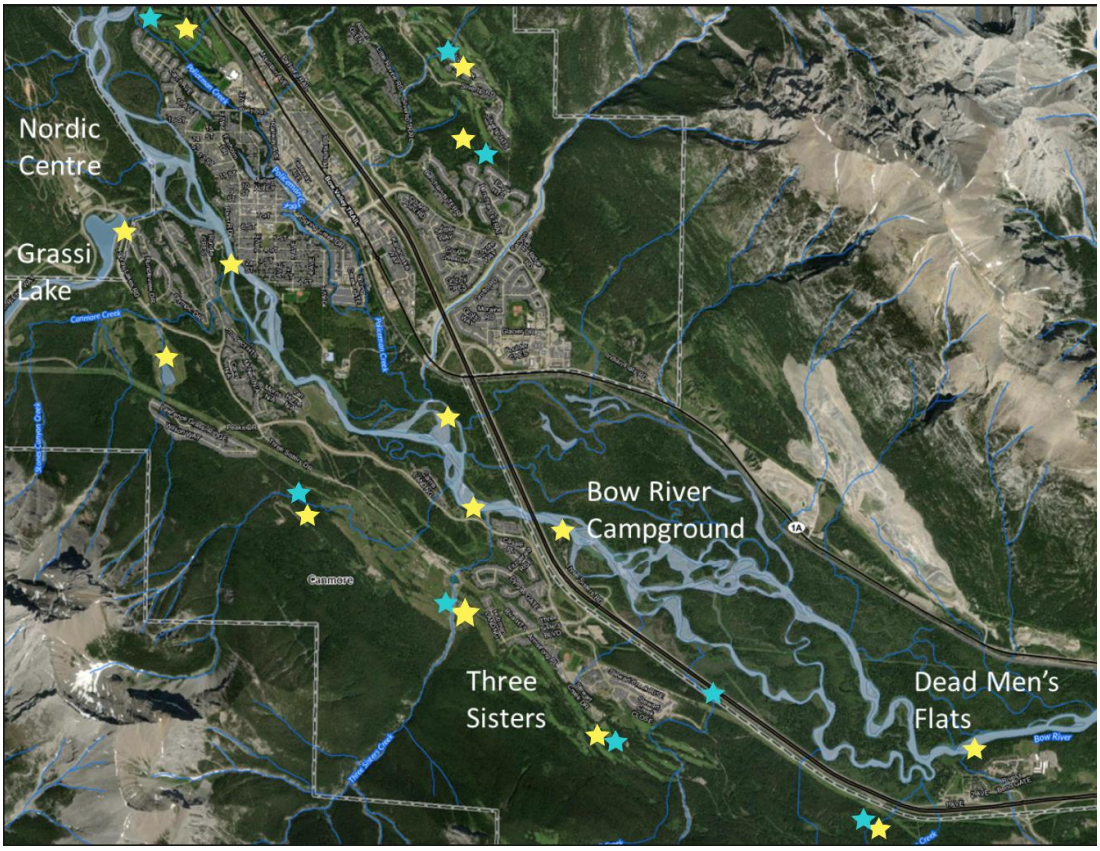
There is some debate, however, on whether wildfire smoke has a significant impact on wildlife behaviour. Participants pointed to a lack of data regarding the impacts that smoke might have on animal species. Participants pointed out that wildlife in Canmore already faces several stressors and questioned whether wildfire smoke would provide a significant enough addition to alter behaviour.

The actions to be taken in wildfire smoke events were similar to the recommended actions for extreme heat events. Many participants suggested proactive closures of areas to give wildlife space. As animals don't have indoor spaces to seek refuge, areas designated for wildlife movement should be enforced. In these events, participants stated a need for clear communication about why areas are closed and why people need to stay away. Regular updates and direction should be given to the public.

To build long-term resilience, participants had several recommendations**.** The use of prescribed burns and the FireSmart program to reduce the number of smoke days caused by wildfire. This would require partnerships with the provincial government and Parks Canada. More research on the impacts that wildfire smoke events have on wildlife behaviour was also recommended. Participant also suggested that there be a focus on education to get buy-in from residents.

Participants were asked to identify locations where they expect human wildlife conflict to occur during extreme heat and wildfire smoke. Figure 1 shows a summary of this input for extreme heat (yellow stars) and wildfire smoke (blue stars). For both types of event, participants anticipated that the majority of conflict would occur in interface areas between the town and adjacent wildlife areas. Popular trails used for recreation and golf courses were identified as areas of potential conflict. In extreme heat events, areas with access to water were highlighted. Many popular spots along the Bow River, Quarry Lake, and the reservoir were all locations participants anticipated a potential increase in human/wildlife conflict. Highways were also identified as areas of concern during wildfire smoke events due to decreased visibility.

Figure 1 Map-based summary of Wildlife Behaviour workshop [Yellow stars = Extreme heat; Blue stars = wildfire smoke]



2.3.2 Health and well-being

A workshop with Town of Canmore staff and local stakeholders was held on February 27th, 2023 with the goal of gathering input and better understanding and planning for the health and well-being impacts of extreme heat and wildfire smoke in Canmore. Attendees came from different departments in the Town of Canmore and from several local organizations that ensure the health and well-being of Canmore residents. The workshop was attended by 15 people; a list of workshop participants is provided in Appendix G. Input received at the workshop is summarized below.

<u>Extreme heat</u>

Workshop participants made several recommendations for the pre-season and warning phase of an extreme heat ERP, including targeted communications for high-risk groups, outreach for unsheltered individuals, language considerations, education for safe spaces, checking air conditioning at home, updating resources, and partnering with settlement organizations. They also suggested monitoring key locations, identifying who needs help, sourcing culturally appropriate food, establishing advocacy and

emergency evacuation locations, and funding non-profit organizations. The participants emphasized the importance of good communication and establishing a plan for day visitors, as well as prioritizing the rollout of emergency evacuation locations and cooling centres.

Regarding the extreme heat emergency phase, several recommendations were provided including advising the public about available safe spaces and activities, using a multilingual alert system to communicate in locals' first language, establishing a vulnerability checklist, being prepared to go door-to-door for vulnerable people, increasing bus service to cooling centres, and providing cooling centres with multiple rooms, including places for kids to play and quiet spaces. Other recommendations included deploying air cooling units to high-risk individuals, increasing relevant public programming, and establishing sheltering spaces for both daytime and overnight use. The participants also suggested using river access points as hubs or locations for shade and water and supplying more water spray stations.

The long-term actions recommended during the workshop for extreme heat emergencies include reducing heat island effects, encouraging more trees for shading, creating a water resource plan, upgrading building design, ensuring high insulation standards, tracking immigration trends, creating neighborhood resource kits, purchasing alert apps, partnering with schools to increase indoor spaces, and incorporating heat/smoke plans into events. The participants also suggest adding community and neighbourhood organizations, purchasing more spray stations, creating a Canmore-specific weather forecast, retrofitting incentives for affordable housing providers, and outreach and education to newcomers in the settlement sector.

Wildfire smoke

The participants had several recommendations for the pre-season and warning phase for a wildfire smoke event. These include actions like portable air purifiers and supporting vulnerable populations, receiving wildfire smoke notifications from Parks Canada, identifying clean air buildings, subsidizing home indoor HEPA filters, learning how to make homes a clean airspace, and distributing air quality monitors. Other recommendations include addressing overcrowding and access to centres for immigrants, renters, and owners, aligning communications with different hazards, building awareness through speakers and media, providing indoor air monitoring, ensuring good communication across multiple platforms, and educating the community about what they can do to prepare.

During the emergency phase of a wildfire smoke event, recommendations from participants were centred around prioritizing resources for Canmore residents. This includes monitoring tourist numbers and encouraging them to return home. In the event that a clean air centre is opened, it was recommended that the focus be on residents and that tourists be encouraged to return to their hotels.

The long-term actions recommended for addressing smoke in Canmore include acknowledging the chronic effects of PM 2.5, using air filtration beyond HVAC, providing portable air purifiers for individual rooms, setting up a permanent air quality monitoring station, providing support for vulnerable residents

to change air filters yearly, obtaining a Canmore-specific smoke forecast, monitoring indoors and key sites, investing in a clean air centre, and using HEPA (High Efficiency Particulate Absorbing) filters.

Participants at the workshop provided several recommendations specific to the provision of cooling and clean air centres in Canmore. Participants suggested that options for these centres should include all buildings in the Town, not just municipal buildings. They also recommended these centres provide access to separate rooms in order to limit anxiety.

2.3.3 Buildings

On February 13th, 2023, a virtual workshop was held with the Town of Canmore staff to review the smoke and wildfire building guidelines and explore potential cool and clean air centres. The primary objectives of the workshop were to review a draft checklist of building criteria that a building should meet in order to be considered as a potential cooling or clean air centre, and to identify facilities within Canmore that had the potential to serve as cooling or clean air centres. Following this workshop, Town of Canmore staff conducted a preliminary assessment to determine which buildings best met the established criteria.

2.3.4 Emergency Response Planning

On March 9th, 2023, a workshop was hosted with the Town of Canmore's Management Committee. The goal of this workshop was to gather recommendations on triggers, actions, and monitoring to be incorporated into emergency response plans for extreme heat and wildfire smoke events.

2.3.4.1 Extreme Heat

It was suggested that the Town should follow Environment and Climate Change Canada's (ECCC) guidelines for heat warnings. Moving into the emergency phase should take a different approach to better suit Canmore's unique context. This will require active monitoring from Town of Canmore staff with ECCC's forecast taken into consideration. Daytime highs (3 days or longer) should have a greater impact on triggering the emergency phase than nighttime lows.

Participants suggested that the town should align its response with fire and medical services ramping up. When considering vulnerable populations, participants suggested that there may be a need to trigger a response early. A separate procedure for vulnerable people was recommended.

It was highlighted that the cancellation or postponement of events (festivals, sports clubs, etc.) needs to align with town facilities and public events. It was suggested that heat be added to event permit ERPs and event organizers be added to the stakeholder list.

Workshop participants suggested that actions during an extreme heat warning and emergency be more heavily focused on communication rather than providing temporary shade and water. Good

communication from the town will be needed early on and should target vulnerable groups. Actions can be implemented during the warning phase but should be discretionary. It was recommended that actions included in the ERP have consecutive increases. This ramping up should be done according to criteria such as heat, duration, and importantly, the capacity of facilities. Items and equipment for providing temporary shade and water should be purchased proactively so that they can be on hand to distribute rapidly.

It was recommended that the Town of Canmore engineering department be responsible for monitoring weather forecasts and will coordinate with Protective Services who will be responsible for making decisions on triggers and action implementation. Participants recommended that it will be key to coordinate with fire, Community Social Development, public works, and facilities early. Increased fire call volumes may trigger or validate a response before ECCC does. There was a call for a dashboard to be developed to pull all monitoring information into one place.

2.3.4.2 Wildfire Smoke

Participants stressed that the trigger between warning and emergency phase for a wildfire smoke event needs to be well defined. Like the trigger for heat events, it could be based on intensity and duration. The overwhelming of resources (fire, medical, clean air facility, CSD feedback) should also be taken into consideration for triggers.

Air quality in Canmore is often different than Calgary, where the ECCC monitoring station is. It I recommended that ECCC warnings be used for now, but a local station should be advocated for. Banff may be getting a station that can monitor PM 2.5, advocacy for this station was strongly recommended. It was also suggested that the Town of Canmore could develop a visibility scale as a reference. This scale could correlate photos from a location of mountain visibility with AQHI ratings.

Similarly, to extreme heat emergencies, participants recommended that actions implemented in both warning and emergency phases should be discretionary. “Consider” should also be added to the ERP for wildfire smoke. Monitoring of the situation (ECCC) and Town facility capacity will be important to trigger larger scale actions. Actions should also be triggered or escalated based on feedback from the community (fire, CSD).

Participants highlighted the difficulty of upgrading facilities to properly filter PM 2.5. In the long term, it would be feasible to upgrade Elevation Place and one or two facilities with Air Handling Units (AHUs). As Banff is getting a PM2.5 monitoring station, participants recommended coordinating with the Town of Banff to access air quality readings. It was suggested that the Canmore Fire Department be responsible for monitoring in a wildfire smoke event and coordinating with Protective Services.

If developed, the visibility scale would also be a good monitoring tool and could be used by community groups as an indication of when to expect a response (see Table 7 and Table 8 for examples).

3. HEALTH IMPACTS AND VULNERABILITY

The growing risks to the health of Canadians from exposure to extreme heat and wildfire smoke events is well documented[6]. Hot ambient conditions and associated heat stress can cause premature mortality and increase morbidity (non-fatal outcomes), as well as adversely impact mental health. Exposure to the different air pollutants contained in wildfire smoke is likewise associated with an increase in mortality and morbidity. Some people are at higher risk of experiencing adverse health effects from exposure to extreme heat or wildfire smoke; there are a number of factors that cause certain populations to be more vulnerable to the effects to heat and air pollution—e.g., age and personal health status. Heat- and smoke-related mortality and morbidity are preventable, and understanding community vulnerability can help focus strategies to effectively reduce risks to health. In this section, the public health risks of extreme heat and wildfire smoke exposure are summarized, and a risk index is developed for Canmore to determine relative risks across the community.

3.1 Health effects of extreme heat

Our body responds to heat stress in two ways: 1. redistributing blood flow towards the skin to transfer heat from muscles (through the skin) to the environment and 2. producing sweat, which subsequently evaporates removing body heat. These physiological responses to heat exposure are necessary to limit increases in core body temperature; they also affect people differently depending on, for instance, age and pre-existing medical conditions, with the potential for negative effects on the body. The redistribution of blood to the skin increases cardiac demand—the heart has to pump harder and faster, increasing local oxygen demand. This can be problematic for people with pre-existing heart conditions—increasing the risk of cardiovascular collapse. Indeed, all-cause cardiovascular illness is the primary cause of death during extreme heat events[7].

In addition, the production of sweat can lead to dehydration if water deficits in the body are not sufficiently replenished. Dehydration can exacerbate cardiovascular strain by decreasing blood volume[8]; it can also lead to acute kidney injury and failure[9].

[6] For a review of the current state of knowledge on this topic see: Gosselin, P., Campagna, C., Demers-Bouffard, D., et al., 2022, Natural Hazards, in P. Berry & R. Schnitter (Eds.), Health of Canadians in a Changing Climate: Advancing our Knowledge for Action. Ottawa, ON: Government of Canada; and Egyed, M., Blagden, P., Plummer, D., et al., 2022, Air Quality, in P. Berry & R. Schnitter (Eds.) *ibid*.

[7] Cheng, J., Xu, Z., Bambrick, H., et al., 2019, Cardiorespiratory effects of heatwaves: a systematic review and meta-analysis of global epidemiological evidence. Environmental Resources, 17: 108610.

[8] Roth, G., Johnson, C., Abajobir, A., et al., 2017, Global, regional, and national burden of cardiovascular diseases for 10 causes, 1990 to 2015, Journal of the American College of Cardiology, 70, 1–25.

[9] Roncal-Jimenez, C., Lanaspa, M., Jensen, T., et al., 2015, Mechanisms by which dehydration may lead to chronic kidney disease, Annuals of Nutrition Metabolism,66, 3, 10–13.

Under extreme conditions, the thermoregulatory capacity of the body can be exceeded. This can result in illness due to overheating that can lead to heat stroke. If not recognized and treated appropriately, this can be fatal[10].

In people with pre-existing respiratory conditions, lung damage caused by increased pulmonary stress due to hyperventilation is associated with increased mortality and morbidity. Elevated air pollution during heat events increases these risks[11].

In addition to increased mortality[12], heat extremes are associated with increased emergency room visits and hospital admittance[13], increased mental and behavioural disorders[14], and adverse pregnancy and birth outcomes[15].

Overall, the scale of public health impacts from extreme heat events are a function of:

- The intensity (maximum daily temperature reached) and duration (the number of consecutive days) of the event;
- When the event occurs in the heat season (earlier in the season is more problematic than later in the season as people have not had time to acclimatize); and
- The susceptibility of the exposed population to harm (discussed below)[16].

Individual physiological and socioeconomic susceptibility to adverse health outcomes varies; the following groups have heightened risk[17]:

- Older adults (aged 65 years and older);

[10] Leon, L. and Bouchama, A., 2015, Heat stroke, Comprehensive Physiology, 5, 611-647.
[11] Bunker, A., Wildenhain, J., Vandenbergh, A., et al., 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, 258–68.
[12] Martin, S., Cakmak, S., Hebbern, C., et al., 2012, Climate change and future temperature-related mortality in 15 Canadian cities, International Journal of Biometeorology, 56,4, 605-619; Gasparrini, A., Guo, Y., Hashizume, M., et al., 2015, Mortality risk attributable to high and low ambient temperature: A multi-country observational study, The Lancet, 386, 369-375; Guo, Y., Gasparrini, A., Li, S., et al., 2018, Quantifying excess deaths related to heatwaves under climate change scenarios: A multi-country time series modelling study, PLoS Medicine, 15, 7, e1002629.
[13] Bai, L., Li, Q., Wang, J., et al., 2017, Increased coronary heart disease and stroke hospitalizations from ambient temperatures in Ontario, Heart, 104, 8, 673-679; and Bai, L., Li, Q., Wang, J., et al., 2016, Hospitalizations from hypertensive diseases, diabetes, and arrhythmia in relation to low and high temperatures: Population-based study, Scientific Reports, 6, 30283.
[14] Wang, X., Lavigne, E., Ouellette-Kuntz, H., and Chen, B., 2014, Acute impacts of extreme temperature exposure on emergency room admissions related to mental and behavior disorders in Toronto, Canada, Journal of Affective Disorders, 155, 154-161.
[15] Auger, N., Fraser, W., Smargiassi, A., and Kosatsky, T., 2015, Ambient heat and sudden infant death: A case-crossover study spanning 30 years in Montreal, Canada, Environmental Health Perspectives, 123, 7, 712-716; and Auger, N., Fraser, W., Smargiassi, A., Bilodeau-Bertrand, M., and Kosatsky, T, (2017, Elevated outdoor temperatures and risk of stillbirth, International Journal of Epidemiology, 46, 1, 200-208.
[16] The health effects of extreme heat events are also influenced by the capacity of the community to respond during events and to take preparedness actions to mitigate risks.
[17] Gosselin, P., Campagna, C., Demers-Bouffard, D., et al., 2022, ibid; Health Canada, Adapting to Extreme Heat Events: Guidelines for Assessing Health Vulnerability, Ottawa, ON.: Government of Canada; and Prepared BC, 2022, Extreme Heat Preparedness Guide, Victoria, BC: Government of British Columbia.

- Infants and young children;
- Pregnant women;
- People with pre-existing health conditions (heart disease, respiratory disease, diabetes, obesity, mental illness, limited mobility);
- Materially deprived and socially disadvantage and isolated people, including homeless and unsheltered individuals and people who live alone;
- Newcomers and transient populations, including tourists;
- People who live in urban heat islands;
- Outdoor workers and others engaged in strenuous outdoor activity;
- People taking certain medications (antipsychotics, antidepressants, or diuretics); and
- People with substance use disorders.

3.2 Health effect of air pollution from wildfire smoke

Wildfire smoke contains multiple air pollutants including fine particles and gases, such as carbon monoxide, nitrogen oxides, and volatile organic compounds—some compounds are known carcinogens (polycyclic aromatic hydrocarbons and benzene)[18]. In addition, wildfire smoke can contribute to the formation of secondary pollutants like ozone. The amount and composition of wildfire smoke is influenced by many factors, including the types of vegetation burned, the temperature of the fire, the distance from the source, the area burned, the amount of fuel burned, and the completeness of combustion[19].

Of all the pollutants in wildfire smoke, fine particulate matter ($PM_{2.5}$) poses the greatest risk to human health—specifically, $PM_{2.5}$, which are particles that measure 2.5 microns (or one millionth of a metre) or less in diameter[20]. $PM_{2.5}$ is especially problematic as it can be inhaled deep with the lungs. $PM_{2.5}$ is a commonly monitored air quality parameter used as an indicator for public health or population exposure; it is continuously monitored at multiple stations across Alberta[21]. Monitored concentrations of $PM_{2.5}$ during smoke events thus provide useful information to inform responses to mitigate public health risks.

In healthy people, short-term (acute) exposure to wildfire smoke can irritate the eyes, increase mucus production in the nose and throat, and lead to coughing or difficulty breathing, especially strenuous outdoor activity. People with existing respiratory or cardiovascular conditions may experience exacerbation of these conditions.

[18] BC Centre for Disease Control, The Composition of Wildfire Smoke, Wildfire Smoke and Your Health, www.bccdc.ca/wildfire-smoke.
[19] Gosselin, P., Campagna, C., Demers-Bouffard, D., et al., 2022, ibid.
[20] Elliot, C., 2014, Guidance for BC Public Health Decision Makers During Wildfire Smoke Events, BC Centre for Disease Control.
[21] See, for example, https://www.alberta.ca/access-air-quality-and-deposition-data.aspx.

Acute exposure to wildfire smoke is associated with an increase in all-cause mortality[22]. It also has demonstrated associations with a range of respiratory morbidity outcomes, such as aggravation of asthma and Chronic Obstructive Pulmonary Disease, and increased health care utilization (emergency room visits, hospital admissions, medication use) for respiratory conditions[23]. However, the literature is inconclusive regarding any association between wildfire smoke exposure and cardiovascular morbidity and health care utilization—e.g., stroke, heart failure[24]. Furthermore, wildfire smoke on its own has not been shown inconclusively to be associated with adverse mental health outcomes[25].

The health effects of chronic (long-term) exposure to wildfire smoke specific $PM_{2.5}$ have yet to be quantified in the literature[26]. Chronic exposure to other anthropogenic sources of $PM_{2.5}$ have nevertheless been linked with increases in all-cause mortality[27].

Individual physiological and socioeconomic susceptibility to adverse health outcomes varies; the following groups have heightened risk[28]:

- Older adults (aged 65 years and older);
- Infants and young children;
- Pregnant women and the fetus;
- Smokers;
- People with pre-existing health conditions (respiratory disease, lung infections, heart disease, diabetes, obesity, mental illness);
- Materially deprived and socially disadvantage and isolated people, including homeless and unsheltered individuals and people who live alone;
- Newcomers and transient populations, including tourists; and
- Outdoor workers and others engaged in strenuous outdoor activity.

[22] Cascio, W., 2018, Wildland fire smoke and human health, Science of the Total Environment, 624, 586-595; and Reid, C., Brauer, M., Johnston, F., et al., 2016, Critical review of health impacts of wildfire smoke exposure, Environmental Health Perspectives, 124, 9, 1334.
[23] McLean, K., Yao, J. and Henderson, S., 2015, An Evaluation of the British Columbia Asthma Monitoring System (BCAMS) and PM2.5 Exposure Metrics during the 2014 Forest Fire Season, International Journal of Environmental Research and Public Health, 12, 6, 6710–6724; and Dodd, W., Howard, C., Rose, C., et al., 2018, The summer of smoke: Eco-social and health impacts of a record wildfire season in the Northwest Territories, Canada, The Lancet Global Health, 6, 2, S30.
[24] Henderson, S., Brauer, M., MacNab, Y. and Kennedy, S., 2011, Three measures of forest fire smoke exposure and their associations with respiratory and cardiovascular health outcomes in a population-based cohort, Environmental Health Perspectives, 119, 9, 1266-1271; and Dodd, W., Howard, C., Rose, C., et al., 2018, ibid.
[25] Reid, C., Brauer, M., Johnston, F., et al., 2016, ibid.
[26] O'Dell, K., Bilsback, K., Ford, B., et al., 2021, Estimated mortality and morbidity attributable to smoke plumes in the United States: Not just a Western US problem, GeoHealth, 5, e2021GH000457.
[27] Crouse, D., Pinault, L., Balram, A., et al., 2019, Complex relationships between greenness, air pollution, and mortality in a population-based Canadian cohort, Environment International, 128, 292–300.
[28] Gosselin, P., Campagna, C., Demers-Bouffard, D., et al., 2022, ibid; Health Canada, Adapting to Extreme Heat Events: Guidelines for Assessing Health Vulnerability, Ottawa, ON.: Government of Canada; and Prepared BC, 2022, Extreme Heat Preparedness Guide, Victoria, BC: Government of British Columbia.

3.3 Community vulnerability assessment

An index-based risk-vulnerability assessment can be used to rank-order and identify areas within population centres with the highest potential for adverse public health outcomes from (say) extreme heat or wildfire smoke events, as well as to identify the main contributing factors—e.g., socioeconomic and demographic characteristics of the population, the quality and composition of the building stock, the density of impervious surfaces, etc. A composite risk index[29] was constructed for Canmore to be used in tandem with the results of the public survey to inform the development of the Heat and Wildfire Smoke Emergency Response Plans.

The composite heat- and smoke-health risk index was constructed in six steps, briefly described in Table 1. At each step, best practices were followed. The spatial unit of analysis was the Dissemination Areas (DAs) used by Statistic Canada, which are the smallest standard geographic areas for which all census data are reported. There are 18 DAs in Canmore.

The hierarchical structure of the heat- and smoke-health risk index is shown in Figure 2, based on the IPCC's latest conceptualization of risk[30]. In the absence of data to the contrary, the hazard dimension (i.e., extreme heat and wildfire smoke) is assumed to have uniform severity across all DAs in Canmore. As a result, it is not included in the calculation of the index as the value for each DA would be the same; in other words, the hazard dimension has no impact on each DA's risk score. While this assumption is likely to hold for wildfire smoke, the temperatures people are exposed to in each DA is likely to differ due to urban heat island effects and topography.

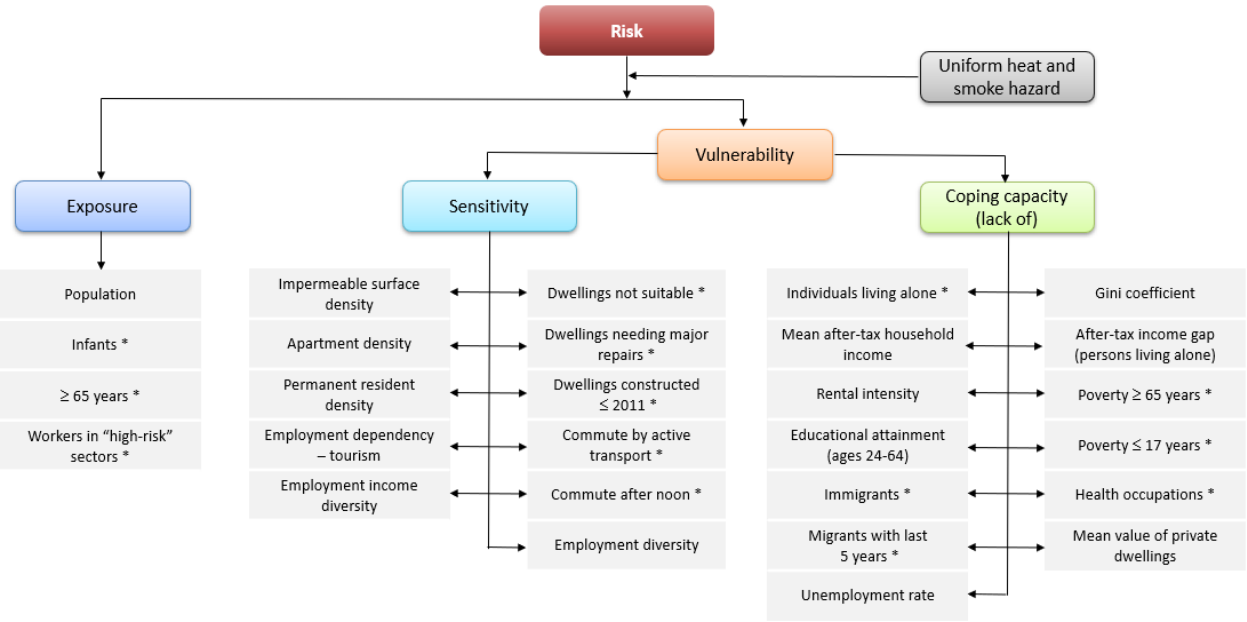
[29] A composite index is an aggregation of multiple individual indicators to provide a synthetic measure (i.e., a summary statistic) of a complex, multidimensional, societal issue of interest, like public health risks from heat and wildfire smoke.

[30] IPCC, The concept of risk in the IPCC Sixth Assessment Report: A summary of cross-Working Group discussions, September 2020, Intergovernmental Panel on Climate Change (IPCC).

Table 1: Description of steps in constructing a composite risk index

1	**Concept definition**	Develop a theoretical framework that provides the basis for the selection and combination of individual variables into the composite index, which is fit for purpose. The index was structured around the IPCC's latest conceptualization of risk, whereby risk is a function of three dimensions: hazard, exposure and vulnerability. The latter is itself a function of two further dimensions: sensitivity and (lack of) coping capacity.
2	**Indicator selection**	Develop a provisional list of indicators and measurement metrics—based on literature and theory—that could be used to assess performance with respect to each core dimension of the conceptual framework. In total, 40 provisional indicators were identified; all but one was constructed from Census 2021 data. The exception was an indicator for the prevalence of impervious surfaces (or lack of greenspace); this was calculated directly from GIS shapefiles for Canmore.
3	**Data treatment and analysis**	Develop descriptive statistics and scatter plots of indicator data, identify and treat outliers, making any necessary transformations. Outliers were identified using box plots boundaries based on the inter-quartile range and threshold values for absolute skewness and kurtosis. Log transformation and, if necessary, Winsorisation was used to treat outliers in two stages.
4	**Normalization**	Normalize the data so all indicators are expressed on a common scale, which renders them comparable. All data must be expressed in a common unit if they are to be aggregated. Standardization (Z-scores) and min-max (linear) rescaling were used to express all data on a 1-10 scale, with 1 indicating a 'preferable' result and 10 indicating a 'non-preferable' result. Indicators were inverted, where necessary, to ensure all low (high) values were 'preferable' ('non-preferable').
5	**Assess statistical coherence**	Assess the statistical properties of the index, including using correlation matrices to check for the presence of (strong) correlation between aggregation levels and between indicators, and make adjustments to, or remove, indicators as necessary. Following this step, the final index comprised 28 indicators, in contrast, to the 40 indicators originally identified.
6	**Aggregation**	Combine the values of a set of indicators into sub-indices and in turn into a single summary 'composite' measure of risk. Indicators were aggregated within sub-indices using arithmetic (additive) aggregation, and sub-indices were summed using geometric (multiplicative) aggregation, reflecting the conceptualization of risk, which is a product of hazard, exposure and vulnerability. Explicit weights were not assigned to any components of the index.

Figure 2: Hierarchical structure of the heat- and smoke-health risk index for Canmore, showing the main sub-indices and linked indicators



Note: * these indicators are measured as rates (i.e., the % of the relevant population).

The calculated heat-health and smoke health risk index score for each DA is provided in Figure 3, as well as for each sub-index. Each DA has a unique 8-digit geo-reference number used by Statistics Canada. The second column in Figure 3 shows the relative rank of each DA; 1 indicating the lowest relative risk across all DAs (corresponding to a risk score of 1); 18 indicating the highest relative risk (corresponding to a risk score of 18). The DA with the highest relative risk is 48105136 (136 for short). This is not surprising since it is associated with the highest level of vulnerability, primarily due to the lowest coping capacity among Canmore residents, as well as a relatively high exposed population. Figure 4 shows the location of this DA—and the other 17—in Canmore. The three most 'at-risk' DAs are highlighted in red; the next three most 'at-risk' DAs are highlighted in orange. The DA with the lowest relative risk is 108. This DA has one of the lowest populations at risk across all DAs, as well as relatively high coping capacity and average sensitivity.

If resources are scarce, emergency response and long-term preventative measures should ideally prioritize—in order:

- Building coping capacity and reducing sensitivity and population exposure in DA 136;
- Reducing sensitivity and population exposure in DA 107;
- Reducing population exposure and building coping capacity in DA 106;

- Reducing population exposure and building coping capacity in DA 112;
- Reducing sensitivity and population exposure in DA 132; and
- Building coping capacity and reducing sensitivity in DA 110.

Figure 3: Community heat- and smoke-health risk index, by Dissemination Areas and Sub-index

Dissemination Areas	Rank	Risk	Exposure	Vulnerabiity	Senstivity	Lack of coping capacity
48150105	9	4.3	9.3	2.4	3.4	3.7
48150106	16	6.1	6.8	5.8	6.7	5.5
48150107	17	7.5	8.0	6.9	8.3	5.8
48150108	1	1.0	1.3	2.7	5.6	2.4
48150109	4	2.1	2.4	3.3	5.2	3.4
48150110	13	5.5	5.2	6.3	8.4	4.9
48150111	6	3.0	3.4	3.8	7.0	2.7
48150112	15	6.0	10.0	3.8	2.4	6.9
48150113	7	3.6	5.9	2.9	4.4	3.5
48150114	5	2.2	8.6	1.0	1.0	4.0
48150129	12	5.3	4.5	6.9	9.4	5.1
48150130	3	1.9	3.1	2.3	6.9	1.0
48150131	10	4.5	5.8	4.1	7.8	2.6
48150132	14	5.6	7.9	4.3	7.9	2.8
48150133	8	4.3	5.7	3.9	7.5	2.5
48150134	2	1.8	1.0	6.3	10.0	3.9
48150135	11	4.9	7.3	3.8	4.7	4.6
48150136	18	10.0	9.2	10.0	8.6	10.0
1 =	Low risk	Low risk	Low exposure	Low vulnerability	Low sensitivity	High cop. cap.
10 (18) =	High risk	High risk	High exposure	High vulnerability	High sensitivity	Low cop. cap.

Figure 4: Community heat- and smoke-health risk map for Canmore

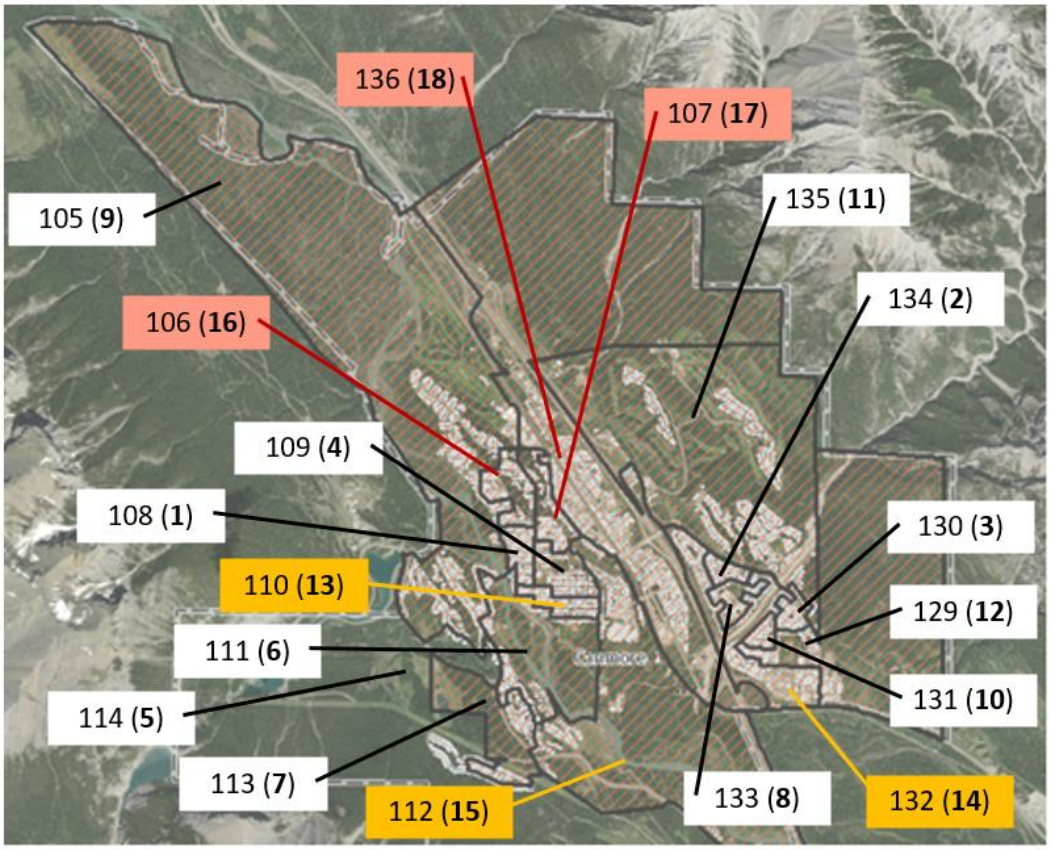
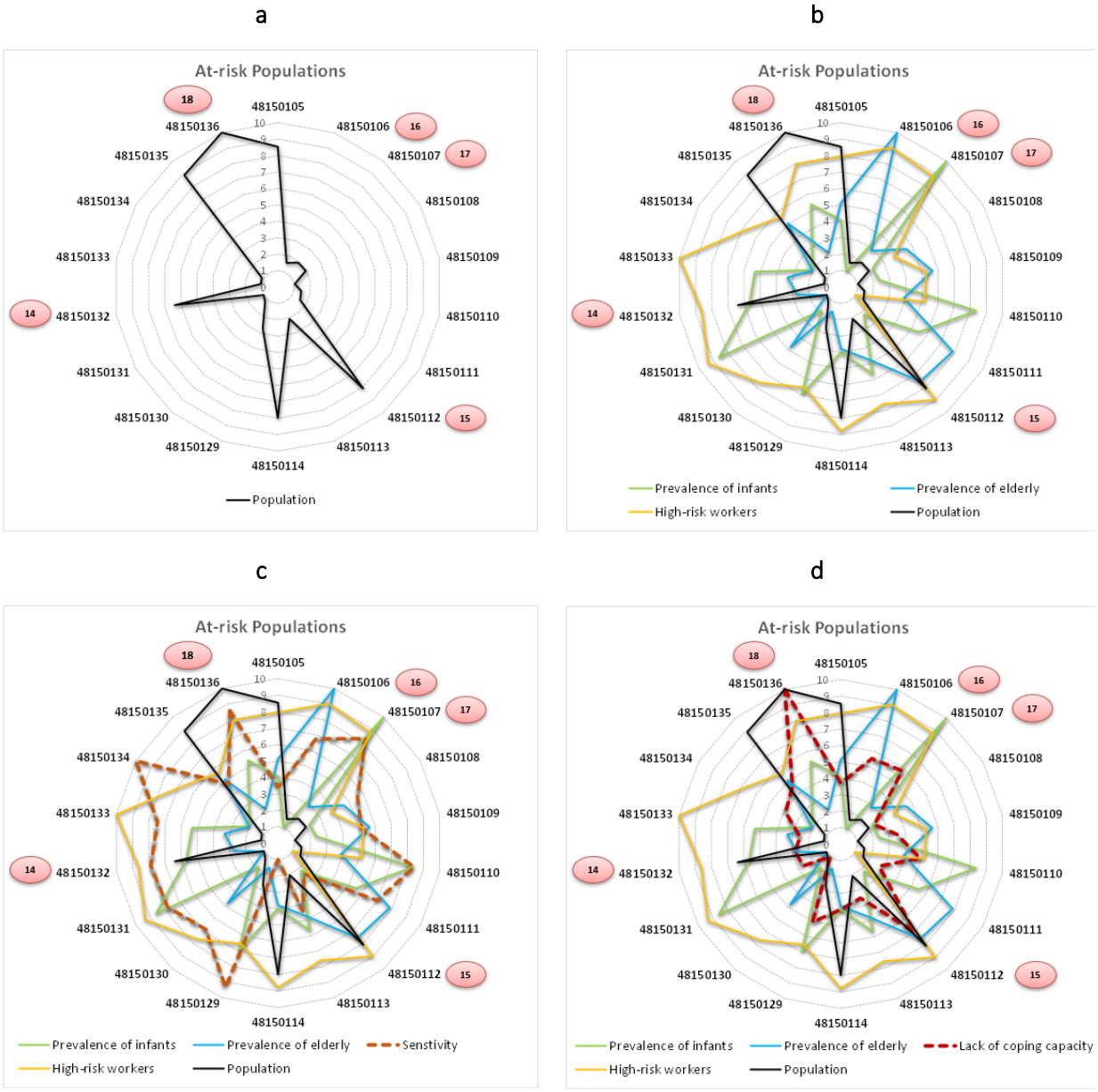


Figure 5 provides further insights into the contribution of the various at-risk populations to the risk scores, along with sensitivity and (lack of) coping capacity. The light red shaded circles in the figure show the relative rank of the six highest risk DAs (18 indicating the highest risk score). Looking at Panel (a), it is evident why 136 and 112 might have high risk scores—with large shares of the total population. Both of these DAs also have a relatively large portion of their workforce in 'high-risk' sectors (Panel b). Likewise, both 106 and 107 have relatively large proportions of workers in 'high-risk' sectors, but 106 and 107 also have the highest prevalence of elderly and infants in their population, respectively. This partially explains why they begin to emerge as high-risk DAs. In addition to having a relatively large share of the total population, DA 112 also has a high prevalence of workers in 'high-risk' sectors and elderly. No surprise then that it has the highest exposure score. In Panel (c) and Panel (d) the sensitivity scores and (lack of) coping capacity scores, respectively, are overlaid on the scores for each population indicator. With one of the highest sensitivity scores, 132 now emerges as a relatively high-risk DA given its above average population exposure scores. The lack of coping capacity scores just reinforces the high-risk status of 112 and 136; the latter also has relatively high sensitivity. With above average sensitivity and lack of coping capacity scores, the relatively high-risk status of 106 and 107 is also confirmed. As shown above, this information can be used to prioritize emergency response and long-term preventative measures.

Figure 5: The contribution of at-risk populations and vulnerability to the DA risk scores



4. HEAT AND SMOKE TRENDS AND PROJECTIONS

The ultimate goal of a heat- or smoke-ERP is to reduce heat- and smoke related morbidity and mortality during an extreme heat or wildfire smoke event by alerting the public about the risks, directing the municipal and community response to help at-risk populations, and providing individuals with information and other resources to help them take actions before, during and after an event to mitigate risks. Some of these activities take place throughout the year (e.g., taking long-term preventative actions to mitigate risks, building the capacity of stakeholders), while others take place during specific time periods (e.g., public education prior to the heat or smoke season, weather surveillance during the season, and retrospective evaluation after the season). Local climate conditions and experience with extreme heat or smoke events will influence the start and end dates for the heat and smoke season, as well as inform the setting of Town-specific alert triggers that activate (and deactivate) the municipal and community response. To inform the alert triggers in the ERPs, this section examines historic weather records and trends relating to extreme heat and smoke events, as well as projected changes with further climate change.

4.1 Temperature extremes

Historical daily observed weather data covering the period 1890-2022 was obtained from the Meteorological Service of Canada (MSC) for the station (Climate ID 3050520) in Banff, which is at an elevation of 1,384m. This is the nearest station to Canmore, which does not have one itself.

The observed maximum daily temperature (daily high) and minimum daily temperature (daily low) over the period 1890-2022 are show in the scatter plots in Figure 6. The trend line is also shown (in dark red). Over the last 130 years both daily lows and daily highs have been trending upwards. Daily lows have been increasing at a higher rate (about 0.20°C per decade) than daily highs (about 0.12°C per decade). This is all consistent with expectations in a changing climate[31]. Over the entire time series, the hottest daily high recorded by 37.8°C (on 29.06.2021); the warmest daily low was 16.9°C (on 23.09.2011 and 10.08.2021). The values for the 95th and 99th percentile extreme values are also shown in the tables to the right of the scatter plots. These represent the values that are exceeded on only 5% and 1% of years, respectively.

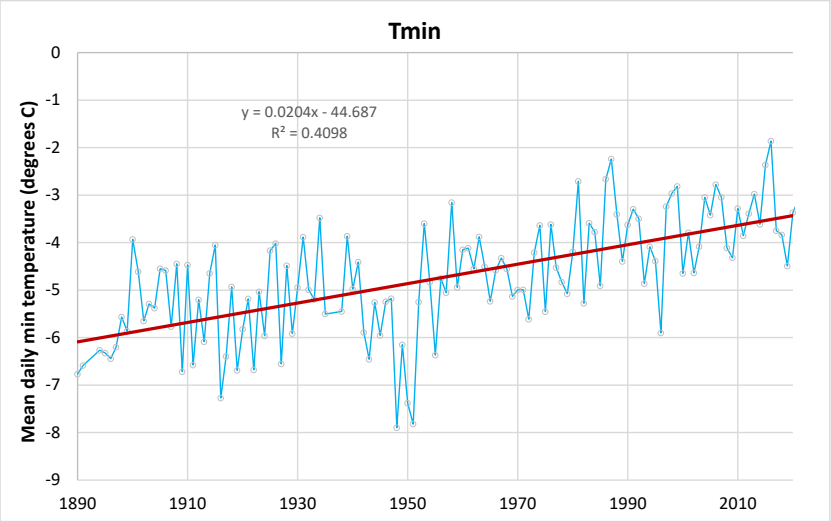
The distribution of daily highs by temperature interval and by month (May to September) over the entire record at Banff is shown in Figure 7. Each bar shows the % of total days in that month within each temperature interval. In all months, daily highs between 25°C and 30°C are possible, though rare in May, June and September—particularly, in May. Daily highs exceeding 30°C are rare in any month, but have been observed in June, July and August—mainly, in July and very rarely in June. In terms of the heat-

[31] Zhang, X., Flato, G., Kirchmeier-Young, M., et al., 2019, Changes in Temperature and Precipitation Across Canada; Chapter 4 in Bush, E. and Lemmen, D. (Eds.), Canada's Changing Climate Report, Government of Canada, Ottawa, Ontario.

ERP—at least based on historical records—**this suggests the heat season runs June-August, with May being when pre-season preparations need to take place**. Below, the extent to which this could alter due to projected climate change is considered.

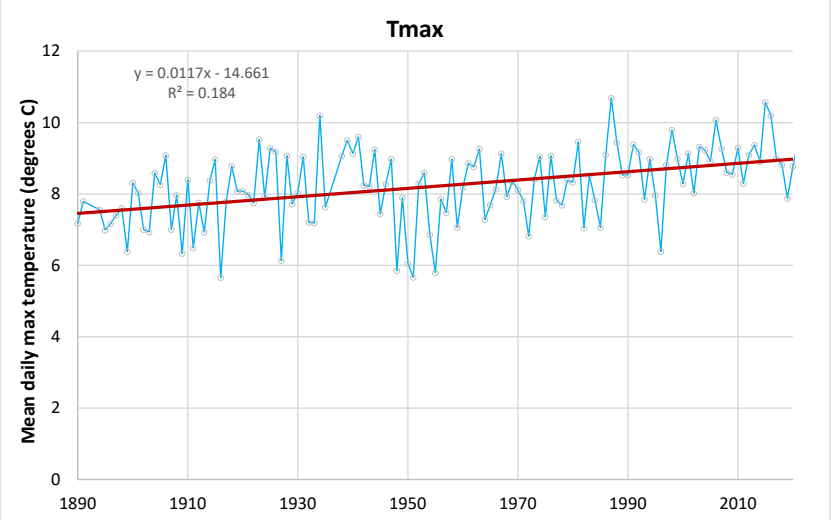
Figure 6: Mean daily highs (Tmax) and lows (Tmin) over the period 1890-2022 recorded at Banff

Daily lows



Min	-39.0°C
Max	37.8°C
50th	8.0°C
95th	25. 6°C
99th	28.9°C

Daily highs

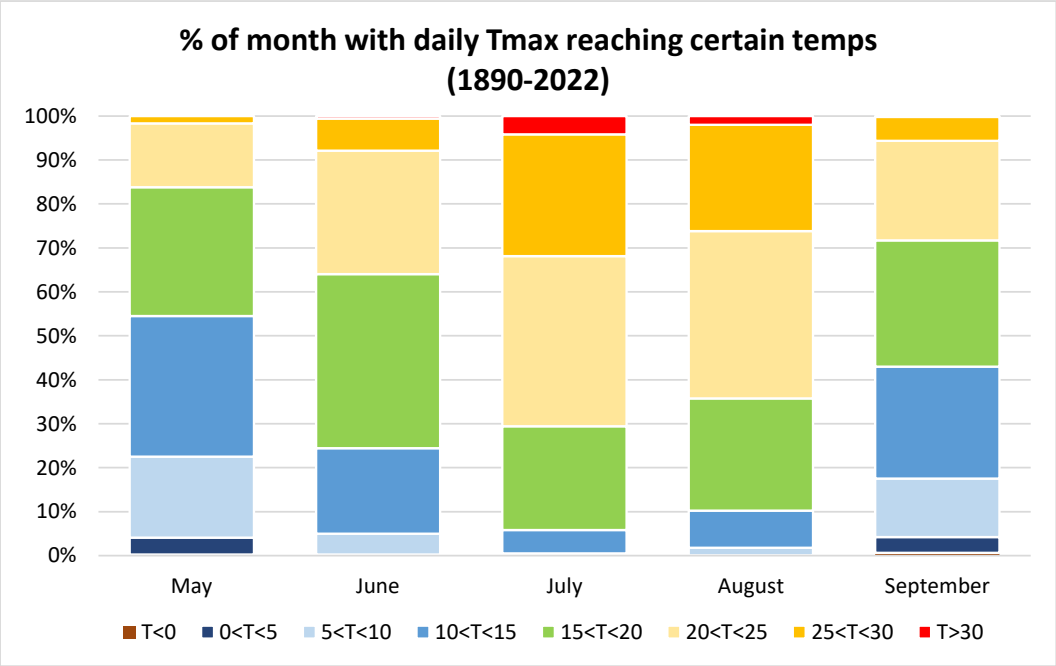


Min	-53.9°C
Max	16.9°C
50th	-2.7°C
95th	-26.0°C
99th	-35.5°C

Given that daily highs and daily lows have been trending upward over the observed temperature record at Banff, looking at daily extremes over the most recent 30-year period (typical of baseline periods used by climatologists) as opposed to the entire 130-year record (as per the tables in Figure 6) might provide a better basis for formulating alert thresholds for the heat-ERP. Figure 8 shows the frequency distributions

for the daily high and daily low temperature records for July and August at Banff for the most recent meteorological baseline period of 1992-2022.

Figure 7: Distribution of mean daily highs (Tmax) by temperature bands and by months over the period 1890-2022 at Banff



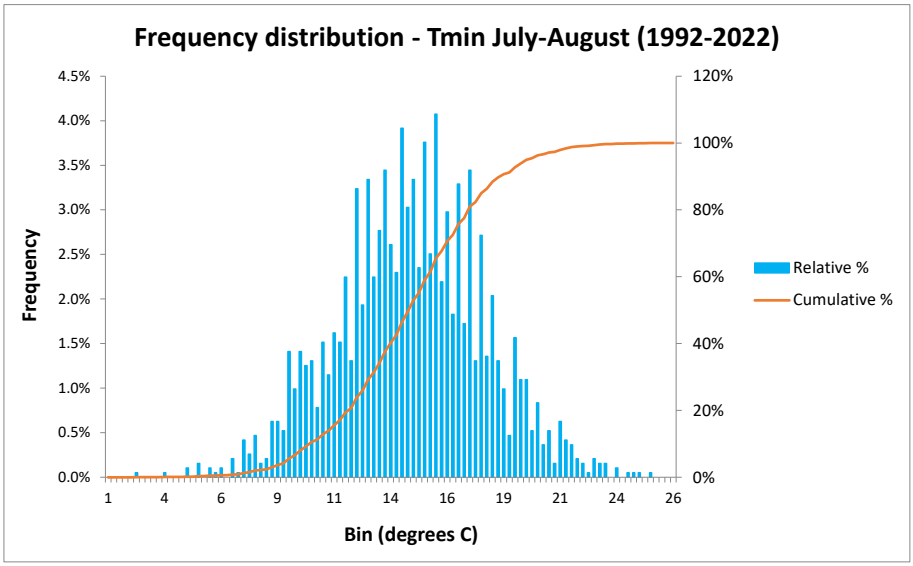
Over the most recent 30-year period, the 95th, 97.5th and 99th percentile extreme daily highs and daily lows in July (J) and August (A) are characterized as follows (each of these extremes is a potential alert threshold for the heat-ERP):

Daily highs	Daily lows
95th percentile = 30.0°C	95th percentile = 11.6°C
➡ 4.5% chance the daily high in J-A was > 30.0°C	➡ 5.1% chance the daily high in J-A was > 11.6°C
➡ 3 times per summer (J-A) this happened	➡ 3 times per summer (J-A) this happened
➡ 14 times per decade this happened in summer	➡ 15 times per decade this happened in summer
97.5th percentile = 30.9°C	97.5th percentile = 12.8°C
➡ 3.0% chance the daily high in J-A was > 30.9°C	➡ 2.7% chance the daily high in J-A was > 12.8°C
➡ 2 times per summer (J-A) this happened	➡ 1-2 times per summer (J-A) this happened
➡ 9 times per decade this happened in summer	➡ 8 times per decade this happened in summer
99th percentile = 32.1°C	99th percentile = 13.8°C
➡ 1.0% chance the daily high in J-A was > 32.1°C	➡ 1.0% chance the daily high in J-A was > 13.8°C
➡ < 1 times per summer (J-A) this happened	➡ < 1 time per summer (J-A) this happened
➡ 3 times per decade this happened in summer	➡ 3 times per decade this happened in summer

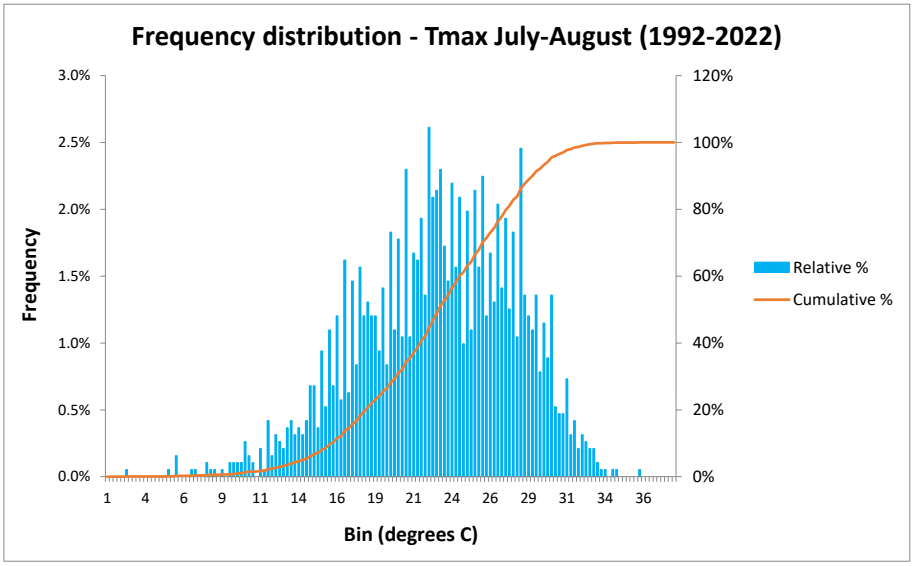
By way of example, if the alert threshold for the heat-ERP was set at the 95th percentile daily high over the most recent 30-year period, it would have triggered actions in the ERP roughly 3 times per summer, on average, or 14 times per decade.

Figure 8: Frequency distributions for mean daily highs (Tmax) and lows (Tmin) over the most recent meteorological baseline period 1992-2022 recorded at Banff

Daily lows



Daily highs

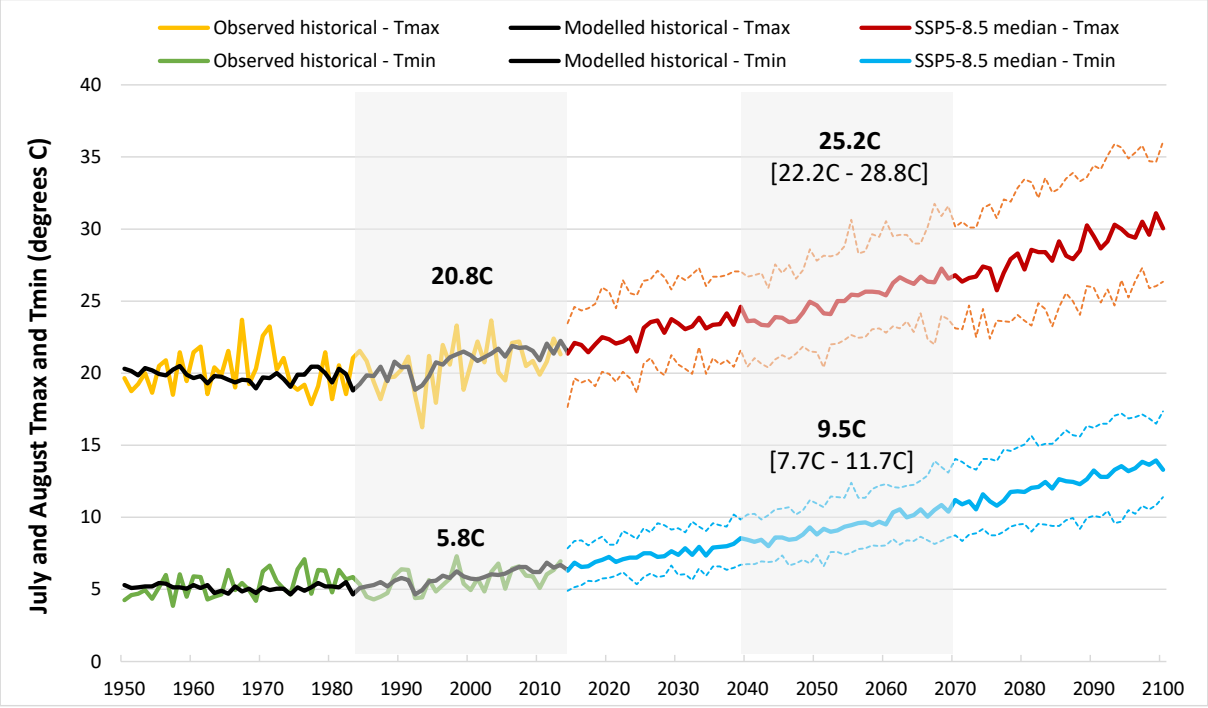


To understand how further climate change will impact temperature extremes in Canmore, daily maximum and daily minimum temperature projections for Canmore were obtained from the Climate Data Canada portal. Data were downloaded from the Coupled Model Intercomparison Project phase 6 (CMIP6-CanDCS-U6) datasets, which are statistically downscaled from 26 CMIP6 global climate models (GCMs). These represent the next generation of climate projections. Data was downloaded for the high emissions

pathway, SSP5-8.5, a fossil-fuel intensive future dominated by climate mitigation challenges—an unlikely worst-case future.

Projected daily highs and daily lows for Canmore are shown in Figure 9, along with modelled historical and observed station data (for Banff). When comparing future projections with past conditions, it is best to use the modelled historical data. For the CMIP6 datasets, the most recent modelled 30-year historical period is 1985-2014; values after 2014 are modelled projections. As shown in Figure 9, the average annual daily high (daily low) over this period is 20.8°C (5.8°C). Note, these values do not correspond to summer months, but rather the full year. By the 2050s (the 30-year period 2041-2070), the annual average daily high is projected to rise by 4.4°C (to 25.0°C); the annual average daily low is anticipated to increase by 3.7°C (to 9.5°C). It therefore follows that daily extreme temperatures are also anticipated to increase in the future with further climate change, as the temperature distributions shown in Figure 8 shift to the right (as shown in Figure 10). Indeed, hot temperatures are projected to become more frequent and intense, increasing the severity of extreme heat events on the Prairies[32].

Figure 9: Observed and modelled historical and projected daily highs (Tmax) and daily lows (Tmin) for Canmore 1950-2100 under a high emissions pathway



Source: Climate Data Canada (www.climatedata.ca/)

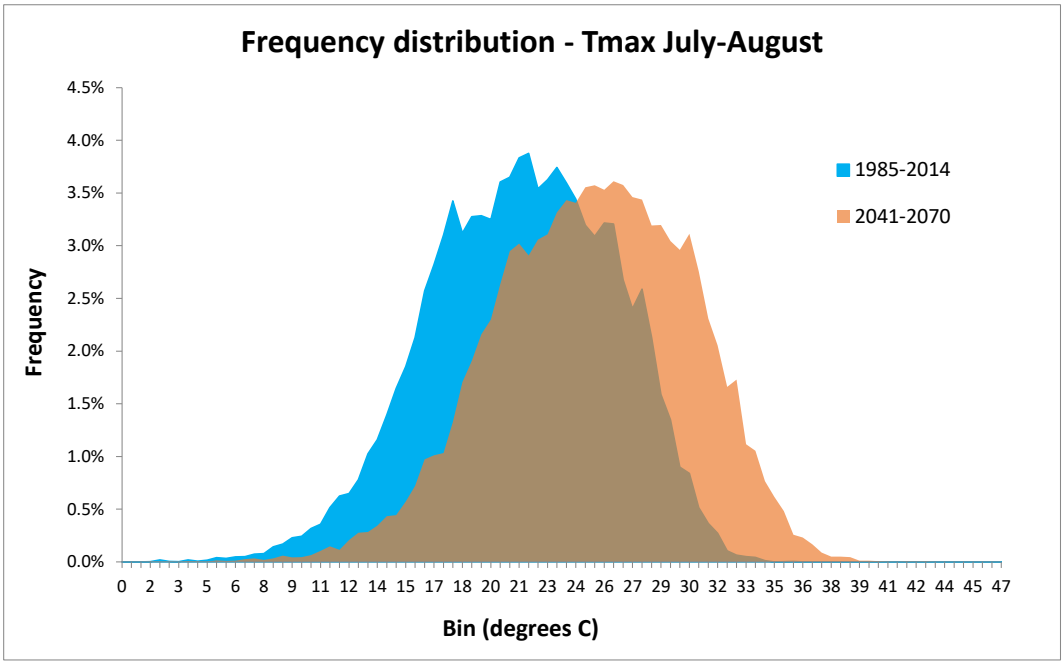
Note: The lighter dashed lines bounding the median projected values (solid thick lines) show the 10th and 90th percentiles across all GCMs

[32] Zhang, X., Flato, G., Kirchmeier-Young, M., et al., 2019, ibid.

As the historical frequency distribution of daily highs and daily lows shifts to the right—as illustrated for daily highs in Figure 10—the likelihood of historical extreme heat events increases as follows:

Observed daily highs (1985-2014)	Modelled daily highs (2041-2070)
95th percentile = 30.0°C →	Now
➡ 4.5% chance the daily high in J-A was > 30.0°C	➡ 15.5% chance the daily high in J-A is > 30.0°C
➡ 3 times per summer (J-A) this happened	➡ 10 times per summer (J-A) this will happen
➡ 14 times per decade this happened in summer	➡ 48 times per decade this will happen
97.5th percentile = 30.9°C →	Now
➡ 3.0% chance the daily high in J-A was > 30.9°C	➡ 13.0% chance the daily high in J-A is > 30.9°C
➡ 2 times per summer (J-A) this happened	➡ 8 times per summer (J-A) this will happen
➡ 9 times per decade this happened in summer	➡ 39 times per decade this will happen
99th percentile = 32.1°C →	Now
➡ 1.0% chance the daily high in J-A was > 32.1°C	➡ 6-7% chance the daily high in J-A is > 32.1°C
➡ < 1 time per summer (J-A) this happened	➡ 4 times per summer (J-A) this will happen
➡ 3 times per decade this happened in summer	➡ 20 times per decade this will happen

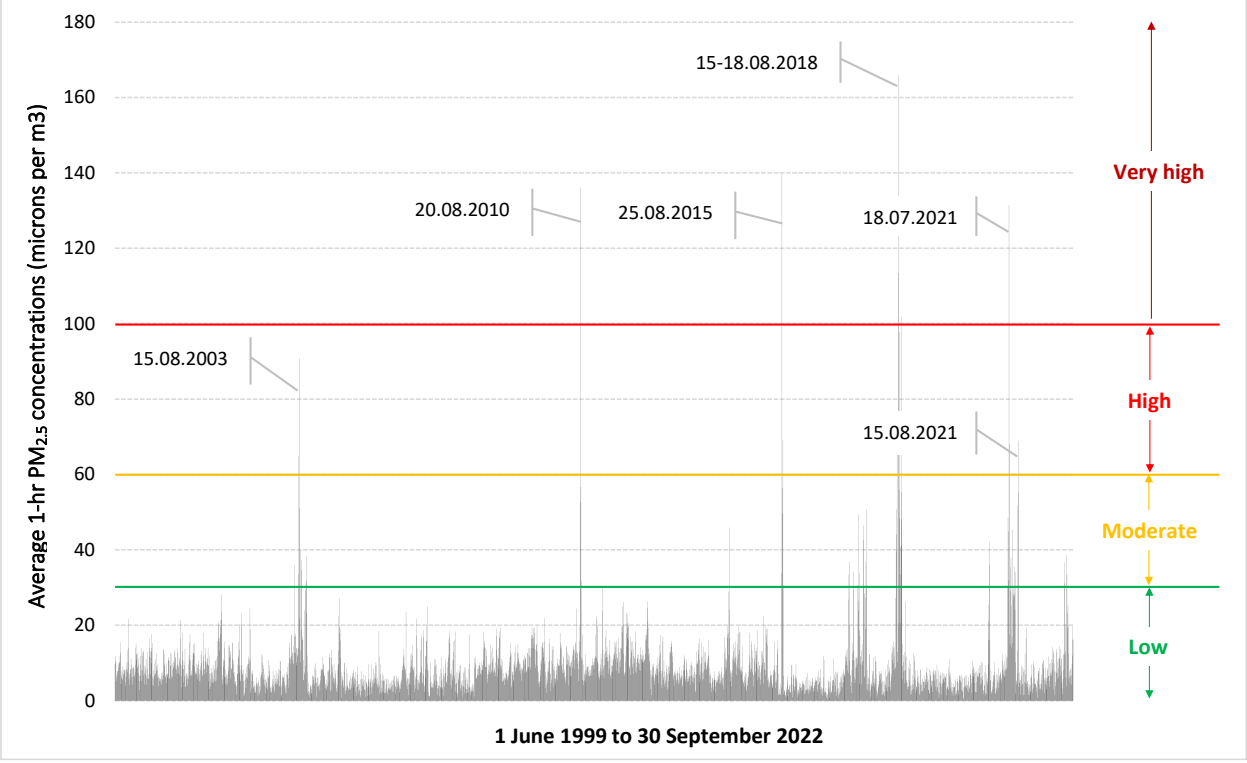
Figure 10: Frequency distributions for mean daily highs (Tmax) and lows (Tmin)—comparing modelled historical values (1985-2014) with projected future values (2041-2071) under a high emissions pathway



4.2 Wildfire smoke

As noted above, the main air pollutant of concern in wildfire smoke in terms of risks to human health is $PM_{2.5}$. Ambient concentrations of $PM_{2.5}$ are not currently monitored in the Bow Valley. The Alberta Government does nonetheless continuously monitor hourly $PM_{2.5}$ levels at various stations in Calgary, which can be used to provide insights into approximate historical concentrations at Canmore. Though due to topography and closer proximity to the sources of wildfire smoke in BC, ambient $PM_{2.5}$ levels may well be higher in Canmore. Figure 11 shows the average 1-hour concentrations of PM2.5 in Calgary for the months of June through September over the period 1999-2022. Concerning the human health risks of $PM_{2.5}$ exposures, the BC Centre for Disease Control (CDC) mapped 1-hour concentrations of $PM_{2.5}$ onto the Air Quality Health Index (AQHI) in British Columbia, delineating risks and responses by concentration levels (see Table 2). The AQHI risk categories (low-very high) are also shown on Figure 11, along with the dates (mainly in August) when the "high" and "very high" threshold concentrations were exceeded in Calgary.

Figure 11: Average 1-hour concentrations of PM2.5 for June-September across all monitoring stations in Calgary (01.06.1999 to 30.09.2022)



Source: Alberta Air Data Warehouse

Analyzing the full distribution of average 1-hourly $PM_{2.5}$ concentrations shown in Figure 11, the following observation can be made for the months of June-September:

- The likelihood of exceeding the "moderate" $PM_{2.5}$ threshold on any given day is about 2-3% (return interval of about every 45 days), with close to 3 episodes anticipated per year or about 26-27 per decade;
- The likelihood of exceeding the "high" $PM_{2.5}$ threshold on any given day is <1% (return interval of about every 225 days), with <1 episode anticipated per year or about 5-6 per decade; and
- The likelihood of exceeding the "very high" $PM_{2.5}$ threshold on any given day is about <1% (return interval of about every 490 days), with <1 episode anticipated per year or about 2-3 per decade.

Table 2: Mapping current $PM_{2.5}$ levels on the Air Quality Health Index in British Columbia

1-HOUR $PM_{2.5}$ ($\mu g/m^3$)	PROVINCIAL AQHI	AQHI RISK CATEGORY	HEALTH MESSAGE FOR PEOPLE AT HIGHER RISK	HEALTH MESSAGE FOR GENERAL POPULATION	ACTIONS TO REDUCE WILDFIRE SMOKE EXPOSURE
0 – 10	1	LOW	**Enjoy** your usual outdoor activities.	**Ideal air quality** for outdoor activities.	**Normal air quality** in British Columbia
11 – 20	2				
21 – 30	3				
31 – 40	4	MODERATE	**Consider reducing** or rescheduling strenuous activities outdoors if you experience symptoms.	**No need to modify** your usual outdoor activities unless you experience symptoms.	• Use a portable air cleaner to reduce smoke in your home • Stay inside with doors and windows closed, but keep cool – being too hot is more risky than breathing smoke for most people • Visit places with cleaner and cooler air, such as libraries, community centres, and shopping malls • If you cannot access cleaner air, consider using a well-fitted N95 respirator or relocating to an area with less smoke
41 – 50	5				
51 – 60	6				
61 – 70	7	HIGH	**Reduce or reschedule** strenuous activity outdoors.	**Consider reducing** or rescheduling strenuous activities outdoors if you experience symptoms.	
71 – 80	8				
81 – 90	9				
91 – 100	10				
101+	10+	VERY HIGH	**Avoid** strenuous activity outdoors.	**Reduce or reschedule** strenuous activity outdoors, especially if you experience symptoms.	

Source: BC Centre for Disease Control, Wildfire Smoke and Air Quality, Wildfire Smoke and Your Health, www.bccdc.ca/wildfire-smoke.

While $PM_{2.5}$ levels are caused by multiple human activities—e.g., burning of fuels for vehicles, home heating, power plants, industrial processes, and road dust and construction operations—the highest levels of $PM_{2.5}$ in Alberta are caused by wildfire smoke in summer and smog in winter[33]. There are no current studies of the impact of climate change on future smoke-$PM_{2.5}$ levels in Canada. Studies have linked historic increases in the area burned with higher concentrations of $PM_{2.5}$, as well as associated

[33] Alberta Government, Air indicators – fine particulate matter, https://www.alberta.ca/air-indicators-fine-particulate-matter.aspx [accessed 14.06.2023].

increases in adverse public health outcomes[34]. Thus, with current trends in the area burned in Canada[35] expected to increase with climate change, it is reasonable to expect that $PM_{2.5}$ levels attributable to wildfire will likewise increase. For example, Wotton et al. (2017)[36] make the following projections for the 2080s under a high emissions pathway:

- A 48% increase in the expected number of wildfire growth days per season;
- A 72% increase in expected number of days per season with potential for >50% tree crown engagement; and
- A 148% increase in the number of days per season when airtankers are no longer effective (fire intensity exceeds capacity of suppression resources).

Similarly, under a high emissions pathway, Wang et al. (2017)[37] project a 74% increase in the number of days per season for fire growth within the observed lifetime of a fire.

5. GUIDELINES FOR COOL AND CLEAN AIR CENTRES

Cooling and clean air centres are one measure to support a community during extreme heat or wildfire smoke events. However, buildings must have certain features to support critical functions for the hazard they are providing refuge from, in this case air cooling and cleaning are directly connected to a building's HVAC systems. Providing refuge for the community should also extend to the accessibility features of the building, as well as a variety of amenities and services.

5.1 Approach

A guideline was created for the Town to assess whether any Town building is suitable to be a cooling centre during an extreme heat event or a clean air space during a wildfire smoke event. A review of the most recent guidance and best practices was conducted and further augmented by subject matter experts with expertise in buildings systems, building sustainability and facility management.

Guidance for both extreme heat and wildfire smoke events in both Canada and the United States (US) was reviewed. There was generally more guidance available for extreme heat events than there was for

[34] Reisen, F., Duran, S., Flannigan, M., et al., 2015, Wildfire smoke and public health risk, International Journal of Wildland Fire, 24, 8, 1029-1044; and Matz, C.., Egyed, M., Xi, G., et al., 2020, Health impact analysis of $PM_{2.5}$ from wildfire smoke in Canada (2013-2015, 2017-2018, The Science of the Total Environment, 725, 138506.

[35] Hanes, C., Wang, X., Jain, P., et al., 2019, Fire-regime changes in Canada over the last half century, Canadian Journal of Forest Research, 49, 3, 256-269.

[36] Wotton, B., Flannigan, M., and Marshall, G., 2017, Potential climate change impacts on fire intensity and key wildfire suppression thresholds in Canada, Environmental Research Letters, 12, 9, 095003.

[37] Wang, X., Parisien, M.-A., Taylor, S., 2017, Projected changes in daily fire spread across Canada over the next century, Environmental Research Letters, 12, 2, 025005.

wildfire smoke events, but the guidance for wildfire smoke included more details about buildings standards. The primary resources used for extreme heat included:

- Health Canada. *Heat Alert and Response Systems to Protect Health: Best Practices Guidebook.* https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/pdf/pubs/climat/response-intervention/response-intervention-eng.pdf
- Health Canada. *Health Facilities Preparation for Extreme Heat Recommendations for Retirement and Care Facility Managers.* https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/hecs-sesc/pdf/pubs/climat/health_facilit-instal_sante/health_facilit-instal_sante-eng.pdf
- US Centre for Disease Control. *The Use of Cooling Centres to Prevent Heat-Related Illness: Summary of Evidence and Strategies for Implementation.* https://www.cdc.gov/climateandhealth/docs/UseOfCoolingCentres.pdf
- BC Housing. *Outdoor Cooling Space during COVID-19 Guide.* https://www.bchousing.org/publications/Covid-19-Outdoor-Cooling-Spaces-Guide.pdf

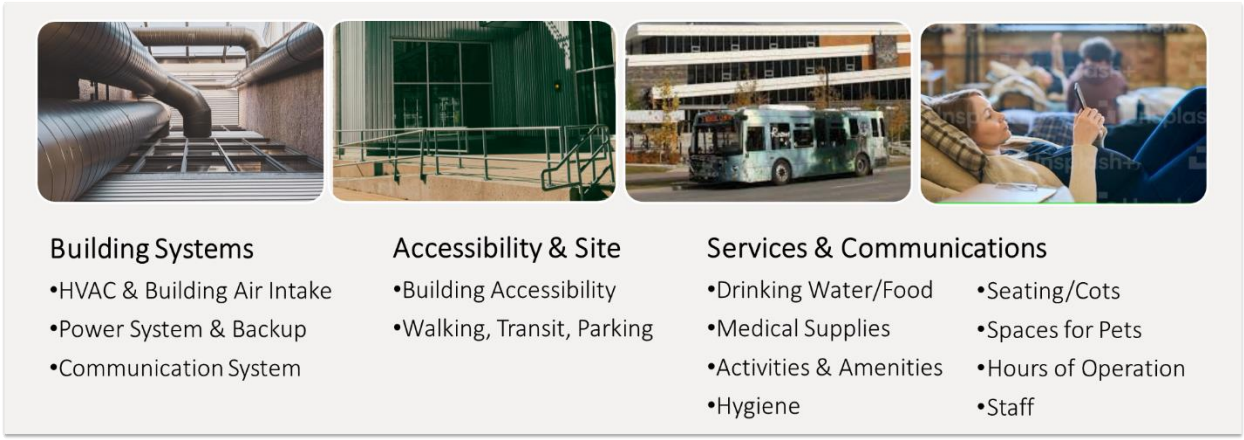
The primary resources used for wildfire smoke events included:

- Calgary Region Airshed Zone's. *Community Guide to Wildfire Smoke and Health.* https://craz.ca/community-guide-to-wildfire-smoke-and-health/
- Health Canada. *Guidance for Cleaner Air Spaces during Wildfire Smoke Events.* https://www.canada.ca/content/dam/hc-sc/documents/services/publications/healthy-living/guidance-cleaner-air-spaces-during-wildfire-smoke-events/guidance-cleaner-air-spaces-during-wildfire-smoke-events.pdf
- Government of Northwest Territories. *Smoke Exposure from Wildfire: Guidelines for Protecting Community Health and Wellbeing.* *https://www.hss.gov.nt.ca/sites/hss/files/smoke-exposure-wildfire-guidelines.pdf*

5.2 Results

The building guideline is organized into three categories of building systems and features, building site and site accessibility, and services. An overview of each of the categories is show in Figure 12. The detailed list of building guidelines acts as a checklist for the Town to assess the appropriateness of Town facilities to act as a cool or clean air centre in an emergency. Not all the items in the guideline must be present in order for the building to provide refuge in an emergency. However, the guidelines are a resource to inform emergency actions including communication of services available at emergency centres, as well as inform long term investments in buildings from an emergency centre perspective. This guideline can also be used to assess the applicability of buildings that are not owned by the Town.

Figure 12 Building Guideline Categories for Extreme Heat and Wildfire Smoke



A preliminary assessment of several municipal buildings was conducted to identify which buildings best met the various criteria. A summary of the appropriateness of Town buildings is provided in Table 3 and Table 4. The detailed list of guidelines and assessment of seven Town buildings is shown in Figure 13.

Table 3 Town Building Appropriateness for Cooling Centres During Extreme Heat Emergencies

Town Facility	Description
Canmore Recreation Centre *BEST*	*Building Requirements*: AC for increased capacity, meet accessibility standards, does NOT have backup power. *Services Available*: Activities for all ages (gym), seating & tables, quiet spaces, sleeping, and pets. *Programming*: Summer camps are supporting children so try not to prevent cool spaces for summer camps.
Elevation Place, Library *BEST*	*Building Requirements*: AC for increased capacity, meet accessibility standards, does NOT have backup power. *Services Available*: Activities for all ages (fitness, swimming, climbing), seating &tables, quiet spaces, sleeping, pets. *Programming*: May have more limited capacity if already heavily used by public during extreme heat.
Civic Centre *BEST*	*Building Requirements*: AC for increased capacity, meet accessibility standards, only facility with backup power. *Services Available*: Limited activities available but could provide quiet spaces for people to work, read or rest. *Programming*: Impact Town staff regular activities if making spaces (lobby, board rooms) available for public.
Seniors Association *GOOD*	*Building Requirements*: AC for increased capacity, meet accessibility standards, does NOT have backup power. *Services Available*: Variety of activities available supporting vulnerable population (seniors).

Town Facility	Description
	Programming: May require extended hours, shuttles, or rescheduling regular programming.
Union Hall, Opera House *OK*	*Building Requirements*: AC for increased capacity, does NOT meet accessibility standards, no backup power. *Services Available*: Limited activities available, no public wi-fi. *Programming:* May require rescheduling other activities.
Scouts Hall, *N/A*	Not appropriate as it does not have AC. Relocate programming that may be occurring in this location.

Table 4 Town Building Appropriateness for Clean Air Centres During Wildfire Smoke Emergencies

Facility	Description
Elevation Place, Library ***BEST***	*Building Requirements*: Advanced smoke features on HVAC, meet accessibility standards, NO backup power. *Services Available*: Activities for all ages (fitness, swimming, climbing), seating and tables, quiet spaces, sleeping. *Programming*: May have more limited capacity if already heavily used by public during wildfire smoke.
Canmore Recreation Centre ***BEST***	*Building Requirements*: Filters on HVAC for smoke, meet accessibility standards, does NOT have backup power. *Services Available*: Activities for all ages (gym), seating and tables, quiet spaces, sleeping. *Programming*: Summer camps are supporting children so try not to prevent cool spaces for summer camps.
Civic Centre *OK/Limited*	*Requirements*: AC but no smoke filters, meet accessibility standards, only facility with backup power. *Services Available*: Limited activities available but could provide quiet spaces for people to work, read or rest. *Programming*: Impact Town staff regular activities if making spaces (lobby, board rooms) available for public.
Seniors Association *OK/Limited*	*Building Requirements*: AC but not smoke filters, meet accessibility standards, does NOT have backup power. *Services Available*: Variety of activities available supporting vulnerable population (seniors). *Programming:* May require extended hours, shuttles, or rescheduling regular programming.
Union Hall, Opera House *OK/Limited*	*Building Requirements*: AC but not smoke filters, does NOT meet accessibility standards, no backup power. *Services Available*: Limited activities available, no public wi-fi. *Programming:* May require rescheduling other activities.
Scouts Hall, *N/A*	Not appropriate as it does not have AC. Relocate programming that may be occurring in this location.

Figure 13 Building Guidelines for Cooling and Clean Air Centres[38]

GUIDELINES FOR EMERGENCY CENTERS
Cool and Clean Air Centers for
Extreme Heat and Wildfire Smoke

Town of CANMORE

	Canmore Recreation Centre	Elevation Place	Civic Centre	Scout Hall	Union Hall	Seniors Centre	Opera House
BUILDING SYSTEMS AND FEATURES - Extreme Heat and Wildfire Smoke							
HVAC Systems							
Facility can handle increased cooling loads due to high occupancy, with a target temperature of 24°C or lower. Natural or mechanical cooling systems are acceptable as long as they can handle increased occupant loads. *(Section 4.2 - Health Canada's Guidance for Cleaner Air Spaces during Wildfire Smoke Events)*	Yes	Yes	Yes	No	Yes	Yes	Yes
Facilities have humidity control systems which can achieve a target humidity of 35 to 50%. *(Section 4.2 - Health Canada's Guidance for Cleaner Air Spaces during Wildfire Smoke Events)*	No	No	No	No	No	No	No
Detailed SOP are available for building operators outlining processes during emergency events. Building systems are regularly balanced and inspected.	?	?	?	?	?	?	?
Power Systems							
Building has backup power generation systems meeting *CSA C282* backup power generation standards and *Section 3.2.7 of the National Building Code* for emergency lighting and power generation.	No	No	Yes	No	No	No	No
Electrical capacity of the building is appropriate for increased cooling loads and higher building occupancies. Must be able to meet the load for all life safety and critical building systems (emergency lighting, sprinklers and fire extinguishing systems, fire alarm systems).	Yes	Yes	Yes	No	Yes	Yes	Yes
System can be isolated by building zones if necessary to maintain critical building systems.	Yes	No	No	No	No	Yes	No
Detailed SOP are available for building operators outlining processes to operate backup power systems. Backup power systems are regularly tested and inspected.	No	No	Yes	No	No	No	No
BUILDING SYSTEMS AND FEATURES - Wildfire Smoke Only							
HVAC Systems, Options							
Filters with MERV rating of 13 or more. Replacement filters are available. Optional: Odour-removing filters can be provided for additional comfort of occupants. Optional: A low-efficiency pre-filter is installed upstream to prevent rapid overloading of the filters.	Yes	Yes	No	No	No	No	No
AC systems that have recirculation capabilities to prevent outside air from infiltrating.	No	Yes	No	No	No	No	No
If applicable, Building Automation Systems need to be programmed for a 'Smoke Event' mode that will place systems in minimum outside air mode during occupied hours and close outside air intakes during unoccupied hours.	No	Yes	No	No	No	No	No
Ductless mini split-type air-conditioner, fully enclosed air-handling unit. Applicable use in a single room or smaller area.	No	No	No	No	No	No	No
Emergency support areas/amenities should be capable of being isolated from the HVAC system.	No	No	No	No	No	No	No
Building Air Monitoring							
Monitoring sensors for indoor/outdoor air quality (consider AQHI, PM2.5 and ozone).	No	No	No	No	No	No	No
Building systems should have sensors to monitor indoor CO and CO_2 levels, preferably those featuring a low-level digital display showing real-time readings. Indoor CO_2 levels should remain below 2,000 ppm. CO levels should remain below 9 ppm averaged over 8 hours, and 20 ppm averaged over 1 hour.	No	No	No	No	No	No	No
Ventilation rates can be achieved with a desired rate of 15 cfm per person and minmum rate of 5 cfm per person.	?	?	?	?	?	?	?
BUILDING AND SITE ACCESSIBILITY - Extreme Heat and Wildfire Smoke							
Building Accessibility							
Building is accessible by emergency medical personnel.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Building is in compliance with the *Accessibility guidance in Section 3.8 of the National Building Code – 2019 Alberta Edition.*	Yes	Yes	Yes	No	No	Yes	No
Site Accessiblity and Features							
Site is accessible by emergency vehicles.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site is accessible by walking or by transit.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site has adequate parking available to meet increased demand during activations.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Building exterior is shaded (structure, trees) to cool the buildings and to sit under.	No	No	No	No	No	No	No
Shuttles to and from centres are provided.	No	No	No	No	No	No	No

[38] Note: Fields marked with a '?' were not assessed through this study

Figure 13 Building Guidelines for Cooling and Clean Air Centres (continued)

GUIDELINES FOR EMERGENCY CENTERS
Cool and Clean Air Centers for
Extreme Heat and Wildfire Smoke

Town of CANMORE

SERVICES - Extreme Heat and Wildfire Smoke	Canmore Recreation Centre	Elevation Place	Civic Centre	Scout Hall	Union Hall	Seniors Centre	Opera House
Drinking Water and Food							
Cool drinking water available.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Emergency food or snacks available.	No	No	No	No	No	No	No
Emergency food or snacks available for pets or service animals.	No	No	No	No	No	No	No
Medical Supplies and Care Spaces							
Medical supplies/first aid kits for heat stroke/overheating on hand.	No	No	No	No	No	No	No
Fridges/coolers to keep medicine or breast milk cool.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quiet rooms for people who are sick or in need of medical attention.	Yes	Yes	Yes	No	No	Yes	No
An established plan to arrange transport from centers to hospitals/medical centres.	No	No	No	No	No	No	No
Communication							
Contains a radio and landline phone.	Yes	Yes	No	No	No	No	No
Public wi-fi or password readily available.	Yes	Yes	Yes	No	No	No	No
Access to interpreters for multiple languages.	No	No	No	No	No	No	No
Staff or volunteers that speak multiple languages.	Yes	Yes	Yes	No	No	No	No
Activities and Amenities							
Activities to keep people occupied (games, gym, books, television).	Yes	Yes	No	Yes	No	Yes	No
Quiet spaces for sitting, working, and sleeping.	Yes	Yes	Yes	No	No	Yes	No
Spaces available for pets and service animals.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Plug-ins available to charge cell phones/electronics.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Child care services or supports.	No	Yes	No	No	No	Yes	No
Hygiene Facilities							
Has accessible washrooms, including child changing stations.	Yes	Yes	Yes	No	No	Yes	No
Site has the ability to accommodate portable toilets, if needed.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Has showers or provides access/shuttles to showers for longer activations.	Yes	Yes	No	No	No	No	No
For longer activations, access to laundry facilities to wash bedding, etc.	No	No	No	No	No	No	No
Beds/Cots and Seating							
Seating available.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tables and chairs available, preferrably near electrical source.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beds or cots available, even for daytime activation.	No	No	No	No	No	No	No
Quiet areas for beds or cots and some more private locations ideally.	Yes	Yes	Yes	No	No	Yes	No
Hours of Operation, Staffing and Other							
Extended hours of operation. In an emergency it should be open 24 hours but less severe events should at least include evenings.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site is secured afterhours (locked site, or on-site security staff).	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Building maintenance staff are available to implement building systems emergency SOPs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Staff or volunteers to support amenities and services, including child, language and pet services.	No	No	No	No	No	No	No
Staff with first aid training.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Staff with specialized medical training.	No	No	No	No	No	No	No
If other parties have emergency evacuation agreements with the site, the site must have capacity to accommodate everyone under all agreements	N/A	N/A	N/A	N/A	N/A	N/A	N/A

6. HEAT & WILDFIRE SMOKE EMERGENCY RESPONSE PLANS

In this section, the core elements of a heat- and smoke-ERP are identified, based on a review of best practice guidance. The alert protocol—one of the core elements—is examined in detail. Long-term preventative strategies for both the Town and individuals are also outlined.

ERPs for Extreme Heat and Wildfire Smoke are provided in Appendix A and B respectively.

6.1 Core ERP components

Numerous guidelines have collated best practices to support municipalities and other levels of government with the development of their own heat- and smoke-ERPs (examples are displayed in Exhibit 1). These guidelines and several existing ERPs (e.g., for the Village of Ashcroft in British Columbia which is viewed as a best practice case study) were reviewed to inform the development process, structure and contents of the ERPs created for Canmore. From the guidelines and existing action plans, ten core elements were identified that are important for successful ERPs:

1. The identification of a lead body to identify and engage stakeholders in the development of the ERPs, and to coordinate and direct the response if an alert occurs).
2. The establishment of partnerships with the necessary stakeholders to successfully implement the plan and mitigate adverse health consequences.
3. Clearly delineated roles and responsibilities, including how Town efforts will be coordinated with other partners and stakeholders.
4. An overview of potential health risks posed by extreme heat and wildfire smoke events affecting the community (presented in Section 3).
5. The identification of at-risk populations and locations within the community (i.e., a “vulnerability assessment”) (presented in Section 3).
6. A description of the alert protocol and triggers for activation, escalation and deactivation (discussed further below).
7. The identification of preparedness, response, and recovery actions and plans to mobilize individual and community action.
8. A communications plan(s) embedded within the ERPs to alert the community of a pending event and what actions to take, and to deliver pre-season capacity building including raising awareness of the health risks of exposure to extreme heat and wildfire smoke, as well as providing advice on how to reduce these health risks. As such, communication with the public takes place both before and during the heat- or smoke-season. Development of a formal communications plan is beyond the scope of this project; nonetheless, examples of key messages and communications for extreme heat events and wildfire smoke events are provided in Appendix E and Appendix F, respectively. In general, there are six main categories of key messages: 1. Keeping the home cool

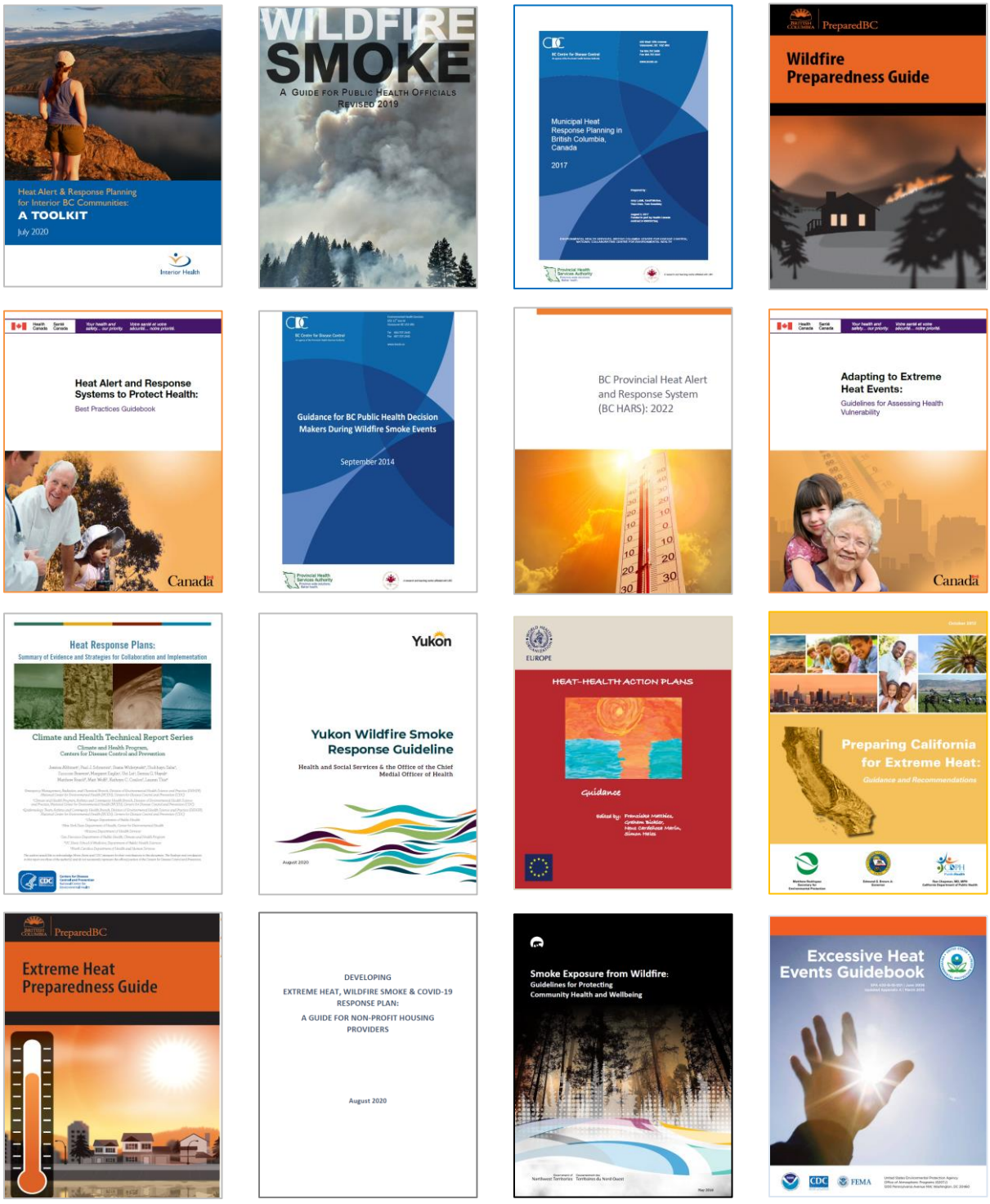
(keeping air in the home clean); 2. Keeping out the heat (keeping out the smoke); 3. Keeping the body cool and hydrated; 4. Helping others; 5. What to do if you experience a health problem; and 6. What to do when others experience a health problem.

9. The identification of long-term preventative actions to reduce heat-health and smoke-health risks and to broadly increase community climate resilience (discussed further below).
10. Real-time health surveillance and post-season evaluation. Why evaluate? It is important to: ensure that actions had the intended effects, contributing to a reduction in health impacts; determine whether actions were timely and cost-effective (represent an efficient use of Town resources); and assess whether actions were acceptable to the target populations. The evaluation will identify areas for improvement prior to the next heat- or smoke-season. Creating a formal (process and outcome) evaluation plan is outside the scope of this project. Real-time surveillance of health outcomes and behavioural responses of residents and tourist can be used to make timely adjustments, where and when necessary, to planned actions documented in the ERPs.

These core elements are not sequential, though some are primarily about planning and others more about response. Implementation of an ERP and its elements can be divided into four stages:

1. Planning and preparation (**pre-season activities**), which includes community mobilization and engagement, the delineation of roles and responsibilities, the assessment of at-risk populations within the Town, the establishment of alert protocols; and the development of a communications plan;
2. Community response (**in-season activities**);
3. Surveillance (**in-season**) and evaluation (**post-season activity**); and
4. Long-term planning and prevention (**ongoing actions**).

Exhibit 1: Examples of best practice guidelines to support development of heat- and smoke-ERPs



6.2 Alert protocol

The purpose of the alert protocol is to identify weather conditions that could result in increased heat- or smoke-related morbidity or mortality in the community. The protocol is used to trigger the Town, key stakeholders and the public (mainly at-risk populations) to take pre-determined actions outlined in the ERPs.

As the purpose of the ERPs is to protect human health, the alert protocols should ideally be based on a definition of an extreme event, where the intensity and duration of the event is associated with increased morbidity and mortality in the local population. Regarding heat alert protocols, for example, the 95th percentile of the daily temperature distribution is commonly used as a starting point[39]. Very few communities in Canada, however, have the capacity to examine the association between weather conditions and local health outcomes to identify inflection points above which morbidity and mortality increase substantially (e.g., by 5%-20%). In addition to local health risks, the protocol should reflect community needs, response capacities, and specific vulnerabilities.

The "trigger" embedded in the protocol—above which responses are initiated—is typically a community-specific numerical value derived from one or more meteorological parameters that are forecast to last for one, two or more days. Furthermore, to allow the Town sufficient lead time to activate the response activities in the ERPs, the forecasts ideally need to be available at least one or two days before it occurs. A key consideration when setting a trigger(s) is to minimize warning fatigue or public apathy associated with activating the ERP, whereby people become desensitized to alerts after repeated warnings that do not materialize (i.e., the occurrence of false positives)[40]. Forecasts in British Columbia, for example, were found to consistently over-predict the observed daily high and low temperatures[41]. In other words, there were more heat alerts in any given year based on forecast temperatures than on observed temperatures. As explained below, similar conclusions were observed for Banff.

Potential alert protocols and triggers for Canmore's heat- and smoke-ERPs are outlined below.

Extreme heat

In general, an alert protocol may include more than one trigger to allow for activation of different levels of community response—for example[42]:

1. A trigger to notify key stakeholders (e.g., a heat watch or notification);

[39] WMO and WHO, 2015, Heatwaves and Health: Guidance on Warning System Development, World Meteorological Organization and World Health Organization.
[40] Henderson, S. and Kosatsky, T., 2012, A data-driven approach to setting trigger temperatures for heat health emergencies, Canadian Journal of Public Health, 10, 3, 227-230.
[41] McLean, K., Stranberg, R., MacDonald, M., et al., 2018, ibid.
[42] Health Canada, 2012, ibid.

2. A trigger to inform a broader group of stakeholders, often accompanied by a public alert (e.g., a heat warning); and
3. An enhanced trigger (e.g., a heat emergency or expanded heat warning) to initiate a more aggressive community response with specific actions targeting at-risk populations

This structure has been adopted by the Alberta Government and will serve as the basis for stakeholder notification as part of a forthcoming provincial Heat Alert Response System. Specifically, the Alberta system will have three heat alert levels[43]:

Heat alert levels	What does it mean?
Level 1 Early heat notice – get prepared	Advance notice that a heat event is forecast in your region
Level 2 Heat warning – act	A Heat Warning is active in your region
Level 3 Expanded heat warning – be informed	A Heat Warning plus other heat hazard factors (e.g., duration or event, poor air quality event) are active in your region

The intention is for the heat alert levels in the forthcoming provincial Heat Alert Response System to be separate and distinct from the provincial and federal notification systems that are currently used for heat warnings or special air quality statements. In line with practice in other jurisdictions—namely, British Columbia—it is anticipated that triggers will only be specified for Level 2 and Level 3. The alert protocol in the Canmore heat-ERP has been similarly structured, using the current trigger for a Heat Warning in this part of Alberta.

At present in Canada, the responsibility for issuing timely weather forecasts, warnings, and alerts, including heat warnings rests with the Meteorological Service of Canada (MSC) division of Environment and Climate Change Canada. Heat warnings are issued based on forecast high temperatures for two or more consecutive days and the intervening overnight lows[44]. The daily high trigger for the part of Alberta including Canmore is 29°C or warmer; the overnight low trigger is 14°C or warmer.

Based on an examination of observed temperatures at the Banff weather station, the criteria for a Heat Warning were only observed twice over the historical record (see Table 5). Nevertheless, between 2017-2022 a total of six Heat Warnings impacting 26 days were issued for Banff National Park; for Canmore-Kananaskis a total of 14 Heat Warnings were issued over the same timeframe impacting 56 days[45]. Similar to experience in British Columbia, forecasts seem to over predict daily high temperatures, resulting in numerous false positives.

[43] Alberta Government, 2022, Extreme Temperature Heat Alerts: Stakeholder Notifications [https://www.alberta.ca/extreme-heat.aspx].
[44] McLean, K., Stranberg, R., MacDonald, M., et al., 2018, Establishing heat alert thresholds for the varied climatic regions of British Columbia, Canada, International Journal of Environmental Research and Public Health, 15, 2048.
[45] See: http://aephin.alberta.ca/heatwarnings/.

The small number of observed Heat Warnings (2) at Banff is driven largely by failure to achieve the overnight low threshold temperature of at least 14°C. If this temperature were reduced to the 95th percentile of the daily low temperature distribution for July and August over the most recent 30 years (1992-2022) (= 11.6°C), about 12 Heat Warnings would have been observed in Banff over this shorter period; that equates to about once every 2-3 years.

Table 5: Number of total times a Heat Warning was observed at Banff in the historical record (1890-2022)

Month	Days with Tmax >= 29C	At least 2 consecutive days with Tmax >= 29C	Nights with Tmin >= 14C	Heat Warning criteria met
May	0	0	0	0
June	31	12	7	0
July	260	126	18	1
August	148	68	16	1
September	17	6	6	0
October	0	0	0	0
Total	**456**	**212**	**47**	**2**

The impact of climate change on the number of times per heat season a Heat Warning is anticipated to be issued is presented in Table 6. Based on the current official criteria for a Heat Warning, about 1 event is anticipated on average per season by mid-century, rising to about 11 events per season by the end of the century. Changing the threshold for the daily low to 11.6°C (as opposed to 14°C), the number of Heat Warnings anticipated per season rises to 3 (by mid-century) and to 18 (by the end of the century).

Table 6: Number of times per year a Heat Warning is anticipated to be observed for Canmore over this century based on a high emissions pathway

Decade	Days with Tmax >= 29C	At least 2 consecutive days with Tmax >= 29C	Nights with Tmin >= 14C	Heat Warning criteria met
2021-2030	9	5	1	0
2031-2040	11	7	1	0
2041-2050	14	8	2	0
2051-2060	20	13	4	1
2061-2070	24	17	6	2
2071-2080	28	20	10	3
2081-2090	26	27	15	6
2091-2100	45	35	23	11

The alert protocol should also contain a mechanism for de-activation and in the case of multiple level triggers, also for de-escalation (from Level 3 to Level 2). For example, de-activation or de-escalation may occur when the observed temperature of the previous day does not achieve threshold trigger and the forecast temperature does not achieve the threshold trigger.

Wildfire smoke

Alert protocols for wildfire smoke could be driven by air quality monitoring, remote satellite sensing products, and fire smoke proxies (like area burned or visibility)—but all with reference to an Air Quality Health Index (AQHI).

The AQHI was developed by Health Canada and Environment and Climate Change Canada (ECCC) as a public information tool to help Canadians protect their health from the effects of air pollution. The AQHI provides hourly information about the health risk associated with local air quality. The value of the index is calculated using 3-hour average measurements from a combination of common air pollutants known to be harmful to human health, including $PM_{2.5}$. Under smoky conditions, larger and faster changes in $PM_{2.5}$ may be observed which are not adequately reflected in the multi-pollutant AQHI. This led British Columbia to develop a mechanism whereby the multi-pollutant AQHI can be overridden by a single-pollutant AQHI-Plus value based on 1-hour $PM_{2.5}$ concentrations alone (which was shown in Table 2).

The AQHI conveys four key pieces of information:

1. An AQHI value on a scale of 1 to 10+. The higher the number, the greater the health risk associated with the air quality;
2. Categories that characterize the level of health risk associated with the index value (low, moderate, high or very high);
3. Health messages for each category for both the general population and at-risk populations and
4. Current hourly AQHI values and maximum forecast values for today, tonight, and tomorrow.

The "high" and "very high" categories on the AQHI provide a means for defining a multi-level set of triggers for a smoke alert protocol. Hourly AQHI values are available for Canmore, though likely based on air quality monitoring stations in Calgary. In the absence of local $PM_{2.5}$ monitoring stations, which would allow hourly observations to be mapped directly onto the table shown in Table 2, the alert protocol for Canmore's smoke-ERP will have to rely on the AQHI values issued by ECCC.

Additional tools to support the alert protocol for the smoke-ERP—in the absence of local $PM_{2.5}$ monitoring—include:

- The smoke forecasts provided by FireWork [https://weather.gc.ca/firework/index_e.html] or BlueSky [http://firesmoke.ca/forecasts/current/].
- Satellite imagery which is useful assessing the movement of smoke plumes [https://www.star.nesdis.noaa.gov/GOES/sector_band.php?sat=G16&sector=can&band=GEOCOLOR&length=24].

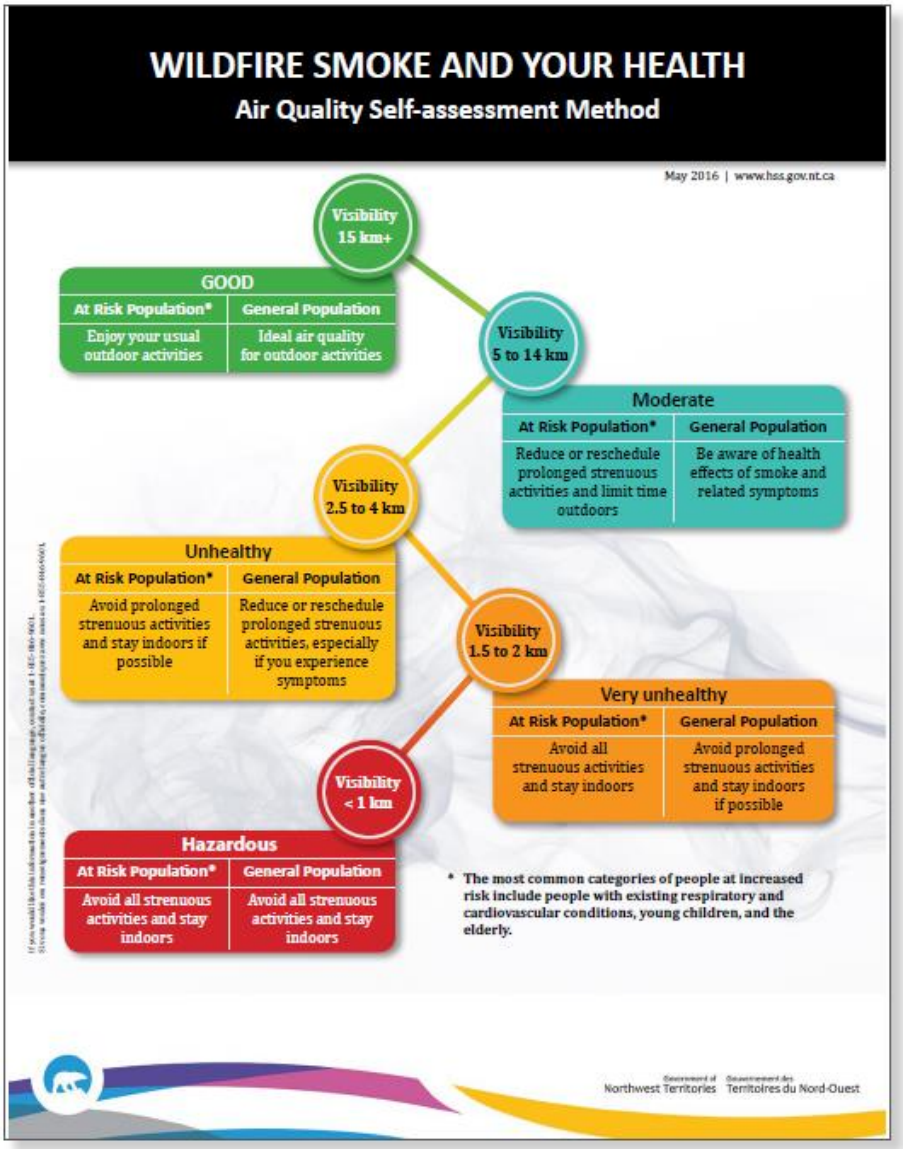
In addition, visibility range provides good proxy for smoke levels, and it requires minimal expertise and resources to implement; it is recommended in several of the reviewed guidelines for communities without $PM_{2.5}$ monitoring (see Table 7 and Table 8 for examples). As a first step, reference landmarks (such as mountains at known distance) would need to be identified. To systematically monitor visibility, cameras could be set up at locations in Town where multiple reference landmarks are visible, with ongoing real-time photos taken to assess visibility range. Such a method provides consistent, timely and intuitive information about local smoke conditions at relatively low cost.

Table 7: Example of estimating PM2.5 levels from a visibility assessment: Yukon

Distance You Can See	Approximant PM2.5 Concentrations 1-3 hour average (µg/m³)	Air Quality Category	At-Risk Population*	General Population	Community Level Response
35km or more	0-15	Good	Enjoy your usual activities	Ideal air quality	
8 to 35km	15-65	Moderate	Consider reducing strenuous outdoor activity if you experience symptoms	No need to modify your usual activities unless you experience symptoms	
3.5 to 8km	65-150	Unhealthy	Reduce strenuous outdoor activities	Consider reducing strenuous outdoor activities; reduce if any symptoms	Identify vulnerable people and consider operating a public cleaner air space
Less than 3.5	>150	Very Unhealthy	Avoid strenuous outdoor activities	Avoid strenuous outdoor activities	Identify vulnerable people and consider operating a public cleaner air space

Source: Yukon (2020)

Table 8: Example of estimating PM2.5 levels from a visibility assessment: Northwest Territories



Source: Northwest Territories (2016)

7. RECOMMENDATIONS FOR LONG-TERM PREPAREDNESS

The adverse health impacts of exposure to primarily high temperatures are not limited to conditions that trigger a warning or emergency. Daily temperatures that do not activate the ERP can still result in excess morbidity and mortality. To address these risks, it is recommended that preventative actions are taken to minimize urban heat island effects, reduce the exposure and vulnerability of at-risk populations to heat events, and strengthen broader community resilience to climate change. Long-term planning strategies tend to focus on keeping the built environment cool. A co-benefit of these strategies is they tend to also reduce GHG emissions or enhance carbon sequestration and storage.

Recommended actions (climate adaptation measures) for long-term resilience to heat and smoke are provided in Table 9. These recommendations should be view as a 'shopping list' of potential actions that could be implemented by the Town; it is not an action plan. The following information is included for each recommendation:

- A description of the **action**, including the action type, for example, a plan, policy, program, education initiative, resource requirement, etc.
- The specific department or agency that would **implement** the action.
- The recommended **priority** level for implementation of the action:
    - High
    - Medium
    - Low
- An estimated **cost** range for implementing the action:
    - $ - Low cost ($10,000)
    - $$ - Moderate cost ($10,000 - $50,000)
    - $$$ - High cost ($50,000 - $100,000)
    - $$$$ - Very high cost (>$100,000)

The recommendations are colour-coded to identify actions that support:

- Extreme heat preparedness and response [red]
- Wildfire smoke preparedness and response [grey]
- Both wildfire smoke and extreme heat preparedness and response [blue]

Table 9 Recommendations for long-term preparedness

	Action	Implement	Priority	Cost
	Temporary shading. Purchase temporary shading structures (tents, canopies, etc.) to be installed at key locations during activation of the extreme heat ERP. Temporary shading should be placed in strategic high-use locations around the Town, for example along exposed commuting routes, transit stops, play areas, picnic areas, etc.	Protective Services	High	$
	Upgrade cooling and clean air centres. Enhance key Town facilities to meet the building guidelines for cooling and/or clean air centres (Section 5) and provide better protection from extreme heat and smoke. Key upgrades would include backup power systems, building air monitoring, and HVAC system improvements, including air conditioning and filtration for smoke	Facilities	High	$$$$
	Label cool and clean air centres. Place a permanent label on Town buildings to identify the most appropriate buildings ('best') for cooling (Table 3) and clean air (Table 4) for heat and smoke refuge	Facilities	High	$$
	At-risk population support program. Develop a municipal program to support residents, particularly at-risk/vulnerable groups, to reduce the health impacts of extreme heat and wildfire smoke. The program could include funding for home retrofits (insulation, shading, HVAC systems, heat pumps, etc.), the provision of portable air filters or space cooling units, or support to check or maintain household HVAC systems including changing air filters.	Community Social Development/ Sustainability	High	$$$
	Enhance ERP communications. Communications and messaging for ERP activation should be provided in multiple languages, use a variety of methods including both digital (e.g., social media, website, emails, apps, newsletters) and non-digital (e.g., signs in strategic locations in the community, in-person discussion with key vulnerable groups), and be coordinated with stakeholders and community organizations that can get the messaging out to populations that are most vulnerable to extreme heat and wildfire smoke	Protective Services / Communications / Community Social Development	High	$$
	Public outreach and education. Enhance public outreach and education on extreme heat and wildfire smoke preparedness (Examples of key messages in Appendix E and F) targeting at-risk/vulnerable populations . Improved education could include the development of new communications materials, dedicated web pages and/or a 'speaker series' with invited guest experts.	Protective Services / Communications / Community Social Development	High	$

	Action	Implement	Priority	Cost
	Upgrade civic facilities. Enhance key Town facilities with improved insulation, energy efficient doors and windows, and sealing around doors and windows to prevent heat entry.	Facilities	Medium	$$$
	Increase urban canopy. Identify urban areas with low urban canopy and develop a multi year plan to increase tree density. Develop design standards to ensure tree health and longevity.	Public Works	Medium	$$
	Increase green spaces. Increase the number of trees, vegetation, parks, green open spaces (with tree shading), tree canopy coverage and connectivity of greenspaces. The focus should be on pedestrian routes in high-risk areas. The selection of species and choice of planting locations should be done to maximize cooling benefits.	Planning & Development / Engineering / Public Works	Medium	$$$
	Implement Green Stormwater Infrastructure. Manage urban stormwater runoff using engineered Low Impact Development facilities which incorporate trees and shrubs. These features reduce heat through evapotranspiration and shading. Retrofit features in existing areas and integrate design standards in the Engineering Design and Construction Guidelines.	Engineering / Public Works	Medium	$$$
	Add water features. Incorporate ponds, moving water and decorative fountains in public spaces to increase evaporative cooling.	Public Works	Medium	$$
	Increase shading around and on buildings. For example, install awnings, shutters, external curtains, and/or shade structures (e.g., pergolas) outside buildings.	Facilities / Public Works	Medium	$$$
	Increase shading around Town. Install permanent shading structures (e.g., artificial canopies) in strategic high-use locations around the Town, for example along exposed commuting routes, transit stops, play areas, picnic areas, etc.	Public Works / Engineering	Medium	$$$
	Temporary water station equipment. Purchase additional temporary water station equipment, for example water bottle filling stations adapted to fire hydrants, to support ERP activation.	Public Works / Fire Services / Protective Services	Medium	$$$
	Update strategic community plans. Incorporate new/improved policies and objectives to support extreme heat and wildfire smoke preparedness and response in strategic plans such as the Municipal Development Plan and Area Structure Plans.	Planning & Development	Medium	$
	Support air quality monitoring. Support local organizations to establish permanent air quality monitoring stations (e.g., purple air) in Canmore to provide locally specific and long-term air quality data	Sustainability	Low	$

	Action	Implement	Priority	Cost
	Advocate for air quality monitoring. Continue to advocate to the provincial government to install air quality monitoring stations in the Bow Valley	Sustainability / Protective Services	Low	$
	Increase public transportation options. In partnership with Roam Transit, enhance the public transportation network to support the wildfire smoke and extreme heat ERPs and long-term resilience, for example by increasing the number of transit stops, targeting at-risk populations with service, improving messaging and communications on available transit services, installing shelters at popular stops to maximize shade cover. Shelters could also incorporate the use of cool materials, cross flow ventilation and insulated roof panels.	Engineering	Low	$$$$
	Update engineering design and construction guidelines. Incorporate enhanced requirements to support extreme heat and wildfire smoke preparedness and response, for example green infrastructure requirements, water features, and/or cool materials.	Engineering	Low	$$
	Incorporate heat and smoke response into event planning. Work with event organizers to ensure there that heat and smoke response plans are in place and required through the event permitting process. Town staff should work with event organize to modify and/or cancel events during extreme heat and smoke.	Economic Development	Low	$
	Implement Green and Resilient Building Policy. Explore implementing a Green and Resilient Building Policy for all Town owned and funded facilities, this includes the implementation of green roofs and transitioning to lighter roofing materials to avoid urban heat island effect where possible.	Engineering / Facilities / Sustainability	Low	$
	Consolidate monitoring information. Consolidate all municipal and external monitoring into a single 'dashboard' for municipal staff and community access. In addition, to heat and smoke information, this monitoring dashboard could include monitoring for other hazards such as river levels, human-wildlife interactions, etc.	Protective Services / Communications	Low	$$

APPENDIX A: EXTREME HEAT EMERGENCY RESPONSE PLAN

EXTREME HEAT

Emergency Response Plan

Last Updated: April 2023

Response Procedures	
Factor	**Description**
Response Priorities	1. Protect all lives while ensuring the safety of responders 2. Protect critical infrastructure 3. Protect property 4. Protect the environment 5. Reduce economic and social losses
Response Protocols	• All responders will be supervised according to the Incident Command System (ICS) organizational chart of the specific event. Decisions ultimately come from the ECC Director. • ECC Director and Operations Section Head may make decisions different than the guidelines in this plan based on field conditions.
Hazards	• Extended periods of high outdoor temperatures are hazardous to **human health** and can lead to mortality, especially for vulnerable populations. Some symptoms of heat stroke include: • Headache • Irritability • Nausea • Thirst and dehydration • Dizziness • Heavy sweating • Weakness • Elevated body temperature • Heat events may also coincide with risk of **power outages** from overloading the power grid. Critical facilities and services should have backup power ready. • Potential for **wildfire and wildfire smoke** increases and may coincide with extreme heat events. • Increased potential for **human-wildlife interactions** especially near water. Wildlife also need access to water for cooling.
Monitoring and Reporting	Extreme heat events most likely in **June to August**. *Before and during an event:* ***EM (Lead), Engineering, Fire, CSD, Communications*** • Monitor for temperature forecasts and temperature alerts from EC Alerts (https://ecalertme.weather.gc.ca/guides/quickstart_en.php) *After an event:* ***EM (Lead), Engineering, Fire, CSD, Communications*** • Record maximum daytime and minimum nighttime temperatures for each day of the event. • Record the total number of days for the heat event and the number of days for each response stage. • Record community health impacts (if data is available or feedback from stakeholders). • Document the amount of public use of the supports provided (spray/shade structures, water, cooling centres). • Conduct a post-event public survey to improve response. • Document amount of public use of supports and record Town level of effort (hours) and costs.

Response Procedures		
Factor	**Vulnerable Group**	**Stakeholder Contacts (*Attachment A*)**
Vulnerable Populations	**Children and the elderly**: These members of the community are particularly vulnerable to the effects of extreme heat. Children, in particular, may not be aware of the danger of extreme heat and may spend more time outdoors than is safe. The elderly, meanwhile, may be less able to recognize the signs of heat-related illness and may be more likely to suffer from chronic conditions or take medication that places them at greater risk.	• Seniors Association • Seniors Lodge • Origins Seniors Facility • Daycares and Day Homes • Summer Camp Programs
	Pregnant women: Pregnant women are at an increased risk of experiencing health effects from extreme heat	• Medical clinics • Hospital
	Individuals with chronic health conditions and mobility limitations: People with chronic health conditions such as heart and respiratory problems, diabetes and obesity, as well as those taking certain medications, are at greater risk of heat-related illness. People who have substance-use disorders or mental health disorders are also at risk. People with disabilities or limited mobility.	• Medical clinics • Hospital • Pharmacies • Mental health and addiction programs
	Individuals with limited access to cooling: People in low-income households, people who are homeless, people living in urban areas with little tree cover, and those without air conditioning are particularly vulnerable to extreme heat.	• Organizations that support homeless groups • Wapiti Campground Management • Community Associations (targeted) • Rental Management Companies
	Individuals who are socially isolated: People who are socially isolated and may have limited access to heat-health information and services.	• Community organizations (neighbourhood programming)
	Tourists, visitors and locals spending time in the outdoors: People with outdoor recreation plans that will be spending time outside during heat events.	• Tourism Canmore Kananaskis • Golf Courses, Hotel Associations • Event Organizers
	Outdoor and hot environment workers: Outdoor workers (construction workers, painters, landscapers) and workers in hot environments (kitchen staff in restaurants) are exposed to extreme heat for extended periods of time. They should implement mitigation strategies as per OHS legislation.	• Bow Valley Chamber of Commerce • Service Industry (kitchen staff) • Town staff (Parks, Roads)

Factor	**Town Facility**	**Description (*Attachment F*)**
Cooling Centre *Optional: Emergency Social Service Reception Centres, see Attachment F*	Canmore Recreation Centre ***BEST***	*Building Requirements*: AC for increased capacity, meet accessibility standards, does NOT have backup power. *Services Available*: Activities for all ages (gym), seating & tables, quiet spaces, sleeping, and pets. *Programming*: Summer camps are supporting children so try not to prevent cool spaces for summer camps.
	Elevation Place, Library ***BEST***	*Building Requirements*: AC for increased capacity, meet accessibility standards, does NOT have backup power. *Services Available*: Activities for all ages (fitness, swimming, climbing), seating &tables, quiet spaces, sleeping, pets. *Programming*: May have more limited capacity if already heavily used by public during extreme heat.
	Civic Centre ***BEST***	*Building Requirements*: AC for increased capacity, meet accessibility standards, only facility with backup power. *Services Available*: Limited activities available but could provide quiet spaces for people to work, read or rest. *Programming*: Impact Town staff regular activities if making spaces (lobby, board rooms) available for public.
	Seniors Association *GOOD*	*Building Requirements*: AC for increased capacity, meet accessibility standards, does NOT have backup power. *Services Available*: Variety of activities available supporting vulnerable population (seniors). *Programming*: May require extended hours, shuttles, or rescheduling regular programming.
	Union Hall, Opera House *OK*	*Building Requirements*: AC for increased capacity, does NOT meet accessibility standards, no backup power. *Services Available*: Limited activities available, no public wi-fi. *Programming*: May require rescheduling other activities.
	Scouts Hall, *N/A*	Not appropriate as it does not have AC. Relocate programming that may be occurring in this location.

Response Strategies and Tactics				
Factor	**Pre-Season Phase**	**Warning Phase**	**Emergency Phase (ECC Activation)**	**Post-Event Phase**
Activation Criteria	Pre-season communication in May or early June.	**Forecast** temperatures of 29-14-29 (High-Low-High) Data Source: Environment Canada (ECCC) *[daytime high °C - nighttime low °C - daytime high °C]*	A **sustained** "heat warning" (29-14-29) for **3 or more** consecutive days AND consider daily high forecasts AND Town facilities are unable to meet demand. Data Source: Environment Canada (ECCC)	**Observed** temperature of previous day does not achieve threshold trigger AND **forecast** temperature does not achieve threshold trigger. Data Source: Environment Canada (ECCC)
Actions				
Communications **Messaging should be provided in **multiple languages** and using **different methods** (digital and physical signage).*	*Attachment B Key Messages* • **Town Staff**: Reminders of the phases, general Town actions, roles/responsibilities, and notification of public messaging. • **Stakeholders**: Organizations supporting vulnerable populations to confirm contacts, protocols and what individuals/organizations can do. • **General Public:** What individuals can do to prepare and what the Town might do and when.	*Attachment C Key Messages* • **Town Staff**: Notification of actions to implement, role of staff and any adjustment to working conditions of staff. • **Stakeholders**: Notification of enhanced services and actions by the Town that are targeted to vulnerable populations. Communication protocol for feedback on needs from stakeholders. • **General Public & Tourists:** What individuals can do during heat event and what enhanced services or actions that Town is providing. **Encourage individuals to check on their neighbours**.	*Attachment D Key Messages* • **Town Staff**: Notification of ECC activation, **redirection of staff resources or rescheduling of programs at Town facilities to support emergency actions**). • **Stakeholders**: Notification of ECC activation & communication protocols, emergency cooling centre locations and services, enhanced actions by the Town targeted to vulnerable populations. • **General Public & Tourists:** Notification of emergency cooling centre locations and services, enhanced services and actions by the Town and what individuals can do. **Encourage individuals to check on their neighbours.**	*Attachment E Key Messages* • **Town Staff**: Notification of ECC de-activation, removal of temporary measures, deactivate cooling centre, re-establish regular programming at Town facilities, re-establish working conditions for staff. • **Stakeholders**: Notification of ECC de-activation and removal of temporary measures. Solicit input of needs of vulnerable populations to recover from event. Post-event feedback on impacts. • **General Public & Tourists:** Notification of ECC de-activation and removal of temporary measures. Post-event feedback on impacts and debrief for Town staff. **Encourage individuals to check on their neighbours.**
Water Stations (*see map*)	• Confirm condition, number & sites for water stations.	• Communicate locations of public drinking water fountains (Rec Centre, Elevation Place, Civic Centre). • **Consider**: Setup temporary water stations including at off leash dog parks, monitor and **refill** regularly. • **Consider**: Redirecting staff on **short**, rotating shifts to stand at stations to communicate resources and radio/call if individuals need emergency assistance.	• Implement actions in warning phase. • Monitor and **refill temporary water stations more frequently**. • **Consider**: Additional locations if needed. • **Consider**: Additional staff to rotate through stations for refilling, outreach and emergency assistance.	• Removal of temporary water sources.
Shade Structures (*see map*)	• Confirm condition, number & sites for shade structures.	• **Consider**: Setup temporary shade structures and monitor (stability, vandalism).	• Implement actions in warning phase rather than consider. • **Consider**: Additional locations if needed.	• Removal of temporary shade and cooling items.
Spray Structures (*see map*)	• Confirm condition, number & sites for spray structures.	• **Consider:** Setup temporary spray structures or install spray/sprinkler caps on fire hydrants. • **Consider:** Redirecting staff to operation and monitor spray structure. Shade structure to be provided for staff. Staff should work **short**, rotating shifts. Water stations should also be located at or near spray structures.	• Implement actions in warning phase rather than consider. • **Consider**: Additional locations if needed or move to different locations to target vulnerable populations.	• Removal of temporary spray structures.
Cooling Spaces and Centres (*see map and Attachment F*)	• Inspect and maintain HVAC systems, review emergency cool air SOP with maintenance staff. • Confirm supplies and setup for activities/services.	• Communicate locations for cooling spaces and activities (Rec Centre, Elevation Place and Library, Civic Centre). • **Consider:** Extending hours for public cooling spaces.	• Activate emergency cooling centres: Reschedule regular programming if needed, redirect Town staff to centres, solicit volunteers if needed, setup activities, quiet spaces, cots, emergency supplies and food. • Direct facility maintenance staff to activate Heat Emergency SOPs and monitor HVAC systems.	• De-activate cooling centre and re-establish programing at Town facilities.
Transportation (*see map*)	• Review and confirm shuttle and transit plans to cool air centres focusing on vulnerable populations.	• Enhance messaging on the use of transit and available parking to access cool spaces.	• Implement actions in warning phase rather than consider. • Add **additional** transit routes or shuttles targeting vulnerable populations and clean air centres.	• Re-establish regular transit services.
Other		• Follow Working in Heat protocols. • **Consider**: Notification and adjustment to permitted events and outdoor recreation groups.	• Implement actions in warning phase rather than consider. • Notification and suggest adjustment to permitted events and outdoor recreation groups.	• Re-establish or suggest alterations to permitted events and outdoor recreation groups.

ATTACHMENT A – CONTACTS

Purpose: List of contacts for key Town of Canmore staff and community organizations that will require coordination of communications and actions leading up to and during extreme heat events.

Last Updated: March 2023
List to be updated annually in preparation of pre-season communications.

Contact Information: Refer to the Town of Canmore **Municipal Emergency Management Plan (MEMP)** for contact information including names, phone numbers and emails.

TOWN OF CANMORE CONTACTS

Department and Role	Role Description
DEM, Deputy DEM	Coordination of response, including monitoring of various hazards, approving messaging, and engaging with stakeholders
Engineering	Monitoring of heat forecasts
Fire Chief, Deputy Fire Chief	Coordination of forecasts, feedback on call for support
Community Social Development (CSD)	Coordinate with community organizations, feedback on needs from community
Public Works, Recreation, Facilities, and IT	Include recreation, summer camps
Communications	Coordinate and send out communications
Human Resources	Internal communications on working in heat

STAKEHOLDERS AND COMMUNITY ORGANIZATION CONTACTS

Vulnerable Group	Organization
Chronic health conditions, mobility limitations, pregnant women	Hospital
	Medical Clinics/Facilities
	Pharmacies
	Mental Health and Addiction Programs
Elderly and Children	Canmore Seniors Association
	Bow River Senior Citizen Lodge
	Origin at Spring Creek
	Canmore Community Daycare Society
	Mountain Munchkin Day Care
	Day Homes
	Summer Camp Programs
	Rental Management Companies

Vulnerable Group	Organization
Limited Access to Cooling and Socially Isolated	Community Organizations ▪ Target older homes, no basements, no air conditioning, lower income ▪ Target isolated populations who may have limited access to health info
	Organization Supporting Homeless (e.g. Homeless Society of Bowness Valley)
	YWCA
	Wapiti Campground
Tourists and Outdoor Events	Tourism Canmore Kananaskis
	Travel Alberta Canmore Visitor Information Centre
	Canmore Nordic Centre
	Canmore Golf and Curling Club
	Silvertip Golf Course
	Stewart Creek Golf & Country Club
	Hotel Association
	Event Organizers (e.g. festivals)
	Outdoor Sports Organizations (e.g. Alpine Club of Canada)
Outdoor and Hot Environment Workers	Bow Valley Chamber of Commerce ▪ Outdoor professions (e.g. landscaping, painting, construction) ▪ Hot indoor conditions (e.g. restaurant kitchen staff)
Emergency Social Service Reception Centres	Canmore Nordic Centre
	Our Lady of the Snow Catholic Academy
	Lawrence Grassi Middle School
	Canmore Collegiate High School
	Elizbeth Rummel School

ATTACHMENT B – PRE-SEASON COMMUNICATIONS

Purpose: Key messages for the Town of Canmore to provide leading up to the extreme heat season. Refer to Attachment A for list of contacts.

Last Updated: March 2023

General Instructions:

1. Messaging should be provided in **multiple languages** targeting demographics of local residents.
2. **Different methods** of communication should be used including both digital (e.g., social media, website, emails, apps, newsletters) and non-digital (e.g., signs in strategic locations in the community, in-person discussion with key vulnerable groups).
3. Communications should be **coordinated with stakeholders and community organizations** that can get the messaging out to populations that are most vulnerable to extreme heat (see Attachment A for list of vulnerable population and contacts).

Type of Communication Messaging by Group:

- **Town Staff**: Reminders of the warning and emergency phases, general Town actions, roles/responsibilities, and notification of public messaging.
- **Stakeholders**: Organizations supporting vulnerable populations to confirm contacts, protocols and what individuals/organizations can do.
- **General Public**: What individuals can do to prepare and what the Town will do and when.

KEY MESSAGES – PRE-SEASON PHASE

- Appendix E in Adapting to the Risks of Extreme Heat and Wildfire Smoke in Canmore

ATTACHMENT C – WARNING PHASE COMMUNICATIONS

Purpose: Key messages for the Town of Canmore to provide when moving into a warning phase of an extreme heat event. Refer to Attachment A for list of contacts.

Last Updated: March 2023

General Instructions:

1. Messaging should be provided in **multiple languages** if possible, or written in simple English, targeting different demographics of local residents.
2. **Different methods** of communication should be used including both digital (e.g., social media, website, emails, apps, newsletters) and non-digital (e.g., signs in strategic locations in the community, in-person discussion with key vulnerable groups).
3. Communications should be **coordinated with stakeholders and community organizations** that can get the messaging out to populations that are most vulnerable to extreme heat (see Attachment A for list of vulnerable population and contacts).

Type of Communication Messaging by Group:

- **Town Staff**: Notification of actions to implement, role of staff and any adjustment to working conditions of staff (especially outdoor workers).
- **Stakeholders**: Notification of enhanced services and actions by the Town that are targeted to vulnerable populations. Communication protocol for feedback on needs from stakeholders.
- **General Public and Tourists**: What individuals can do during heat events and what enhanced services or actions that Town is providing. Encourage individuals to check on their neighbours.

KEY MESSAGES – WARNING PHASE

- Appendix E in Adapting to the Risks of Extreme Heat and Wildfire Smoke in Canmore

ATTACHMENT D – EMERGENCY PHASE COMMUNICATIONS

Purpose: Key messages for the Town of Canmore to provide when moving into an emergency phase of an extreme heat event. Refer to Attachment A for list of contacts.

Last Updated: March 2023

General Instructions:

1. Messaging should be provided in **multiple languages** targeting demographics of local residents.
2. **Different methods** of communication should be used including both digital (e.g., social media, website, emails, apps, newsletters) and non-digital (e.g., signs in strategic locations in the community, in-person discussion with key vulnerable groups).
3. Communications should be **coordinated with stakeholders and community organizations** that can get the messaging out to populations that are most vulnerable to extreme heat (see Attachment A for list of vulnerable population and contacts).

Type of Communication Messaging by Group:

- **Town Staff**: Notification of ECC activation, redirection of staff resources or rescheduling of programs at Town facilities to support emergency actions.
- **Stakeholders**: Notification of ECC activation & communication protocols, emergency cooling centre locations and services, enhanced actions by the Town targeted to vulnerable populations.
- **General Public and Tourists**: Notification of emergency cooling centre locations and services, enhanced services and actions by the Town and what individuals can do. Encourage individuals to check on their neighbours.

KEY MESSAGES – WARNING PHASE

- Appendix E in Adapting to the Risks of Extreme Heat and Wildfire Smoke in Canmore

ATTACHMENT E – POST-EVENT PHASE COMMUNICATIONS

Purpose: Key messages for the Town of Canmore to provide when emergency phase of an extreme heat event has concluded, also know as post-event. Refer to Attachment A for list of contacts.

Last Updated: March 2023

General Instructions:

1. Messaging should be provided in **multiple languages** targeting demographics of local residents.
2. **Different methods** of communication should be used including both digital (e.g., social media, website, emails, apps, newsletters) and non-digital (e.g., signs in strategic locations in the community, in-person discussion with key vulnerable groups).
3. Communications should be **coordinated with stakeholders and community organizations** that can get the messaging out to populations that are most vulnerable to extreme heat (see Attachment A for list of vulnerable population and contacts).

Type of Communication Messaging by Group:

- **Town Staff**: Notification of ECC de-activation, removal of temporary measures (water, shade, spray, signage), deactivate cooling centre, re-establish regular programming at Town facilities, re-establish working conditions for staff.
- **Stakeholders**: Notification of ECC de-activation and removal of temporary measures. Solicit input of needs of vulnerable populations to recover from event. Post-event feedback on impacts and improved supports.
- **General Public and Tourists**: Notification of ECC de-activation and removal of temporary measures. Post-event feedback on impacts and improved supports. Encourage individuals to check on their neighbours.

KEY MESSAGES – WARNING PHASE

- Appendix E in Adapting to the Risks of Extreme Heat and Wildfire Smoke in Canmore

ATTACHMENT F – EMERGENCY COOLING CENTRES

Purpose: List of potential emergency cooling centres and a guideline of building features and amenities required.

Last Updated: March 2023
List to be updated annually in preparation of pre-season communications.

TOWN OF CANMORE FACILITIES

The most appropriate Town facilities to act as cool air centres to support residents include:

BEST	Good	OK	Not Appropriate
Canmore Recreation Centre Elevation Place, Library Civic Centre	Seniors Association	Union Hall Opera House	Scouts Hall

See guidelines below for details on building features and amenities for each of the Town facilities listed above. The appropriateness of additional Town facilities can be assessed using the guideline.

Note:
Backup Power – The Civic Centre is the only building with backup power, but this may not be sufficient to run the air conditioning. There is a tie in point for a portable generator at the old Fire Hall, Public Works building and ArtsPlace however these facilities may not be appropriate or available to support public.

EMERGENCY SOCIAL SERVICE RECEPTION CENTRES

In addition to Town facilities, the Town has Emergency Social Services Reception Centre agreements established with the facilities listed below. The Town should review the building guidelines with each of these facilities to better understand building features and amenities to assess appropriateness for use as a cooling centre during an extreme heat event. See Attachment A for contact information.

Name of Facility	Cooling Centre: Amenities and Building Features
Canmore Nordic Centre	
Our Lady of the Snows Catholic Academy	
Lawrence Grassi Middle School	
Elizabeth Rummel School	
Canmore Collegiate High School	

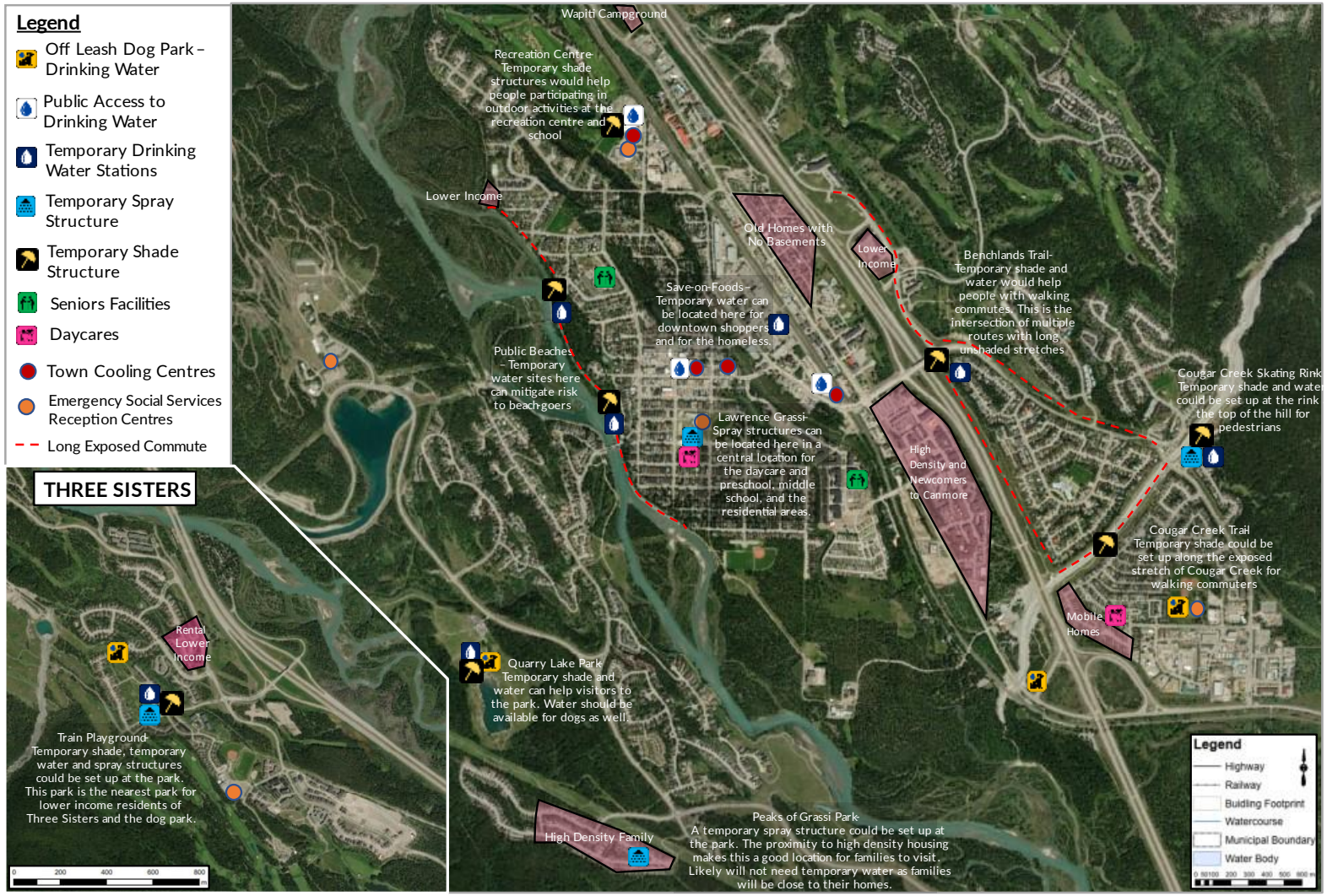
GUIDELINES FOR EMERGENCY CENTRES Cool and Clean Air Centres for Extreme Heat and Wildfire Smoke	Canmore Recreation Centre	Elevation Place	Civic Centre	Scout Hall	Union Hall	Seniors Centre	Opera House
BUILDING SYSTEMS AND FEATURES - Extreme Heat and Wildfire Smoke							
HVAC Systems							
Facility can handle increased cooling loads due to high occupancy, with a target temperature of 24°C or lower. Natural or mechanical cooling systems are acceptable as long as they can handle increased occupant loads. *(Section 4.2 - Health Canada's Guidance for Cleaner Air Spaces during Wildfire Smoke Events)*	Yes	Yes	Yes	No	Yes	Yes	Yes
Facilities have humidity control systems which can achieve a target humidity of 35 to 50%. *(Section 4.2 - Health Canada's Guidance for Cleaner Air Spaces during Wildfire Smoke Events)*	No	No	No	No	No	No	No
Detailed SOP are available for building operators outlining processes during emergency events. Building systems are regularly balanced and inspected.	?[1]	?	?	?	?	?	?
Power Systems							
Building has backup power generation systems meeting *CSA C282* backup power generation standards and *Section 3.2.7 of the National Building Code* for emergency lighting and power generation.	No	No	Yes	No	No	No	No
Electrical capacity of the building is appropriate for increased cooling loads and higher building occupancies. Must be able to meet the load for all life safety and critical building systems (emergency lighting, sprinklers and fire extinguishing systems, fire alarm systems).	Yes	Yes	Yes	No	Yes	Yes	Yes
System can be isolated by building zones if necessary to maintain critical building systems.	Yes	No	No	No	No	Yes	No
Detailed SOP are available for building operators outlining processes to operate backup power systems. Backup power systems are regularly tested and inspected.	No	No	Yes	No	No	No	No
BUILDING SYSTEMS AND FEATURES - Wildfire Smoke Only							
HVAC Systems, Options							
Filters with MERV rating of 13 or more. Replacement filters are available. Optional: Odour-removing filters can be provided for additional comfort of occupants. Optional: A low-efficiency pre-filter is installed upstream to prevent rapid overloading of the filters.	Yes	Yes	No	No	No	No	No
AC systems that have recirculation capabilities to prevent outside air from infiltrating.	No	Yes	No	No	No	No	No
If applicable, Building Automation Systems need to be programmed for a 'Smoke Event' mode that will place systems in minimum outside air mode during occupied hours and close outside air intakes during unoccupied hours.	No	Yes	No	No	No	No	No
Ductless mini split-type air-conditioner, fully enclosed air-handling unit. Applicable use in a single room or smaller area.	No	No	No	No	No	No	No
Emergency support areas/amenities should be capable of being isolated from the HVAC system.	No	No	No	No	No	No	No
Building Air Monitoring							
Monitoring sensors for indoor/outdoor air quality (consider AQHI, PM2.5 and ozone).	No	No	No	No	No	No	No
Building systems should have sensors to monitor indoor CO and CO_2 levels, preferably those featuring a low-level digital display showing real-time readings. Indoor CO_2 levels should remain below 2,000 ppm. CO levels should remain below 9 ppm averaged over 8 hours, and 20 ppm averaged over 1 hour.	No	No	No	No	No	No	No
Ventilation rates can be achieved with a desired rate of 15 cfm per person and minimum rate of 5 cfm per person.	?	?	?	?	?	?	?
BUILDING AND SITE ACCESSIBILITY - Extreme Heat and Wildfire Smoke							
Building Accessibility							
Building is accessible by emergency medical personnel.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Building is in compliance with the *Accessibility guidance in Section 3.8 of the National Building Code – 2019 Alberta Edition.*	Yes	Yes	Yes	No	No	Yes	No
Site Accessibility and Features							
Site is accessible by emergency vehicles.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site is accessible by walking or by transit.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site has adequate parking available to meet increased demand during activations.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Building exterior is shaded (structure, trees) to cool the buildings and to sit under.	No	No	No	No	No	No	No
Shuttles to and from centres are provided.	No	No	No	No	No	No	No

[1] Fields marked with a '?' were not assessed through this study

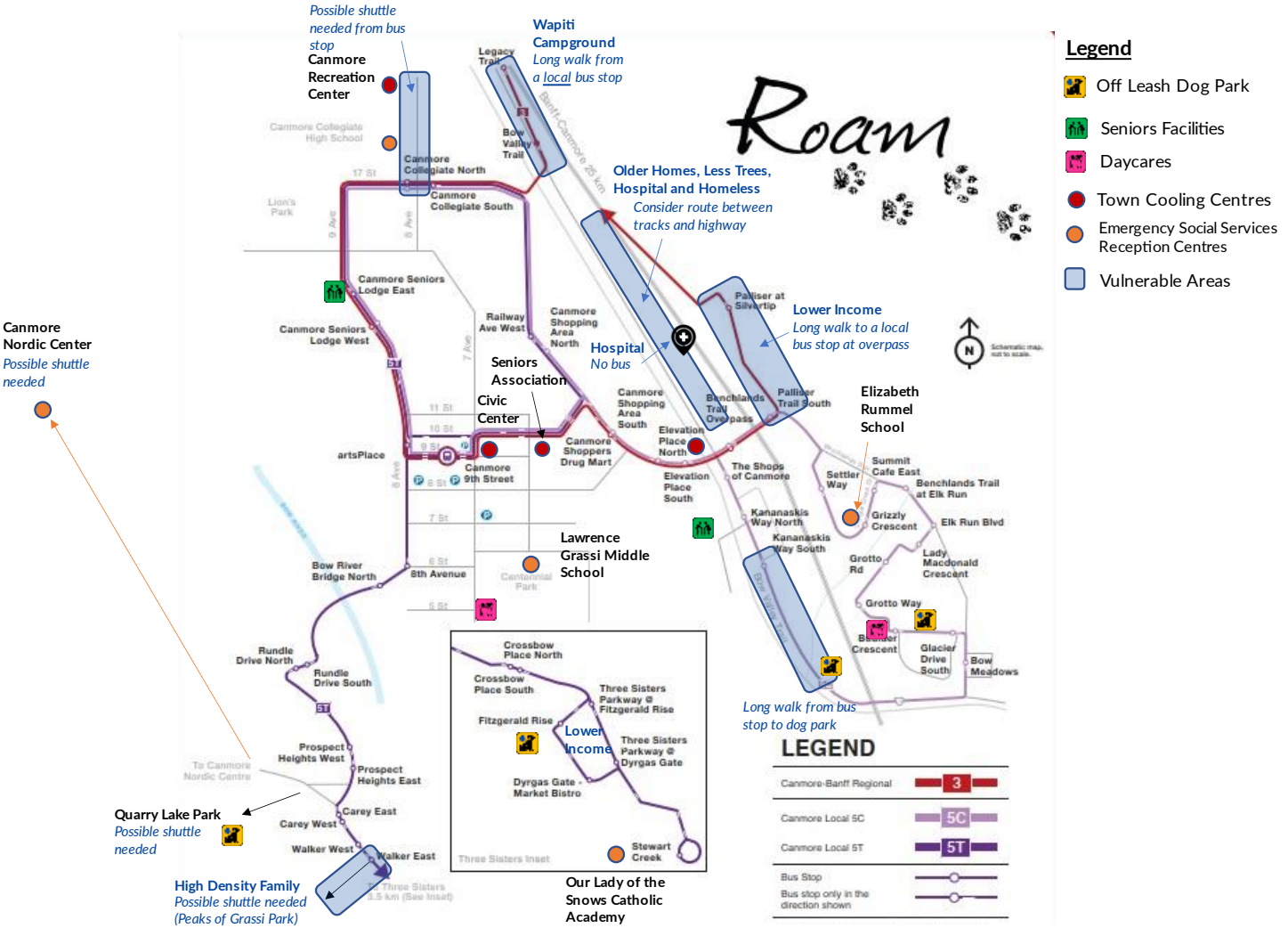
GUIDELINES FOR EMERGENCY CENTRES
Cool and Clean Air Centres for
Extreme Heat and Wildfire Smoke

SERVICES - Extreme Heat and Wildfire Smoke	Canmore Recreation Centre	Elevation Place	Civic Centre	Scout Hall	Union Hall	Seniors Centre	Opera House
Drinking Water and Food							
Cool drinking water available.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Emergency food or snacks available.	No	No	No	No	No	No	No
Emergency food or snacks available for pets or service animals.	No	No	No	No	No	No	No
Medical Supplies and Care Spaces							
Medical supplies/first aid kits for heat stroke/overheating on hand.	No	No	No	No	No	No	No
Fridges/coolers to keep medicine or breast milk cool.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quiet rooms for people who are sick or in need of medical attention.	Yes	Yes	Yes	No	No	Yes	No
An established plan to arrange transport from centres to hospitals/medical centres.	No	No	No	No	No	No	No
Communication							
Contains a radio and landline phone.	Yes	Yes	No	No	No	No	No
Public wi-fi or password readily available.	Yes	Yes	Yes	No	No	No	No
Access to interpreters for multiple languages.	No	No	No	No	No	No	No
Staff or volunteers that speak multiple languages.	Yes	Yes	Yes	No	No	No	No
Activities and Amenities							
Activities to keep people occupied (games, gym, books, television).	Yes	Yes	No	Yes	No	Yes	No
Quiet spaces for sitting, working, and sleeping.	Yes	Yes	Yes	No	No	Yes	No
Spaces available for pets and service animals.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Plug-ins available to charge cell phones/electronics.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Child care services or supports.	No	Yes	No	No	No	Yes	No
Hygiene Facilities							
Has accessible washrooms, including child changing stations.	Yes	Yes	Yes	No	No	Yes	No
Site has the ability to accommodate portable toilets, if needed.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Has showers or provides access/shuttles to showers for longer activations.	Yes	Yes	No	No	No	No	No
For longer activations, access to laundry facilities to wash bedding, etc.	No	No	No	No	No	No	No
Beds/Cots and Seating							
Seating available.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tables and chairs available, preferably near electrical source.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beds or cots available, even for daytime activation.	No	No	No	No	No	No	No
Quiet areas for beds or cots and some more private locations ideally.	Yes	Yes	Yes	No	No	Yes	No
Hours of Operation, Staffing and Other							
Extended hours of operation. In an emergency it should be open 24 hours per day but less severe events should at least include evenings.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site is secured afterhours (locked site, or on-site security staff).	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Building maintenance staff are available to implement building systems emergency SOPs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Staff or volunteers to support amenities and services, including child, language and pet services.	No	No	No	No	No	No	No
Staff with first aid training.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Staff with specialized medical training.	No	No	No	No	No	No	No
If other parties have emergency evacuation agreements with the site, the site must have capacity to accommodate everyone under all agreements	N/A	N/A	N/A	N/A	N/A	N/A	N/A

EXTREME HEAT EMERGENCY RESPONSE PLAN - MAP OF ACTIONS AND VULNERABLE AREAS



EXTREME HEAT EMERGENCY RESPONSE PLAN – MAP OF VULNERABLE POPULATIONS TO CONSIDER FOR SHUTTLES/ROUTES



APPENDIX B: WILDFIRE SMOKE EMERGENCY RESPONSE PLAN

WILDFIRE SMOKE

Emergency Response Plan

Response Procedures	
Factor	**Description**
Response Priorities	1. Protect all lives while ensuring the safety of responders 2. Protect critical infrastructure 3. Protect property 4. Protect the environment 5. Reduce economic and social losses
Response Protocols	• All responders will be supervised according to the Incident Command System (ICS) organizational chart of the specific event. Decisions ultimately come from the ECC Director. • ECC Director and ECC Management Staff may make decisions different than the guidelines in this plan based on field conditions.
Hazards	• Poor air quality from wildfire smoke is hazardous to **human health** and can lead to mortality, especially for vulnerable populations. Some symptoms of respiratory distress include: ◦ Dizziness ◦ Shortness of breath ◦ Chest pains ◦ Wheezing (incl. asthma attacks) ◦ Severe cough ◦ Heart palpitations • **Wildfire smoke** may coincide with extreme heat events. • Increased potential for **human-wildlife interactions** especially collision on the highway due to limited visibility. Wildlife can become more panicked and unpredictable.
Monitoring and Reporting	Wildfire smoke events most likely in **July to August**. *Before and during an event:* ***EM (Lead), Fire, Banff*** • Monitor air quality health index ratings from Weather Canada for the nearest location to Canmore (Calgary) (https://weather.gc.ca/airquality/pages/abaq-002_e.html) • Monitor Wildfire Smoke Prediction System (FireWork) (https://weather.gc.ca/firework/index_e.html) • FireSmoke Canada (https://firesmoke.ca/) • Record number of days of "High" (AQHI 7-10) and "Very High" (AQHI 10+) during the wildfire smoke season. • Record the total number of days for the smoke event and the number of days for each response stage. • Record community health impacts (if data is available or feedback from stakeholders). Include Fire and CSD. *After an event:* ***EM (Lead), Engineering, Fire, CSD, Communications*** • Document the amount of public use of the supports provided (cooling centres). • Record Town level of effort (hours) and costs.

Response Procedures		
Factor	**Vulnerable Group**	**Stakeholder Contact (*Attachment A*)**
Vulnerable Populations	**Children and the elderly**: These members of the community are particularly vulnerable to the effects of wildfire smoke. Children, in particular, may not be aware of the danger of wildfire smoke and may spend more time outdoors than is safe. The elderly, meanwhile, may be less able to recognize the signs of smoke-related illness and may be more likely to suffer from chronic conditions or take medication that places them at greater risk.	• Seniors Association • Seniors Lodge • Origins Seniors Facility • Daycares and Day Homes • Summer Camp Programs
	Pregnant women: Pregnant women are at an increased risk of experiencing health effects from wildfire smoke.	• Medical clinics • Hospital
	Individuals with chronic health conditions and mobility limitations: People with chronic health conditions such as heart and respiratory problems, diabetes and obesity, as well as those taking certain medications, are at greater risk of smoke-related illness. People who have substance-use disorders or mental health disorders are also at risk. People with disabilities or limited mobility are susceptible if longer periods of time are required to be outside to move around the Town.	• Medical clinics • Hospital • Pharmacies • Mental health and addiction programs
	Individuals with limited access to clean air or adequate air filtration: People in low-income households, rental properties, people who are homeless, people living in areas with little tree cover, and those without air conditioning and filtration are particularly vulnerable to wildfire smoke.	• Organizations that support homeless groups • Wapiti Campground Management • Community Associations (targeted) • Rental Management Companies
	Individuals who are socially isolated: People who are socially isolated and may have limited access to smoke-health information and services.	• Community organizations (neighbourhood programming)
	Tourists, visitors and locals spending time in the outdoors: People with outdoor recreation plans that will be spending time outside during smoke events.	• Tourist Canmore Kananaskis • Golf Courses, Hotel Associations • Event Organizers
	Outdoor workers: Outdoor workers (construction workers, painters, landscapers) that are exposed to wildfire smoke for extended periods of time and may be at risk of smoke-related illness.	• Bow Valley Chamber of Commerce

Factor	Facility	Description (*Attachment F*)
Clean Air Centres *Optional: Emergency Social Service Reception Centres, see Attachment F*	Elevation Place, Library ***BEST***	*Building Requirements*: Advanced smoke features on HVAC, meet accessibility standards, NO backup power. *Services Available*: Activities for all ages (fitness, swimming, climbing), seating and tables, quiet spaces, sleeping. *Programming*: May have more limited capacity if already heavily used by public during wildfire smoke.
	Canmore Recreation Centre ***BEST***	*Building Requirements*: Filters on HVAC for smoke, meet accessibility standards, does NOT have backup power. *Services Available*: Activities for all ages (gym), seating and tables, quiet spaces, sleeping. *Programming*: Summer camps are supporting children so try not to prevent cool spaces for summer camps.
	Civic Centre *OK/Limited*	*Requirements*: AC but no smoke filters, meet accessibility standards, only facility with backup power. *Services Available*: Limited activities available but could provide quiet spaces for people to work, read or rest. *Programming*: Impact Town staff regular activities if making spaces (lobby, board rooms) available for public.
	Seniors Association *OK/Limited*	*Building Requirements*: AC but not smoke filters, meet accessibility standards, does NOT have backup power. *Services Available*: Variety of activities available supporting vulnerable population (seniors). *Programming:* May require extended hours, shuttles, or rescheduling regular programming.
	Union Hall, Opera House *OK/Limited*	*Building Requirements*: AC but not smoke filters, does NOT meet accessibility standards, no backup power. *Services Available*: Limited activities available, no public wi-fi. *Programming:* May require rescheduling other activities.
	Scouts Hall, *N/A*	Not appropriate as it does not have AC. Relocate programming that may be occurring in this location.

Response Strategies and Tactics				
Factor	**Pre-Event Phase**	**Warning Phase**	**Emergency Phase – Activation of EOC**	**Post-Event Phase**
Activation Criteria	Pre-season communication in June or July. Highest risk is in August.	**Forecast: AQHI 7-10 (High) during 2 day forecast period** Data Source: Environment Canada (ECCC), Calgary Station Additional Monitoring Sources: FireWork, FireSmoke, Town of Banff	**Forecast: AQHI 10+ (Very High) during 2 day forecast period and it is determined that there is an immediate public safety and health concern** Data Sources: Environment Canada (ECCC), Calgary Station Additional Monitoring Sources: FireWork, FireSmoke, Town of Banff	**Forecast**: Observed AQHI of previous day does not achieve threshold trigger AND forecast AQHI does not achieve threshold trigger. Monitor resource use. If community resources are not being used consider demobilizing before the forecast trigger.
Actions				
Communications **Messaging should be provided in **multiple languages** and using **different methods** (digital and physical signage).*	*Attachment B Key Messages* • **Town Staff**: Reminders of the phases, general Town actions, roles/responsibilities, and notification of public messaging. • **Stakeholders**: Organizations supporting vulnerable populations to confirm contacts, protocols and what individuals/organizations can do. • **General Public:** What individuals can do to prepare and what the Town will do and when.	*Attachment C Key Messages* • **Town Staff**: Notification of actions to implement, role of staff and any adjustment to working conditions of staff (especially outdoor workers). • **Stakeholders**: Notification of enhanced services and actions by the Town that are targeted to vulnerable populations. Communication protocol for feedback on needs from stakeholders. • **General Public & Tourists:** What individuals can do during smoke event and what enhanced services or actions that Town is providing. **Encourage individuals to check on their neighbours**.	*Attachment D Key Messages* • **Town Staff**: Notification of ECC activation, **redirection of staff resources or rescheduling of programs at Town facilities to support emergency actions**, and adjustment to working conditions of staff (esp. outdoor workers). • **Stakeholders**: Notification of ECC activation & communication protocols, emergency clean air centre locations and services, enhanced actions by the Town targeted to vulnerable populations. • **General Public & Tourists:** Notification of emergency clean air centre locations and services, enhanced services and actions by the Town and what individuals can do. **Encourage individuals to check on their neighbours.**	*Attachment E Key Messages* • **Town Staff**: Notification of ECC de-activation, removal of temporary measures (water), deactivate clean air centre, re-establish regular programming at Town facilities, re-establish working conditions for staff. • **Stakeholders**: Notification of ECC de-activation and removal of temporary measures. Solicit input of needs of vulnerable populations to recover from event. Post-event feedback on impacts and improved supports. • **General Public & Tourists:** Notification of ECC de-activation and removal of temporary measures. Post-event feedback on impacts and improved supports. **Encourage individuals to check on their neighbours.**
Water Stations (*see map*)	• Confirm condition, number & sites for water stations.	• Communicate locations of public drinking water fountains (Rec Centre, Elevation Place, Civic Centre). • **Consider**: Setup temporary water stations including at off leash dog parks, monitor and **refill** regularly.	• Implement actions in warning phase rather than consider. • Monitor and **refill temporary water stations more frequently**. • **Consider**: Additional locations if needed.	• Removal of temporary water sources.
Clean Air Centres (*see map and Attachment F*)	• Inspect and maintain HVAC systems, confirm backup smoke filters for HVAC, review emergency clean air SOP with maintenance staff. • Confirm supplies and setup for activities/services.	• Communicate locations of clean air spaces activities (Rec Centre, Elevation Place and Library). • **Consider:** Extending hours for public clean air spaces.	• Activate emergency clean air centres. Reschedule regular programming if needed, redirect Town staff to centres, solicit volunteers if needed, setup activities, quiet spaces, cots, emergency supplies and food. • Direct facility maintenance staff to activate Smoke Emergency SOPs and monitor HVAC systems.	• De-activate clean air centre and re-establish programing at Town facilities.
Transportation (*see map*)	• Review and confirm shuttle and transit plans to clean air centres focusing on vulnerable populations.	• Enhance messaging on the use of transit and available parking to access clean air spaces. • **Consider**: Warning signs and communication of increased risk of highway collisions with wildlife due to limited visibility and more unpredictable behaviour from wildlife.	• Implement actions in warning phase rather than consider. • Add **additional** transit routes or shuttles targeting vulnerable populations and clean air centres.	• Re-establish regular transit services. • Remove wildlife risk signs.
Other		• Follow Working in Smoke protocols. • **Consider**: Notification and adjustment to permitted events and outdoor recreation groups.	• Implement actions in warning phase rather than consider. • Notification and adjustment to permitted events and outdoor recreation groups.	• Re-establish or consider alterations to permitted events and outdoor recreation groups.

ATTACHMENT A – CONTACTS

Purpose: List of contacts for key Town of Canmore staff and community organizations that will require coordination of communications and actions leading up to and during wildfire smoke events.

Last Updated: March 2023
List to be updated annually in preparation of pre-season communications.

Contact Information: Refer to the Town of Canmore **Municipal Emergency Management Plan (MEMP)** for contact information including names, phone numbers and emails.

TOWN OF CANMORE CONTACTS

Department and Role	Role Description
DEM, Deputy DEM	Coordination of monitoring for various hazards
Fire Chief, Deputy Fire Chief	Monitoring of wildfire and air quality forecasts, feedback on calls for support from community
Engineering	Coordination of forecasts with extreme heat
Community Social Development (CSD)	Coordinate with community organizations, feedback on needs from community
Public Works, Recreation, Facilities and IT	Include recreation, summer camps
Communications	Coordinate and send out communications
Human Resources	Internal communications on working in smoke
*Town of Banff	Coordinate with monitoring air quality (PM2.5 station)
*Bow Valley Clean Air Society (BVCAS)	Coordinate with monitoring air quality (private stations)

STAKEHOLDERS AND COMMUNITY ORGANIZATION CONTACTS

Vulnerable Group	Organization
Chronic health conditions, mobility limitations, pregnant women	Hospital
	Medical Clinics/Facilities
	Pharmacies
	Mental Health and Addiction Programs
	Handibus/Paratransit
Elderly and Children	Canmore Seniors Association
	Bow River Senior Citizen Lodge
	Origin at Spring Creek
	Canmore Community Daycare Society
	Mountain Munchkin Day Care
	Day Homes
	Summer Camp Programs

Vulnerable Group	Organization
Limited Access to Cooling and Socially Isolated	Rental Management Companies
	Community Organizations ▪ Target older homes, no basements, no air conditioning, lower income ▪ Target isolated populations who may have limited access to health info
	Organization Supporting Homeless (e.g. Homeless Society of Bowness Valley)
	YWCA
	Wapiti Campground
Tourists and Outdoor Events	Tourism Canmore Kananaskis
	Travel Alberta Canmore Visitor Information Centre
	Canmore Nordic Centre
	Canmore Golf and Curling Club
	Silvertip Golf Course
	Stewart Creek Golf & Country Club
	Hotel Association
	Event Organizers (e.g. festivals)
	Outdoor Sports Organizations (e.g. Alpine Club of Canada)
Outdoor Workers	Bow Valley Chamber of Commerce ▪ Outdoor professions (e.g. landscaping, painting, construction)
Emergency Social Service Reception Centres	Canmore Nordic Centre
	Our Lady of the Snow Catholic Academy
	Lawrence Grassi Middle School
	Canmore Collegiate High School
	Elizbeth Rummel School

ATTACHMENT B – PRE-SEASON COMMUNICATIONS

Purpose: Key messages for the Town of Canmore to provide leading up to the wildfire smoke season. Refer to Attachment A for list of contacts.

Last Updated: March 2023

General Instructions:

1. Messaging should be provided in **multiple languages** targeting demographics of local residents.
2. **Different methods** of communication should be used including both digital (e.g., social media, website, emails, apps, newsletters) and non-digital (e.g., signs in strategic locations in the community, in-person discussion with key vulnerable groups).
3. Communications should be **coordinated with stakeholders and community organizations** that can get the messaging out to populations that are most vulnerable to wildfire smoke (see Attachment A for list of vulnerable population and contacts).

Type of Communication Messaging by Group:

- **Town Staff**: Reminders of the warning and emergency phases, general Town actions, roles/responsibilities, and notification of public messaging.
- **Stakeholders**: Organizations supporting vulnerable populations to confirm contacts, protocols and what individuals/organizations can do.
- **General Public**: What individuals can do to prepare and what the Town will do and when.

KEY MESSAGES – PRE-SEASON PHASE

- Appendix F in Adapting to the Risks of Extreme Heat and Wildfire Smoke in Canmore

ATTACHMENT C – WARNING PHASE COMMUNICATIONS

Purpose: Key messages for the Town of Canmore to provide when moving into a warning phase of a wildfire smoke event. Refer to Attachment A for list of contacts.

Last Updated: March 2023

General Instructions:

1. Messaging should be provided in **multiple languages** targeting demographics of local residents.
2. **Different methods** of communication should be used including both digital (e.g., social media, website, emails, apps, newsletters) and non-digital (e.g., signs in strategic locations in the community, in-person discussion with key vulnerable groups).
3. Communications should be **coordinated with stakeholders and community organizations** that can get the messaging out to populations that are most vulnerable to wildfire smoke (see Attachment A for list of vulnerable population and contacts).

Type of Communication Messaging by Group:

- **Town Staff**: Notification of actions to implement, role of staff and any adjustment to working conditions of staff (especially outdoor workers).
- **Stakeholders**: Notification of enhanced services and actions by the Town that are targeted to vulnerable populations. Communication protocol for feedback on needs from stakeholders.
- **General Public and Tourists**: What individuals can do during wildfire smoke events and what enhanced services or actions that Town is providing. Encourage individuals to check on their neighbours.

KEY MESSAGES – WARNING PHASE

- Appendix F in Adapting to the Risks of Extreme Heat and Wildfire Smoke in Canmore

ATTACHMENT D – EMERGENCY PHASE COMMUNICATIONS

Purpose: Key messages for the Town of Canmore to provide when moving into an emergency phase of a wildfire smoke event. Refer to Attachment A for list of contacts.

Last Updated: March 2023

General Instructions:

1. Messaging should be provided in **multiple languages** if possible, or written in simple English, targeting different demographics of local residents.
2. **Different methods** of communication should be used including both digital (e.g., social media, website, emails, apps, newsletters) and non-digital (e.g., signs in strategic locations in the community, in-person discussion with key vulnerable groups).
3. Communications should be **coordinated with stakeholders and community organizations** that can get the messaging out to populations that are most vulnerable to wildfire smoke (see Attachment A for list of vulnerable population and contacts).

Type of Communication Messaging by Group:

- **Town Staff**: Notification of ECC activation, redirection of staff resources or rescheduling of programs at Town facilities to support emergency actions, and adjustment to working conditions of staff (especially outdoor workers).
- **Stakeholders**: Notification of ECC activation & communication protocols, emergency clean air centre locations and services, enhanced actions by the Town targeted to vulnerable populations.
- **General Public and Tourists**: Notification of emergency clean air centre locations and services, enhanced services and actions by the Town and what individuals can do. Encourage individuals to check on their neighbours.

KEY MESSAGES – EMERGENCY PHASE

- Appendix F in Adapting to the Risks of Extreme Heat and Wildfire Smoke in Canmore

ATTACHMENT E – POST-EVENT PHASE COMMUNICATIONS

Purpose: Key messages for the Town of Canmore to provide when emergency phase of a wildfire smoke event has concluded, also know as post-event. Refer to Attachment A for list of contacts.

Last Updated: March 2023

General Instructions:

1. Messaging should be provided in **multiple languages** targeting demographics of local residents.
2. **Different methods** of communication should be used including both digital (e.g., social media, website, emails, apps, newsletters) and non-digital (e.g., signs in strategic locations in the community, in-person discussion with key vulnerable groups).
3. Communications should be **coordinated with stakeholders and community organizations** that can get the messaging out to populations that are most vulnerable to wildfire smoke (see Attachment A for list of vulnerable population and contacts).

Type of Communication Messaging by Group:

- **Town Staff**: Notification of ECC de-activation, removal of temporary measures (water, signage), deactivate clean air centre, re-establish regular programming at Town facilities, re-establish working conditions for staff.
- **Stakeholders**: Notification of ECC de-activation and removal of temporary measures. Solicit input of needs of vulnerable populations to recover from event. Post-event feedback on impacts and improved supports.
- **General Public and Tourists**: Notification of ECC de-activation and removal of temporary measures. Post-event feedback on impacts and improved supports. Encourage individuals to check on their neighbours.

KEY MESSAGES – POST-EVENT PHASE

- Appendix F in Adapting to the Risks of Extreme Heat and Wildfire Smoke in Canmore

ATTACHMENT F – EMERGENCY COOLING CENTRES

Purpose: List of potential emergency clean air centres and a guideline of building features and amenities required.

Last Updated: March 2023
List to be updated annually in preparation of pre-season communications.

TOWN OF CANMORE FACILITIES

The most appropriate Town facilities to act as clean air centres to support residents include:

BEST	Good	OK	Not Appropriate
Canmore Recreation Centre Elevation Place, Library		Civic Centre Seniors Association Union Hall Opera House	Scouts Hall

See guidelines below for details on building features and amenities for each of the Town facilities listed above. The appropriateness of additional Town facilities can be assessed using the guideline.

Note:
Backup Power – The Civic Centre is the only building with backup power, but this may not be sufficient to run the air conditioning and filtration units. There is a tie in point for a portable generator at the old Fire Hall, Public Works building and ArtsPlace however these facilities may not be appropriate or available to support public.

EMERGENCY SOCIAL SERVICE RECEPTION CENTRES

In addition to Town facilities, the Town has Emergency Social Services Reception Centre agreements established with the facilities listed below. The Town should review the building guidelines with each of these facilities to better understand building features and amenities to assess appropriateness for use as a clean air centre during a wildfire smoke event. See Attachment A for contact information.

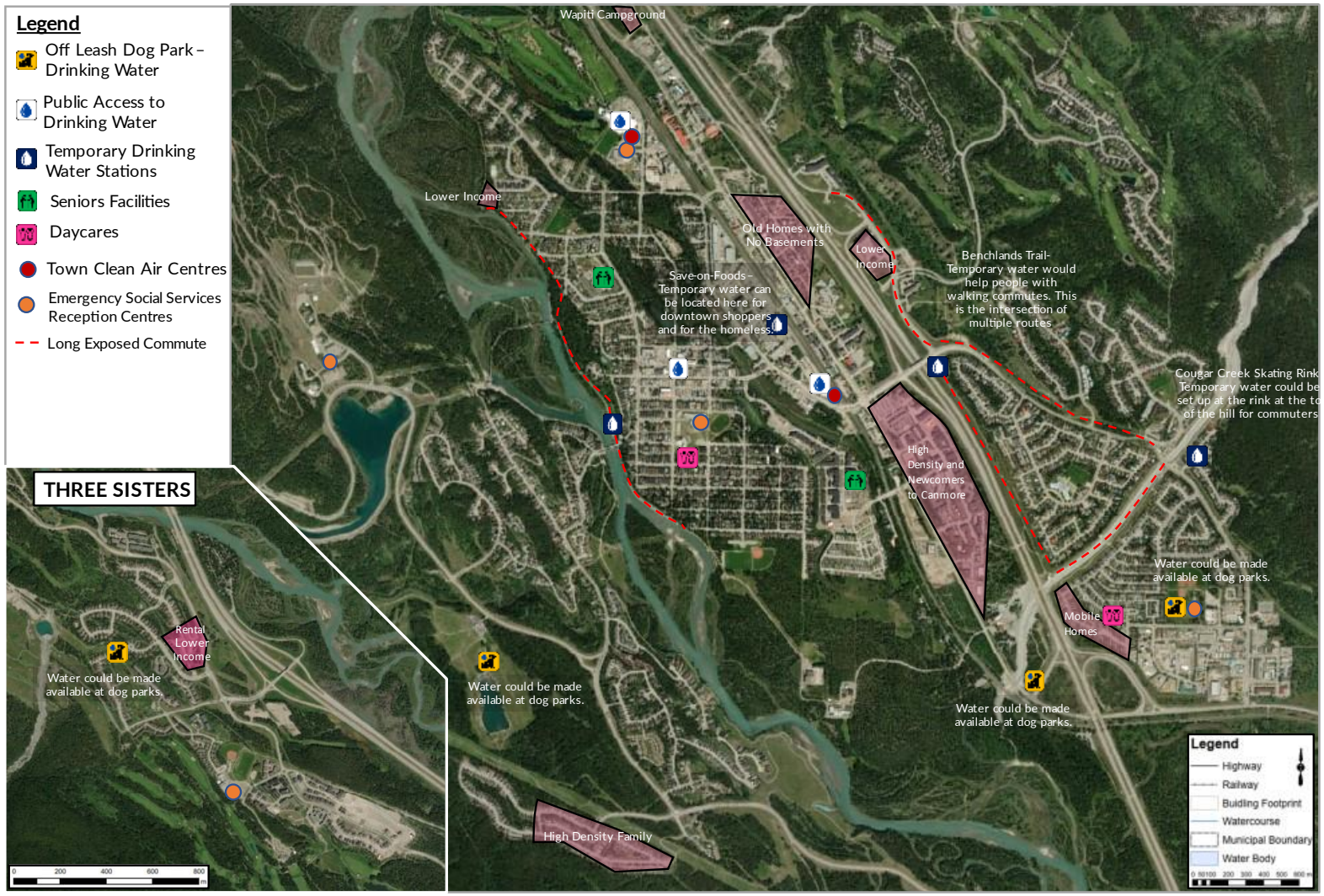
Name of Facility	Cooling Centre: Amenities and Building Features
Canmore Nordic Centre	
Our Lady of the Snows Catholic Academy	
Lawrence Grassi Middle School	
Elizabeth Rummel School	
Canmore Collegiate High School	

GUIDELINES FOR EMERGENCY CENTRES **Cool and Clean Air Centres for** **Extreme Heat and Wildfire Smoke**	Canmore Recreation Centre	Elevation Place	Civic Centre	Scout Hall	Union Hall	Seniors Centre	Opera House
BUILDING SYSTEMS AND FEATURES - Extreme Heat and Wildfire Smoke							
HVAC Systems							
Facility can handle increased cooling loads due to high occupancy, with a target temperature of 24°C or lower. Natural or mechanical cooling systems are acceptable as long as they can handle increased occupant loads. *(Section 4.2 - Health Canada's Guidance for Cleaner Air Spaces during Wildfire Smoke Events)*	Yes	Yes	Yes	No	Yes	Yes	Yes
Facilities have humidity control systems which can achieve a target humidity of 35 to 50%. *(Section 4.2 - Health Canada's Guidance for Cleaner Air Spaces during Wildfire Smoke Events)*	No	No	No	No	No	No	No
Detailed SOP are available for building operators outlining processes during emergency events. Building systems are regularly balanced and inspected.	?[1]	?	?	?	?	?	?
Power Systems							
Building has backup power generation systems meeting *CSA C282* backup power generation standards and *Section 3.2.7 of the National Building Code* for emergency lighting and power generation.	No	No	Yes	No	No	No	No
Electrical capacity of the building is appropriate for increased cooling loads and higher building occupancies. Must be able to meet the load for all life safety and critical building systems (emergency lighting, sprinklers and fire extinguishing systems, fire alarm systems).	Yes	Yes	Yes	No	Yes	Yes	Yes
System can be isolated by building zones if necessary to maintain critical building systems.	Yes	No	No	No	No	Yes	No
Detailed SOP are available for building operators outlining processes to operate backup power systems. Backup power systems are regularly tested and inspected.	No	No	Yes	No	No	No	No
BUILDING SYSTEMS AND FEATURES - Wildfire Smoke Only							
HVAC Systems, Options							
Filters with MERV rating of 13 or more. Replacement filters are available. Optional: Odour-removing filters can be provided for additional comfort of occupants. Optional: A low-efficiency pre-filter is installed upstream to prevent rapid overloading of the filters.	Yes	Yes	No	No	No	No	No
AC systems that have recirculation capabilities to prevent outside air from infiltrating.	No	Yes	No	No	No	No	No
If applicable, Building Automation Systems need to be programmed for a 'Smoke Event' mode that will place systems in minimum outside air mode during occupied hours and close outside air intakes during unoccupied hours.	No	Yes	No	No	No	No	No
Ductless mini split-type air-conditioner, fully enclosed air-handling unit. Applicable use in a single room or smaller area.	No	No	No	No	No	No	No
Emergency support areas/amenities should be capable of being isolated from the HVAC system.	No	No	No	No	No	No	No
Building Air Monitoring							
Monitoring sensors for indoor/outdoor air quality (consider AQHI, PM2.5 and ozone).	No	No	No	No	No	No	No
Building systems should have sensors to monitor indoor CO and CO_2 levels, preferably those featuring a low-level digital display showing real-time readings. Indoor CO_2 levels should remain below 2,000 ppm. CO levels should remain below 9 ppm averaged over 8 hours, and 20 ppm averaged over 1 hour.	No	No	No	No	No	No	No
Ventilation rates can be achieved with a desired rate of 15 cfm per person and minimum rate of 5 cfm per person.	?	?	?	?	?	?	?
BUILDING AND SITE ACCESSIBILITY - Extreme Heat and Wildfire Smoke							
Building Accessibility							
Building is accessible by emergency medical personnel.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Building is in compliance with the *Accessibility guidance in Section 3.8 of the National Building Code – 2019 Alberta Edition.*	Yes	Yes	Yes	No	No	Yes	No
Site Accessibility and Features							
Site is accessible by emergency vehicles.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site is accessible by walking or by transit.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site has adequate parking available to meet increased demand during activations.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Building exterior is shaded (structure, trees) to cool the buildings and to sit under.	No	No	No	No	No	No	No
Shuttles to and from centres are provided.	No	No	No	No	No	No	No

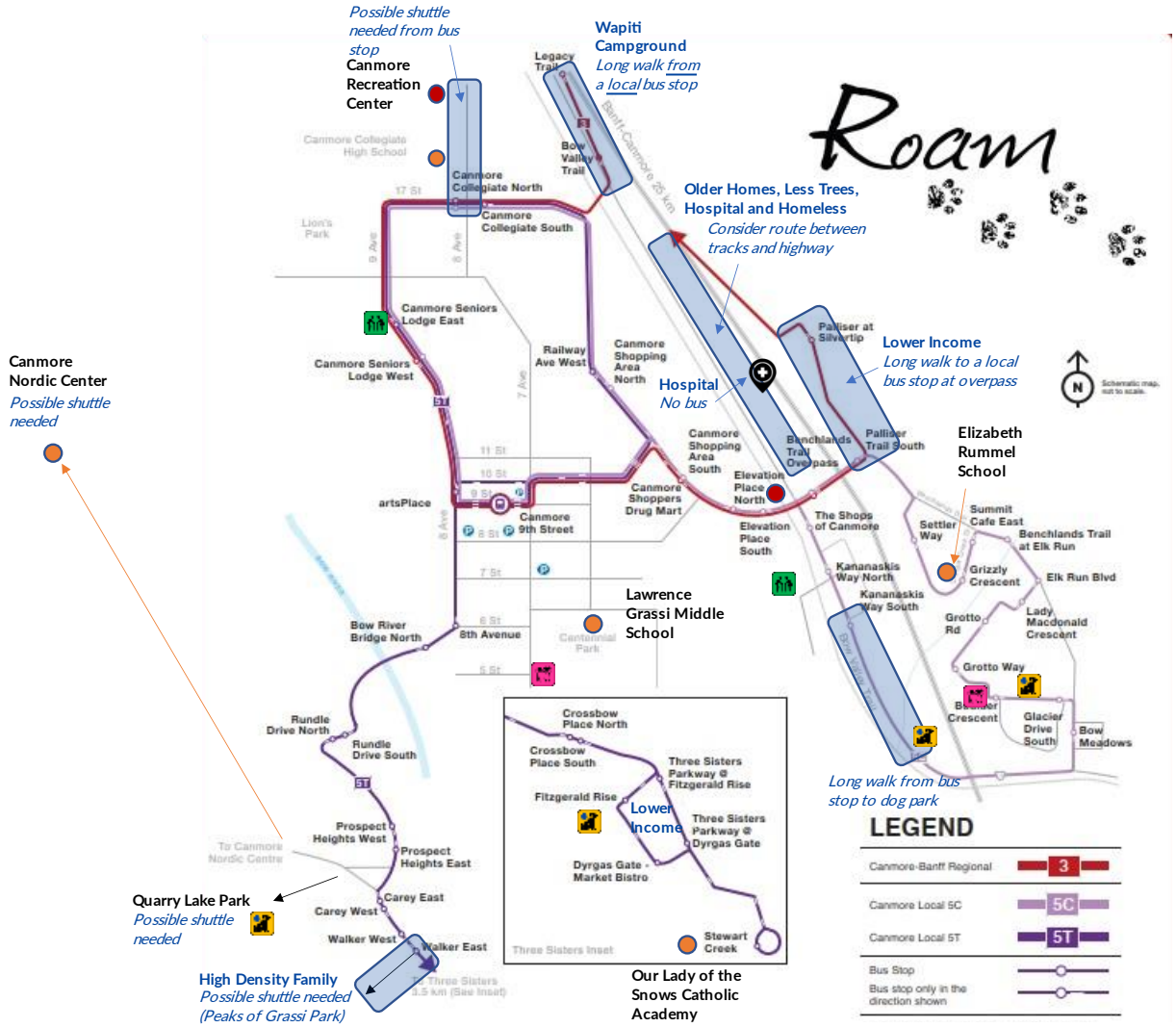
[1] Fields marked with a '?' were not assessed through this study

GUIDELINES FOR EMERGENCY CENTRES Cool and Clean Air Centres for Extreme Heat and Wildfire Smoke	Canmore Recreation Centre	Elevation Place	Civic Centre	Scout Hall	Union Hall	Seniors Centre	Opera House
SERVICES - Extreme Heat and Wildfire Smoke							
Drinking Water and Food							
Cool drinking water available.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Emergency food or snacks available.	No	No	No	No	No	No	No
Emergency food or snacks available for pets or service animals.	No	No	No	No	No	No	No
Medical Supplies and Care Spaces							
Medical supplies/first aid kits for heat stroke/overheating on hand.	No	No	No	No	No	No	No
Fridges/coolers to keep medicine or breast milk cool.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quiet rooms for people who are sick or in need of medical attention.	Yes	Yes	Yes	No	No	Yes	No
An established plan to arrange transport from centres to hospitals/medical centres.	No	No	No	No	No	No	No
Communication							
Contains a radio and landline phone.	Yes	Yes	No	No	No	No	No
Public wi-fi or password readily available.	Yes	Yes	Yes	No	No	No	No
Access to interpreters for multiple languages.	No	No	No	No	No	No	No
Staff or volunteers that speak multiple languages.	Yes	Yes	Yes	No	No	No	No
Activities and Amenities							
Activities to keep people occupied (games, gym, books, television).	Yes	Yes	No	Yes	No	Yes	No
Quiet spaces for sitting, working, and sleeping.	Yes	Yes	Yes	No	No	Yes	No
Spaces available for pets and service animals.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Plug-ins available to charge cell phones/electronics.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Child care services or supports.	No	Yes	No	No	No	Yes	No
Hygiene Facilities							
Has accessible washrooms, including child changing stations.	Yes	Yes	Yes	No	No	Yes	No
Site has the ability to accommodate portable toilets, if needed.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Has showers or provides access/shuttles to showers for longer activations.	Yes	Yes	No	No	No	No	No
For longer activations, access to laundry facilities to wash bedding, etc.	No	No	No	No	No	No	No
Beds/Cots and Seating							
Seating available.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tables and chairs available, preferably near electrical source.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Beds or cots available, even for daytime activation.	No	No	No	No	No	No	No
Quiet areas for beds or cots and some more private locations ideally.	Yes	Yes	Yes	No	No	Yes	No
Hours of Operation, Staffing and Other							
Extended hours of operation. In an emergency it should be open 24 hours per day but less severe events should at least include evenings.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Site is secured afterhours (locked site, or on-site security staff).	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Building maintenance staff are available to implement building systems emergency SOPs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Staff or volunteers to support amenities and services, including child, language and pet services.	No	No	No	No	No	No	No
Staff with first aid training.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Staff with specialized medical training.	No	No	No	No	No	No	No
If other parties have emergency evacuation agreements with the site, the site must have capacity to accommodate everyone under all agreements	N/A	N/A	N/A	N/A	N/A	N/A	N/A

WILDFIRE SMOKE EMERGENCY RESPONSE PLAN - MAP OF ACTIONS AND VULNERABLE AREAS



WILDFIRE SMOKE EMERGENCY RESPONSE PLAN – MAP OF VULNERABLE POPULATIONS TO CONSIDER FOR SHUTTLES/ROUTES



APPENDIX C: COMMUNITY SURVEY

Canmore Community Survey: Extreme Heat and Wildfire Smoke Response Plans

The Town of Canmore's Emergency Management Agency has identified several natural hazards and risks to the community, and has Emergency Response Plans in place for wildfire, steep creek flooding and watercourse flooding. Extreme heat and wildfire smoke are emerging risks to the Town which are projected to become more frequent and intense in the future, as a result of climate change.

The Town of Canmore is undertaking this survey to elicit community views related to the risks of extreme heat and wildfire smoke, and how we can be better prepared. Community views obtained through this survey will contribute to development of Emergency Response Plans for both extreme heat and wildfire smoke, as well as an action plan to enhance long-term resilience to heat and smoke events.

The survey will take approximately 10 minutes to complete. Your responses are completely anonymous and will remain confidential. Please complete the survey by February 10, 2023.

For more information on this project and to follow for updates visit:
https://canmore.ca/projects/emergency-response-plans-extreme-heat-wildfire-smoke

Part 1: Extreme Heat

This portion of the survey concerns extreme heat events in Canmore, defined as summertime temperatures that are much hotter than average, generally above 30°C, and may last for two or more days.

Q1 Please indicate your level of agreement with the following statement: Extreme heat is a major public health risk in Canmore?

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q2 How concerned are you about your household's ability to manage the impacts of extreme heat events?

- Not at all concerned
- Slightly concerned
- Somewhat concerned
- Very concerned

Q3 Please explain why you are (or are not) concerned about your household's ability to manage the impacts of extreme heat events?

Q4 Over the past several summers, were you aware of any Heat Warnings issued for Canmore?

- Yes (proceed to Q5)
- No (Skip to Q6)

Q5 If yes to Q4, how did you hear about the Heat Warning(s)? (select all that apply)

- Radio
- Television
- Newspaper
- Social media
- Word of mouth
- Internet
- Mobile weather app (Environment Canada, Weather Network, etc.)

Q6 Do you change your behavior in any way when there is an extreme heat event?

- Yes (proceed to Q7)
- No (Skip to Q9)

Q7 If yes to Q6, which of the following did you do during extreme heat events in the past? [select all that apply]

- Avoided outdoors/direct sun
- Drank more fluids/stayed hydrated
- Used air conditioning at home
- Used fans at home
- Closed curtains and blinds
- Kept doors and windows closed during the day
- Relocated to a cooler location/found an air-conditioned location
- Dressed appropriately
- Checked on neighbours/those at risk
- Avoided strenuous work or exercise
- Changed the timing of outdoor activity (e.g., early morning or late evening)
- Other (please specify) _____

Q8 If yes to Q6, what is the *minimum* daily high temperature that would cause you to drastically change your behaviour (e.g., avoid outdoors)?

- 20-24°C
- 25-29°C
- 30-34°C
- 35-39°C
- 40°C +
- I would not change my behaviour regardless of the daily high temperature

Q9 If not to Q6, why not? [select all that apply]

- I wasn't concerned, heat is not dangerous to me or members of my household
- Too much of an inconvenience
- I was not aware of what to do
- Other (please specify) _____

Q10 How likely are you to use the following community resources/supports during an extreme heat event? [Very unlikely, Unlikely, Likely, or Very likely]

- An accessible cooling centre (air-conditioned building/facility)
- Shaded outdoor public spaces
- Swimming at indoor recreation facility (e.g., Elevation Place)
- Swimming at a local lake (e.g., Quarry Lake)
- Public water station

Part 2: Wildfire Smoke

This portion of the survey pertains to wildfire smoke, which is defined as a mixture of gases and fine particles from forest fires, including particulate matter, carbon monoxide, and chemicals.

Q11 Please indicate your level of agreement with the following statement: Wildfire smoke is a major public health risk in Canmore?

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q12 How concerned are you about your household's ability to manage the impacts of wildfire smoke events?

- Not at all concerned
- Slightly concerned
- Somewhat concerned
- Very concerned

Q13 Please explain why you are (or are not) concerned about your household's ability to manage the impacts of wildfire smoke?

Q14 Over the past several summers, were you aware of any air quality notifications (e.g., a Special Air Quality Statement) issued for Canmore due to wildfire smoke?

- Yes (proceed to Q15)
- No (Skip to Q16)

Q15 If yes to Q14, how did you hear about the notification(s)? (select all that apply)

- Radio
- Television
- Newspaper
- Social media
- Word of mouth
- Internet
- Mobile weather app (Environment Canada, Weather Network, etc.)
- Other (please specify) _____

Q16 During wildfire smoke days in Canmore, do you change your behavior in any way?

- Yes (proceed to Q17)
- No (Skip to Q18)

Q17 If yes to Q16, which of the following did you do during wildfire smoke days in the past? [select all that apply]

- Avoided strenuous work or exercise
- Checked on neighbours/those at risk
- Reduced outdoor physical activity
- Stayed indoors
- Wore a face mask
- Used a portable air filter/cleaner at home
- Spent time at a clean air space in Town
- Used a home ventilation system (Heat Recovery Ventilation, re-circulating air conditioner with fresh-air intake closed, etc.)
- Other (please specify) _____

Q18 If no to Q16, why not? [select all that apply]

- I wasn't concerned, wildfire smoke is not dangerous to me or members of my household
- Too much of an inconvenience
- I was not aware of what to do
- Other (please specify) _____

Q19 How likely would you be to use a community clean air centre (facility with good ventilation/air quality) during a wildfire smoke event?

- Very unlikely
- Unlikely
- Likely
- Very likely

Part 3: About you

Q20 In the future, what would you say is the best method for communicating to Canmore residents about actions they can take during extreme heat and smoke events and resources available? (select all that apply)

- Radio
- Newspaper
- Town of Canmore website
- Email
- Social media
- Mobile signs around town
- Other (please specify) _____

Q21 If a cooling centre or clean air centre were opened in Canmore during an extreme heat or smoke event, how important would the following features be to you? [Not at all important, slightly important, very important, extremely important]

- Within walking distance of my home
- Wheelchair accessible
- Accessible via public transport
- Internet access
- Activities (e.g., board games, books, etc.)
- Food and water
- Overnight accommodations (a bed)

Q22 Do you or any member(s) of your household identify with any of the following at-risk groups for extreme heat and smoke health impacts? (select all that apply)

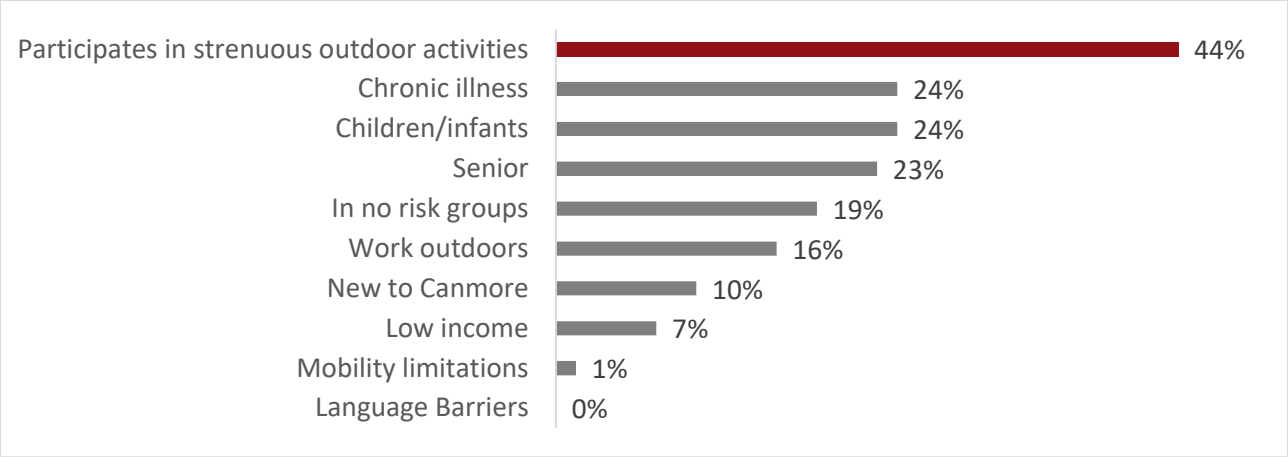
- Face language barriers
- Low-income
- Participate in strenuous outdoor activities
- Physically impaired with mobility limitations
- New to Canmore
- Work outdoors
- Seniors
- Children and infants
- Chronic illness such as diabetes, lung or heart conditions, mental illness
- None of the above

Q 23 Do you have any other comments, questions or concerns regarding the creation of Emergency Response Plans for extreme heat and wildfire smoke for the Town of Canmore?

APPENDIX D: COMMUNITY SURVEY RESULTS

An important aspect of the community survey was to identify members groups that may be at higher risk of extreme heat and smoke, and to determine if perceptions and preferred management responses varied for different at-risk groups. The majority (81%) of respondents self-identified as belonging to one or more at-risk groups, with the majority being those who participate in strenuous outdoor activities - 44% (Figure 14).

Figure 14 Representation of at-risk groups to smoke and heat in Canmore



In the survey analysis below, differences in perceptions amongst these at-risk groups are provided.

Perceptions of major health risks

Figure 15 illustrates whether survey participants agreed that wildfire smoke and extreme heat were major health risks in Canmore. Although most participants believed that both impacts were major public health risks in Canmore, 25% more participants agreed that smoke was a major public health risk than extreme heat.

Figure 15 Perception of heat and smoke as major health risks in Canmore

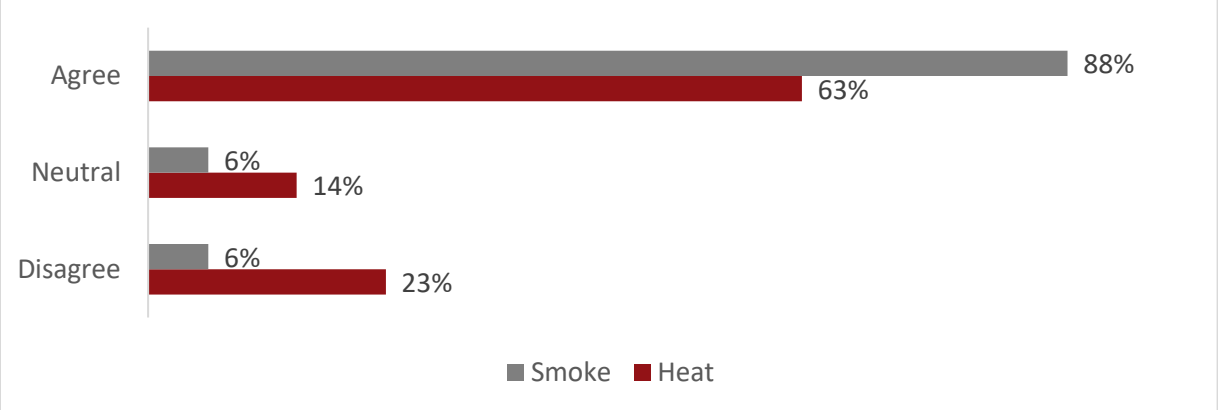


Table 10 shows the comparison in responses for the perception of major health risks between at-risk groups and the average response[46]. Participants who are low income and new to Canmore were more likely to agree that heat is a major public health risk, whereas those who work outdoors are more likely to disagree that smoke is a major public health risk[47].

Table 10 Differences in perceptions of heat and smoke as health risks between at-risk groups and the average

At-risk group	Extreme Heat	Wildfire Smoke
Participates in strenuous outdoor activities (n=31)	same as average	same as average
Children/infants (n=18)	same as average	same as average
Chronic illness (n=18)	same as average	same as average
Seniors (n=16)	same as average	same as average
In 'no risk' group (n=13)	same as average	same as average
Work Outdoors (n=11)	same as average	21% more likely to disagree than average
New to Canmore (n=7)	37% more likely to agree than average	same as average
Low Income (n=5)	17% more likely to agree than average	same as average

Ability to manage smoke and heat impacts

Figure 16 shows how survey participants perceived their household's ability to manage the effects of wildfire smoke and extreme heat. Participants were asked to rate their level of concern, ranging from 'very concerned' to 'not at all concerned'. Overall, participants were more concerned about their household's ability to manage wildfire smoke, with 70% saying they were either very or somewhat concerned, compared to 41% being very or somewhat concerned about their ability to extreme heat.

[46] Responses between each at-risk group are compared to the average of all responses for each question. As a general rule, responses that vary by more than 15% between the at-risk group and the average were considered significant.

[47] Analysis for those with language barriers (n=0) and mobility limitations (n=1) was not conducted as there was insufficient representation from these groups. Analysis of results for those identifying as 'low income' (n=5), and 'New to Canmore' (n=7) should be treated with caution given the small sample size.

Figure 16 Level of concern about household ability to manage smoke and heat impacts

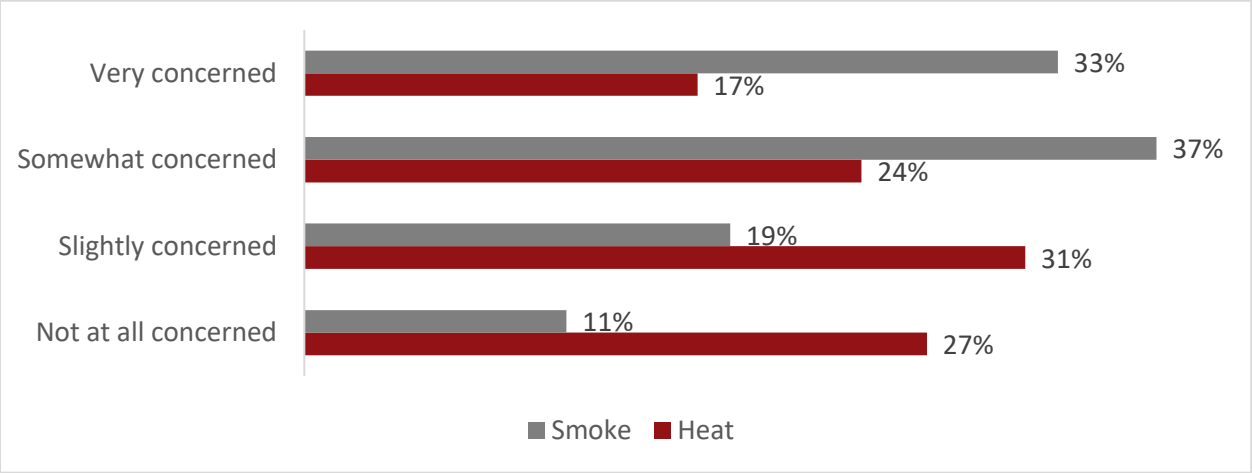


Table 11 compares responses between each at-risk group and the average for participants' ability to manage smoke and heat impacts. Overall, seniors are the most concerned about their ability to manage both impacts, whereas outdoor workers are relatively less concerned. New Canmore residents are more likely to be concerned about their ability to manage heat impacts, and those who identify as not being at risk are less concerned about their ability to manage smoke impacts.

Table 11 Comparison of ability to manage smoke and heat impacts between at-risk groups and the average

At-risk group	Extreme Heat	Wildfire Smoke
Participates in strenuous outdoor activities (n=31)	same as average	same as average
Children/infants (n=18)	same as average	same as average
Chronic illness (n=18)	same as average	same as average
Seniors (n=16)	21% more likely to be concerned	24% more likely to be concerned
In 'no risk' group (n=13)	same as average	16% more likely to be less concerned
Work Outdoors (n=11)	23% more likely to be less concerned	25% more likely to be less concerned
New to Canmore (n=7)	16% more likely to be concerned	same as average
Low Income (n=5)	same as average	same as average

Additionally, survey participants were asked a follow-up question to explain the reasoning for their response. That is, why are you (or not) concerned about your household's ability to manage the impacts of extreme heat and wildfire smoke? Most participants mentioned that they were not concerned about extreme heat because they have access to a cold basement (n=14) or air conditioning (n=11), or perceived extreme heat to not be a significant issue (n=7). For those expressing concern about extreme heat, the reasons provided include a lack of air conditioning (n=11) and the potential health effects (n=8).

Regarding wildfire smoke, 20 participants stated they were concerned about their household's ability to manage wildfire smoke due to health concerns. Other reasons for concern included the necessity to stay indoors with windows closed and unable to enjoy the outdoors (n=17). For those unconcerned about managing wildfire smoke, most participants stated such because they have an air filtration system in their home (n=9) or can easily adapt by closing the windows or staying indoors (n=9).

Awareness and communications of smoke and heat warnings

Several questions on the survey asked participants about their awareness of heat and smoke warnings and communication of warnings. The vast majority of participants were aware of heat warnings (91%) and air quality notifications (94%) issued for Canmore in the past. As shown in Figure 17, the primary mode of receiving warnings for these impacts was using a mobile weather app (74% and 88% of participants used this method for heat and smoke warnings, respectively). The Internet and social media were also relatively popular options, with more than 40% of participants using these communication modes to hear about warnings for both impacts. In contrast, TV and the newspaper were the least popular options with less than 20% of participants using them to hear about warnings.

Figure 17 Primary mode used to hear about smoke and heat warnings

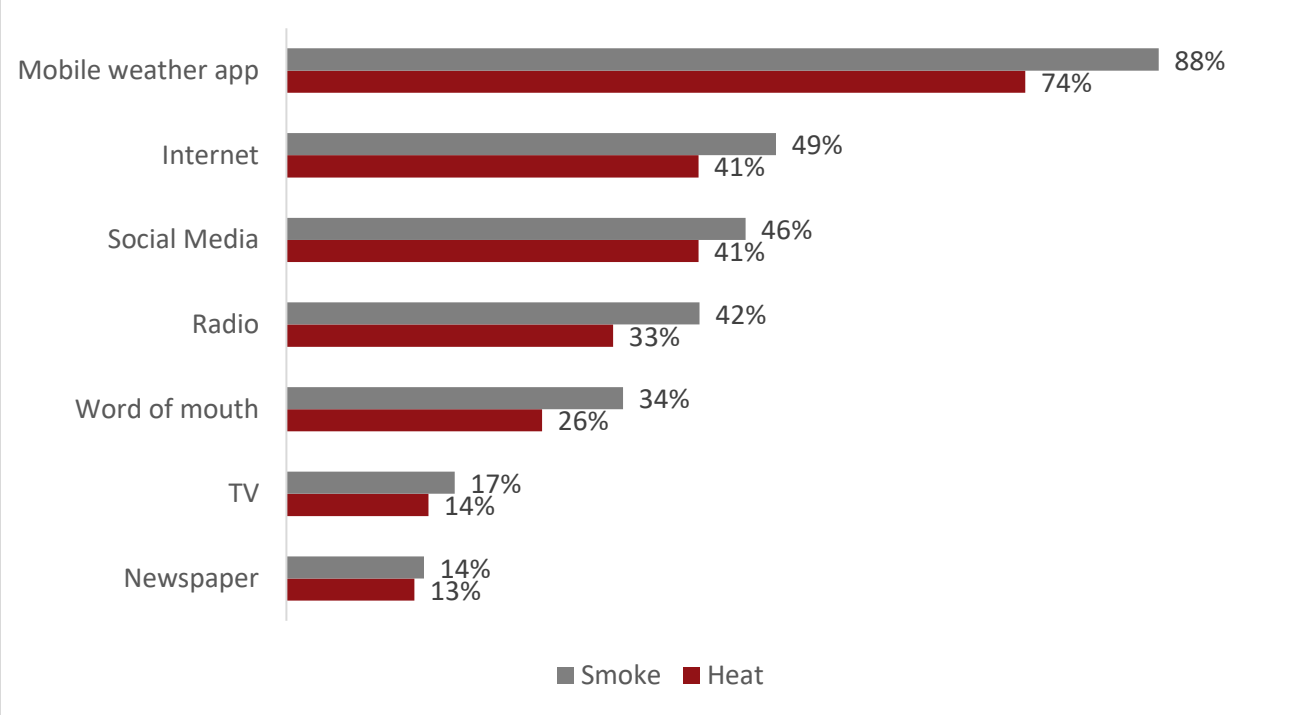


Table 12 illustrates the differences between the method that each at-risk group uses to hear about smoke and heat warning and the average. Overall, new Canmore residents are less likely to hear about warnings from electronic sources, including the internet, radio, TV, and the mobile weather app. In contrast, outdoor workers are more likely to hear about warnings from electronic sources. Those with chronic illness, children, and low-income individuals use a combination of electronic and non-electronic (i.e., word of mouth) sources to hear about warnings.

Table 12 Comparison of method to hear about smoke and heat warnings between at-risk groups and the average

At-risk groups	Comparison to average: Heat	Comparison to average: Smoke
Participates in strenuous outdoor activities (n=31)	Same as average	Same as average
Children/infants (n=18)	18% less likely to hear about warnings from the internet than the average	More likely to hear about warnings from radio (20%) and the mobile weather app (17%) than the average
Chronic illness (n=18)	More likely to hear about warnings from word of mouth (21%) and the internet (17%) than the average	15% more likely to hear about warnings from word of mouth than the average
Seniors (n=16)	Same as average	Same as average
In 'no risk' group (n=13)	Less likely to hear about warnings from radio (-17%), and word of mouth (-18%) than the average	17% more likely to hear about warnings from the mobile weather app than the average
Work Outdoors (n=11)	More likely to hear about warnings from radio (40%), TV (31%), social media (31%), and word of mouth (20%) than the average	More likely to hear about warnings from radio (34%), TV (30%), social media (29%), internet (26%), and the mobile weather app (17%) than the average
New to Canmore (n=7)	Less likely to hear about warnings from radio (-19%), internet (-27%), and the mobile weather app (-31%) than the average	Less likely to hear about warnings from TV (-16%), internet (-32%), and the mobile weather app (-40%) than the average
Low Income (n=5)	More likely to hear about warnings from newspaper (27%), social media (19%), and word of mouth (74%) than the average	More likely to hear about warnings from radio (21%) newspaper (27%), and word of mouth (48%) than the average. Less likely to hear about warnings from TV (-16%), the internet (-26%), and the mobile weather app (-23%) than the average

Participants were also asked their preferences for receiving communications about actions they can take and available resources during smoke and heat events. Most participants (74%) prefer to receive communications through social media platforms (Figure 18). Radio and newspaper were the least preferred with less than 50% of participants supporting these options.

Figure 18 Preferred method of communication for taking action during smoke and heat events

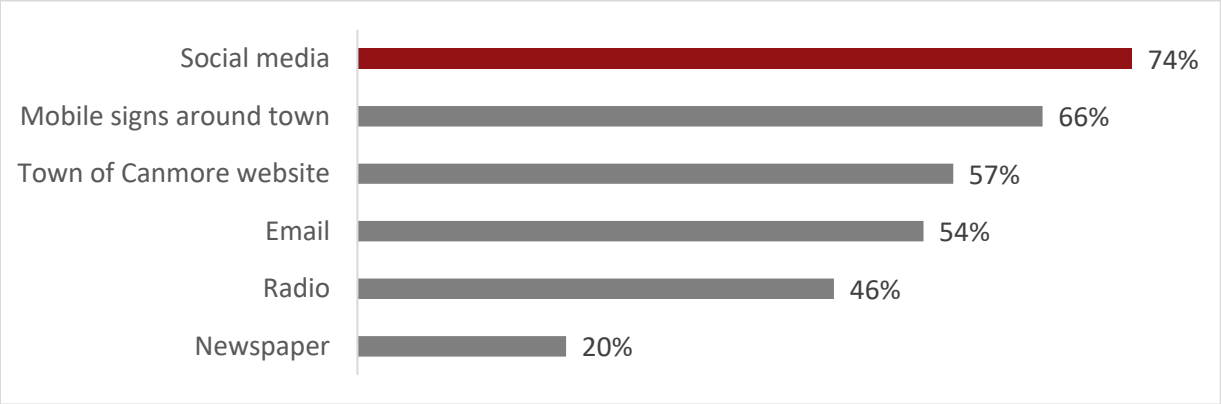


Table 13 compares the communication preferences between at-risk groups and the average respondent. New Canmore residents and low-income individuals were more likely to prefer to receive notifications and messaging through newspaper, whereas outdoor workers are more likely to prefer radio and the town website. On the other hand, those who are not at risk are less likely to prefer using email.

Table 13 Comparison of communication preferences for taking action between subgroups and the average

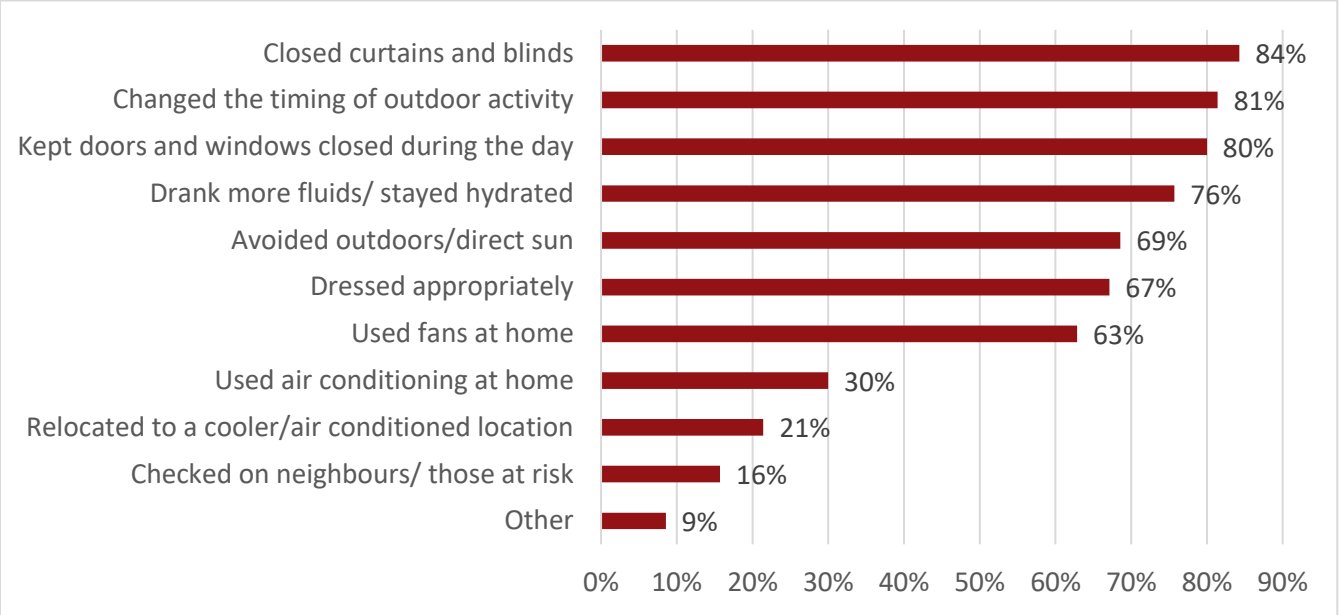
At-risk group	Comparison to average
Participates in strenuous outdoor activities (n=31)	same as average
Children/infants (n=18)	same as average
Chronic illness (n=18)	same as average
Seniors (n=16)	same as average
In 'no risk' group (n=13)	less likely to recommend email by 16%
Work Outdoors (n=11)	more likely to recommend radio by 27% and town website by 16%
New to Canmore (n=7)	more likely to recommend newspaper by 23%
Low Income (n=5)	more likely to recommend newspaper by 20%

Behavioral changes to manage smoke and heat

The majority of survey participants indicated that they have changed their behaviour during smoke and heat events (93% and 94% for smoke and heat, respectively). Figure 19 and Figure 21 below illustrates actions that survey participants are currently taking to manage these impacts. For extreme heat, the most often cited behavioural changes included closing curtains and blinds (84%), changing the timing of outdoor activities (81%) and keeping doors and windows closed during the day (80%). In contrast, 21% or fewer participants chose to relocate to a cooler location or check on neighbors and at-risk individuals during these events[48].

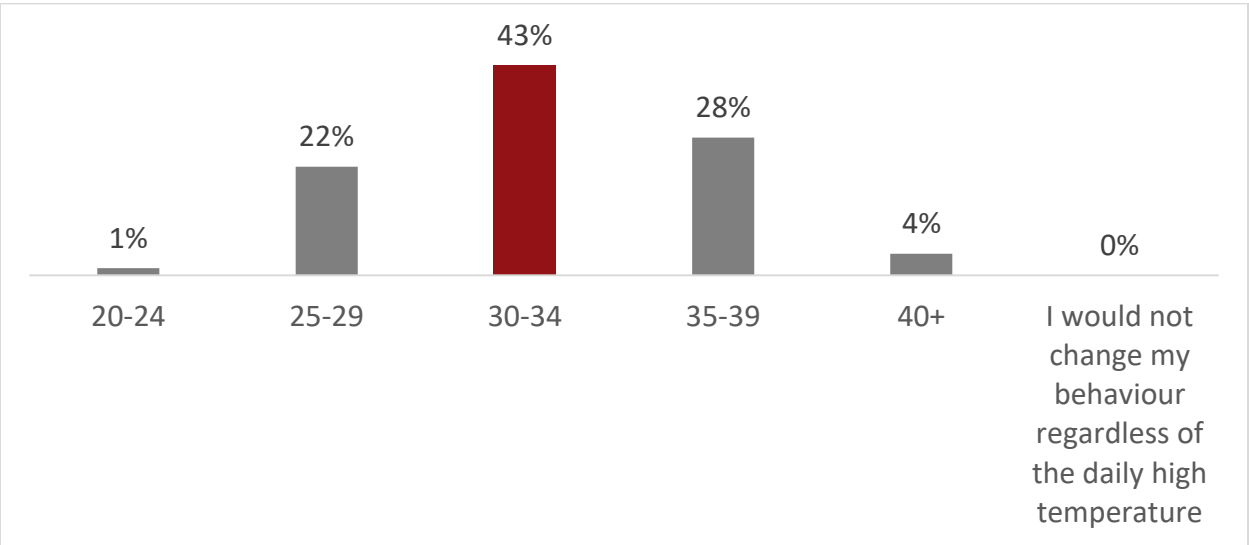
[48] While this statement is true, the comments provided on this question suggest that some people interpreted the question as geographically changing their location not just moving around inside their existing home. Several comments stated that people went to a cooler location within their home (a basement).

Figure 19 Behavioral changes in response to extreme heat



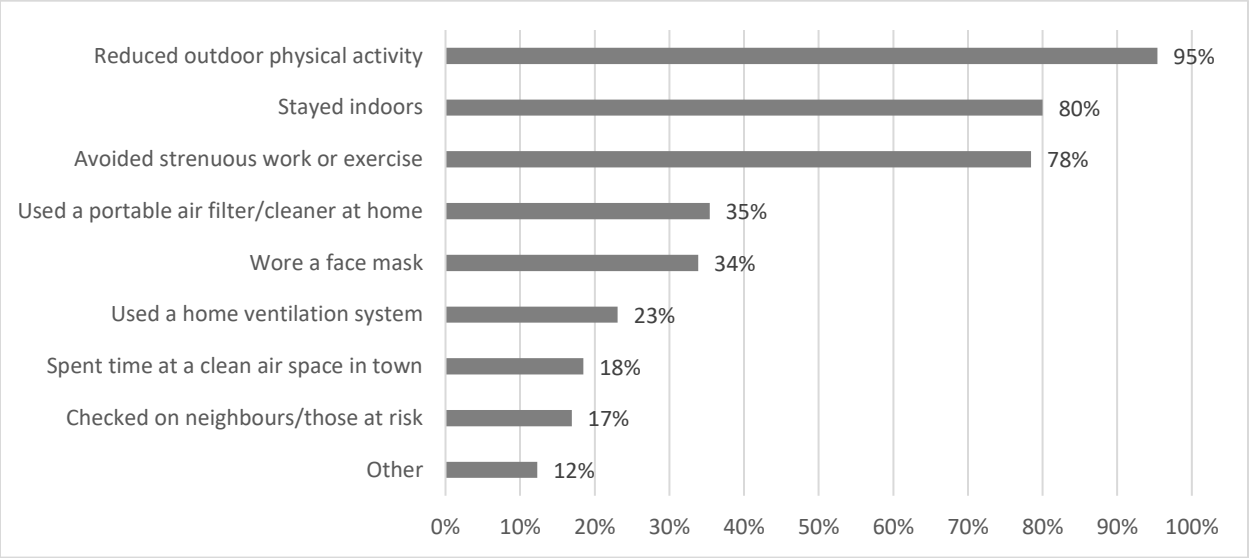
Most participants (43%) indicated that 30-35°C was the minimum temperature that would cause them to start changing their behaviour (Figure 20).

Figure 20 Minimum temperature causing changes in behaviour



For wildfire smoke, the most common behavioural changes consisted of altering or reducing outdoor physical activity and staying indoors with windows, doors, and curtains closed (80% or more participants chose these actions).

Figure 21 Behavioral changes in response to wildfire smoke



Out of the participants who would not change their behaviour during these events (7% and 6% for smoke and heat, respectively), the main reason for their response was because they were not concerned about the effects from these impacts.

Table 14 displays the differences between each at-risk group and the average for behavioural changes taken to manage smoke and heat. During extreme heat events, those who are not at risk, outdoor workers, those with chronic illness, and low-income individuals are more likely to take action to protect themselves from the heat. This includes avoiding strenuous work or exercise, relocating to a cooler location, changing the timing of outdoor activity, and staying hydrated. When wildfire smoke events occur, seniors, and those with chronic illness are more likely to improve ventilation by wearing a face mask and using a home ventilation system, whereas low-income individuals and outdoor workers are less likely to do so. New Canmore residents are less likely to perform any of these actions when either event occurs.

Table 14 Comparison of current actions to manage smoke and heat between subgroups and the average

At-risk group	Comparison to average: Heat	Comparison to average: Smoke
Participates in strenuous outdoor activities (n=31)	same as average	same as average
Children/infants (n=18)	Checked on neighbours 16% less often than average	same as average
Chronic illness (n=18)	More likely to stay hydrated by 18%	More likely to wear a face mask by 22%
Seniors (n=16)	same as average	More likely to use a home ventilation system by 22% and check on neighbours by 16%

In 'no risk' group (n=13)	More likely to avoid strenuous work or exercise by 15%	same as average
Work Outdoors (n=11)	More likely to relocate to a cooler location by 24%, avoid strenuous work or exercise by 29%, and change the timing of outdoor activity by 19%	Less likely to use a portable air filter by 24%, and use a home ventilation system by 21%; More likely to avoid strenuous work or exercise by 27%
New to Canmore (n=7)	Less likely to close curtains or blinds by 27%, keep doors and windows closed during the day by 37%, relocate to a cooler location by 21%, and avoid strenuous work or exercise by 19%	Less likely to use a portable air filter by 33%, use a home ventilation system by 21%, wear face masks by 17%, and reduce strenuous work or exercise by 44%
Low Income (n=5)	More likely to stay hydrated by 24%, and relocate to a cool location by 19%; Less likely to use fans at home by 23% and keep doors and windows closed during the day by 20%	Less likely to use a portable air filter by 33% and use a home ventilation system by 21%

Use of community resources and supports for extreme heat

Figure 22 displays the ranking of community resources that survey participants would use during extreme heat events. Participants were asked to rate how likely they would be to use these resources, ranging from 1 (very unlikely) to 4 (very likely). Most participants indicated that they would be most likely to use swimming facilities at indoor recreation centres (34%), followed by an accessible indoor cooling centre (30%). Public water stations, local lakes, and shared outdoor public spaces were less desirable choices for participants.

Figure 22 Use of community resources during extreme heat events

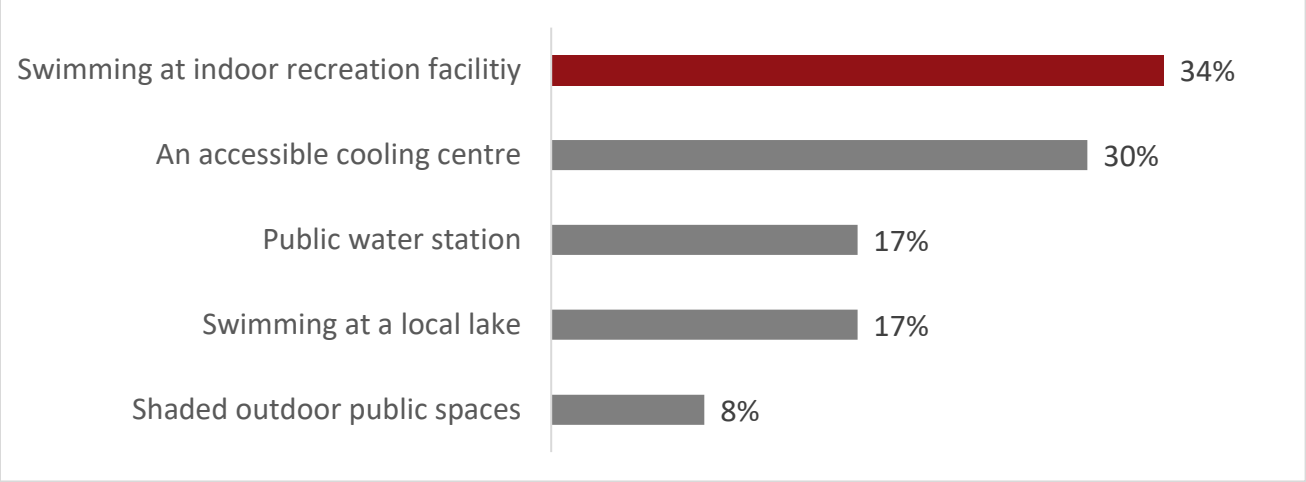


Table 15 compares the responses between each at-risk group and the average for the use of community resources during extreme heat events. Children and low-income individuals are less likely to swim during extreme heat events, whereas those who are at no risk are more likely to do so. Seniors are less likely to

use a cooling centre and those with chronic illness are the opposite. New Canmore residents are less likely to use any community resources overall.

Table 15 Comparison of community resources used to manage extreme heat between at-risk groups and the average

Subgroup	Comparison to average
Participates in strenuous outdoor activities (n=31)	Same as average
Children/infants (n=18)	Less likely to swim indoors by 11% or outdoors by 17%
Chronic illness (n=18)	More likely to use an accessible cooling centre by 17%
Seniors (n=16)	Less likely to use an accessible cooling centre by 18%
In 'no risk' group (n=13)	More likely to swim indoors by 20% or outdoors by 21%
Work Outdoors (n=11)	Same as average
New to Canmore (n=7)	Less likely to do any of these actions by 13% (less likely to use a cooling centre by 16%, swim indoors by 20% or outdoors by 17%)
Low Income (n=5)	Less likely to swim outdoors by 17% or use public water stations by 17%

Preferences for cooling and clean air centres

The survey asked a variety of questions relating to the usage of cooling and clean air centres during heat and smoke events. The majority of participants (56%) indicated that they would be unlikely to use a clean air centre during smoke events. However, if one was provided to them, over 30% of participants rated wheelchair accessibility (35%), within walking distance of their home (34%), and having overnight accommodation (32%) to be the most important features of these facilities (Figure 23).

Figure 23 Most important features of cooling and clean air centres

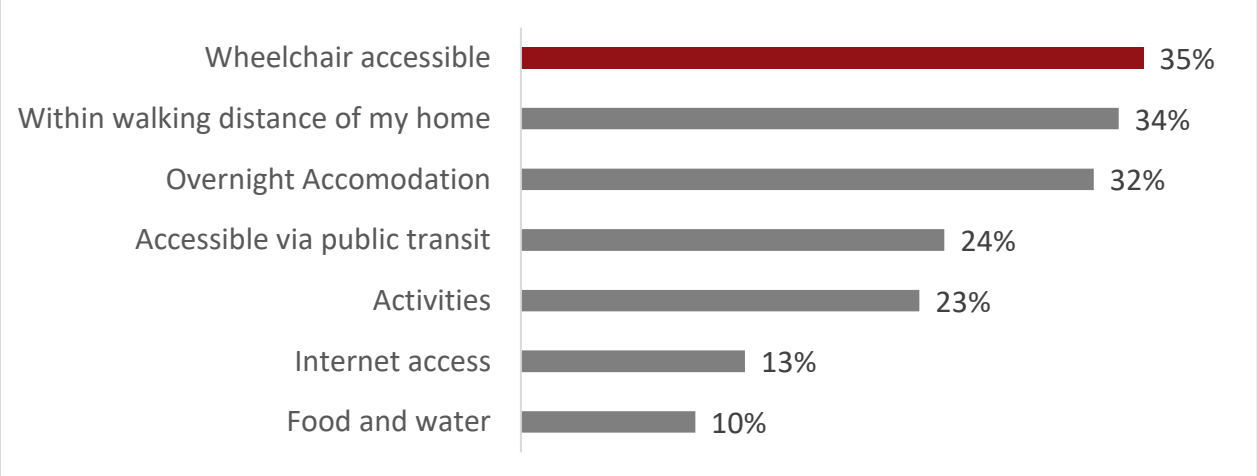


Table 16 shows the differences between how likely each at-risk group would be to use a cooling or clean air centre compared to the average. In summary, new Canmore residents would be more likely to use these facilities, whereas those with chronic illness would be less likely to do so.

Table 16 Comparison of the likelihood of using a cooling or clean air centre between at-risk groups and the average

Subgroup	Comparison to average
Participates in strenuous outdoor activities (n=31)	same as average
Children/infants (n=18)	same as average
Chronic illness (n=18)	15% less likely to use a community clean air centre than average
Seniors (n=16)	same as average
In 'no risk' group (n=13)	same as average
Work Outdoors (n=11)	same as average
New to Canmore (n=7)	15% more likely to use a community clean air centre than average
Low Income (n=5)	same as average

Table 17 provides a comparison between features that each subgroup would prefer in these facilities and the average. Outdoor workers are more likely to request internet access whereas low-income individuals would like to see a facility that is accessible by active transport and has activities to do in the building.

Table 17 Comparison of cooling and clean air centre features between at-risk groups and the average

Subgroup	Comparison to average
Participates in strenuous outdoor activities (n=31)	same as average
Children/infants (n=18)	same as average
Chronic illness (n=18)	same as average
Seniors (n=16)	same as average
In 'no risk' group (n=13)	same as average
Work Outdoors (n=11)	More likely to request internet access by 24%
New to Canmore (n=7)	same as average
Low Income (n=5)	More likely to recommend a centre that is within walking distance by 26%, accessible by public transit by 16%, and has activities to do by 17%

Additional recommendations to manage heat and smoke

The last question on the survey asked participants if they had any other comments, questions or concerns regarding the creation of Emergency Response Plans for extreme heat and wildfire smoke. Below is a summary of additional strategies or actions the Town could take based on their responses:

- Safe zones for both wildfire smoke and extreme heat would be an excellent idea
- The prescribed monitor burns and MPB programs are essential to the health of Canmore
- It would be helpful to have as much advance notice of smoke and heat events as possible, e.g.: 2 or more days
- The town could provide more information on steps that people can take to keep smoke out of their homes
- Would like to see funding for portable HEPA filters to improve the air quality in at least the rooms in the house where people sleep. Also, advice on brands that work and their limitations
- Some of the town communication about fire pits that can be used could be improved. It might be better just to say no wood burning on all smoky days rather than trying to say what types of pits are ok to use.
- Use more channels to post alerts rather than just Facebook
- Would like to see the town addressing the potential for wildfire events that create these smoky conditions by addressing the fuel loading in the valley beyond the neighborhood fire smarting, (the forested slopes above town on provincial and private lands)
- Having cooling/clean air fans available to borrow, rent, or buy would allow people to stay in their homes rather than be displaced and have the inconvenience of a cooling centre. Any services provided should prioritize residents (free) over tourists/visitors (pay for use)
- Alerting residents to weather conditions and smoke conditions is already provided by Environment Canada and several other resources. Encouraging individual capacity building and resiliency may be a better investment of time and resources than duplicating existing services
- Everyone should have to wear masks in cooling centres to prevent the spread of diseases (e.g., COVID-19)
- Funding should be spent on sprinkler systems for homes and revising the roads so they can accommodate mass evacuations during wildfires
- Would like to encourage the Town of Canmore to communicate with the Bow Valley Clean Air Society around their efforts to request that Fire Smart / pine beetle kill fires use proven air curtain technology to reduce particulates and the emissions coming off of these prescribed fires

APPENDIX E: EXAMPLES OF KEY MESSAGES AND COMMUNICATIONS FOR EXTREME HEAT

Extreme Heat Preparedness

Before the heat

Heat illnesses are preventable. Extreme heat events can aggravate existing medical conditions and lead to serious health effects such as **heat exhaustion** or more serious **heatstroke**. Heat-related illnesses can happen when temperatures are higher for a number of days, particularly when the nighttime temperatures do not drop. There are **simple steps** you can take before a heat event occurs to protect yourself, your family and your neighbours.

Who is at risk from heat?

Certain individuals have a higher risk of developing heat-related illnesses; this is due to factors such as age, medical conditions, social factors, or working conditions:

- Older adults (60+)
- People who are pregnant
- People who live alone or are socially isolated
- Infants and young children
- People who experience unstable housing
- People with limited mobility
- People with pre-existing health conditions such as diabetes, heart disease or respiratory illness
- People who use substances
- People who work outdoors or in hot environments
- People with mental illness such as schizophrenia, depression, or anxiety
- Some medications also increase risks. Ask a pharmacist whether your medications will impact your ability to cope with heat and follow their recommendations.

Be prepared

- Prepare a personal health plan/family plan for extreme heat events.
- Consult with your doctor for additional health advice based on your medical status (e.g., modifications to activities, medication or fluid intake).
- Know temperatures indoors and outdoors - by checking local weather forecasts and the thermostat inside your home.
- Be aware of community options and needs and prepare a list of contact numbers or web links where you can get help.
- Consider having a 'Heat Buddy' to check in on you at least twice per day if you live alone. If you know someone who lives alone, consider checking in on them as their 'Heat Buddy!'
- Be well stocked with supplies to avoid having to go shopping during an event (cool drinks, food and medications).
- Top up vehicle fuel tank in case you need to relocate to a cooler place.
- Make sure air-conditioners or fans are working properly before summer starts.

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat

Alberta

Prepare your home

- Install and close curtains, blinds or awnings in windows to deflect the heat.
- Identify cool zones in your home such as basements or one room that can be kept cooler.
- If feasible, install a window air conditioner in at least one room.
- Have fans available to help move cooler air indoors during the late evening and early morning hours.

Stay cool

- **Stay cool indoors**: If you do not have an air conditioner, prepare a list of the nearest air-conditioned spaces or cooling centres that can accommodate your needs (e.g., wheelchair accessible, children's activities, pet accommodations) and include how to get there (e.g., own vehicle, family, friend, public transport). Examples include:
  - Shopping malls
  - Movie theaters
  - Places of worship
  - Libraries
  - Community centers
  - Parks and green spaces
  - Swimming pools
  - Spray Parks
  - Indoor recreational facilities
- **Schedule outdoor activities carefully**: Lower your activity level and avoid strenuous activity during the heat. Plan errands or outdoor activities early or late in the day when it is generally cooler. Rest often in shady areas to allow your body to cool and recover.
- **Wear appropriate clothing**: Avoid direct sun by staying in the shade and wearing a hat and protective clothing. Use sunscreen and UV-protective eyewear.
- **Never leave people or pets alone in closed vehicles or in direct sunlight.**

Stay hydrated

- Drink plenty of water before you feel thirsty. Be aware that sugary, caffeinated or alcoholic drinks cause dehydration.
- **Warning**: Some medications (such as diuretics) may make you more likely to become dehydrated. Talk with your doctor about appropriate water intake during hot weather.

Cooling Tips:

Fans cannot effectively reduce body temperatures or prevent heat-related illness in people at-risk. Do not rely on fans as your primary cooling method during a Heat Warning.

Take a cool shower or bath, or go for a swim to draw heat from your body.

Sleep with a wet sheet or in a wet shirt.

Avoid using your oven or other appliances (e.g., large screen televisions) that could heat up your home more.

If it is safe, open windows and doors in evening to passively cool your home.

Stay informed

Visit www.alberta.ca/ExtremeHeat for more information and resources to help you stay safe.

Subscribe to ECCC WeatherCan App (for heat and air quality).

ECCC Public Alerts website for a list of current alerts and Heat Warning thresholds for Alberta.

Check for updates: Extreme heat and air quality events can coincide. Monitor your local news, weather and air quality alerts.

Know the signs of extreme heat illness and what to do.

Monitor those at high risk by using the Health Check during extreme heat events.

Contact information

Any questions regarding this factsheet can be addressed to: Extreme.Heat@gov.ab.ca

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat
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Source: Alberta Government, Extreme heat preparedness: before the heat, July 2022 [https://www.alberta.ca/extreme-heat.aspx]

BE PREPARED FOR EXTREME HEAT

Extreme heat

Everyone has some level of risk to the harmful effects of extreme heat. Reduce your risk of serious health issues (even death) by being prepared before a heat wave occurs.

Who's most at risk?

- Older adults
- Infants and young children
- Women who are pregnant
- People who work and exercise outdoors
- People with reduced mobility
- People experiencing homelessness
- People who live alone or are socially isolated
- People with pre-existing medical conditions and illnesses
- People with substance use disorders
- People living in high density housing with no indoor cooling

What can you do?

Keep you and your loved ones safe by having a plan and the supplies you need to stay cool, hydrated and informed.

Stay Cool

Indoors: Identify cool zones in your home to stay comfortable and drink plenty of water. At night, open windows and use fans to pull cool air indoors. Before bed take a cool shower and apply a cold towel to your neck.

A digital thermometer in your home can help you monitor the heat. If it becomes too hot, go to an air-conditioned shelter.

Outdoors: Plan activities during the coolest part of the day. Avoid direct sun, seek shade, and wear sunblock, a hat and light coloured loose-fitting clothing. Never leave people or pets alone in closed vehicles.

Stay Hydrated

Drink plenty of water before you feel thirsty, be aware that sugary, caffeinated and alcoholic drinks cause dehydration. Remind others to drink water too.

Be Prepared

When hot weather is in the forecast, make a habit of gathering supplies to keep your household (including your pets) cool and hydrated. Make a personal health emergency plan for those who are most at risk.

Know the signs of heat illness, set up a buddy system to stay connected with neighbours, friends, family, and those who are high risk, to help keep each other safe. Call 9-1-1 if anyone is unconscious or needs medical help.

Stay Informed

Extreme heat can affect air quality and disrupt services like power and water.

Use the WeatherCan App or Public Alert website for weather updates and Special Air Quality Statements in your area. You can also subscribe for updates from your utility providers.

More information on alberta.ca/ExtremeHeat

Alberta

Source: Alberta Government, Extreme heat infographic: Be prepared for extreme heat, July 2022 [https://www.alberta.ca/extreme-heat.aspx]

Extreme Heat Information Sheet

General Public

Extreme heat events can aggravate existing medical conditions and lead to serious health effects such as **heat exhaustion** or more serious **heatstroke**. It is important to stay cool, stay hydrated, and be informed. There are **simple steps** you can take to protect yourself, your family, friends and neighbours.

Watch for signs of heat illness

Heat exhaustion

- Headache
- Skin rash
- Rapid breathing and heart rate
- Muscle cramps
- Extreme thirst
- Dizziness or fainting
- Dark urine and decreased urination
- Nausea or vomiting
- Heavy sweating

What you should do

- Move to a cool place out of the sun
- Lay person down and apply cool wet cloths
- Give sips of water
- Consult with a medical expert

Heatstroke is a medical emergency - Call 911 immediately

- High body temperature
- Lack of sweat, very hot red skin
- Strong, rapid pulse
- Dizziness, fainting or unconsciousness
- Confusion and lack of coordination
- Nausea

What you should do

- Move to a cool place out of the sun
- Remove outer clothing and shoes
- Wrap in a wet towel or cloth
- Do not give fluids

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat

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Who is at risk from heat?

Everyone is at risk from heat related illnesses when it is hot out. Certain individuals have a higher risk of developing heat-related illnesses due to factors such as age, medical conditions, social factors, or working conditions:

- Older adults (60+)
- People who are pregnant
- People who live alone or are socially isolated
- Infants and young children
- People who are experiencing unstable housing
- People with limited mobility
- People with pre-existing health conditions such as diabetes, heart disease or respiratory illness
- People who use substances
- People who work outdoors or in hot environments
- People with mental illness such as schizophrenia, depression, or anxiety
- Some medications also increase your risk. Ask a pharmacist whether your medications impact your ability to cope with heat and follow their recommendations.

When do heat related illnesses usually happen?

- Some people are more sensitive to the effects of heat than others. However, for most people, heat-related illnesses happen when temperatures remain high for a few days, especially when nighttime temperatures do not drop.
- Know your daytime and nighttime temperatures by checking your local weather forecasts and by using a thermostat in your home.

What should you do? Be prepared

- Be aware of community options, and your needs. Prepare a list of contact numbers or web links where you can get help.
- Know if your family, friends and neighbours are at risk and may need assistance.
- Consider having a 'Heat Buddy' to check in on you at least twice per day if you live alone. If you know someone who lives alone, consider checking in on them as their 'Heat Buddy!'
- Check regularly on children, the elderly, and persons with disabilities and chronic illness; be sure they are cool and well hydrated.
- Be well stocked to avoid having to go shopping during an event (cool drinks, food and medications).
- Top up vehicle fuel tank in case you need to relocate to somewhere cool.

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat

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Source: Alberta Government, Extreme heat information sheet: general public, July 2022 [https://www.alberta.ca/extreme-heat.aspx]

Take Action - Heat illnesses are preventable!

Stay cool

- Avoid direct sun, use shady spaces, or go inside.
- Wear broad spectrum sunscreen (SPF30 or more).
- Wear light-colored, loose-fitting, clothing that covers the skin, sunglasses and a hat.
- Postpone outdoor activities to a cooler time of day or reschedule to another day.
- Keep blinds, curtains and doors closed during the day.
- Ensure any air conditioners are in working order. If feasible, install a window air conditioner in at least one room.
- Ensure any fans are in working order. Fans can help move cooler air indoors during the late evening and early morning hours, but should not be relied upon as a primary cooling method when indoor temperatures are above 35 degrees Celsius.
- Avoid using your oven to prepare meals.
- If safe, open doors and window at night.
- Take cool showers or baths or take a swim to cool off.
- Visit air-conditioned spaces (mall, library, recreational centre, cooling centres).
- Never leave a person or pet in a closed vehicle or in direct sun.

Stay hydrated

- Drink plenty of water before you feel thirsty. Be aware that sugary, caffeinated or alcoholic drinks cause dehydration.
- Eat hydrating foods such as fruits and fresh vegetables.

Be informed

- Know the signs of extreme heat illness and what to do.
- Stay up to date on heat alerts so you know when to take extra care.
- Consider buying an additional thermometer to monitor the temperature in your most frequently used space(s) if different from the room where your thermostat is located.
- Review actions before a heat event and have a plan.
- Check on family, friends and neighbours who may be at risk.

Know where to find more information:

Visit www.alberta.ca/ExtremeHeat for moe information and resources to help you stay safe.

Subscribe to ECCC WeatherCan App (for heat and air quality)

ECCC Public Alerts website for a list of current alerts and Heat Warning thresholds for Alberta.

Contact information

Questions regarding this factsheet can be addressed to: Extreme.Heat@gov.ab.ca

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat

Alberta

Extreme Heat Information Sheet
Seniors

Older adults may be faced with other factors that can put them at increased risk during extreme heat events. These factors may include chronic illnesses, medications that interfere with the body's cooling mechanisms, social isolation and poverty. Heat can aggravate existing medical conditions and have serious health effects such as **heat exhaustion** or more serious **heatstroke**. It is important to **stay cool, stay hydrated and be informed**. There are simple steps you can take to protect yourself, your family, friends and neighbours.

Watch for signs of heat illness

Heat exhaustion

- Headache
- Skin rash
- Rapid breathing and heart rate
- Muscle cramps
- Extreme thirst
- Dizziness or fainting
- Dark urine and decreased urination
- Nausea or vomiting
- Heavy sweating

What you should do

- Move to a cool place out of the sun
- Lay person down and apply cool wet cloths
- Give sips of water
- Consult with a medical expert

Heatstroke is a medical emergency - Call 911 immediately

- High body temperature
- Lack of sweat, very hot red skin
- Strong, rapid pulse
- Dizziness, fainting or unconsciousness
- Confusion and lack of coordination
- Nausea

What you should do

- Move to a cool place out of the sun
- Remove outer clothing and shoes
- Wrap in a wet towel or cloth
- Do not give fluids

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat
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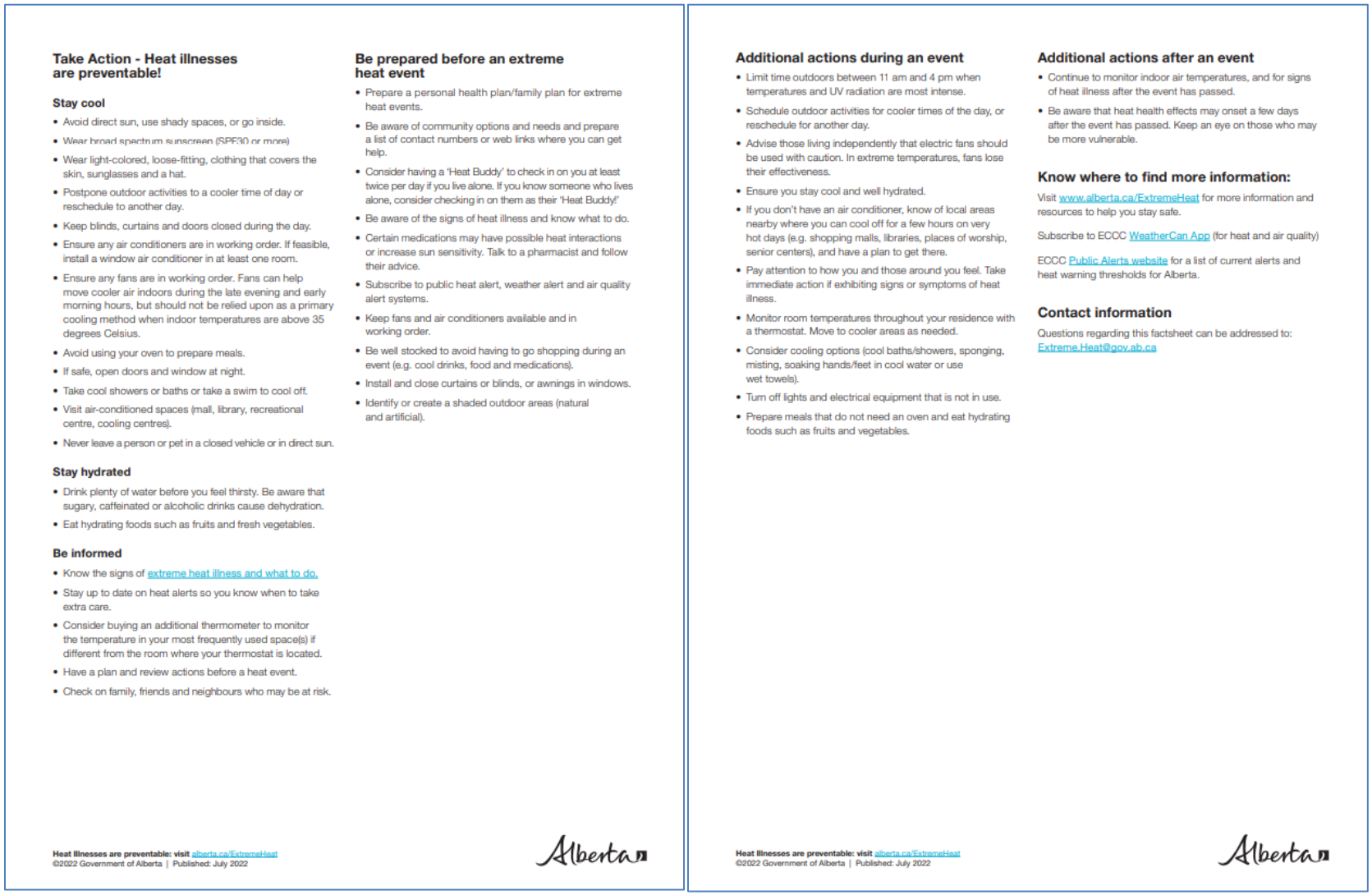
Source: Alberta Government, Extreme heat information sheet: general public (left) and Extreme heat information sheet: seniors (right), July 2022 [https://www.alberta.ca/extreme-heat.aspx]



Take Action - Heat illnesses are preventable!

Stay cool

- Avoid direct sun, use shady spaces, or go inside.
- Wear broad spectrum sunscreen (SPF30 or more)
- Wear light-colored, loose-fitting, clothing that covers the skin, sunglasses and a hat.
- Postpone outdoor activities to a cooler time of day or reschedule to another day.
- Keep blinds, curtains and doors closed during the day.
- Ensure any air conditioners are in working order. If feasible, install a window air conditioner in at least one room.
- Ensure any fans are in working order. Fans can help move cooler air indoors during the late evening and early morning hours, but should not be relied upon as a primary cooling method when indoor temperatures are above 35 degrees Celsius.
- Avoid using your oven to prepare meals.
- If safe, open doors and window at night.
- Take cool showers or baths or take a swim to cool off.
- Visit air-conditioned spaces (mall, library, recreational centre, cooling centres).
- Never leave a person or pet in a closed vehicle or in direct sun.

Stay hydrated

- Drink plenty of water before you feel thirsty. Be aware that sugary, caffeinated or alcoholic drinks cause dehydration.
- Eat hydrating foods such as fruits and fresh vegetables.

Be informed

- Know the signs of extreme heat illness and what to do.
- Stay up to date on heat alerts so you know when to take extra care.
- Consider buying an additional thermometer to monitor the temperature in your most frequently used space(s) if different from the room where your thermostat is located.
- Have a plan and review actions before a heat event.
- Check on family, friends and neighbours who may be at risk.

Be prepared before an extreme heat event

- Prepare a personal health plan/family plan for extreme heat events.
- Be aware of community options and needs and prepare a list of contact numbers or web links where you can get help.
- Consider having a 'Heat Buddy' to check in on you at least twice per day if you live alone. If you know someone who lives alone, consider checking in on them as their 'Heat Buddy!'
- Be aware of the signs of heat illness and know what to do.
- Certain medications may have possible heat interactions or increase sun sensitivity. Talk to a pharmacist and follow their advice.
- Subscribe to public heat alert, weather alert and air quality alert systems.
- Keep fans and air conditioners available and in working order.
- Be well stocked to avoid having to go shopping during an event (e.g. cool drinks, food and medications).
- Install and close curtains or blinds, or awnings in windows.
- Identify or create a shaded outdoor areas (natural and artificial).

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat

Alberta

Additional actions during an event

- Limit time outdoors between 11 am and 4 pm when temperatures and UV radiation are most intense.
- Schedule outdoor activities for cooler times of the day, or reschedule for another day.
- Advise those living independently that electric fans should be used with caution. In extreme temperatures, fans lose their effectiveness.
- Ensure you stay cool and well hydrated.
- If you don't have an air conditioner, know of local areas nearby where you can cool off for a few hours on very hot days (e.g. shopping malls, libraries, places of worship, senior centers), and have a plan to get there.
- Pay attention to how you and those around you feel. Take immediate action if exhibiting signs or symptoms of heat illness.
- Monitor room temperatures throughout your residence with a thermostat. Move to cooler areas as needed.
- Consider cooling options (cool baths/showers, sponging, misting, soaking hands/feet in cool water or use wet towels).
- Turn off lights and electrical equipment that is not in use.
- Prepare meals that do not need an oven and eat hydrating foods such as fruits and vegetables.

Additional actions after an event

- Continue to monitor indoor air temperatures, and for signs of heat illness after the event has passed.
- Be aware that heat health effects may onset a few days after the event has passed. Keep an eye on those who may be more vulnerable.

Know where to find more information:

Visit www.alberta.ca/ExtremeHeat for more information and resources to help you stay safe.

Subscribe to ECCC WeatherCan App (for heat and air quality)

ECCC Public Alerts website for a list of current alerts and heat warning thresholds for Alberta.

Contact information

Questions regarding this factsheet can be addressed to: Extreme.Heat@gov.ab.ca

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat
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Source: Alberta Government, Extreme heat information sheet: seniors, July 2022 [https://www.alberta.ca/extreme-heat.aspx]

Extreme Heat Information Sheet
Schools

Extreme heat can greatly impact children due to their unique physiological characteristics and dependence on caregivers. There are **simple steps** you can take to protect children from heat related illnesses such as **heat exhaustion** and **heatstroke**. It is important to stay cool, stay hydrated, and be informed.

Watch for signs of heat illness

Heat exhaustion

- Headache
- Skin rash
- Rapid breathing and heart rate
- Muscle cramps
- Extreme thirst
- Dizziness or fainting
- Dark urine and decreased urination
- Nausea or vomiting
- Heavy sweating

What you should do

- Move to a cool place out of the sun
- Lay person down and apply cool wet cloths
- Give sips of water
- Consult with a medical expert

Heatstroke is a medical emergency - Call 911 immediately

- High body temperature
- Lack of sweat, very hot red skin
- Strong, rapid pulse
- Dizziness, fainting or unconsciousness
- Confusion and lack of coordination
- Nausea

What you should do

- Move to a cool place out of the sun
- Remove outer clothing and shoes
- Wrap in a wet towel or cloth
- Do not give fluids

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat

Alberta

Take Action - Heat illnesses are preventable!

Stay cool

- Avoid direct sun, use shady spaces, or go inside.
- Wear broad spectrum sunscreen (SPF30 or higher).
- Wear light-colored, loose-fitting clothing that covers the skin, sunglasses and a wide brimmed hat.
- Postpone outdoor activities to a cooler time of day or another day.
- Keep blinds, curtains and outside doors closed during the day.
- Staff should role model appropriate behaviors for children.
- Use misting sprays to keep cool.
- Visit air-conditioned spaces (mall, library, recreational centre, cooling centres).
- Never leave children in a closed vehicle or in direct sun.

Stay hydrated

- Encourage students to drink plenty of water throughout the day.
- Diluted fruit juices are a good option.
- Eat hydrating foods such as fruits and fresh vegetables.

Be informed

- Review actions before a heat event and have a plan.
- **Know the signs** of extreme heat illness and what to do.
- Stay up to date on heat alerts so you know when to take extra care.
- Check regularly on children to be sure they are cool and hydrated.

Be prepared before an event

- Prepare a school extreme heat plan which includes:
  - An emergency staffing plan.
  - A plan in the event of power a failure.
  - Procedures for relocation or evacuation.
  - A communication strategy to notify staff, students and families of the extreme heat event and what actions they need to take.
- Ensure staff and students can identify the signs of heat illness and know what to do.
- Subscribe to public heat alert, weather alert and air quality alert systems.
- Extreme heat and air quality events often coincide. Monitor your local news, weather and air quality alerts.
- Install curtains, blinds or awnings in windows.
- Ensure any air conditioners are in working order.
- Ensure any fans are in working order. Fans can help move cooler air indoors during the late evening and early morning hours, but should not be relied upon as a primary cooling method when indoor temperatures are above 35 degrees Celsius.
- Be well stocked with cool drinks.
- Develop shaded outdoor areas in the school yard (natural and artificial).

Additional actions during an event

- Keep students and staff out of the heat as much as possible, and ensure everyone is well hydrated.
- Monitor children with disabilities and check the heat on metal and vinyl parts of wheelchairs and medical equipment.
- Monitor children for signs and symptoms of heat illness. Follow first aid procedures immediately.
- Monitor room temperatures throughout the school.
- Move to air-conditioned rooms or cooler rooms within the school if possible.
- Turn off lights and electrical equipment that is not in use.
- Prepare meals that do not need an oven and provide hydrating foods and snacks such as fruit and vegetables.
- Schedule outdoor activities for cooler times of the day or shift to indoor activities.
- Check the heat of outdoor equipment before use (e.g., slides, monkey bars, benches and picnic tables).
- Provide parents with information on how to keep children cool, and provide the link to Alberta Health's website for additional resources.

Know where to find more information:

Visit www.alberta.ca/ExtremeHeat for more information and resources to help you stay safe.

Subscribe to ECCC WeatherCan App (for heat and air quality)

ECCC Public Alerts website for a list of current alerts and heat warning thresholds for Alberta.

Contact information

Questions regarding this factsheet can be addressed to: Extreme.Heat@gov.ab.ca

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat

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Source: Alberta Government, Extreme heat information sheet: schools, July 2022 [https://www.alberta.ca/extreme-heat.aspx]

Extreme Heat Information Sheet

Child Care Facilities

Extreme heat can have a greater impact on young children due to their unique physiological characteristics and high dependence on caregivers. There are **simple steps** you can take to protect infants and young children from heat related illnesses such as heat exhaustion and heat stroke. It is important to stay cool, stay hydrated, and be informed.

Watch for signs of heat illness

Heat exhaustion

- Headache
- Skin rash
- Rapid breathing and heart rate
- Muscle cramps
- Extreme thirst
- Dizziness or fainting
- Dark urine and decreased urination
- Nausea or vomiting
- Heavy sweating

What you should do

- Move to a cool place out of the sun
- Lay person down and apply cool wet cloths
- Give sips of water
- Consult with a medical expert

Heatstroke is a medical emergency - Call 911 immediately

- High body temperature
- Lack of sweat, very hot red skin
- Strong, rapid pulse
- Dizziness, fainting or unconsciousness
- Confusion and lack of coordination
- Nausea

What you should do

- Move to a cool place out of the sun
- Remove outer clothing and shoes
- Wrap in a wet towel or cloth
- Do not give fluids

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat

Alberta

Take Action - Heat illnesses are preventable!

Stay cool

- Avoid direct sun, use shady spaces, or go inside.
- Wear broad spectrum sunscreen (SPF30 or higher).
- Wear light-colored, loose-fitting clothing that covers the skin, sunglasses and a wide brimmed hat.
- Postpone outdoor activities to a cooler time of day or another day.
- Keep blinds, curtains and doors closed during the day.
- Staff should role model appropriate behaviors for children.
- Use misting sprays to keep cool.
- Visit air-conditioned spaces (mall, library, recreational centre, cooling centres).
- Never leave infants or children in a closed vehicle or in direct sun.

Stay hydrated

- Offer plenty of water or diluted juices throughout the day.
- Eat hydrating foods such as fruits and fresh vegetables.

Be informed

- Know the signs of extreme heat illness and what to do.
- Stay up to date on heat alerts so you know when to take extra care.
- Review actions before a heat event and have a plan.
- Check regularly on infants and young children to be sure they are cool and hydrated.

Be prepared before an event

- Prepare a facility extreme heat policy and plan which includes:
  - an emergency staffing plan
  - a plan in the event of a power failure
  - procedures for relocation or evacuation
  - a communication strategy to notify families and staff of a heat event.
- Ensure staff can identify the signs of heat illness and know what to do.
- Extreme heat and air quality events often coincide. Know where to look for heat and weather advisories.
- Ensure any air conditioners are in working order. If feasible, install a window air conditioner in at least one room.
- Ensure any fans are in working order. Fans can help move cooler air indoors during the late evening and early morning hours, but should not be relied upon as a primary cooling method when indoor temperatures are above 35 degrees Celsius.
- Be well provisioned with cool drinks and hydrating foods such as fruits and vegetables.
- Develop shaded outdoor areas (natural and artificial).

Additional actions during an event

- Activate policies and plans to deal with extreme temperatures.
- Keep children out of the heat a much as possible and ensure everyone is well hydrated.
- Limit time outdoor between 11am- 4pm when temperatures and UV radiation are most intense. Offer regularly scheduled rest periods.
- Schedule outdoor activities for cooler times of the day or shift to indoors.
- When outdoors, stay in the shade as much as possible (natural or artificial).
- Check the heat of outdoor equipment before use (slides, monkey bars, benches and picnic tables).
- Monitor children with disabilities and check the heat on metal and vinyl parts of wheelchairs and medical equipment.
- Monitor children for signs and symptoms of heat illness. Follow first aid procedures immediately.
- Monitor room temperatures throughout the facility.
- Move children to air-conditioned rooms or cooler rooms within the facility as needed.
- Prepare meals that do not need an oven and provide hydrating snacks and meals (fruits and vegetables).
- Provide parents with information on how to keep children cool, and provide the link to Alberta Health's website for additional resources.

Know where to find more information:

Visit www.alberta.ca/ExtremeHeat for more information and resources to help you stay safe.

Subscribe to ECCC WeatherCan App (for heat and air quality)

ECCC Public Alerts website for a list of current alerts and heat warning thresholds for Alberta.

Contact information

Questions regarding this factsheet can be addressed to: Extreme.Heat@gov.ab.ca

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat
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Source: Alberta Government, Extreme heat information sheet: childcare facilities, July 2022 [https://www.alberta.ca/extreme-heat.aspx]

Extreme Heat Information Sheet

Adult Care Facilities

Adults who reside or use a care facility may face other factors that can put them at increased risk during extreme heat events. These factors may include chronic illnesses, medications that interfere with the body's cooling mechanisms, social isolation and poverty. Extreme heat can aggravate existing medical conditions and have serious health effects such as **heat exhaustion** or more serious **heatstroke**. It is important to stay cool, stay hydrated and be informed. There are **simple steps** you can take within your facility.

Watch for signs of heat illness

Heat exhaustion

- Headache
- Skin rash
- Rapid breathing and heart rate
- Muscle cramps
- Extreme thirst
- Dizziness or fainting
- Dark urine and decreased urination
- Nausea or vomiting
- Heavy sweating

What you should do

- Move to a cool place out of the sun
- Lay person down and apply cool wet cloths
- Give sips of water
- Consult with a medical expert

Heatstroke is a medical emergency - Call 911 immediately

- High body temperature
- Lack of sweat, very hot red skin
- Strong, rapid pulse
- Dizziness, fainting or unconsciousness
- Confusion and lack of coordination
- Nausea

What you should do

- Move to a cool place out of the sun
- Remove outer clothing and shoes
- Wrap in a wet towel or cloth
- Do not give fluids

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat

Alberta

Take Action - Heat illnesses are preventable!

Stay cool

- Avoid direct sun, use shady spaces, or go inside.
- Wear broad spectrum sunscreen (SPF30 or more).
- Wear light-colored, loose-fitting, clothing that covers the skin, sunglasses and a hat.
- Postpone outdoor activities to a cooler time of day or reschedule to another day.
- Keep blinds, curtains and outside doors closed during the day.
- Ensure any air conditioners are in working order. If feasible, install a window air conditioner in at least one room.
- Ensure any fans are in working order. Fans can help move cooler air indoors during the late evening and early morning hours, but should not be relied upon as a primary cooling method during extreme heat events.
- Avoid using ovens to prepare meals.
- If safe, open doors and window at night.
- Take cool showers or baths or take a swim to cool off.
- Visit air-conditioned spaces (mall, library, recreational centre, cooling centres).
- Never leave a person or pet in a closed vehicle or in direct sun.

Stay hydrated

- Drink plenty of water before you feel thirsty. Be aware that sugary, caffeinated or alcoholic drinks cause dehydration.
- Eat hydrating foods such as fruits and fresh vegetables.

Be informed

- Know the signs of extreme heat illness and what to do.
- Stay up to date on heat alerts so you know when to take extra care.
- Monitor the temperature inside your residence using a thermostat.
- Review actions before a heat event and have a plan.

Be prepared before an extreme heat event

- Prepare a personal health plan/family plan for extreme heat events.
- Be aware of community options and needs and prepare a list of contact numbers or web links where you can get help.
- Consider having a 'Heat Buddy' to check in on you at least twice per day if you live alone. If you know someone who lives alone, consider checking in on them as their 'Heat Buddy!'
- Be aware of the signs of heat illness and know what to do.
- Certain medications may have possible heat interactions or increase sun sensitivity. Talk to a pharmacist and follow their advice.
- Subscribe to public heat alert, weather alert and air quality alert systems.
- Keep fans and air conditioners available and in working order.
- Be well well stocked with supplies to avoid having to go shopping during an event (cool drinks, food and medications).
- Install and close curtains or blinds, or awnings in windows.
- Identify or create a shaded outdoor areas (natural and artificial).

Heat illnesses are preventable: visit alberta.ca/ExtremeHeat
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Source: Alberta Government, Extreme heat information sheet: adult care facilities, July 2022 [https://www.alberta.ca/extreme-heat.aspx]

PreparedBC

Extreme Heat Preparedness Guide

8. ACTIVATE YOUR PLAN TO STAY COOL

An Extreme Heat Emergency will typically be identified three to four days before the hottest temperatures occur. Check the weather daily when it is hot outside. If an Extreme Heat Emergency alert has been issued, it's time to put your plan into action:

- Relocate to a cooler location if you have planned to do so
- Reconfigure the coolest location in your home so you can sleep there at night
- Check in with your pre-identified heat buddy. If you don't have one, try to reach out to someone you trust as soon as possible
- Put up external window covers to block the sun if you can safely do so
- Close your curtains and blinds
- Ensure digital thermometers have batteries
- Make ice and prepare jugs of cool water
- Keep doors and windows closed between 10 a.m. and 8 p.m. to trap cooler air inside. Open them at 8 p.m. to allow cooler air in, and use fans (including kitchen and bathroom exhaust fans) to move cooler air through the house

TIP: Outdoor temperatures usually peak around 5 p.m. in BC, but indoor temperatures usually peak around 9 or 10 p.m. Sleeping in an air-conditioned space or outside is a good option for staying cool if you can safely do so.

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Extreme Heat Preparedness Guide

During Extreme Heat

9. STAYING COOL INSIDE

In homes without air conditioning, heat builds indoors over the course of a few days. It may stay hotter inside than outside overnight. Without air conditioning, the longer the heat lasts, the more dangerous it becomes.

Take the following steps to keep yourself and members of your household safe:

- If you have air conditioning, turn it on. It does not need to be going full strength to help you stay safe
- If you have air conditioning, and vulnerable friends and family do not, bring them to your home
- If you do not have air conditioning, move to your pre-identified alternate location with air conditioning or cooler spaces
- Sleep in the coolest part of the residence. Outdoor temperatures are usually lower than indoor temperatures overnight, so consider sleeping outside if you can safely do so
- Sleep with a wet sheet or in a wet shirt
- Take cool baths or showers to draw heat from your body
- Drink plenty of water, regardless of whether you feel thirsty. Be aware that sugary or alcoholic drinks cause dehydration
- If you are taking medication or have a health condition, ask your doctor or pharmacist if it increases your health risk in the heat and follow their recommendation
- If your doctor limits the amount you drink, or has you on water pills, ask how much you should drink while the weather is hot

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Source: Government of British Columbia, Extreme heat preparedness guide,2022 [https://www2.gov.bc.ca/gov/content/safety/emergency-management/preparedbc/know-your-hazards/severe-weather/extreme-heat]

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Extreme Heat Preparedness Guide

10. STAYING COOL OUTSIDE

- Lower your activity level and avoid strenuous activity. If you must do errands or plan to exercise, do so early or late in the day when it is generally cooler
- Never leave children or pets in a parked car
- Avoid direct sun by staying in the shade and wearing a hat and protective clothing. Use sunscreen and UV-protective eyewear
- Seek cooler, breezier areas when outdoors, such as large parks near to trees and water
- If you work in a hot environment, discuss and act on ways to decrease heat exposure with your employer and coworkers

TIP: Pets are part of the family too. Make sure they have plenty of water and are with you in cool locations. When outside, stay in shady areas and avoid asphalt and pavement. Those surfaces can burn paws.

11. WHAT TO DO IF YOU ARE GETTING TOO HOT

Overheating can be harmful to your health and potentially deadly. If you're experiencing symptoms such as rapid breathing, rapid heart rate, extreme thirst, and decreased urination with an unusually dark yellow colour, take immediate steps to cool down and seek emergency care:

- Get medical attention, or call 911 or your local emergency number
- Submerge yourself or the person you're helping in cool water
- Remove clothes and apply wet cloths to the skin

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Extreme Heat Preparedness Guide

Heat stroke is an emergency. Call 911 or your local emergency number if you are caring for someone who displays symptoms, then take immediate action to cool them down while waiting for help to arrive.

12. CHECK IN ON YOUR HEAT BUDDY AND NEIGHBOURS

Consider checking in on your pre-identified heat buddy from **page 8**, as well as your neighbours - especially those that are homebound or alone. Check in multiple times a day, especially later in the day when it is hottest.

13. PREPARE FOR WILDFIRES AND SMOKE

Extreme heat can lead to periods of drought and a higher risk of wildfires. For most people, exposure to extreme heat is a bigger risk to health than exposure to wildfire smoke. If you cannot get cool inside, go outside even if there is smoke.

Visit **www.bcwildfire.ca** for information on current wildfire activity, wildfire prevention and active fire bans and restrictions.

Go to **www.preparedbc.ca/wildfires** for information on how to get prepared for a wildfire.

Go to **http://www.bccdc.ca/wildfiresmoke** for details on the health impacts of wildfire smoke.

14. ADDITIONAL RESOURCES

For additional resources, please visit **www.preparedbc.ca**, where you can learn about how to prepare for, respond to and recover from the top hazards in BC, such as wildfires, floods, and earthquakes.

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Source: Government of British Columbia, Extreme heat preparedness guide,2022 [https://www2.gov.bc.ca/gov/content/safety/emergency-management/preparedbc/know-your-hazards/severe-weather/extreme-heat]

Pre-season Notification Communication Materials for Village of Ashcroft, British Columbia

Ashcroft

ADVISORY 1

NEWS RELEASE (Date)

PRE-SEASON
EXTREME HEAT NOTIFICATION

The Village of Ashcroft and Interior Health wish to remind residents that the warmer weather is on its way. To ensure that everyone is prepared and able to stay healthy during extreme heat events we urge you to:

1. Watch for updates if Extreme Heat events are expected
2. Keep a supply of bottled water on hand
3. Make sure everyone has a hat to wear outdoors and has loose fitting, light coloured clothing
4. Have your air conditioner serviced to ensure it is working
5. Be prepared to change your routine – perform your outdoor tasks before 11am or after 5pm
6. Older adults, infants and young children, those with chronic illnesses or on special medication are more at risk with increased heat
7. Check on your friends and neighbours, especially those who may have special challenges, and make sure they are prepared for extreme heat
8. Never leave people or pets inside vehicles during warmer weather
9. Be aware of how to stay healthy in the heat. More information is on the back of this notice

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please take the time to talk to your neighbours and identify residents who may require assistance during lengthy extreme heat events. These may be people who do not have air conditioning, have limited or no form of transportation and no supply of bottled water on hand. It is important that everyone understands the need to cool off during extreme heat events.

If you have any questions, please contact The Village of Ashcroft at 250-453-9161 or check our website at www.ashcroftbc.ca or the Interior Health Extreme Heat Website at www.interiorhealth.ca

EXTREME HEAT NOTIFICATION

Ashcroft

PRE SEASON ADVISORY

The Village of Ashcroft and Interior Health wish to remind residents that the warmer weather is on its way. To ensure that everyone is prepared and able to stay healthy during extreme heat events we urge you to:

1. Watch for updates if Extreme Heat events are expected.
2. Keep a supply of water on hand.
3. Make sure everyone has a hat to wear outdoors and loose fitting, light coloured clothing.
4. Have your air conditioner serviced to ensure it is working.
5. Be prepared to change your routine – perform your outdoor tasks before 11am and after 5 pm.
6. Older adults, infants and young children, those with chronic illnesses or on special medication are more at risk with increased heat.
7. Check on your friends and neighbours, especially those who may have special challenges, and make sure they are prepared for extreme heat.
8. Never leave people or pets inside vehicles during warmer weather.
9. Be aware of how to stay healthy in the heat. Information brochures are available at the HUB, Pool, Village Office, Museum, or view them online at the Village Facebook page or website.
10. Know the signs of Heat Exhaustion and Heat Stroke and learn how to stay healthy in the heat.

PLEASE SPREAD THE WORD TO YOUR NEIGHBOURS

Please take the time to talk to your neighbours and identify residents who require assistance during lengthy extreme heat events. These may be people who do not have air conditioning, have limited or no form of transportation, and no water supply on hand. It is important that everyone understands the need to cool of during extreme heat events.

COOLING CENTRES

The Ashcroft Community Hall at 409 Bancroft Street as well as The HUB at 711 Hill Street will be open to use as cooling centres when extreme heat level 1 & 2 have been reached. This entails daytime temperatures of 35° for 2 days in a row and overnight temperatures at or above 18°.

If you have any questions, please contact The Village of Ashcroft, check our website at www.ashcroftbc.ca, or check the Interior Heath Extreme Heat website at www.interiorhealth.ca

The Village of Ashcroft | www.ashcroftbc.ca | Village of Ashcroft 601 Bancroft St. Ashcroft, BC V0K 1A0
@AshcroftVillage | 250-453-9161

HEAT RELATED ILLNESS

HEAT EXHAUSTION

Symptoms
- Heavy Sweating
- Cold, pale, and clammy skin
- Fast, weak pulse
- Nausea or vomiting
- Muscle Cramps
- Tiredness or Weakness
- Dizziness
- Fainting (passing out)
- Headache

What to do
- Move to a cool place
- Loosen your clothes
- Reduce your body temperature – Put cool, wet cloths on your body or take a cool bath
- SIP water, AVOID caffeine
- If symptoms worsen or lasts longer than 1 hour, get Medical Help.

HEAT STROKE

Symptoms
- High body temperature (103° F or higher)
- Hot, red, dry, or damp skin
- Fast, strong pulse
- Confusion
- Nausea
- Dizziness
- Headache
- Fainting (passing out)

What to do
- Call 911 right away – heat stroke is a medical emergency
- Move the person to a cooler place
- Help lower the person's temperature with cool clothes or cool bath
- Do not give the person anything to drink

If you have any questions, please contact The Village of Ashcroft, check our website at www.ashcroftbc.ca. For more information on heat related illnesses check the Health Link BC website page www.healthlinkbc.ca/health-topics/htske

The Village of Ashcroft | www.ashcroftbc.ca | Village of Ashcroft 601 Bancroft St. Ashcroft, BC V0K 1A0
@AshcroftVillage | 250-453-9161

Source: Village of Ashcroft, British Columbia, Heat Alert and Response System, January 2022 [https://www.alberta.ca/extreme-heat.aspx]

Scientifically sound heat-health messages for the public

1. Heat illnesses are preventable

This message empowers the reader. It reduces barriers to action.

2. While extreme heat can put everyone at risk from heat illnesses, health risks are greatest for: older adults; infants and young children; people with chronic illnesses, such as breathing difficulties, heart conditions, or psychiatric illnesses; people who work in the heat; people who exercise in the heat; homeless people; and low-income earners

Heat-vulnerable individuals—the list should accurately represent populations at higher risk in your community (determined through an assessment of individual- and community-level vulnerabilities).

3. If you are taking medication or have a health condition, ask your doctor or pharmacist if it increases your health risk in the heat and follow their recommendations

Some drugs interfere with the body's ability to maintain normal body temperature. Sensitivity can vary widely, so people should be encouraged to seek advice from their doctors and pharmacists.

4. Heat illnesses include heat stroke, heat exhaustion, heat fainting, heat edema (swelling of hands, feet and ankles), heat rash and heat cramps (muscle cramps). Watch for symptoms of heat illness, which include dizziness or fainting; nausea or vomiting; headache; rapid breathing and heartbeat; extreme thirst; and decreased urination with unusually dark yellow urine. If you experience any of these symptoms during extreme heat, immediately move to a cool place and drink liquids. Water is best.

Urgency of the situation—immediate actions need to be taken when signs of heat illness are seen. If not treated immediately, they may result in a life-threatening condition such as heat stroke. This urgency should be highlighted in the message.

5. Heat stroke is a medical emergency! Call 911 or your local emergency number immediately if you are caring for someone, such as a neighbour, who has a high body temperature and is either unconscious, confused or has stopped sweating. While waiting for help cool the person right away by moving them to a cool place, if you can; applying cold water to large areas of the skin or clothing; and fanning the person as much as possible.

Heat stroke is a medical emergency and requires immediate medical attention, as the mortality rate can be high. Emphasize the immediate need to call 911 or a local emergency number, which should be included in the message.

6. Frequently visit neighbours, friends and older family members, especially those who are chronically ill, to make sure that they are cool and hydrated.

Visitors can help identify signs of heat illness that could be missed over the telephone. Checking with a telephone call is sufficient only for people who have excellent self-care ability. It is essential to use careful judgment of a person's ability for selfcare and past experiences in hot environments when determining how often to visit the person under your care.

7. Drink plenty of cool liquids, especially water, before you feel thirsty to decrease your risk of dehydration. Thirst is not a good indicator of dehydration.

Many people, especially older adults, may be in a state of chronic dehydration because of a reduced ability to feel thirst, the body's reduced ability to react to dehydration and concern over frequent urination. By the time a person feels thirst, they have already lost about 2% of their body water and dehydration has occurred.

8. Reschedule or plan outdoor activities during cooler parts of the day.

Every region has its own micro-climate. Depending on the location of a person's residence, their body could get a heat load from direct sunlight during the day or from pavement and buildings even after the sun sets. It is important to let people decide which time is cooler and more comfortable for outdoor activities. For those who may want to participate in outdoor activities, offer safer options such as rescheduling outdoor activities to a cooler part of the day or another day; exercising in an air-conditioned place rather than heading outdoors; choosing a cooler outdoor location such as a tree-shaded area away from high traffic to avoid high levels of air pollution; or if one of these options is not possible, the activity duration and intensity should be reduced.

9. Wear loose-fitting, light-colored clothing made of breathable fabric.

Clothing thickness and the amount of skin covered will affect the efficiency of heat transfer and the evaporation of sweat from the skin. Insulation, permeability and breathability are characteristics important to consider when determining the most appropriate clothes to wear during extreme heat.

10. Never leave people or pets in your care inside a parked vehicle or in direct sunlight.

It is not feasible to list all people (e.g., infants, those who are chronically ill) who should not be left in the vehicle during extreme heat. The designation "people or pets in your care" implies those with caregiver needs. Indicating "anyone" may appear to be too generic and could result in mistrust and disregard of the message.

11. Take a break from the heat by spending a few hours in a cool place. It could be a tree-shaded area, swimming facility or an air-conditioned spot such as a public building, shopping mall, grocery store, place of worship or public library.

Time needed for sufficient cooling depends on individual characteristics. Every person needs to judge their own comfort level and when they feel refreshed after cooling. Develop this message based on the existing airconditioned resources and programs that are most appropriate for your target audience and their demographics (e.g., cooling centre, public library, cooling room in an apartment building, place of worship, shopping mall, grocery store). Keep in mind that some people may not have access to air-conditioned places. Therefore, it is a good idea to highlight other cooling options (e.g., waterfront locations, tree-shaded areas, swimming facility or spray pads – some of these may be excellent choices for children).

12. Take cool showers or baths until you feel refreshed.

Some people who are at a higher risk from extreme heat may have other health conditions such as cardiovascular disorders. Exposure to a rapid shift in temperature could have health consequences. Recommending a "cool" rather than "cold" shower or bath minimizes this risk.

13. Prepare meals that don't need to be cooked in your oven.

Ovens produce a lot of heat. Cooking with an oven will increase the indoor temperature, which is difficult to lower during extreme heat events, especially without an air conditioner.

14. Block sun out by closing awnings, curtains or blinds during the day.

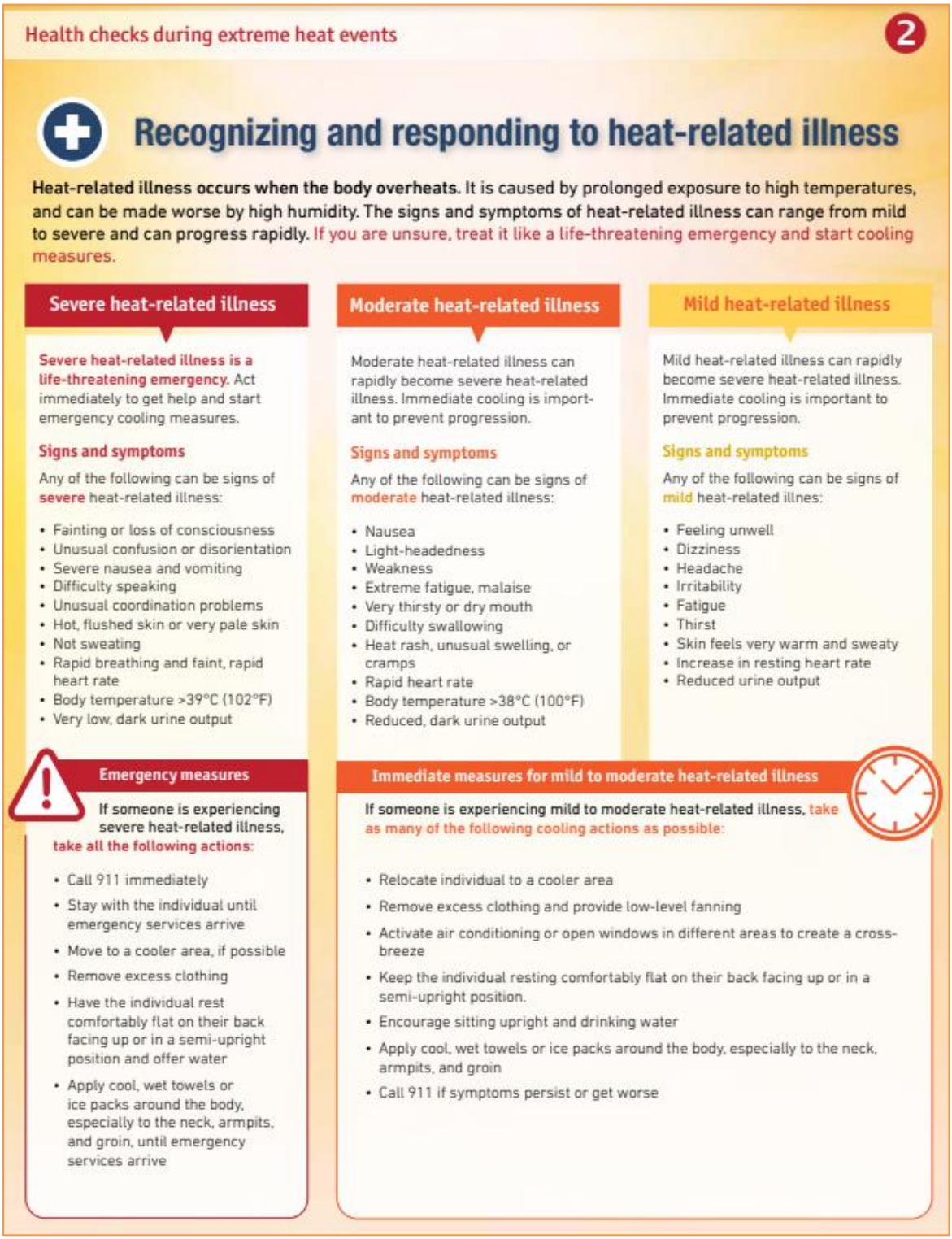
Allowing the sun to beam through the windows will increase your indoor temperature due to the "greenhouse effect" and will result in trapping hot air in the home. Installing and closing awnings or shutters is very effective at keeping the heat outside, since the sun's rays will be blocked before they reach the window.

15. Avoid sun exposure. Shade yourself by wearing a wide-brimmed, breathable hat or using an umbrella.

Heat is made up of four main physical and environmental factors that contribute to the body's heat load: humidity, radiant load, temperature and wind speed. Direct sun exposure will increase the radiant load and total heat exposure. This is why shaded areas are cooler and wearing a wide-brimmed, breathable hat or using an umbrella in the sun is recommended.

Source: Health Canada, Communicating the health risks of extreme heat events: Toolkit for public health and emergency management officials, 2011.

Self-health checks during extreme heat events



Health checks during extreme heat events 2

Recognizing and responding to heat-related illness

Heat-related illness occurs when the body overheats. It is caused by prolonged exposure to high temperatures, and can be made worse by high humidity. The signs and symptoms of heat-related illness can range from mild to severe and can progress rapidly. If you are unsure, treat it like a life-threatening emergency and start cooling measures.

Severe heat-related illness

Severe heat-related illness is a life-threatening emergency. Act immediately to get help and start emergency cooling measures.

Signs and symptoms

Any of the following can be signs of **severe** heat-related illness:

- Fainting or loss of consciousness
- Unusual confusion or disorientation
- Severe nausea and vomiting
- Difficulty speaking
- Unusual coordination problems
- Hot, flushed skin or very pale skin
- Not sweating
- Rapid breathing and faint, rapid heart rate
- Body temperature >39°C (102°F)
- Very low, dark urine output

Moderate heat-related illness

Moderate heat-related illness can rapidly become severe heat-related illness. Immediate cooling is important to prevent progression.

Signs and symptoms

Any of the following can be signs of moderate heat-related illness:

- Nausea
- Light-headedness
- Weakness
- Extreme fatigue, malaise
- Very thirsty or dry mouth
- Difficulty swallowing
- Heat rash, unusual swelling, or cramps
- Rapid heart rate
- Body temperature >38°C (100°F)
- Reduced, dark urine output

Mild heat-related illness

Mild heat-related illness can rapidly become severe heat-related illness. Immediate cooling is important to prevent progression.

Signs and symptoms

Any of the following can be signs of mild heat-related illnes:

- Feeling unwell
- Dizziness
- Headache
- Irritability
- Fatigue
- Thirst
- Skin feels very warm and sweaty
- Increase in resting heart rate
- Reduced urine output

Emergency measures

If someone is experiencing severe heat-related illness, take all the following actions:

- Call 911 immediately
- Stay with the individual until emergency services arrive
- Move to a cooler area, if possible
- Remove excess clothing
- Have the individual rest comfortably flat on their back facing up or in a semi-upright position and offer water
- Apply cool, wet towels or ice packs around the body, especially to the neck, armpits, and groin, until emergency services arrive

Immediate measures for mild to moderate heat-related illness

If someone is experiencing mild to moderate heat-related illness, take as many of the following cooling actions as possible:

- Relocate individual to a cooler area
- Remove excess clothing and provide low-level fanning
- Activate air conditioning or open windows in different areas to create a cross-breeze
- Keep the individual resting comfortably flat on their back facing up or in a semi-upright position.
- Encourage sitting upright and drinking water
- Apply cool, wet towels or ice packs around the body, especially to the neck, armpits, and groin
- Call 911 if symptoms persist or get worse

Source: National Collaborating Centre for Environment Health, Health Checks During Extreme Heat Events, Jun 2022 [https://ncceh.ca/documents/guide/health-checks-during-extreme-heat-events]

APPENDIX F: EXAMPLES OF KEY MESSAGES AND COMMUNICATIONS FOR WILDFIRE SMOKE

Health Messaging for Wildfire Smoke Events

Limit outdoor activity and strenuous activities: exercising outdoors can increase exposure to wildfire smoke. Choose lower intensity activities, reduce the amount of time spent exercising, drink lots of water and reduce the intensity of the exercise or stop if you are experiencing symptoms.

Stay indoors: spend time in a room in your home with cleaner air or in a community cleaner air space to reduce smoke exposure. Keep indoor air cleaner by avoiding smoking or burning other materials. Use a portable air cleaner if possible. If heat is also an issue, seek out a cooler space. Excessive heat exposure can also result in illness.

Filter indoor air: if you have an HVAC system make sure the filter has a MERV rating of 13 or higher. Use portable air cleaners rated for tobacco smoke, pollen and dust, with an Association of Home Appliance Manufacturers (AHAM) label that is rated for at least 2/3 of the area of the room. Do not use ozone generating air purifiers or electrostatic precipitators.

Create a contingency plan for outdoor events: create back up plans for outdoor events in case of heavy smoke. Such activities include school or camp activities, sporting or cultural events and mass gatherings.

Vehicles: drive carefully if visibility is reduced. Keep the window closed and set the ventilation system to recirculate. Vehicles should never be used as a shelter, but as a means to get somewhere.

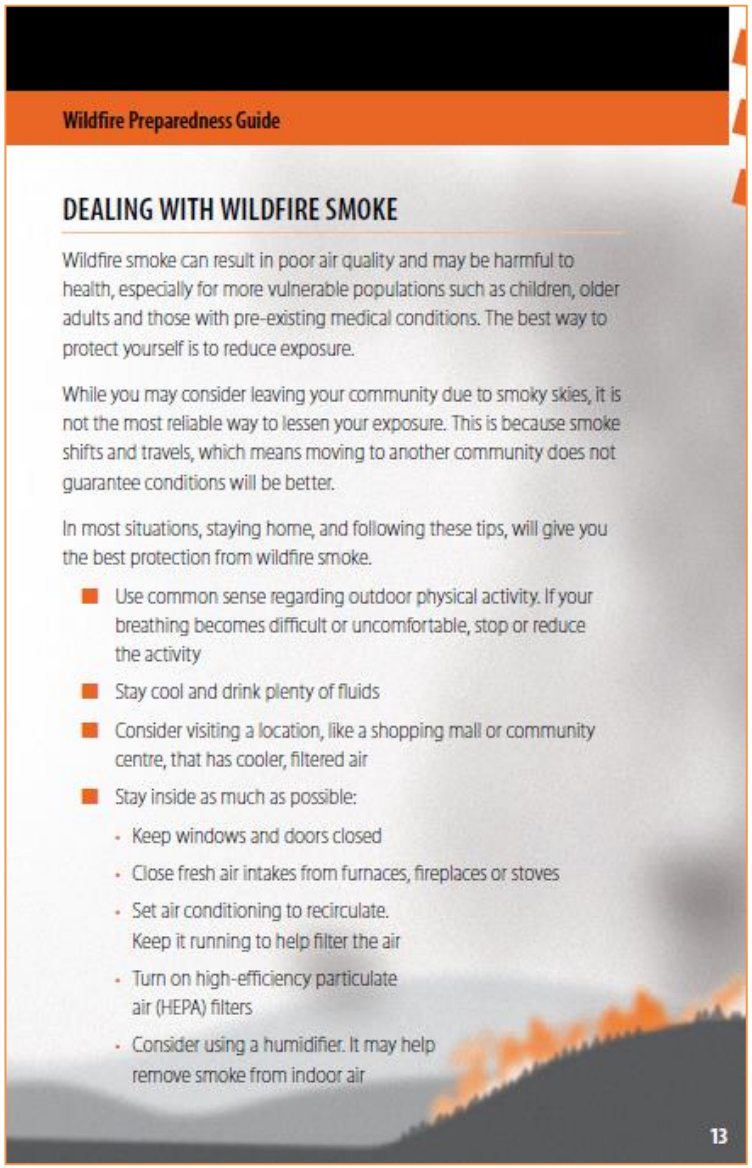
Look out for others: if you have neighbours, friends or relatives who live alone, check on them to make sure they are okay. For any health concerns contact your health care provider.

Monitor the situation: pay attention to local smoke alerts on weather.gc.ca and changing smoke conditions on FireWork or BlueSky.

Asthma and COPD: if you have asthma or COPD make an action plan for smoke events and ensure adequate supplies (e.g., medication) are available. Seek medical attention if you have any concerns.

Evacuating: evacuation is a last resort measure and involves the urgent removal of individuals from a community in order to protect them from exposure to wildfire smoke. This may be voluntary or mandatory and can start out as voluntary and progress into a mandatory order. Evacuation could include a segment of the population only, such as populations at greater risk.

Source: Yukon, Yukon Wildfire Smoke Response Guideline, August 2020 [https://yukon.ca/en/yukon-wildfire-smoke-response-guideline]



Wildfire Preparedness Guide

DEALING WITH WILDFIRE SMOKE

Wildfire smoke can result in poor air quality and may be harmful to health, especially for more vulnerable populations such as children, older adults and those with pre-existing medical conditions. The best way to protect yourself is to reduce exposure.

While you may consider leaving your community due to smoky skies, it is not the most reliable way to lessen your exposure. This is because smoke shifts and travels, which means moving to another community does not guarantee conditions will be better.

In most situations, staying home, and following these tips, will give you the best protection from wildfire smoke.

- Use common sense regarding outdoor physical activity. If your breathing becomes difficult or uncomfortable, stop or reduce the activity
- Stay cool and drink plenty of fluids
- Consider visiting a location, like a shopping mall or community centre, that has cooler, filtered air
- Stay inside as much as possible:
  - Keep windows and doors closed
  - Close fresh air intakes from furnaces, fireplaces or stoves
  - Set air conditioning to recirculate. Keep it running to help filter the air
  - Turn on high-efficiency particulate air (HEPA) filters
  - Consider using a humidifier. It may help remove smoke from indoor air

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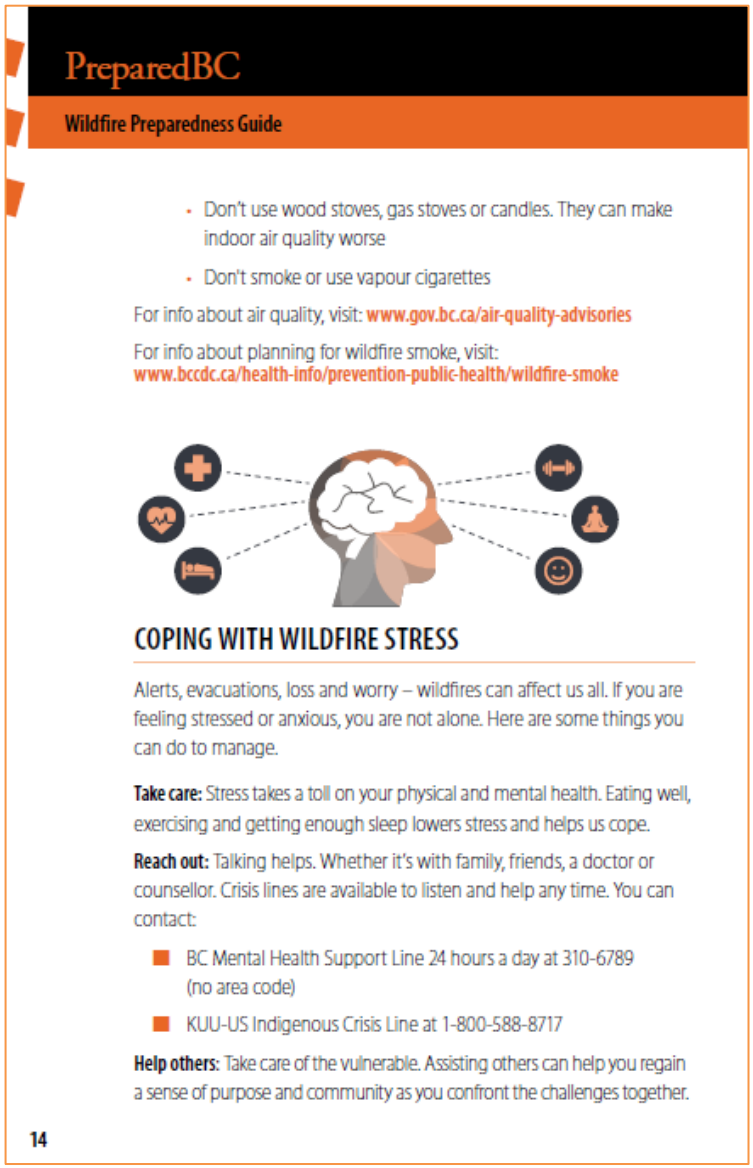

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Wildfire Preparedness Guide

- Don't use wood stoves, gas stoves or candles. They can make indoor air quality worse
- Don't smoke or use vapour cigarettes

For info about air quality, visit: www.gov.bc.ca/air-quality-advisories

For info about planning for wildfire smoke, visit: www.bccdc.ca/health-info/prevention-public-health/wildfire-smoke

COPING WITH WILDFIRE STRESS

Alerts, evacuations, loss and worry – wildfires can affect us all. If you are feeling stressed or anxious, you are not alone. Here are some things you can do to manage.

Take care: Stress takes a toll on your physical and mental health. Eating well, exercising and getting enough sleep lowers stress and helps us cope.

Reach out: Talking helps. Whether it's with family, friends, a doctor or counsellor. Crisis lines are available to listen and help any time. You can contact:

- BC Mental Health Support Line 24 hours a day at 310-6789 (no area code)
- KUU-US Indigenous Crisis Line at 1-800-588-8717

Help others: Take care of the vulnerable. Assisting others can help you regain a sense of purpose and community as you confront the challenges together.

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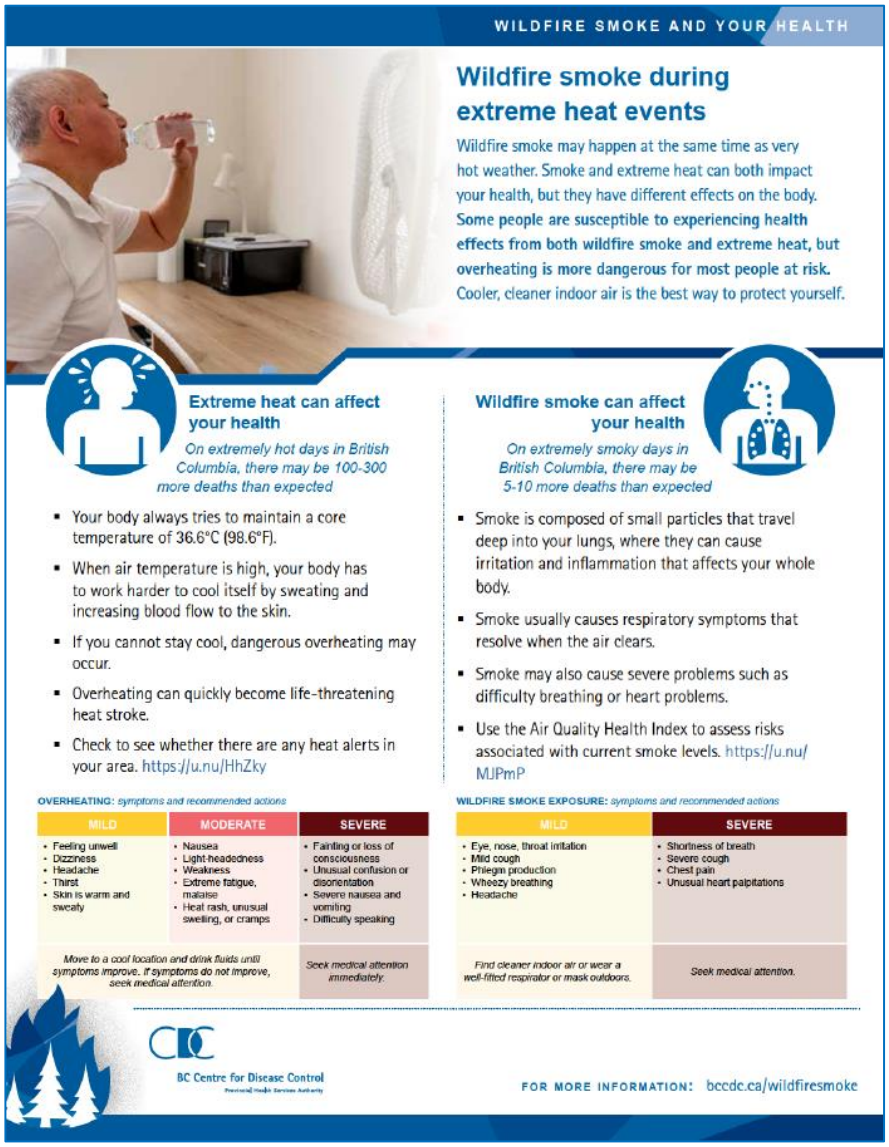
Source: Government of British Columbia, Wildfire preparedness guide,2022 [https://www2.gov.bc.ca/gov/content/safety/emergency-management/preparedbc/know-your-hazards/wildfire]



WILDFIRE SMOKE AND YOUR HEALTH

Wildfire smoke during extreme heat events

Wildfire smoke may happen at the same time as very hot weather. Smoke and extreme heat can both impact your health, but they have different effects on the body. **Some people are susceptible to experiencing health effects from both wildfire smoke and extreme heat, but overheating is more dangerous for most people at risk.** Cooler, cleaner indoor air is the best way to protect yourself.

Extreme heat can affect your health

On extremely hot days in British Columbia, there may be 100-300 more deaths than expected

- Your body always tries to maintain a core temperature of 36.6°C (98.6°F).
- When air temperature is high, your body has to work harder to cool itself by sweating and increasing blood flow to the skin.
- If you cannot stay cool, dangerous overheating may occur.
- Overheating can quickly become life-threatening heat stroke.
- Check to see whether there are any heat alerts in your area. https://u.nu/HhZky

Wildfire smoke can affect your health

On extremely smoky days in British Columbia, there may be 5-10 more deaths than expected

- Smoke is composed of small particles that travel deep into your lungs, where they can cause irritation and inflammation that affects your whole body.
- Smoke usually causes respiratory symptoms that resolve when the air clears.
- Smoke may also cause severe problems such as difficulty breathing or heart problems.
- Use the Air Quality Health Index to assess risks associated with current smoke levels. https://u.nu/MJPmP

OVERHEATING: *symptoms and recommended actions*

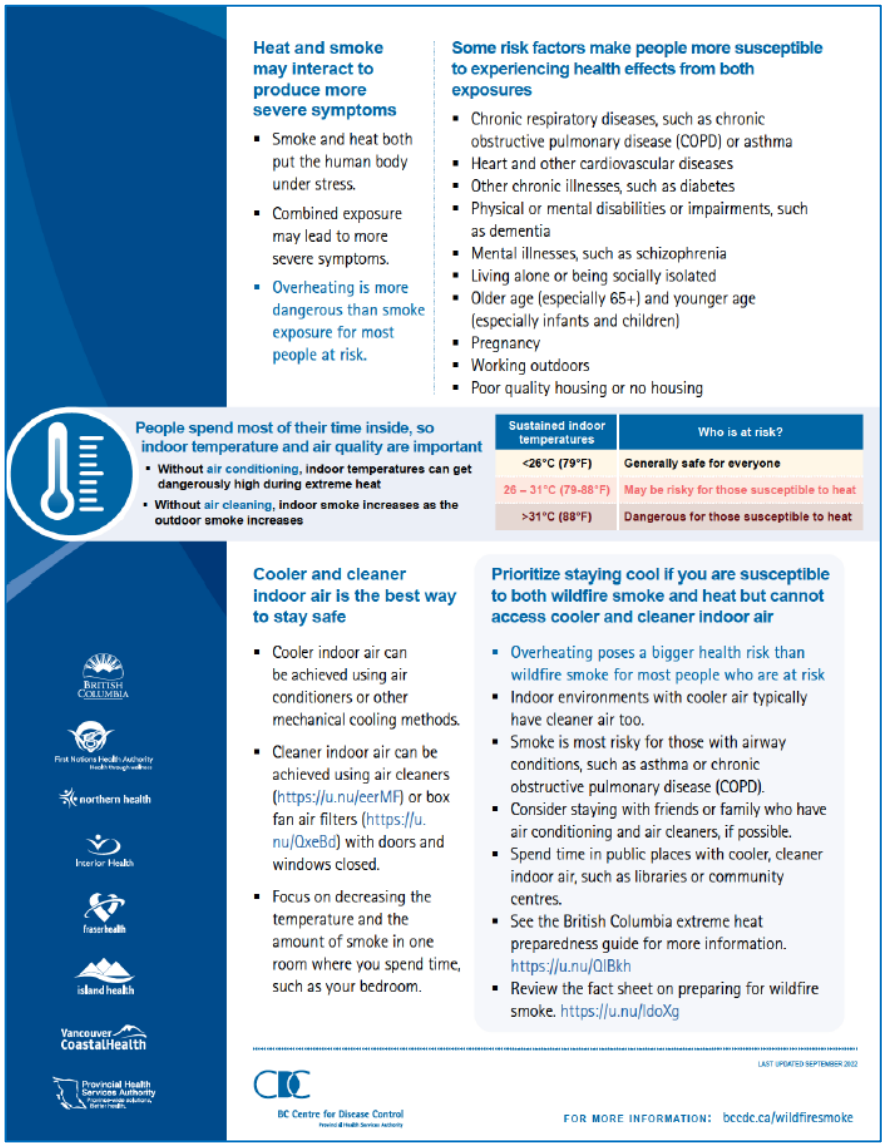
MILD	MODERATE	SEVERE
• Feeling unwell • Dizziness • Headache • Thirst • Skin is warm and sweaty	• Nausea • Light-headedness • Weakness • Extreme fatigue, malaise • Heat rash, unusual swelling, or cramps	• Fainting or loss of consciousness • Unusual confusion or disorientation • Severe nausea and vomiting • Difficulty speaking
Move to a cool location and drink fluids until symptoms improve. If symptoms do not improve, seek medical attention.		*Seek medical attention immediately.*

WILDFIRE SMOKE EXPOSURE: *symptoms and recommended actions*

MILD	SEVERE
• Eye, nose, throat irritation • Mild cough • Phlegm production • Wheezy breathing • Headache	• Shortness of breath • Severe cough • Chest pain • Unusual heart palpitations
Find cleaner indoor air or wear a well-fitted respirator or mask outdoors.	*Seek medical attention.*

BC Centre for Disease Control

FOR MORE INFORMATION: bccdc.ca/wildfiresmoke



Heat and smoke may interact to produce more severe symptoms

- Smoke and heat both put the human body under stress.
- Combined exposure may lead to more severe symptoms.
- Overheating is more dangerous than smoke exposure for most people at risk.

Some risk factors make people more susceptible to experiencing health effects from both exposures

- Chronic respiratory diseases, such as chronic obstructive pulmonary disease (COPD) or asthma
- Heart and other cardiovascular diseases
- Other chronic illnesses, such as diabetes
- Physical or mental disabilities or impairments, such as dementia
- Mental illnesses, such as schizophrenia
- Living alone or being socially isolated
- Older age (especially 65+) and younger age (especially infants and children)
- Pregnancy
- Working outdoors
- Poor quality housing or no housing

People spend most of their time inside, so indoor temperature and air quality are important

- **Without air conditioning, indoor temperatures can get dangerously high during extreme heat**
- **Without air cleaning, indoor smoke increases as the outdoor smoke increases**

Sustained indoor temperatures	Who is at risk?
<26°C (79°F)	Generally safe for everyone
26 – 31°C (79-88°F)	May be risky for those susceptible to heat
>31°C (88°F)	Dangerous for those susceptible to heat

Cooler and cleaner indoor air is the best way to stay safe

- Cooler indoor air can be achieved using air conditioners or other mechanical cooling methods.
- Cleaner indoor air can be achieved using air cleaners (https://u.nu/eerMF) or box fan air filters (https://u.nu/QxeBd) with doors and windows closed.
- Focus on decreasing the temperature and the amount of smoke in one room where you spend time, such as your bedroom.

Prioritize staying cool if you are susceptible to both wildfire smoke and heat but cannot access cooler and cleaner indoor air

- Overheating poses a bigger health risk than wildfire smoke for most people who are at risk
- Indoor environments with cooler air typically have cleaner air too.
- Smoke is most risky for those with airway conditions, such as asthma or chronic obstructive pulmonary disease (COPD).
- Consider staying with friends or family who have air conditioning and air cleaners, if possible.
- Spend time in public places with cooler, cleaner indoor air, such as libraries or community centres.
- See the British Columbia extreme heat preparedness guide for more information. https://u.nu/QlBkh
- Review the fact sheet on preparing for wildfire smoke. https://u.nu/IdoXg

BRITISH COLUMBIA · First Nations Health Authority · northern health · Interior Health · fraserhealth · island health · Vancouver CoastalHealth · Provincial Health Services Authority

LAST UPDATED SEPTEMBER 2022

BC Centre for Disease Control

FOR MORE INFORMATION: bccdc.ca/wildfiresmoke

Source: Government of British Columbia, Wildfire Smoke During Extreme Heat Events, Wildfire Smoke and Your Health [http://www.bccdc.ca/health-info/prevention-public-health/wildfire-smoke]

WILDFIRE SMOKE AND YOUR HEALTH

Health Effects of Wildfire Smoke

Wildfire smoke is a complex mixture of fine particulate matter (PM2.5) and gases, such as carbon monoxide, nitrogen oxides, and volatile organic compounds. The mixture can change depending on the fuels, the weather, and distance from the fire. Wildfire smoke causes episodes of the worst air quality that most people will ever experience in British Columbia.

Although wildfire smoke is different from air pollution caused by traffic or industry, it is also harmful to human health.

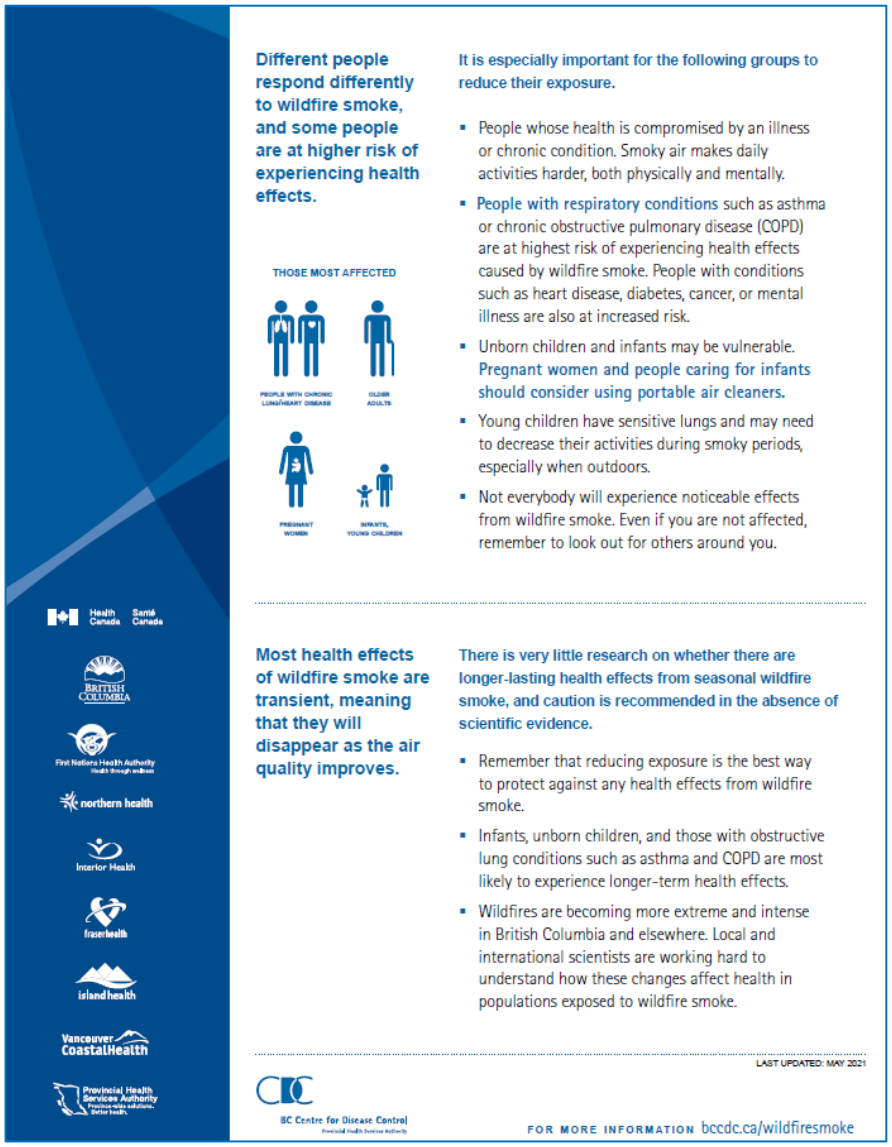
- Smoky air makes it harder for your lungs to get oxygen into your blood.
- Wildfire smoke can irritate your respiratory system and cause an immune response, which may lead to inflammation that affects other parts of your body.
- Common symptoms include eye irritation, runny nose, sore throat, mild cough, phlegm production, wheezy breathing, or headaches. Such symptoms can usually be managed without medical attention.
- Some people may have more severe symptoms, such as shortness of breath, severe cough, dizziness, chest pain, or heart palpitations. You should seek prompt medical attention if you experience any of these symptoms.
- Smoky air may increase risk of some infections, such as pneumonia COVID-19, and ear infections in children.

Reducing exposure to wildfire smoke is the best way to protect your health.

- Portable air cleaners that use HEPA filtration can effectively remove smoke particles from the indoor air. Do your research to find something suitable for your needs.
- If you have forced air heating, you can use different filters and settings to minimize the amount of wildfire smoke that comes into your home. Talk to your service provider about what will work best for your system.
- Libraries, community centres, and shopping malls often have cooler, filtered air that can provide a break from outdoor smoke.
- When driving, keep the windows up, the air conditioner on, and use the recirculate setting to limit intake of the outdoor air.
- The harder you breathe, the more smoke you inhale. Take it easy during smoky periods, consider exercising indoors, and drink lots of water to help your body cope with the smoke.
- If you have an outdoor occupation, refer to resources from WorkSafe BC https://u.nu/4vl8

BC Centre for Disease Control

FOR MORE INFORMATION bccdc.ca/wildfiresmoke



Different people respond differently to wildfire smoke, and some people are at higher risk of experiencing health effects.

THOSE MOST AFFECTED

PEOPLE WITH CHRONIC LUNG/HEART DISEASE

OLDER ADULTS

PREGNANT WOMEN

INFANTS, YOUNG CHILDREN

It is especially important for the following groups to reduce their exposure.

- People whose health is compromised by an illness or chronic condition. Smoky air makes daily activities harder, both physically and mentally.
- People with respiratory conditions such as asthma or chronic obstructive pulmonary disease (COPD) are at highest risk of experiencing health effects caused by wildfire smoke. People with conditions such as heart disease, diabetes, cancer, or mental illness are also at increased risk.
- Unborn children and infants may be vulnerable. Pregnant women and people caring for infants should consider using portable air cleaners.
- Young children have sensitive lungs and may need to decrease their activities during smoky periods, especially when outdoors.
- Not everybody will experience noticeable effects from wildfire smoke. Even if you are not affected, remember to look out for others around you.

Health Canada Santé Canada

BRITISH COLUMBIA

First Nations Health Authority

northern health

Interior Health

fraserhealth

island health

Vancouver CoastalHealth

Provincial Health Services Authority

Most health effects of wildfire smoke are transient, meaning that they will disappear as the air quality improves.

There is very little research on whether there are longer-lasting health effects from seasonal wildfire smoke, and caution is recommended in the absence of scientific evidence.

- Remember that reducing exposure is the best way to protect against any health effects from wildfire smoke.
- Infants, unborn children, and those with obstructive lung conditions such as asthma and COPD are most likely to experience longer-term health effects.
- Wildfires are becoming more extreme and intense in British Columbia and elsewhere. Local and international scientists are working hard to understand how these changes affect health in populations exposed to wildfire smoke.

LAST UPDATED: MAY 2021

BC Centre for Disease Control

FOR MORE INFORMATION bccdc.ca/wildfiresmoke

Source: Government of British Columbia, Health Effects of Wildfire Smoke, Wildfire Smoke and Your Health [http://www.bccdc.ca/health-info/prevention-public-health/wildfire-smoke]

Health effects and messages for at risk populations for each (US) AQI category

AQI Category (AQI Values)	Health Effects	Cautionary Statements	Other Protection Messages
Good (0–50)	None expected	None	None
Moderate (51–100)	Possible aggravation of heart or lung disease	Unusually sensitive individuals should consider limiting prolonged or heavy exertion. People with heart or lung disease should pay attention to symptoms. Individuals with symptoms of lung or heart disease, including repeated coughing, shortness of breath or difficulty breathing, wheezing, chest tightness or pain, palpitations, nausea, unusual fatigue or lightheadedness, should contact a health care provider.	If symptomatic, reduce exposure to particles by following advice in box below.
Unhealthy for Sensitive Groups (101–150)	Increasing likelihood of respiratory or cardiac symptoms in sensitive individuals, aggravation of heart or lung disease, and premature mortality in people with heart or lung disease and older adults	Sensitive Groups: People with heart or lung disease, the elderly, children, and pregnant women should limit prolonged or heavy exertion. Limit time spent outdoors. Avoid physical exertion. People with asthma should follow their asthma management plan. Individuals with symptoms of lung or heart disease that may be related to excess smoke exposure, including repeated coughing, shortness of breath or difficulty breathing, wheezing, chest tightness or pain, heart palpitations, nausea, unusual fatigue or lightheadedness, should contact a health care provider.	Keep doors and windows closed, seal large gaps as much as possible. Avoid using exhaust fans (e.g., kitchen, bathroom, clothes dryer, and utility room exhaust fans). Keep the garage-to-home door closed. If cooling is needed, turn air conditioning to re- circulate mode in home and car, or use ceiling fans or portable fans (but do not use whole house fans that suck outdoor air into the home). If a home has a central heating and/or air conditioning system, install higher-efficiency filters (e.g., filters rated at MERV 13 or higher) if they can be accommodated by the system. Regardless of whether a filter upgrade has been performed, the system's circulating fan can be temporarily set to operate continuously to obtain maximum particle removal by the central air system's filter, although this will increase energy use and costs. Operate appropriately sized portable air cleaners to reduce indoor particle levels. Avoid indoor sources of pollutants, including tobacco smoke, heating with wood stoves and kerosene heaters, frying or broiling foods, burning candles or incense, vacuuming, and using paints, solvents, cleaning products, and adhesives. Keep at least a 5-day supply of medication available. Have a supply of non-perishable groceries that do not require cooking.

Source: California Air Resources Board (CARB) and the California Department of Public Health (CDPH), Wildfire Smoke: A Guide for Public Health Officials, September 2021 [https://www.airnow.gov/publications/wildfire-smoke-guide/wildfire-smoke-a-guide-for-public-health-officials/]

AQI Category (AQI Values)	Health Effects	Cautionary Statements	Other Protection Messages
Unhealthy (151–200)	Increased aggravation of heart or lung disease and premature mortality in persons with heart or lung disease and older adults; increased respiratory effects in general population.	Sensitive Groups: Should avoid prolonged or heavy exertion Everyone: Should limit prolonged or heavy exertion Limit time spent outdoors. Individuals with symptoms of lung or heart disease that may be related to excess smoke exposure, including repeated coughing, shortness of breath or difficulty breathing, wheezing, chest tightness or pain, palpitations, nausea or unusual fatigue or lightheadedness, should contact your health care provider.	Sensitive Groups: Stay in a "clean room" at home (where there are no indoor smoke or particle sources, and use a non-ozone producing air cleaner). Go to a "cleaner air" shelter (see Appendix D) or possibly out of area Everyone: Follow advice for sensitive groups in box above. Identify potential "cleaner air" shelters in the community (see Appendix D).
Very Unhealthy (201–300)	Significant aggravation of heart or lung disease, premature mortality in persons with heart or lung disease and older adults; significant increase in respiratory effects in general population.	Everyone: Should avoid prolonged or heavy exertion and stay indoors, preferably in a space with filtered air.	Everyone: If symptomatic, seek medical attention. If you are unable to create your own cleaner indoor air space to shelter in place, evacuate to a cleaner air shelter or leave the area, if it is safe to do so.
Hazardous (> 300)	Serious aggravation of heart or lung disease, premature mortality in persons with heart or lung disease and older adults; serious risk of respiratory effects in general population.	Everyone: Should avoid any outdoor activity, and stay indoors, preferably in a space with filtered air.	Everyone: If symptomatic, seek medical attention. If you are unable to create your own cleaner indoor air space to shelter in place, evacuate to a cleaner air shelter or leave the area, if it is safe to do so.

[1]Higher advisory levels automatically incorporate all of the guidance offered at lower levels.

Source: California Air Resources Board (CARB) and the California Department of Public Health (CDPH), Wildfire Smoke: A Guide for Public Health Officials, September 2021 [https://www.airnow.gov/publications/wildfire-smoke-guide/wildfire-smoke-a-guide-for-public-health-officials/]

APPENDIX G: WORKSHOP ATTENDEES

Wildlife

Name	Organization
Caitlin Van Gaal	Town of Canmore
Kara Partridge	Parks Canada
Nick de Ruyter	Biosphere Institute of the Bow Valley
Kate Tucker	Government of Alberta
John Mahoney	Government of Alberta
Andrew Box	MD of Bighorn
Aaron Szott	Government of Alberta
David Tavernini	Parks Canada
Debbie Mucha	Government of Alberta
Mike Ewald	Government of Alberta
Alexandria Jones	Parks Canada
Collin Letain	Government of Alberta
Kyle Lester	Government of Alberta
Jeff Zukiwsky	All One Sky Foundation
Calvin Kwan	All One Sky Foundation
Craig MacDonald	Associated Engineering
Eli Panning – Osendurp	The Resilience Institute

Health and Well-being

Name	Organization
Caitlin Van Gaal	Town of Canmore
Lisa Guest	Town of Canmore
Lisa Brown	Town of Canmore
Keri Martens	Town of Canmore
Brett Oud	Canmore General Hospital
Hal Retzer	Bow Valley Clean Air Society
Diane Luka	Alberta Health Services
Christine deMontigny	Town of Canmore
Rhea Funke	Origins at Spring Creek
Alison McCrum	Town of Canmore
Neil Atteinson	Homeless Society of the Bow Valley & YWCA
Ella Schatzmann	Alberta Health Services
Gareth Thomson	Biosphere Institute of Bow Valley
Stefan Bunock	Canmore Downtown Business Improvement Area
Jeff Zukiwsky	All One Sky Foundation
Richard Boyd	All One Sky Foundation
Twyla Kowalczyk	Associated Engineering
Eli Panning – Osendurp	The Resilience Institute

Emergency Response Planning

Name	Organization
Caitlin Van Gaal	Town of Canmore
Eleanor Miclette	Town of Canmore
Scott McKay	Town of Canmore
Therese Rogers	Town of Canmore
Margaret Szamosfalvi	Town of Canmore
Robyn Dinnadge	Town of Canmore
Whitney Smithers	Town of Canmore
Lisa Brown	Town of Canmore
Sally Caudill	Town of Canmore
Stephen Hanus	Town of Canmore
Andreas Comeau	Town of Canmore
Caitlin Miller	Town of Canmore
Johanna Sauve	Town of Canmore
Ryan Singleton	Town of Canmore
Amy Fournier	Town of Canmore
Lance Bushie	Town of Canmore
Richard Boyd	All One Sky Foundation
Twyla Kowalczyk	Associated Engineering

ALL ONE SKY FOUNDATION is a not-for-profit, charitable organization established to help vulnerable populations at the crossroads of energy and climate change. We do this through education, research and community-led programs, focusing our efforts on adaptation to climate change and energy poverty. Our vision is a society in which ALL people can afford the energy they require to live in warm, comfortable homes, in communities that are resilient and adaptive to a changing climate.

www.allonesky.ca

Email: jeff@allonesky.com
Phone: 1.250.430.1551

809 49th Ave SW, PO Box 19012, Calgary, AB., T2S 1A0, Canada

Councillor Updates

DATE OF MEETING: June 20, 2023 **Agenda #: E-1**

1. **Mayor Krausert**
   a) Canmore Community Housing
      - I defer to Councillor Foubert's report.

   b) Tourism Canmore Kananaskis
      - Nothing new to report.

   c) Rocky Mountain Heritage Foundation
      - The Town and the Board of Rocky Mountain Heritage Foundation have been meeting to come to agreement on the principles of a new Memorandum of Understanding with respect to the Quarry Lake, which they co-own 50% each. It has reached a point where a draft memorandum is now being drafted and will come to Council for approval in due course.

   d) Emergency Management Committee
      - A meeting was held on May 17, 2023. The focus of the meeting was updating the committee on new emergency plans with respect to smoke and heat as well as the new emergency app that will be launched shortly. Both of these items are coming to Committee of the Whole for a briefing.

   e) Human Wildlife Co-existence Roundtable
      - Nothing new to report. The meeting that was scheduled for June 2, 2023 was rescheduled due to unavailability of several participants due to the usual post-election freeze on provincial involvement until new ministers, etc. are in place. The new meeting is scheduled to be virtual on July 11th.

   f) Town of Canmore – MD of Bighorn Inter-Municipal Committee
      - Nothing new to report. The meeting that was scheduled for May 31, 2023 was rescheduled to August 31, 2023. At that time we will review the schedule for review of all intermunicipal agreements between the MD of Bighorn and the Town of Canmore.

   g) Canmore Tourism Roundtable
      - The roundtable discussion has spurred on the development of a Regenerative Tourism Advisory Taskforce, which is still at the conceptual stage with determining participants and terms of reference. This initiative is being lead by Tourism Canmore Kananaskis and more information will be available as these concepts take form.

h) Mid-Sized Cities Mayors' Caucus (MCMC)

- The most recent virtual monthly meeting took place on May 17, 2023. The next virtual meeting is scheduled for June 27, 2023.
- I continue to Chair the subcommittee planning the MCMC Winter Summit to be held January 10-12, 2024, in Canmore.

i) Advocacy on Behalf of the Town of Canmore

- On May 9th, as requested by Council, and with the assistance of Councillor Foubert, I provided a letter to the federal government suggesting that the Canadian Infrastructure Bank expand its scope to allow for housing infrastructure.
- On May 18th, as per request of Council, I provided the government and opposition (and several others) with a letter outlining the provincial downloading that the Town of Canmore has experienced, and which is similarly being experienced by other municipalities throughout Alberta.
- On May 19th, the CAO and I travelled to Blackfoot Crossing Historical Park to meet with Chief Ouyen Crowfoot of the Siksika First Nation. This was an introductory meeting as part of the Town of Canmore efforts to have right relations with all First Nations in the Treaty 7 area.
- On June 1st, myself along with the GMs of Corporate Services and Municipal Infrastructure, respectively, hosted a press conference with respect to Canmore housing action initiatives.
- On June 5th, the mayors and CAOs from Canmore, Banff, and Jasper met to discuss next steps with respect to advocacy regarding a designation for tourism-based communities.
- On June 5th, the towns of Canmore and Banff along with the MD of Bighorn and ID#9 held a virtual call with Peter Quinn, Bow Valley Victim Services ("BVVS"), to discuss next steps with respect to our collective advocacy to support BVVS.

j) Events

- On May 16th, I attended the Peak Academy Launch Party hosted by Tourism Canmore Kananaskis.
- On May 17th, I brought remarks and participated in the Pride flag raising at the Civic Centre recognizing the International Day Against Homophobia, Lesbophobia, Biphobia, and Transphobia.
- On May 18th, I attended the opening of two new exhibits at the Canmore Museum – Along the Bow: The Art of this Place; and Survival in Paradise: Coal Mining in the Bow Valley.
- On June 4th, I attended the Canmore Senior's Association Annual Pancake Breakfast.
- On June 8th, I attended the Seniors Ice Cream Social being hosted by FCSS in recognition of Seniors Week.
- On June 8th, I brought remarks and congratulations on behalf of the Town of Canmore to the Our Lady of the Snows Graduation Ceremony.
- On June 9th, I attended along with Councillor Hilstad then Canmore & Area Health Care Foundation Golf Fundraiser 2023.

k) Miscellaneous

- Continued my monthly appearances on Mountain FM with Rob Murray.
- On May 15th, I interviewed with CBC re types of support Canmore could use from the next provincial government to promote/preserve affordable housing in Canmore.
- On May 16th, myself and Councillors Marra and Mah hosted lunch with former Canmore Councillor Dorothy Wetherell (now 96 years old).
- On May 18th, I attended the local candidates forum for the provincial election hosted at The Malcolm Hotel.
- On May 23rd, along with all of Council, I participated in cyber security training from the IT Department.
- I provided a congratulatory video to the Emerald Awards in recognition of the nomination of the Bow Valley Green Energy Cooperative (which they then won on June 7th in the Energy category).
- From May 25th through May 28th, myself and several members of Council as well as the CAO and GM of Municipal Infrastructure attended the annual Federation of Canadian Municipalities Conference, which was held in Toronto, ON, this year.
- On June 1st, I hosted a class of grade six students from Lawrence Grassi Middle School to give them a tour of the Civic Centre and a mock council session in Council Chambers.

2. Councillor Foubert

a) Canmore Community Housing

- The hiring sub-committee has made an offer to hire a new executive director. Once details are confirmed, an official announcement will be made.
- CCH continues to move toward repaying the $1.76 million it owes the Town of Canmore to purchase Wolf Willow units several years ago. There are seven units left to be sold, however, CCH is working to ensure current tenants renting the units have the opportunity to purchase or move prior to the sale. A six-month lease extension is being provided and any existing tenant that meets Vital Homes rental eligibility who wishes will be prioritized to the top of CCH's rental list.
- CCH approved a new social media strategy and policy. Look for our new social media accounts sharing information about projects and programs.

b) Bow Valley Regional Transit

- See Coun. McCallum's update.

c) Canmore Planning Commission

- No meetings held.

d) Canmore Museum
- The Canmore Museum Society board is currently looking at recruiting a new executive officer to lead our organization into the next phase of its exciting future as a leader in the cultural landscape of the community.
- The new rotating exhibit gallery space officially opened with its first show: Along the Bow. If you are able to attend a talk by curator Mary-Beth Laviolette, I highly recommend it.

e) Alberta Municipalities Environment and Sustainability Committee
- The next meeting is July 14 in Stettler where committee members will tour that community's new wastewater treatment.

f) Miscellaneous
- Attended Resilience Day hosted by the Town of Canmore with early childhood education and family support workers in the Bow Valley.
- Attended the Federation of Canadian Municipalities convention in Toronto. Learned more about natural asset inventories and urban forest canopy policies for urban centres; learned about housing policies and funding options; learned about cycling infrastructure and mode shift in the downtown core of a city of 3 million people.
- Attended the opening of the Indigenous Perspectives art show at the Three Sisters Gallery in Elevation Place.

3. Councillor Graham

a) Canmore Community Housing
- Finished hiring for new Executive Director. Will be announced in the coming weeks
- Defer to Councillor Foubert.

b) Canmore Mountain Arts Foundation
- Doing Enterprise Risk Assessment Study.
- Appointed Rob Kindrachuk as a community member of the Finance and Audit Committee.
- Next meeting June 21.

c) Cultural Advisory Committee
- Meeting postponed until July.

d) Wildsmart
- Bill Hunt appointed to board.
- Bear day was a resounding success. Many folks attended and information was well received. Not a lot of locals at the event.

e) Miscellaneous
- Deputy Mayor until July 1st .

- Attended Cyber Security Training
- Attended Pride Day flag raising.

4. Councillor Hilstad

a) CAO Performance Review Committee
- Nothing new to report.

b) Heliport Monitoring Committee
- Alpine Helicopters continue to operate in accordance with the Conduct of a Helicopter Business as set out in Schedule D of the Heliport Lease.

c) Canmore Planning Commission
- Nothing new to report.

d) Enforcement Appeal Review Committee
- Nothing new to report.

e) Community Grants Selection Committee
- Adjudication is complete and letters of awards and regrets are being sent out.

5. Councillor Mah

a) Bow Valley Waste Management Commission (BVWMC)
- BVWMC met on May 24, 2023. Annual contributions were made to reserves and in light of the most recent monthly financial statements, the Commission is on sound financial footing.
- Paul Ryan, on behalf of SAEWA presented an update on where their project is at. There is heightened interest from various municipalities who are currently not SAEWA members to hop on board the Energy from Waste initiative.

b) Business Improvement Area (BIA)
- BIA's search of a new Executive Director continues. After speaking with the Chair, Tory Kendal, they are conducting an initial set of interviews in June to assess the first batch of candidates

c) Emergency Management Committee
- I defer to Mayor Krausert's report.
- Additionally, I am excited and pleased to see that TOC is now a working with VOYENT to provide emergency communications with our citizens.

d) Canmore Community Housing
- I defer to Councillor Foubert's report

e) Miscellaneous

- On May 16th, had lunch with former Canmore councillor Dorothy Wetherall. Well into her nineties, it was fascinating to hear Dorothy's stories of Canmore and the issues she faced as a councillor!
- Attended the FCM conference in Toronto from May 24th – May 28th. Personal highlights included:
  - ◊ Visiting the Toronto Archives facility and appreciating their foresight in preserving numerous documents in the city's history.
  - ◊ Doing a walking tour through the Queen West area and seeing the importance of densifying existing neighborhoods. Strategies involve:
    - reducing parking minimums (in some cases, to zero!) for areas with good transit connectivity
    - bringing sensitivity for future designs to align with existing street forms and creating a sense of "rhythm" for pedestrians. This involves a regular allotment of consistent, smaller commercial frontage as opposed to large spans occupied by a single retailer. Larger retailers should be set up below grade, or on second floor.
    - Implement laneways in the back and eliminating all curb-cuts and front driveways.
    - Terracing higher floors to preserve all-important sunlight on the main street.
    - To address parking issues, many units are using parking stackers – ie revolving conveyors to maximize car storage.
  - ◊ Seeing a presentation by Canadian Union of Public Employees (CUPE) addressing the potential concerns of P3 partnerships and the Canadian Infrastructure Bank.
    Some sobering stories of municipalities where their P3 contracts no longer serving their community. Contract negotiation is critical.
- On June 3rd, acted as MC for the Rundle Mountain Cycling Club (RMCC) kids criterium bike races. This is a fantastic event and kids raced fiercely for chocolate medals. Here's a fun pic of me sprinting away as a heat starts,

6. Councillor Marra

a) Assessment Review Board (ARB)
- Nothing to report.

b) Bow Valley Waste Management Commission
- I defer to Councillor Mah.

c) Canmore Public Library
- Nothing new to report. I was unable to attend due to FCM Conference

d) Subdivision and Development Appeal Board (SDAB)
- Nothing to report. To view any upcoming appeals or to find Board Orders please visit the Town of Canmore Website.

e) Inter-Municipal Committee – Town of Canmore and M.D of Bighorn
- Nothing new to report. Next meeting August 31/23.

f) Southern Alberta Energy from Waste Association (SAEWA)
- Nothing to report as I was unable to attend due to FCM Conference.

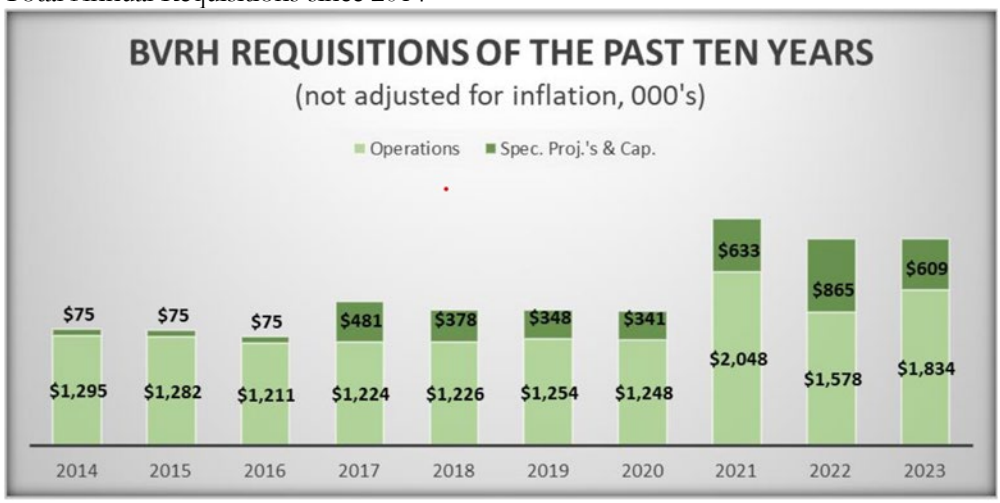
g) Bow Valley Regional Housing
- See attached Newsletter and waitlists.

h) Miscellaneous
- I attended the (FCM) Federation of Canadian Municipalities Annual Conference and Trade show in Toronto. It was great to exchange and compare information, ideas that are happening in Municipalities across Canada. The highlights of the convention were my 3 study tours.
  - ◊ Exploring Toronto Archives – We viewed historic photographs from the Toronto Archives' vast collection and Toronto's earliest government documents, including the City's first bylaw, Council Minutes and tax assessment roll. (a literal roll) The Spadina Records Centre facility holds over 130,000 boxes. We also got a behind the scenes tour of the Conservation Lab.
  - ◊ North York Central Library- We toured the newly renovated NYCL that won the 2022 IIDA/ALA Award for Outstanding Historic Renovation Project. We toured the Library's Digital innovation hub, Creation Loft as well as other technology and learning facilities on site.
  - ◊ Waterfront Revitalization- Economic Growth- An overview of the long-term plan for creating a new innovative mixed –use communities and revitalization of the Port Lands.

7. Councillor McCallum

a) Bow Valley Regional Housing
- The Spring Garden Party was held Saturday, June 10th, on the grounds of the Bow River Lodge. Planned activities include live music, delicious treats, fun games and tours of the first floor of the new wing.

- The province is assessing the core competencies of Board Members for all their Housing Management Bodies. Each board member has been asked to complete a survey to help the administration and the province determine where we might lack skills and experience.
- A Municipal Requisition overview was presented to the Board. As requisitions are based on equalized assessment, Canmore taxpayers continue to pay the most significant share as they have the most extensive assessment and experienced the most significant increases.
- A quick overview of requisitions:
  - ◊ Town of Canmore: $1,545,584.50, up $53,000 = 3.5%
  - ◊ Town of Banff: $502,746.06, down $34,000 = 6.3%
  - ◊ M.D. of Bighorn: $251,307.44, up $9,000 = 3.7%
  - ◊ I.D. #9: $114,874.34, down $25,000 = 18%
  - ◊ K.I.D.: $33,598.60, down $1,700 = 4.8%
  - ◊ Total Requisition: $2,448,110.96, up $620 = very slightly higher
- Total Annual Requisitions since 2014



b) SDAB

- Nothing new to report.

c) ARB

- Nothing new to report.

d) Bow Valley Regional Transit Services Commission

- OnIt service has been finalized, and the contractor is actively advertising and selling seats. Service started on the May long weekend and will continue throughout the summer. Service may be extended until Thanksgiving, depending on the summer ridership demand. Service will be Thursday evenings, Friday – Sunday full day plus Statutory holidays.
- Roam CEO Martin Bean was featured on a US PodCast with Paul Comfort who refers to himself as a "Transit Evangelist." You can listen to Martin Bean's interview here: https://www.transitunplugged.com/martin-bean
- It has been a challenging few days this past month regarding the availability of buses. Many minor mechanical issues, with parts still taking longer than expected to arrive from suppliers.

- A very close call of a youngster running out in front of our bus in a crosswalk on Elk Street in Banff. The driver had no choice but to brake hard – resulting in very minor injuries to 1 passenger and damaging the same passenger's phone (we are in communication with the passenger). We have reached out to Banff Elementary to discuss the event, hoping they might remind students about crosswalk safety ("walk don't run" etc.).
- Ridership since 2019 (Route 5 is knocking it out of the park and Route 3 continues to outperform its already stellar ridership):

Ridership YTD (end of May)	2019	2023	Increase
1,2 Banff Local	306,690	458,950	50%
3 Canmore/Banff Regional	74,935	103,742	38%
5 Canmore Local	48,810	120,273	146%
8X Lake Louise Express	18,843	40,640	116%
9 Johnston Canyon	0	5,543	0%

Ridership May Only	2019	2023	Increase
1,2 Banff Local	82,195	123,905	51%
3 Canmore/Banff Regional	16,925	23,645	40%
5 Canmore Local	10,769	26,920	150%
8X Lake Louise Express	5,634	11,241	100%
9 Johnston Canyon	0	2,400	0%

e) Miscellaneous

- Federation of Canadian Municipalities (May 25 – 29, 2023) – I had the opportunity to attend FCM this year in Toronto, Ontario. This is my first FCM conference I have attended since 2019. As always, there were an array of excellent study tours, workshops, and speakers for attendees to choose from. There were also great networking events to attend during coffee breaks as well as at the evening social functions.
- Seniors Ice Cream Social (June 8th, 2023) – I had a great opportunity to interact with some of Canmore seniors at Rotary Friendship Park last Thursday and enjoy some delicious ice cream. It was great to see the Canmore Library, Roam Transit, Bow Valley Learning Council and the Bow Valley Primary Care Network there to answer questions and provide information for interested seniors.

Monthly Bulletin
May 2023

BOW VALLEY REGIONAL HOUSING

NEWS, INITIATIVES, AND EVENTS

Spring Garden Party

Our Spring Garden Party returns to Bow River Lodge to celebrate seniors on June 10, 2023! This year marks a return to pre-pandemic partying, so please save the date and join us to recognize our seniors, enjoy fun activities, yummy treats, and a band. We also hope to allow tours of the first floor of the new wing for those eager to check it out!

Designated Supportive Living (DSL) Operations

We remain proud and excited to welcome DSL residents into the new wing at Bow River Lodge. The program brings public DSL care to the region for the first time and will help keep seniors close to their loved ones and supports in the community for longer. We expect up to 30 former residents of the region who left to access this level of care will return to live at Bow River Lodge!

We thank the Government of Alberta, Alberta Seniors, Community and Social Supports, Alberta Health, Alberta Health Services, and SE Health for helping us bring this facility to Canmore and the Bow Valley region. Our Grand Opening on April 27 was a well-attended kick-off!

Our DSL Hair Salon is opening in June; long-time hairstylist and barber Fidal has joined the team to serve our residents. Welcome Fidal!

BVRH Board member changes

We wish to bid farewell to Julie Canning and thank her for her contribution to the Board over the past months. Don Beaulieu has been appointed by Improvement District #9 to take Julie's seat, welcome, Don!

PROGRAM OCCUPANCY RATES

Bow River Lodge - NSL	89%
Bow River Lodge – DSL	38%
Cascade House	84%
Bow River Homes	100%
Mount Edith House	100%
Community Housing	100%
Rent Supplement	100%

SPECIAL PROJECTS

This is Home (Phase 3+)

We have submitted a draft concept to Alberta Seniors, Community, & Social Supports for our Phase 3+ Projects. If approved, they would refresh much of our Community and Seniors' Independent Housing stock while adding unit types and affordability levels to the region. We hope that the GOA will appreciate and approve the opportunity in collaboration with the Town of Canmore, and perhaps other Housing Agencies to address some of the housing crisis in the Bow Valley.

RESOURCES

- In an emergency, please dial **911.**
- For 24/7 nurse advice and general health information for Albertans information on diseases, treatments, staying well, and healthcare services dial **811.**
- For 24/7 community program & service information, including affordability programming in the Bow Valley dial **211.**

ABOUT BOW VALLEY REGIONAL HOUSING

Bow Valley Regional Housing (BVRH) is a Housing Management Body (HMB) serving the Government of Alberta and the Bow Valley Region. HMB operational funding sources vary. Tenants pay accommodation fees. Those fees are subject to affordability limits, which prevent them from fully covering the costs of operations. Provincial grants and municipal ratepayer requisitions subsidize seniors lodge deficits, while the province also subsidizes deficits in independent seniors and community housing.

As the HMB for the Bow Valley region, BVRH is responsible for social housing, as well as affordable supportive living accommodation for seniors throughout Kananaskis Country, the Bow Corridor, the MD of Bighorn, and all of Banff National Park, an area covering about 13,500 square kilometers.

> All told, we currently house, or help to house approximately 450 residents of the Bow Valley in eight permanent housing projects encompassing 36 separate buildings.

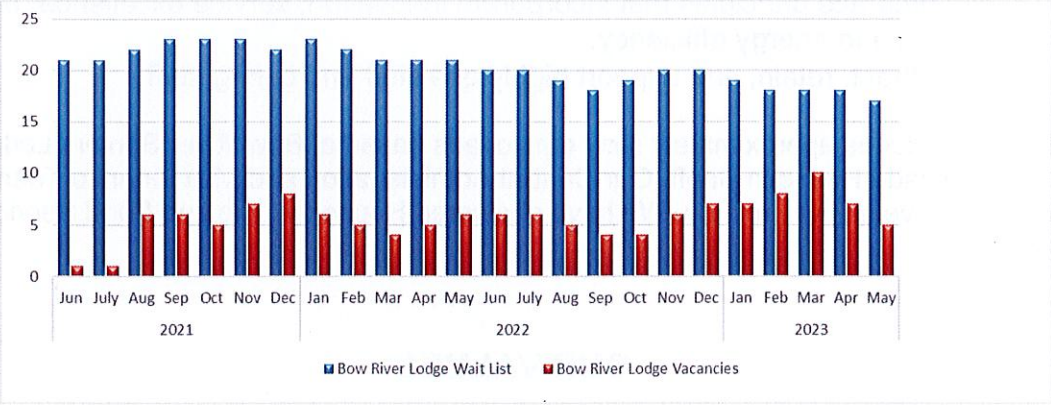
May 2023 Occupancy & Waitlist Report

BOW VALLEY REGIONAL HOUSING

Bow River Seniors Lodge - NSL in Canmore

Occupancy and waitlist as of May 25, 2023:

- The lodge has sixty-three residential suites.
- Of those suites, fifty-six are occupied or available for occupancy.
- The other suites are not available for occupancy. They are not captured in the chart below but include the following:
  - Four are utilized for cool-down space, storage, or amenity spaces.
  - Six are being rehabilitated (including three former office/storage spaces).
- 89% of the habitable suites are occupied or awarded pending move-in.
- Eighteen candidate households are waitlisted, and most are not ready to move in.



Bow River Seniors Lodge – DSL Wing in Canmore

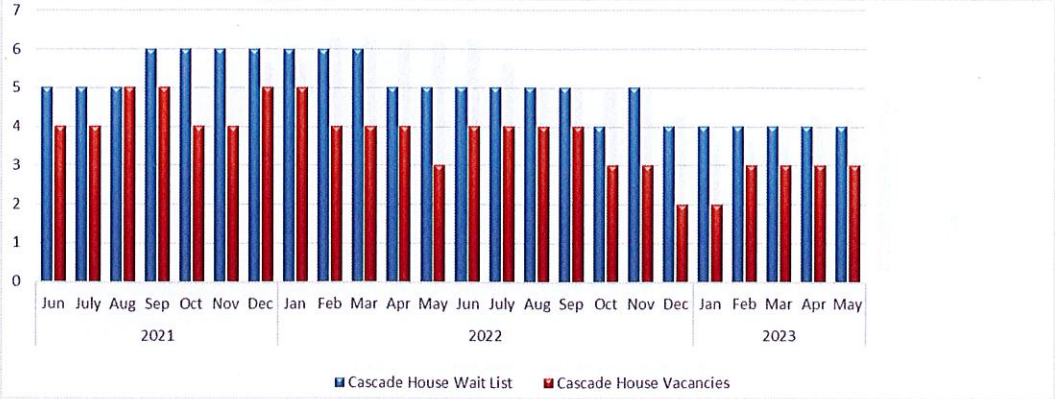
Occupancy as of May 25, 2023:

- There are twenty-three residents in Designated Supportive Living 4 (DSL4).
- Three applicants are scheduled to move over the next three weeks.
- First floor – dementia unit – not yet operational pending staffing.
- Second floor – care unit – at 77% occupancy.
- AHS controls the admission process; we are not privy to waitlist information.

Cascade House (Seniors Lodge) in Banff

Occupancy and waitlist as of May 25, 2023:

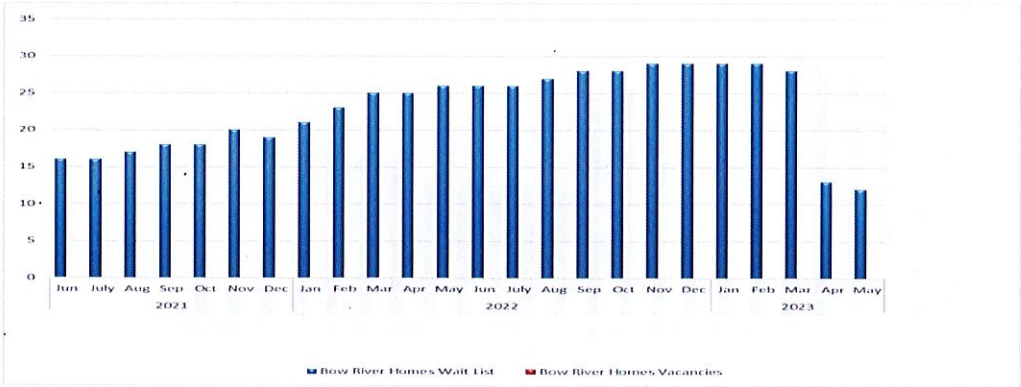
- The lodge has twenty-two residential suites.
- Of those suites, nineteen are occupied or available for occupancy.
- The other suite is not available for occupancy. They are not captured in the chart below but include the following:
  - Three are being rehabilitated.
- 84% of the habitable suites are occupied or awarded pending move-in.
- Four candidate households are waitlisted, and they are not yet ready to move in.



Bow River Homes (Seniors Self-Contained) in Canmore

Occupancy and waitlist as of May 25, 2023:

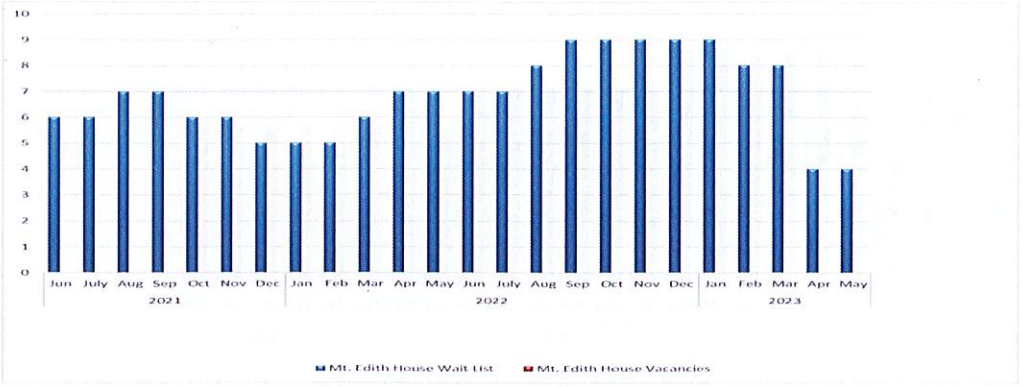
- The project has twenty-eight self-contained residential suites.
- Of those suites, twenty-five are occupied or available for occupancy.
- The other suite is not available for occupancy. They are not captured in the chart below but include the following:
  - Three are being rehabilitated.
- 100% of the habitable suites are occupied or awarded pending move-in.
- Twelve candidate households are waitlisted.



Mount Edith House (Seniors Self-Contained) in Banff

Occupancy and waitlist as of May 25, 2023:

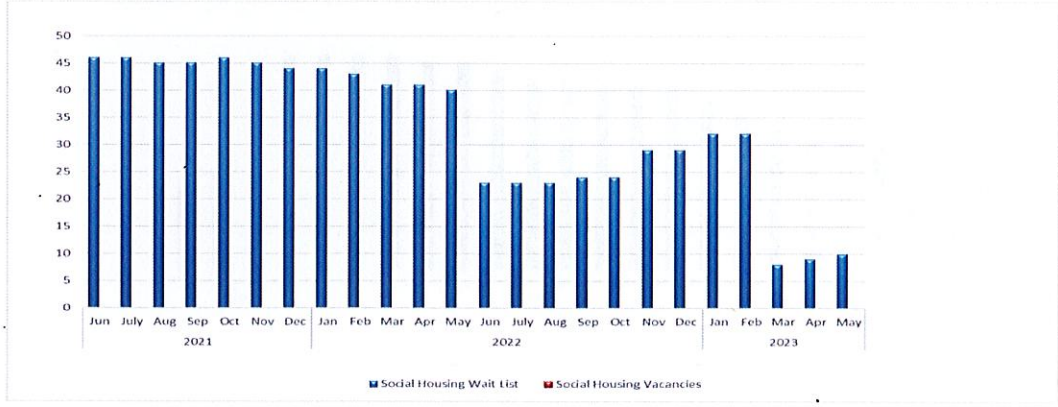
- The building has thirty-four self-contained residential suites.
- Of those suites, thirty-two are occupied or available for occupancy.
- The other suite is not available for occupancy. They are not captured in the chart below but include the following:
  - Two are being rehabilitated.
- 100% of the habitable suites are occupied or awarded pending move-in.
- Eight candidate households are waitlisted.



Community Housing Projects in Canmore

Occupancy and waitlist as of May 25, 2023:

- The portfolio has fifty-eight individual residential units.
- Of those fifty-eight units, fifty-five are occupied or available for occupancy.
- The other suites are not available for occupancy. They are not captured in the chart below but include the following:
    - Three are being rehabilitated.
- 100% of the habitable suites are occupied.
- Ten candidate households are waitlisted.



Rent Supplement (RS) Programs in the Bow Valley Region.

Occupancy and waitlist as of May 25, 2023:

- A monthly budget of $32,370.00.
- Providing financial subsidies to 60 active client households.
- Two candidate households are waitlisted.
- The monthly subsidy totaled $30,768, averaging $513.00 per client household.
- Of our active RS client households:
    - 48 live in Canmore
    - Seven live in Banff
    - Three live in Deadman's Flat
    - Two live in Exshaw

BOW VALLEY
REGIONAL HOUSING

Regular Board Meeting
Minutes
Thursday, April 27, 2023, 10:00 am.
Bow River Seniors Lodge, Canmore AB

PRESENT:	Lisa Rosvold (Chair), Karen Marra (Vice-Chair), Joanna McCallum, Chip Olver, and Anita Szuster
TELECONFERENCE:	Barb Pelham
ALSO PRESENT:	Ian Wilson (CAO), Greg Hutchings (Operations Manager), and Jennifer Comighod (Client Services Manager)
REGRETS:	Julie Canning

1. **CALL TO ORDER**
   Chairperson L. Rosvold called the meeting to order at 10:20 am.

2. **ADOPTION OF AGENDA**
   Motion 23-020: K. Marra to approve the agenda. With the addition of 8.b Potential welcome gift for the DSL residents, 9.f ASCHA 2023 Convention & Tradeshow participants update 11.a Reschedule the next meeting. Carried unanimously.

3. **APPROVAL OF MINUTES**
   a. **Regular Meeting of the Board:**
      Motion 23-021: J. McCallum to approve the minutes of March 23, 2023, the regular meeting of the board as presented. Carried unanimously.

4. **COMMITTEE REPORT**
   a. **Community Integration Committee:** verbal update provided and discussed.

5. **CAO REPORT**
   a. **'This is Home' Redevelopment:** verbal update provided and discussed.

6. **NEW BUSINESS**
   a. **2023 Supportive Living Programs - Capital and Reserve Budget Development:** report provided and discussed.
      Motion 23-022: A. Szuster to approve the 2023 Supportive Living Program Capital and Reserve Budget as presented. Carried unanimously.
   b. **In-Camera IT discussion:**
      Motion 23-023: K. Marra to take the meeting on camera. Carried unanimously.
      Motion 23-024: A. Szuster to take the meeting out of the camera. Carried unanimously.
   c. **Potential welcome gift to DSL Residents:** discussed.

7. **CORRESPONDENCE AND INFORMATION**
   a. **Operating Agreement with SEHC:** report provided and discussed.
      Motion 23-025: K. Marra to accept the report as information. Carried unanimously.
   b. **MOU with SEHC:** report provided and discussed.
      Motion 23-026: K. Marra to accept the report as information. Carried unanimously.
   c. **April 2023 BVRH Bulletin:** presented and reviewed.
      Motion 23-027: A. Szuster to accept the report as information. Carried unanimously.
   d. **April 2023 Occupancy and Waitlist Report:** presented and reviewed.
      Motion 23-028: A. Szuster to accept the report as information. Carried unanimously.
   e. **ASCHA 2023 Conference & Tradeshow Participants Update:** K. Marra and J McCallum provided verbal updates and discussed.

8. **DATE AND LOCATION OF NEXT MEETING(S)**
   a. **Next Regular Meeting of the Board**: discussed
      June 01, 2023, starting at 10:00 am in Bow River Lodge, Canmore.

9. **ADJOURNMENT**
   Motion 23-029: C. Olver that the meeting adjourn at 11:58 am. Carried unanimously.

Lisa Rosvold, Chairperson

Ian Wilson, CAO

MINUTES PREPARED BY: Jennifer Comighod, Client Services Manager

CCH OPERATIONS REPORT
May 2023

	OWN Program		RENT Program							
Wait List:	196	+18 over last month	155		+5 over last month					
Applications YTD:	67	+11 over last month +51 over STLY	108		+19 over last month +49 over STLY					
Applications Received/Processed 2022:	*72*		*154*							
Inquiries YTD:	97	+21 over last month +16 over STLY	197		+81 over last month +83 over STLY					
Inquiries 2022:	*227 Total*		*238 Total*							
Current Occupancy:			97%	Hector	100%	McArthur	100%	Wolf Willow	100%	NLCC
Total Vital Home Units:	162	2 Units for Sale in May 1 Unit SCMV-C/S 1 Unit WW-C/S	60		48		9		1	
Turnover YTD:	4%	6	8%	5	17%	8	10%	1	0%	0
Turnover 2022:	*12%*	*19 sales (19/157)*	*18%*	*11 Units (11/60)*	*31%*	*15 units (15/48)*	*30%*	*3 Units (3/9)*	*0%*	*0*

↑ Above numbers updated as of May 31, 2023 ↑

CANMORE COMMUNITY HOUSING

Canmore Rental Statistics for 2023

		Jan.	Feb.	Mar.	Q1 Averages	Apr.	May	June	Q2 Averages	July	Aug.	Sept.	Q3 Averages	Oct.	Nov.	Dec.	Q4 Averages	Annual Average
Shared 1Bdrm	**Average**	$900.00	$ 1,095.20	$1,533.33	**$ 1,176.18**	$1,292.86	$1,200.00		**$ 1,246.43**				**$ -**				**$ -**	**$ 1,204.28**
	Median	$900.00	$ 1,150.00	$1,400.00	**$ 1,150.00**	$1,200.00	$1,200.00		**$ 1,200.00**				**$ -**				**$ -**	**$ 1,200.00**
	Available	1	5	3	**3**	7	2		**5**				**0**				**0**	**4**
Studio	**Average**				**$ -**				**$ -**				**$ -**				**$ -**	**#DIV/0!**
	Median				**$ -**				**$ -**				**$ -**				**$ -**	**#NUM!**
	Available	0	0	0	**0**	0	0		**0**				**0**				**0**	**0**
1 Bedroom	**Average**	$2,218.50	$ 3,250.00	$1,816.67	**$ 2,428.39**	$2,133.33	$2,095.83		**$ 2,114.58**				**$ -**				**$ -**	**$ 2,302.87**
	Median	$2,100.00	$ 3,250.00	$1,500.00	**$ 2,100.00**	$2,200.00	$2,100.00		**$ 2,150.00**				**$ -**				**$ -**	**$2,100.00**
	Available	10	2	3	**5**	9	12		**11**				**0**				**0**	**7**
2 Bedroom	**Average**	$2,745.42	$ 3,076.82	$3,203.00	**$ 3,008.41**	$2,673.44	$3,007.72		**$ 2,840.58**				**$ -**				**$ -**	**$ 2,941.28**
	Median	$2,700.00	$ 2,900.00	$3,150.00	**$ 2,900.00**	$2,700.00	$2,825.00		**$ 2,762.50**				**$ -**				**$ -**	**$2,825.00**
	Available	12	11	9	**11**	16	18		**17**				**0**				**0**	**13**
3 Bedroom	**Average**	$4,480.00	$ 4,691.67	$4,484.67	**$ 4,552.11**	$4,099.72	$4,190.79		**$ 4,145.26**				**$ -**				**$ -**	**$ 4,389.37**
	Median	$3,750.00	$ 4,625.00	$4,450.00	**$ 4,450.00**	$3,850.00	$4,000.00		**$ 3,925.00**				**$ -**				**$ -**	**$4,000.00**
	Available	5	6	15	**9**	18	19		**19**				**0**				**0**	**13**
4+Bedroom	**Average**	$5,133.57	$ 4,517.00	$6,596.67	**$ 5,415.75**	$8,475.00	$5,700.00		**$ 7,087.50**				**$ -**				**$ -**	**$ 6,084.45**
	Median	$4,750.00	$ 4,995.00	$5,000.00	**$ 4,995.00**	$8,475.00	$5,700.00		**$ 7,087.50**				**$ -**				**$ -**	**$5,000.00**
	Available	7	5	3	**5**	2	2		**2**				**0**				**0**	**4**
Summary Total Studio-4		**34**	**24**	**30**	**88**	**45**	**51**	**0**	**96**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	184

Canmore Rental Statistics for 2022

		Jan.	Feb.	Mar.	Q1 Averages	Apr.	May	June	Q2 Averages	July	Aug.	Sept.	Q3 Averages	Oct.	Nov.	Dec.	Q4 Averages	Annual Average
Shared 1Bdrm	**Average**	$880.56	$ 920.83	$781.25	**$ 860.88**	$847.50	-	$935.00	**$ 891.25**	$1,200.00	$901.11	$863.33	**$ 988.15**	$895.00	$ 995.00	$ 1,056.25	**$ 982.08**	**$ 934.17**
	Median	$800.00	$ 900.00	$762.50	**$ 800.00**	$900.00	-	$950.00	**$ 925.00**	$1,200.00	$900.00	$875.00	**$ 900.00**	$935.00	$ 885.00	$ 1,100.00	**$ 935.00**	**$ 900.00**
	Available	9	6	4	**6**	8	0	6	**5**	2	9	3	**5**	3	6	8	**6**	**5**
Studio	**Average**	$1,300.00	$900.00	-	**$ 1,100.00**	-	$1,300.00	-	**$ 1,300.00**	$ 1,400.00	$ 1,525.00	$1,075.00	**$ 1,333.33**	$1,200.00	$ 1,000.00	$ 1,375.00	**$ 1,191.67**	**$ 1,230.56**
	Median	$1,300.00	$900.00	-	**$ 1,100.00**	-	$1,300.00	-	**$ 1,300.00**	$ 1,400.00	$ 1,525.00	$1,075.00	**$ 1,400.00**	$1,200.00	$ 1,000.00	$ 1,375.00	**$ 1,200.00**	**$ 1,300.00**
	Available	2	1	0	**1**	0	1	0	**0**	1	1	1	**1**	1	1	1	**1**	**1**
1 Bedroom	**Average**	$1,714.00	$ 1,749.17	$1,646.11	**$ 1,703.09**	$1,759.38	$1,783.33	$1,966.67	**$ 1,836.46**	$2,040.00	$2,066.00	$ 1,954.00	**$ 2,020.00**	$2,031.33	$ 2,278.75	$ 2,188.38	**$ 2,166.16**	**$ 1,931.43**
	Median	$1,700.00	$ 1,847.50	$1,695.00	**$ 1,700.00**	$1,525.00	$1,750.00	$2,100.00	**$ 1,750.00**	$2,100.00	$2,050.00	$ 1,837.50	**$ 2,050.00**	$2,011.00	$ 2,200.00	$ 1,900.00	**$ 2,011.00**	**$ 1,873.75**
	Available	5	6	9	**7**	8	6	3	**6**	5	14	10	**10**	12	12	13	**12**	**9**
2 Bedroom	**Average**	$2,545.24	$ 2,901.56	$2,909.72	**$ 2,785.51**	$2,371.39	$2,602.21	$2,710.69	**$ 2,561.43**	$2,900.00	$2,711.86	$ 2,799.28	**$ 2,803.71**	$2,811.63	$2,810.56	$ 2,749.00	**$ 2,790.40**	**$ 2,735.26**
	Median	$2,250.00	$ 2,850.00	$2,747.50	**$ 2,747.50**	$2,199.50	$2,324.50	$2,550.00	**$ 2,324.50**	$2,697.50	$2,600.00	$ 2,700.00	**$ 2,697.50**	$2,700.00	$ 2,700.00	$ 2,500.00	**$ 2,700.00**	**$ 2,648.75**
	Available	21	16	18	**18**	18	14	26	**19**	26	35	29	**30**	27	27	15	**23**	**23**
3 Bedroom	**Average**	$3,716.86	$ 3,686.36	$4,163.18	**$3,855.47**	$4,059.06	$3,622.94	$3,669.23	**$3,783.74**	$3,871.43	$3,463.18	$ 3,903.21	**$3,745.94**	$3,947.57	$4,704.14	$ 4,722.67	**$4,458.13**	**$3,960.82**
	Median	$3,450.00	$ 3,400.00	$4,000.00	**$ 3,450.00**	$3,450.00	$3,400.00	$3,400.00	**$ 3,400.00**	$3,500.00	$3,500.00	$ 3,550.00	**$ 3,500.00**	$3,600.00	$4,625.00	$ 3,750.00	**$ 3,750.00**	**$ 3,500.00**
	Available	14	11	11	**12**	16	17	13	**15**	7	22	14	**14**	21	14	9	**15**	**14**
4+Bedroom	**Average**	$3,600.00	$ 5,016.67	$3,016.67	**$ 3,877.78**	$8,166.67	$7,025.00	$6,500.00	**$ 7,230.56**	$4,800.00	$4,862.50	$ 5,950.00	**$ 5,204.17**	$5,519.17	$3,140.00	$ 3,596.67	**$ 4,085.28**	**$ 5,099.44**
	Median	$3,600.00	$ 3,250.00	$3,000.00	**$ 3,250.00**	$8,000.00	$8,000.00	$6,500.00	**$ 8,000.00**	$4,800.00	$4,250.00	$ 5,500.00	**$ 4,800.00**	$5,200.00	$3,140.00	$ 3,790.00	**$ 3,790.00**	**$ 4,525.00**
	Available	1	3	3	**2**	3	5	2	**3**	1	8	6	**5**	6	2	3	**4**	**4**
Summary Total Studio-4		**43**	**37**	**41**	**121**	**45**	**43**	**44**	**132**	**40**	**80**	**60**	**180**	**67**	**56**	**41**	**164**	597

Sources: Asset West, PEKA, ReMax, RMO, Peak Estates, Rent Faster, Kijiji

Above stats included both furnished, unfurnished accommodation and both with without utilities. An average of all available.

Administrative Update

DATE OF MEETING: June 20, 2023 **Agenda #: F-1**

A. CAO's Office

1. CAO

a) Attended the Federation of Canadian Municipalities (FCM) Conference in Toronto with the GM of Infrastructure and several members of Council. Attended sessions focused on housing, climate, and effectively supporting staff retention and resilience.

b) Attended lunch meeting with Mayor Krausert, Siksika Chief Ouray Crowfoot, and members of the Siksika Council at the Blackfoot Crossing Historical Park.

c) Meetings with the Rocky Mountain Heritage Foundation (who are 50% owners of the land at Quarry Lake) to discuss an agreement for revenue sharing for paid parking at Quarry Lake are ongoing. We are hoping to finalize an agreement in the coming months.

d) Held a virtual All Staff General Assembly on May 31 and provided updates to staff on the 2023 Employee Award Program, the Railway Avenue project, the Housing Action Plan, and the recent Reconciliation, Equity, Diversity, and Inclusion (REDI) assessment of the organization (which will come to Council in July). Many thanks to Communication for organizing the assembly and HR, Engineering, GMs of Corporate Services, and Municipal Infrastructure for preparing materials and presenting!

e) Along with the GM of Infrastructure and the Manager of Public Works attended a meeting with TransAlta staff intended to share information and build strong working relationships.

2. General Manager of Corporate Services

a) Attended the 2023 Government Finance Officers Association (GFOA) International conference. Returned with great learnings and resources to assist with our update of the Long-Term Financial Strategy and Asset Management Strategy.

b) In April, the Town received an assessment complaint on sections 299 and 300 of the Municipal Government Act with questions about how the assessment roll was prepared and how sales data was used to determine the assessed value of a particular property. Municipal Affairs reviewed the complaint and found the assessor did provide the correct information once clarity on what was being sought was determined. Municipal Affairs worked with the Town's contract assessor and made four (4) recommendations:

- Develop a formal request for information process. – the compliance review form will be added to the Town's website prior to the next assessment year.
- Clearly identify the valuation approach used for each property type and provide the appropriate valuation report to show how the assessment was prepared.
- Identify descriptors and codes for the variables used in the valuation model, including ranges for each if present.
- Publish a list of sales that an assessed person has access to, or the ability to independently search for property sales within the subject property's market area.

The Town's assessors will be addressing the last three (3) recommendations prior to the next assessment year and are currently working with the Town to develop processes and an appropriate fee schedule using best practices from other Alberta municipalities.

3. General Manager of Municipal Infrastructure

a) Attended the Federation of Canadian Municipalities (FCM) Conference, as noted in the CAO update.

4. General Manager of Municipal Services

a) Joined the Managers of Protective Services, Economic Development and Engineering in a meeting with the Downtown Business Improvement Area's Chair and Interim Executive Director to discuss parameters for the Town Centre Grant Program.

5. Legal

a) The transfer of land from Municipal Affairs to the Town at the bottom of the Legacy Trail switchbacks to the Nordic Centre was registered on May 2, 2023. This completes the land acquisition for capital project 1317 for the Legacy Trail extension.

B. MUNICIPAL SERVICES

1. Community Social Development

a) The Family Connection Centre completed two 'Getting Ready for Kindergarten' multi-week sessions, one at Our Lady of the Snow and one at Elizabeth Rummel School. The program was adjusted to include discuss topics like, having kids in a pandemic.

b) Family Community Support Services hosted Seniors' week from June 5-11. The week was an opportunity to recognize and celebrate the importance of seniors in our community. The week included numerous activities from Aquafit to Emergency preparedness for seniors.

c) The Community Evaluator led a childcare discussion on June 1, 2023 to support local centres with brainstorming ways to build more sustainable daycare within Canmore. The province attended the meeting, to provide a licensing perspective, and Alberta Childcare Ventures (private, provincially contracted business development group) attended the meeting, to provide business support.

d) The Community Evaluator launched the Safe Park program on June 1. As of June 9, 18 vehicles have fully registered for the program (this represents 22 individuals). In total, the program has had 27 applications and 35 inquiries.

e) The Community Grant Selection Committee adjudicated this year's community grants. A summary of awarded grants is below:

Grant Application	Allocation	Project Summary
artsPlace	2,000	The Shoe Project advances leadership skills and language fluency of immigrant and refugee women who residing in the Bow Valley. Women receive professional development for 10 weeks and complete three public performances
Association Canadienne Francaise de l'Alberta regionale de Canmore-Banff	2,000	A series of events in celebration of National Francophone Immigration month and to welcome French-speaking newcomers to the community

Bow Valley Wellness, Recovery, Preparedness	3,000	A mental health messaging campaign that facilitates access to local resources
Bow Valley Affordable Arts	2,000	An affordable art program that includes dance, ukulele, sculpting, song writing, and electronic music creation
Bow Valley Connections Centre	3,000	A free theater play that focuses on the nurturing and life-giving aspects of the world
Bow Valley Food Alliance	2,000	In partnership with Whyte Museum and Mini Thni community, food for grieving for families who are mourning on the Stoney Nakoda Nation
Bow Valley Learning Council	2,000	"Live like a local" a program to support English Language learners with connecting to community
Canmore Filipino Canadian Society	2,000	A series of events celebrating Filipino Heritage month and connecting the Filipino community with the Canmore community
Canmore Halloween Project	2,000	A Halloween gathering to connect children and families to community. Includes opportunities for children who are unable to attend the event due to health concerns
Homelessness Society of the Bow Valley	2,000	A series of clothing and gear swaps for community to share excess items they may own or receive needed items for free. Extra items will be given to winter emergency shelter guests
Pine Tree Players	2,000	Collaboration with the Canmore Museum to host live street performances featuring historical local characters/legends telling the story of our town's history
Ralph Connor Memorial United Church	1,000	Facilitated conversation with community designed to bring community together to talk about how community will be maintained as the world continues to change due to technology, growth, climate change, and more
Rocky Mountain Adaptive Sport	2,000	Training for summer staff so that they can provide safe, quality, and accessible programs
Soul of Miistaki	2,000	A program aimed at promoting equitable access to the outdoors and to empower marginalized people to develop skills and confidence

In addition to the above grants, the Community Grant Selection Committee also allocated $1,000 to Rocky Mountain Adaptive Sport for their 2022 grant application that was missed and therefore not included in the 2022 adjudication discussions.

2. Recreation Services

a) Aquatics will be partnering with Lawrence Grassi Middle School this fall to offer the Bronze Star program as an option for grade seven students. The provincial regulations related to COVID-19 halted this middle school option for three years. This program provides students with employable skills and after the completion of the program students often choose to pursue additional certification and employment opportunities with the Town of Canmore.

b) Recreation recently conducted a fee review and will be implementing marginal increases in alignment with the Recreation Services Operating Policy. On June 26, day pass admissions will

increase, followed by some facility rental fees in the Fall. Membership rates will remain the same for this year as increases were implemented in 2022.

c) The month of June is recognized as recreation and parks month in Alberta. To celebrate the many benefits that recreation and parks bring to our community, free activities were offered on Sunday, June 4.

d) Administration has been working with the newly formed Bow Valley Pickleball Association and the Canmore Tennis Association to coordinate access to Town facilities.

3. Fire-Rescue

a) Rescue One and three firefighters attended Disaster Readiness Day in Banff on May 7. The event provided Bow Valley residents and visitors with the opportunity learn what steps they can take to prepare for emergencies and how various agencies are prepared to manage large emergency events.

b) To support the Alberta wildfire response efforts, one Canmore firefighter was deployed with Canada Task Force – two to the Parkland County Fire from May 5-12.

c) Canmore Fire-Rescue's year to date call volume (as of April 30) has increased 32% compared to the same period in 2022.

d) Medical Co-Response continues to represent approximately half of the calls received by Canmore Fire-Rescue (CFR). The table below compares which agency arrived on scene first and when CFR arrived first, the time spend waiting for EMS in 2022 and 2023.

2022		Jan 1 to May 24, 2022		Jan 1 to May 24, 2023	
Fire-Rescue Arrived First	Avg Wait Time for EMS (m:ss)	Fire-Rescue Arrived First	Avg Wait Time for EMS (m:ss)	Fire-Rescue Arrived First	Avg Wait Time for EMS (m:ss)
71%	6:42	71%	5:48	73%	6:58

4. Protective Services

a) The draft Regional Emergency Management Bylaw went before the Town of Banff's Finance and Governance Committee on May 23. It received support from their Council to go forward for three readings to enact the bylaw.

b) The Manager of Protective Services and a Community Peace Officer attended the Canmore Young Adult Network's Pasta Night on May 16. This well-attended event provided the opportunity to talk with individuals about emergency preparedness, municipal bylaws, and other concerns related to the Town of Canmore.

c) Peak season parking rates came into effect on May 15 and parking rates changed from $2/hr to $3/hr in the Town Centre and from $2.50/hr to $10/two hours at Quarry Lake. Resident monthly pass peak season rates came into effect on May 1 and passes are available for residents at $83/month.

d) Resident parking permit renewals began at the end of May. A small number of online portal system errors delayed a handful of residents from renewing their permits. Administration continues to work closely with vendor to identify issues and deploy bug fixes.

e) In early June the Paid Parking team delivered a session for the Canmore Seniors Association to assist individuals with resident parking permit renewals.

f) Community Peace Officers actively assisted the Streets and Roads department through the months of April and May with parking enforcement in street sweeping zones.

5. Economic Development

a) Main Street Pedestrian Area permitting has received 28 applications for post and cable patios, outdoor set-ups, and community seating areas as well as five in-street patio applications for solid structure patios on Town of Canmore Road right of ways.

b) Since HappiPad.com/Canmore launched (late April), five host and nine renter registrations have been received.

c) Economic Development has launched the Business for Kids and Teens program which encourages children in grades one to nine to write a business plan and submit it to Economic Development with the ability to win some kick-starter funding and/or prizes from local partners.

d) Arts & Events

- In recognition of National Indigenous Peoples Months in June Arts and Events will be hosting the following events
  - Three Sisters Gallery – Indigenous Perspective Exhibit from June 1 to August 30 at Elevation Place
  - National Indigenous Peoples Day on June 17 from 10 am – 3pm at the Canmore Civic Centre, Civic Centre Plaza, and Rotary Friendship Park. The day will include an indigenous cultural showcase, pouch making workshop, story time, book walk and Indigenous Art Market.

C. CORPORATE SERVICES

1. **Finance**

a) Administration is closely monitoring cost of living (COLA) data. The 2024 approved budget includes a COLA estimate of 2.6%. Currently year over year data indicates it is trending closer to approximately 5.5%.

b) 2023 Financial Update (see charts at the end of this document for Year to Date as of April 30)

Administration monitors actual performance compared to budget. Year-to-date variances are largely attributable to timing differences and savings between actual versus budgeted transactions and various flow-through reserve and funding entries that are not accounted for until year-end. A detailed analysis of the variances to April 30 was conducted that excluded the impact of timing and year-end accounting and considered known subsequent events. See attached Financial Report as of April 30, 2022, with detailed variance explanations by department. It is early in the year to make any assumptions of the budget trends, but a few key highlights are as follows:

Revenues:
Higher than budget paid parking revenues and related fines ticket revenue projected for the year.
Decreased automatic traffic enforcement fines (photo radar) revenues due to the impact of the provincial guideline changes.
Recreation revenues (memberships, rentals, programming etc.) are starting to recover from the pandemic levels.

Low Income Transit Pass Grant of $812,262 has been approved by the province of which $710,729 will be received in 2023 ($507,664 has been received) and $101,533 in 2024. This is a one-time grant.

Expenses:
Snow and ice control is lower than budget due to overall less snow accumulation than other seasons and dependent on weather conditions in the later part of the year.
Overall, a decrease in contracted services to budget is being noted due to timing of the contracted repairs and maintenance.
Slippage is being monitored carefully and position vacancies and payroll slippage is at $300,000 versus the annual budget assumption of $820,000.

2. Communication

a) Website Renewal Project Update: we continue to work with our website design vendor to develop a refreshed and more user-friendly website for the Town of Canmore which will improve our online presence and enhance the services we provide to the community. We are finalizing the website design, preparing the content for migration to the new site which is anticipated to launch in early July.

b) We just announced the launch of the Voyent Alert notification service in Canmore. A campaign to enroll subscribers will be promoted through all Town of Canmore communications channels to enroll community members and visitors. Voyent Alert is a multipurpose notification service that will be used to communicate important information to our residents. Alerts can be received on the Voyent Alert app, or by email, text message, or phone call. Other Bow Valley communities also use this notification service and subscribers can select which updates to receive. There are currently almost 2,500 people subscribed to receive Town of Canmore emergency updates by email, and we hope to transition those subscribers to the new system this summer.

D. MUNICIPAL INFRASTRUCTURE

1. Planning & Development

a) Bed & Breakfast Safety Code Inspections: To comply with Alberta Building Code requirements, a process change is coming into effect that will affect all new and existing Bed & Breakfast operators. Bed and Breakfasts will be required to demonstrate compliance with the National Building Code – Alberta Edition upon renewal of an existing development permit or upon application for a new Bed & Breakfast Development Permit. Compliance can be demonstrated by the submission of an inspection report prepared by a certified Safety Codes Officer. Bed & Breakfast operators who have a development permit renewal in 2023 are encouraged to be proactive about achieving compliance. Operators who wish to book an inspection of their property can do so by submitting an online inquiry to the Planning & Development Department. A letter providing information on this process change was sent to operators the week of May 29th.

b) Development Permit Signage Guidelines: Notice of Application and Notice of Decision guidelines have been finalized. The guide has been circulated to BOWDA members and is available on the Town's website. These new guidelines were developed to support Council's Strategic Goal around Relationships, so that residents are effectively notified about development occurring within the Town and have an increased awareness of when and how they can provide feedback on what is being proposed. These guidelines will require larger signs (a minimum of 18" x 24") be posted on site, so that they are noticeable and visible from the street. This will be a

significant increase in visibility, as signs currently posted are often no bigger than 8.5" x 11". There will also be new signage requirements for Statutory Plan and Land Use Bylaw Amendments.

The department will trial these guidelines for a year. Based on compliance level review of these guidelines in mid-2024, a decision may be made to transitions these guidelines into regulations within the Land Use Bylaw.

2. Engineering Services

a) Community Speed Limits – Implementation of 30km/hr speed limits on local, collector streets, and portions of the arterial roadways in the core (as outlined in the March Committee of the Whole report) is scheduled for mid-June.

b) Cougar Creek (1562): A key milestone was achieved in May with the completion of the drilling and grouting program and creation of a 10m deep grout curtain below the foundation excavation. Ground conditions were consistent with expectations. Substructure work will be ongoing through June, weather and runoff permitting, with the next steps including the reinforced-concrete foundation, sheet-pile core wall installation and backfill to creek bed level planned.

c) West Bow River Pathway (7235): Contract awarded to PCL. Project kickoff meeting held. Contractor mobilized to site June 1 as per plan.

d) Bow Valley Trail and Teepee Town (Hospital Place) Street and Drainage Rehabilitation (7297) and BVT Water/Wastewater Upgrades (7323/7324): Contract awarded to BECL. Project kickoff meeting held. Mobilization planned for fall, to prepare for spring 2024 construction.

3. Facilities

a) Fire Station Construction (7229):

- Considerable progress is ongoing and move in is still scheduled this fall.

b) Fire Station Topsoil Stockpile Management (7288):

- The topsoil stockpile was screened in May. About 75% of the stockpile was re-used on site and for other Town purposes (e.g., cemetery & storm pond rehabilitation).
- The remaining 25% was offered to BOWDA members, supporting the Town's interest in reducing the hauling of stockpile materials to outside of the Bow Valley or the landfill. Spring Creek, several builders, landscapers, and not-for profit organizations took advantage of this offer, which is a great community outcome!
- The site is expected to be rehabilitated by the end of the summer, fulfilling compliance with development standards.

c) CRC Rooftop Solar Expansion - Phase 2 (7232):

- Substantially complete and generating power in time for the peak solar generation time of year.

d) CRC Lifecycle Maintenance Project (7009):

- Procurement of Roofing Contractors is complete, and work to be completed this summer.

e) EP Cooling Enhancements (7291):

- Chartering phase complete; procurement stage initiated; implementation planned in 2024.

f) EP Lifecycle Maintenance Project (7287):

- Leisure pool and hot tub gutter re-waterproofing and grout repair contractors have both been procured, and ready for implementation during the annual pool shutdown scheduled this fall.

g) Facilities Use Framework (7230):
- Framework has been completed by the consultant. The recommended re-use will be submitted to Council for approval.

h) Scout Hall Repairs & Maintenance (7289):
- Procurement in progress and implementation planned in the fall.

i) Elevation Place Incident:
- An electrical contractor using the boom lift damaged the gutter grate and tiles surrounding a portion of the leisure pool.
- Staff acted quickly to shut down the work, mitigate risks and re-open the leisure pool in a way that is safe for the public.
- The damage may be repaired during the annual pool shut down in the fall and may impact the length of the shut-down.

j) Elevation Place Slide Platform Remediation:
- The rehabilitation drawings have been submitted by the consultant and will likely be approved by Administration in June.
- Once the remediation plan has been approved, costing and estimated time to implement the remediation will be sought from contractors. If remediation cannot be completed within the approved operating budget, a report identifying alternatives will be brought to Council.

k) Exterior Staining/Painting:
- Planned for the following facilities this season: North and East side of the Civic Centre, South side of Senior's Centre, old Visitor Information Centre, and wood beams of Elevation Place.

l) Heliport Update
- Alpine Helicopters submitted their annual report for 2023, and the Heliport Monitoring Committee will meet in June to review the report.

4. Public Works

a) Parks
- All Parks assets including bike parks, ball diamonds, sports fields, courts, and vault washrooms (that are not currently closed due to capital projects) are open for the summer.
- Quarry Lake Life Jacket Station and water testing was completed the week of May 23.
- Civic Centre mulch bed rehabilitation at the front of the building has been completed.

b) Streets & Roads
- Street Sweeping: the formal street sweeping program was completed on May 19. A collaborative effort between Streets & Roads/Fleet/Parks/Enforcement/Communications delivered a successful and efficient program in 2023.
- Seasonal Roadway/Sidewalk Maintenance: Crack sealing, pavement repairs, long line painting, concrete repairs, and in-road messaging work is underway throughout town. This

work is currently moving along significantly ahead of schedule compared to previous years with intent to complete much of it before the busy tourism season arrives.

- Main Street Closure: successfully executed without issue on May 8.
- Surplus Equipment: $18,766 was collected from the sale of surplus equipment at the end of April. Surplus equipment is sold at public auction while maintaining compliance with the Vehicle Replacement Policy.

c) Solid Waste Services

- The Town hosted the third annual compost give away in late May over two days. A total of 360 residents registered for the event to receive compost. The first event scheduled for May 18 was postponed to May 30 because of the poor air quality.

d) Utilities

- Regulatory: There was a reportable contravention on May 4 in Teepee Town. A contractor was completing tying into the watermain, and the system experienced a loss of pressure. EPCOR responded several times and restored pressure within 30 minutes. The line was flushed, and samples taken to ensure water safety. The contravention was reported to Alberta Environment.
- Service Disruptions:
  - April 15: A homeowner in Silvertip contacted EPCOR when they noted low water pressure. A pressure reducing valve after the water meter in the was found to be faulty. This is a private property issue, but EPCOR replaced the meter at the same time (as part of the meter replacement program).
  - April 17: A home along 10th Avenue experienced a sewer back up. EPCOR responded and noted a deficiency on the Town's side of the service connection. A repair will be scheduled in the future to address the issue.
  - April 17: A home in Larch reported a sewer back up. EPCOR responded to find a frozen service and mobilized a steam unit to thaw the line.
  - April 18: The Town's Waste Management Centre experienced cloudy water. EPCOR responded and noted aeration in the system, likely due to low water use. EPCOR flushed the line until the cloudiness was gone.
  - April 25: A home on Pinewood Crescent had a sewer back up and the homeowner's plumber was not able to clear the obstruction. EPCOR worked with the plumber to camera and locate the blockage. Services were restored the next day.
  - April 26: A house was in the process of being demolished in Teepee Town and did not advise EPCOR to have the water shut off. The leak was isolated and repaired in the less than 30 minutes.

e) Sustainability

- Administration is partnering with the Biosphere Institute to contract two individuals to work part time over the summer months, delivering messaging from the Keep Wildlife Alive Campaign. This is an outreach pilot to enable the Town, through the Biosphere, to be out in the community delivering messaging and showcasing the importance of human-wildlife coexistence. It will be administered by the Biosphere's WildSmart program and fully funded

by the Public Works 2023 operating budget. The two-outreach staff will attend community events, set up pop-up booths at busy locations around Canmore, and complete door knocking campaigns to discuss the various Town policies and bylaws that relate to human-wildlife coexistence, e.g., fruit tree removal, off-leash dogs, bird feeders and giving wildlife space.

- Fruit Tree Incentive Program: as of May 23, eight incentives have been processed for the removal of 29 trees.
- On June 3, the Biosphere Institute of the Bow Valley hosted the Green Buildings Open House, a self-guided tour of eight high-performance and sustainable buildings in Canmore, Banff, and Dead Mans Flats. This event, which started in 2022, is a showcase of homes and businesses that demonstrate sustainable technology, renewable energy systems, water and energy efficiency, climate adaptation, and more. In total, 366 Bow Valley residents participated in the 2023 tour, up from 244 in 2022.

Town of Canmore
Summary of All Units
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Municipal Taxes	(128)	0	(128)	0%	32,040,636
Sales and Rentals	7,592,327	7,310,015	282,312	4%	26,201,194
Permits and Fines	1,280,669	1,260,950	19,719	2%	3,387,085
Internal Transfers	1,716,143	1,715,076	1,067	0%	1,971,163
Grants	738,076	226,236	511,840	226%	1,505,710
Transfers and Other	696,140	323,032	373,108	116%	3,197,158
Total Revenue	**12,023,227**	**10,835,309**	**1,187,918**	**11%**	**68,302,946**
EXPENDITURES					
Salaries, Wages and Benefits	7,555,583	7,921,990	(366,407)	(5%)	24,512,412
Admin and General Services	1,457,805	1,552,839	(95,034)	(6%)	2,766,413
Contracted Services	5,717,057	6,137,609	(420,552)	(7%)	18,193,469
Supplies and Energy	1,142,860	1,116,171	26,689	2%	4,506,349
Borrowing Costs	211,831	211,831	0	0%	4,634,293
Other	(180)	154	(334)	(217%)	73,167
Transfer to Capital	0	0	0	0%	1,385,000
Transfer to Reserve	351,367	351,368	(1)	(0%)	8,612,075
Internal Transfers	1,716,143	1,698,718	17,425	1%	1,971,163
Transfer to Affiliated Orgs	1,270,105	1,270,105	0	0%	1,648,605
Total Expenditures	**19,422,571**	**20,260,785**	**(838,214)**	**(4%)**	**68,302,946**

See the following pages for details:

Please note:

The Town of Canmore periodic internal financial reports do not reflect accrual accounting. As such, there are timing variances due to differences between cash and accrual-based accounting.

Many reserve entries and transfers are not booked until year-end. Consequently, there are year-to-date variances related to flow-through reserve and funding entries not yet accounted for.

Town of Canmore
Summary of Town Operations (excl Utilities / SWS)
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Municipal Taxes	(128)	0	(128)	0%	32,040,636
Sales and Rentals	2,993,313	2,707,745	285,568	11%	9,532,650
Permits and Fines	1,280,669	1,260,950	19,719	2%	3,387,085
Internal Transfers	1,716,143	1,715,076	1,067	0%	1,971,163
Grants	738,076	226,236	511,840	226%	1,505,710
Transfers and Other	686,140	323,032	363,108	112%	2,957,158
Total Revenue	**7,414,213**	**6,233,039**	**1,181,174**	**19%**	**51,394,402**
EXPENDITURES					
Salaries, Wages and Benefits	7,068,703	7,416,497	(347,794)	(5%)	22,886,689
Admin and General Services	1,445,746	1,537,344	(91,598)	(6%)	2,717,038
Contracted Services	3,812,427	4,051,593	(239,166)	(6%)	11,611,241
Supplies and Energy	794,677	717,125	77,552	11%	3,309,415
Borrowing Costs	10,825	10,825	0	0%	1,770,521
Other	(180)	154	(334)	(217%)	73,167
Transfer to Capital	0	0	0	0%	1,385,000
Transfer to Reserve	76,367	76,368	(1)	(0%)	5,316,451
Internal Transfers	707,453	696,991	10,462	2%	732,650
Transfer to Affiliated Orgs	1,270,105	1,270,105	0	0%	1,592,230
Total Expenditures	**15,186,123**	**15,777,002**	**(590,879)**	**(4%)**	**51,394,402**

See the following pages for details:

Town of Canmore
General Municipal
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Municipal Taxes	(126)	0	(126)	0%	31,590,636
Sales and Rentals	991,110	1,010,003	(18,893)	(2%)	3,315,500
Permits and Fines	48,609	48,918	(309)	(1%)	275,000
Grants	507,664	0	507,664	0%	200,000
Transfers and Other	355,024	286,100	68,924	24%	1,858,301
Total Revenue	**1,902,281**	**1,345,021**	**557,260**	**41%**	**37,239,437**
EXPENDITURES					
Salaries, Wages and Benefits	0	0	0	0%	(698,011)
Admin and General Services	974,623	1,008,356	(33,733)	(3%)	1,048,356
Contracted Services	34,560	0	34,560	0%	25,000
Borrowing Costs	10,825	10,825	0	0%	1,364,929
Other	(800)	0	(800)	0%	50,000
Transfer to Capital	0	0	0	0%	1,385,000
Transfer to Reserve	72,767	72,768	(1)	(0%)	5,028,801
Total Expenditures	**1,091,975**	**1,091,949**	**26**	**0%**	**8,204,075**
Net Surplus / Deficit	**810,306**	**253,072**	**557,234**	**220%**	**29,035,362**

Notes on variances of $5,000 and 5% from Budget:

Grants - increase is due to receiving the Low-Income Transit Pass Program grant proceeds for the period Apr 2022 to Jun 2023. We are anticipating an additional $203k in 2023 and $102k in 2024.

Transfers and Other - increase is from (1) Three Sisters Drive pre-servicing re-payments and (2) a transfer from the CEIP deferred revenue reserve (Clean Energy improvement Program) to offset YTD program expenses recorded below in Contracted Services.

Contracted Services - increase is YTD CEIP related professional expenses (offset above in Transfers and Other).

Town of Canmore
Council
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
EXPENDITURES					
Salaries, Wages and Benefits	149,541	153,622	(4,081)	(3%)	471,809
Admin and General Services	27,976	31,961	(3,985)	(12%)	100,293
Contracted Services	7,875	4,000	3,875	97%	12,000
Supplies and Energy	1,251	2,332	(1,081)	(46%)	7,000
Other	0	0	0	0%	14,807
Total Expenditures	**186,643**	**191,915**	**(5,272)**	**(3%)**	**605,909**
Net Surplus / Deficit	**(186,643)**	**(191,915)**	**5,272**	**(3%)**	**(605,909)**

Notes on variances of $5,000 and 5% from Budget:

nothing to comment.

Town of Canmore
Corporate Administration Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	27,975	25,000	2,975	12%	75,000
Permits and Fines	250	2,500	(2,250)	(90%)	2,500
Internal Transfers	292,874	292,874	0	0%	292,874
Transfers and Other	4,710	4,050	660	16%	4,550
Total Revenue	**325,809**	**324,424**	**1,385**	**0%**	**374,924**
EXPENDITURES					
Salaries, Wages and Benefits	1,544,646	1,596,175	(51,529)	(3%)	4,946,139
Admin and General Services	166,968	173,766	(6,798)	(4%)	532,309
Contracted Services	777,087	817,725	(40,638)	(5%)	1,507,553
Supplies and Energy	15,659	17,047	(1,388)	(8%)	86,750
Other	0	50	(50)	(100%)	50
Total Expenditures	**2,504,360**	**2,604,763**	**(100,403)**	**(4%)**	**7,072,801**
Net Surplus / Deficit	**(2,178,551)**	**(2,280,339)**	**101,788**	**(4%)**	**(6,697,877)**

Rollup includes: Executive Office, Communications, Municipal Clerk's Office, Human Resources, Finance, Common Services and Information Technology

Notes on variances of $5,000 and 5% from Budget:

Contracted Services - decreased due to timing of general expenses in all areas.

Town of Canmore
Municipal Services Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	1,725,945	1,415,695	310,250	22%	5,232,332
Permits and Fines	779,559	778,432	1,127	0%	1,516,285
Grants	230,412	226,236	4,176	2%	1,105,710
Transfers and Other	171,905	28,382	143,523	506%	348,215
Total Revenue	**2,907,821**	**2,448,745**	**459,076**	**19%**	**8,202,542**
EXPENDITURES					
Salaries, Wages and Benefits	3,085,073	3,244,711	(159,638)	(5%)	10,316,664
Admin and General Services	142,763	176,371	(33,608)	(19%)	742,708
Contracted Services	135,309	153,235	(17,926)	(12%)	4,416,515
Supplies and Energy	258,611	206,243	52,368	25%	605,090
Other	537	104	433	416%	310
Transfer to Reserve	3,600	3,600	0	0%	287,650
Internal Transfers	707,453	696,991	10,462	2%	732,650
Total Expenditures	**4,333,346**	**4,481,255**	**(147,909)**	**(3%)**	**17,101,587**
Net Surplus / Deficit	**(1,425,525)**	**(2,032,510)**	**606,985**	**(30%)**	**(8,899,045)**

See following departmental sheets for details:
Economic Development Rollup
Community Social Development Rollup
Protective Services Rollup
Recreation Rollup

Town of Canmore
Economic Development Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Permits and Fines	489,637	485,512	4,125	1%	496,535
Transfers and Other	17,673	19,686	(2,013)	(10%)	56,230
Total Revenue	**507,310**	**505,198**	**2,112**	**0%**	**552,765**
EXPENDITURES					
Salaries, Wages and Benefits	214,628	228,074	(13,446)	(6%)	717,669
Admin and General Services	28,639	46,656	(18,017)	(39%)	201,830
Contracted Services	35,869	33,091	2,778	8%	127,875
Supplies and Energy	12,344	14,393	(2,049)	(14%)	36,550
Transfer to Reserve	0	0	0	0%	(1)
Total Expenditures	**291,480**	**322,214**	**(30,734)**	**(10%)**	**1,083,923**
Net Surplus / Deficit	**215,830**	**182,984**	**32,846**	**18%**	**(531,158)**

Rollup includes: Economic Development and Arts & Events

Notes on variances of $5,000 and 5% from Budget:

Salaries, Wages and Benefits - decrease is due to a position vacancy early in the year.

Admin and General Services - decreased due to timing of general expenses primarily in A&E.

Town of Canmore
Community Social Development Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	3,302	6,168	(2,866)	(46%)	48,435
Grants	218,659	226,236	(7,577)	(3%)	677,710
Transfers and Other	151,970	8,696	143,274	1648%	24,485
Total Revenue	**373,931**	**241,100**	**132,831**	**55%**	**750,630**
EXPENDITURES					
Salaries, Wages and Benefits	386,759	402,690	(15,931)	(4%)	1,271,438
Admin and General Services	3,815	11,204	(7,389)	(66%)	30,900
Contracted Services	23,024	6,640	16,384	247%	22,920
Supplies and Energy	141,410	41,363	100,047	242%	126,644
Other	537	104	433	416%	310
Transfer to Reserve	3,600	3,600	0	0%	3,600
Total Expenditures	**559,145**	**465,601**	**93,544**	**20%**	**1,455,812**
Net Surplus / Deficit	**(185,214)**	**(224,501)**	**39,287**	**(17%)**	**(705,182)**

Rollup includes: CSD Administration, FCSS and Family Connection Centre (FCC)

Notes on variances of $5,000 and 5% from Budget:

Transfers and Other - increased from (1) FCC & FCSS grant funds received in prior year for use in Q1 2023 and (2) Homeless Society of the Bow Valley (HSBV) program funding received for use in Q1 (offset below).

Admin and General Services - decreased due to timing of general expenses in all areas.

Contracted Services - increased due to HSBV program expenses (offset with funding above).

Supplies and Energy - increased due to HSBV program expenses (offset with funding above).

Town of Canmore
Protective Services Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	401,387	196,900	204,487	104%	1,299,500
Permits and Fines	289,922	292,920	(2,998)	(1%)	1,019,750
Grants	11,753	0	11,753	0%	428,000
Transfers and Other	0	0	0	0%	267,500
Total Revenue	**703,062**	**489,820**	**213,242**	**44%**	**3,014,750**
EXPENDITURES					
Salaries, Wages and Benefits	1,375,320	1,446,015	(70,695)	(5%)	4,549,772
Admin and General Services	67,010	71,946	(4,936)	(7%)	364,040
Contracted Services	68,171	100,378	(32,207)	(32%)	4,194,970
Supplies and Energy	30,700	76,528	(45,828)	(60%)	250,278
Transfer to Reserve	0	0	0	0%	284,051
Internal Transfers	707,453	696,991	10,462	2%	732,650
Total Expenditures	**2,248,654**	**2,391,858**	**(143,204)**	**(6%)**	**10,375,761**
Net Surplus / Deficit	**(1,545,592)**	**(1,902,038)**	**356,446**	**(19%)**	**(7,361,011)**

Rollup includes: RCMP Policing, Municipal Enforcement and Fire-Rescue

Notes on variances of $5,000 and 5% from Budget:

Sales and Rentals - higher revenue than budget is a result of paid parking program vs. budget assumptions.

Permits and Fines - although overall variance is not significant it is comprised of (1) decreased automated traffic enforcement fine revenue being negatively impacted by provincial guideline changes in 2022 - which is offset with (2) increased Municipal Enforcement fines (ticket) revenue as a result of the paid parking program.

Grants - received a provincial Fire Services Training Program grant to conduct a Nozzle Forward course for hose line management and fire attack.

Salaries, Wages and Benefits - decrease is primarily due to position vacancies in Municipal Enforcement.

Contracted Services - decrease is mainly from lower automatic traffic enforcement contract costs on reduced revenue.

Supplies and Energy - decrease due to timing of general expenses in all areas.

Town of Canmore
Recreation Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	1,321,257	1,212,627	108,630	9%	3,884,397
Transfers and Other	2,261	0	2,261	0%	0
Total Revenue	**1,323,518**	**1,212,627**	**110,891**	**9%**	**3,884,397**
EXPENDITURES					
Salaries, Wages and Benefits	1,108,367	1,167,932	(59,565)	(5%)	3,777,785
Admin and General Services	43,299	46,565	(3,266)	(7%)	145,938
Contracted Services	8,246	13,126	(4,880)	(37%)	70,750
Supplies and Energy	74,157	73,959	198	0%	191,618
Total Expenditures	**1,234,069**	**1,301,582**	**(67,513)**	**(5%)**	**4,186,091**
Net Surplus / Deficit	**89,449**	**(88,955)**	**178,404**	**(201%)**	**(301,694)**

Rollup includes: Recreation Admin and Rentals, Aquatics, Climbing, Recreation Programs and Fitness

Notes on variances of $5,000 and 5% from Budget:

Sales and Rentals - Memberships, arena rentals and programming revenues are starting to recover from pandemic levels.

Salaries, Wages and Benefits - decreased due to vacancies and adjusting staffing to business volumes.

Town of Canmore
Municipal Infrastructure Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	248,283	257,047	(8,764)	(3%)	909,818
Permits and Fines	452,250	431,100	21,150	5%	1,593,300
Internal Transfers	738,269	737,202	1,067	0%	993,289
Grants	0	0	0	0%	200,000
Transfers and Other	154,501	4,500	150,001	3333%	340,500
Total Revenue	**1,593,303**	**1,429,849**	**163,454**	**11%**	**4,036,907**
EXPENDITURES					
Salaries, Wages and Benefits	2,289,442	2,421,989	(132,547)	(5%)	7,850,088
Admin and General Services	41,151	45,353	(4,202)	(9%)	191,835
Contracted Services	552,396	772,463	(220,067)	(28%)	3,326,003
Supplies and Energy	519,156	491,503	27,653	6%	2,610,575
Other	83	0	83	0%	8,000
Total Expenditures	**3,402,228**	**3,731,308**	**(329,080)**	**(9%)**	**13,986,501**
Net Surplus / Deficit	**(1,808,925)**	**(2,301,459)**	**492,534**	**(21%)**	**(9,949,594)**

See following departmental sheets for details:
Engineering
Planning & Development
Facilities Rollup
Public Works Rollup

Town of Canmore
Engineering
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	76	0	76	0%	7,166
Permits and Fines	47,353	33,332	14,021	42%	100,000
Internal Transfers	238,991	238,991	0	0%	238,991
Transfers and Other	2,304	0	2,304	0%	120,000
Total Revenue	**288,724**	**272,323**	**16,401**	**6%**	**466,157**
EXPENDITURES					
Salaries, Wages and Benefits	394,392	394,668	(276)	(0%)	1,225,681
Admin and General Services	7,809	5,588	2,221	40%	18,465
Contracted Services	14,961	17,500	(2,539)	(15%)	52,500
Supplies and Energy	975	1,713	(738)	(43%)	5,350
Total Expenditures	**418,137**	**419,469**	**(1,332)**	**(0%)**	**1,301,996**
Net Surplus / Deficit	**(129,413)**	**(147,146)**	**17,733**	**(12%)**	**(835,839)**

Notes on variances of $5,000 and 5% from Budget:

Permits and Fines - increase is due to higher volume of engineering development permit activity .

Town of Canmore
Planning & Development
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	39,509	41,168	(1,659)	(4%)	64,500
Permits and Fines	404,897	397,768	7,129	2%	1,493,300
Transfers and Other	0	0	0	0%	120,000
Total Revenue	**444,406**	**438,936**	**5,470**	**1%**	**1,677,800**
EXPENDITURES					
Salaries, Wages and Benefits	443,188	477,630	(34,442)	(7%)	1,481,001
Admin and General Services	15,894	18,594	(2,700)	(15%)	91,240
Contracted Services	53,719	62,700	(8,981)	(14%)	188,100
Supplies and Energy	92	984	(892)	(91%)	2,950
Other	83	0	83	0%	0
Total Expenditures	**512,976**	**559,908**	**(46,932)**	**(8%)**	**1,763,291**
Net Surplus / Deficit	**(68,570)**	**(120,972)**	**52,402**	**(43%)**	**(85,491)**

Notes on variances of $5,000 and 5% from Budget:

Salaries, Wages and Benefits - decrease is due to position vacancies.

Contracted Services - decrease is due to timing of contract service requirements.

Town of Canmore
Facilities Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	196,304	190,879	5,425	3%	567,747
Internal Transfers	70,634	70,634	0	0%	70,634
Total Revenue	**266,938**	**261,513**	**5,425**	**2%**	**638,381**
EXPENDITURES					
Salaries, Wages and Benefits	755,720	778,851	(23,131)	(3%)	2,428,046
Admin and General Services	6,745	7,189	(444)	(6%)	21,240
Contracted Services	180,806	234,440	(53,634)	(23%)	887,630
Supplies and Energy	280,907	236,177	44,730	19%	1,103,985
Total Expenditures	**1,224,178**	**1,256,657**	**(32,479)**	**(3%)**	**4,440,901**
Net Surplus / Deficit	**(957,240)**	**(995,144)**	**37,904**	**(4%)**	**(3,802,520)**

Notes on variances of $5,000 and 5% from Budget:

Contracted Services - decreased due to timing of contracted repairs & maintenance.

Supplies and Energy - increased is primarily from power and natural gas in Q1 along with timing of supplies purchases.

Town of Canmore
Public Works Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	12,393	25,000	(12,607)	(50%)	270,405
Internal Transfers	428,644	427,577	1,067	0%	683,664
Grants	0	0	0	0%	200,000
Transfers and Other	152,197	4,500	147,697	3282%	100,500
Total Revenue	**593,234**	**457,077**	**136,157**	**30%**	**1,254,569**
EXPENDITURES					
Salaries, Wages and Benefits	696,142	770,840	(74,698)	(10%)	2,715,360
Admin and General Services	10,703	13,982	(3,279)	(23%)	60,890
Contracted Services	302,910	457,823	(154,913)	(34%)	2,197,773
Supplies and Energy	237,181	252,629	(15,448)	(6%)	1,498,290
Other	0	0	0	0%	8,000
Total Expenditures	**1,246,936**	**1,495,274**	**(248,338)**	**(17%)**	**6,480,313**
Net Surplus / Deficit	**(653,702)**	**(1,038,197)**	**384,495**	**(37%)**	**(5,225,744)**

Rollup includes: Public Works Administration and Sustainability, Parks, Streets and Roads

Notes on variances of $5,000 and 5% from Budget:

Sales and Rentals - decreased due to year to date cemetery sales of plots & niches.

Transfers and Other - increased from carry-over Mountain Pine Beetle grant funds received in prior year. These funds are being returned to the province as the program will be administered by FRIAA (Forest Resource Improvement Association of Alberta) later this fall.

Salaries, Wages and Benefits - decreased primarily due to position vacancies and timing of seasonal Park staff.

Contracted Services - decreased due to (1) YTD savings in snow and ice control costs - overall less snow accumulation than some other seasons and (2) timing of contracted maintenance and equipment repairs.

Supplies and Energy - decrease is timing of supplies purchases.

Town of Canmore
Solid Waste Services Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	1,221,086	1,224,178	(3,092)	(0%)	4,242,292
Transfers and Other	10,000	0	10,000	0%	0
Total Revenue	**1,231,086**	**1,224,178**	**6,908**	**1%**	**4,242,292**
EXPENDITURES					
Salaries, Wages and Benefits	486,880	505,493	(18,613)	(4%)	1,625,723
Admin and General Services	3,588	6,931	(3,343)	(48%)	23,675
Contracted Services	203,455	279,404	(75,949)	(27%)	988,814
Supplies and Energy	89,300	93,656	(4,356)	(5%)	163,000
Borrowing Costs	0	0	0	0%	445,147
Transfer to Reserve	275,000	275,000	0	0%	409,624
Internal Transfers	300,110	293,148	6,962	2%	529,934
Transfer to Affiliated Orgs	0	0	0	0%	56,375
Total Expenditures	**1,358,333**	**1,453,632**	**(95,299)**	**(7%)**	**4,242,292**
Net Surplus / Deficit	**(127,247)**	**(229,454)**	**102,207**	**(45%)**	**0**

Notes on variances of $5,000 and 5% from Budget:

Transfers and Other - transfer from SWS Recycling Reserve to support the food waste diversion program implementation (per motion 68-2023).

Contracted Services - decreased primarily due to timing of recycling fees and equipment repairs.

Town of Canmore
Water Utility Rollup
as at April 30, 2023

	2023 YTD Actual	2023 YTD Budget	Variance $	Variance %	2023 Annual Budget
REVENUES					
Sales and Rentals	3,377,927	3,378,092	(165)	(0%)	12,426,252
Transfers and Other	0	0	0	0%	240,000
Total Revenue	**3,377,927**	**3,378,092**	**(165)**	**(0%)**	**12,666,252**
EXPENDITURES					
Admin and General Services	8,471	8,564	(93)	(1%)	25,700
Contracted Services	1,701,175	1,806,612	(105,437)	(6%)	5,593,414
Supplies and Energy	258,883	305,390	(46,507)	(15%)	1,033,934
Borrowing Costs	201,006	201,006	0	0%	2,418,625
Transfer to Reserve	0	0	0	0%	2,886,000
Internal Transfers	708,579	708,579	0	0%	708,579
Total Expenditures	**2,878,114**	**3,030,151**	**(152,037)**	**(5%)**	**12,666,252**
Net Surplus / Deficit	**499,813**	**347,941**	**151,872**	**44%**	**0**

Notes on variances of $5,000 and 5% from Budget:

Contracted Services - decreased due to timing of Epcor billing cycle. Also additional services such as rehab work, leak detection & repair etc. typically happen later in the year.

Supplies and Energy - increased primarily from timing of water meter purchases.

Motion #	Agenda Item	Resolution	Council Mtg Date	Service Area	Action Status	Last Update	Date Complete
99-2021	**MOU with Stoney Nakoda**	Direct administration to investigate and report back on the scope, process and resources needed to establish a Memorandum of Understanding (MOU) with the Stoney Nakoda Nation.	27-Apr-21	CST	The Stoney Nakoda Nation have indicated that they would like access to lands within the Town of Canmore boundaries for cultural ceremonies. This would help in building relationships that will assist with establishing an MOU in the future. Council approved a request to advance this work at the Sept 7, 2021 council meeting. Administration continues to reach out to the Stoney Nakoda Administration to advance this work.	18-Apr-23	
216-2021	**Advancing Truth and Reconciliation with the Stoney Nakoda Nation**	Direct administration to work with the Stoney Nakoda Nation to identify lands within the Town of Canmore boundaries that would be appropriate for cultural ceremonies and assist with any necessary agreements for the use of these lands.	7-Sep-21	CST	Work is ongoing. The next step for this items rests with the Stoney Nakoda Nation.	18-Apr-23	
219-2021	**Lower Silvertip Wildlife Corridor**	Direct administration to assemble a working group consisting of key Lower Silvertip Wildlife Corridor landowners to develop principles for and an approach to shared management of the corridor.	7-Sep-21	Public Works Admin	The Lower Silvertip Wildlife Corridor Working Group has produced a draft shared management plan. Engagement with various trail user groups is underway. After the engagement is complete, the shared management plan will be finalized.	5-Apr-22	
79-2022	**Procedural Bylaw Amendment 2022-04 Omnibus**	Direct administration to investigate the options for video and audio being treated as written submissions and imbedded in the record of public submissions.	5-Apr-22	Clerks	IT and the Municipal Clerk continue to investigate options as part of the capital project to update Council Chambers A/V. This would be part of phase 2 of this project - Agenda Management Software	13-Feb-23	
149-2022	**Bow Valley Clean Air Society**	Review and recommendation of implementing a closed-door bylaw from approximately early September to early June; and, if the recommendation is in support of the request, to provide Council with a draft closed door bylaw for consideration.	5-Jul-22	Public Works	An administration update was provided to the Committee of the Whole in November 2022. Monitoring of doors occured over the winter with a report planned to come to Coucil in July.	27-Apr-23	
258-2022	**Bylaws 2022-09 and 2022-10 800 3rd Avenue Municipal Development Plan and Land Use Bylaw Amendments**	Return no later than June 2023 with a response from the applicant regarding motion 125-2022: That Council direct administration to work with the Applicant to prepare a recommendation and/or wording for a potential amendment with respect to Bylaws 2022-09 and 2022-10 ("the Bylaws") regarding each of the following topics and provide the said recommendation and/or wording to Council prior to the 2nd reading of the Bylaws. • Limiting house sizes in the subject area; • Creation of a legal instrument upon all parcels of the subject lands, which will include the following elements: (i) if a palliative care facility is not constructed in Area A then Area A will revert to the owner and the land in Area A will remain in a natural state; (ii) there is to be no trail or road connection between the Spring Creek development and 3rd Avenue through the subject lands; and (iii) the lands shall be protected in perpetuity from any further development except as described in the application;• Minimizing the distance between the buildings in Area B and 3rd Avenue in order to minimize the disruption to the undeveloped areas of the lands;• Removing the buildings in Area C, subject to an agreement between the Spring Creek development and the Applicant whereby the Spring Creek development provides at its own cost water servicing to the palliative care facility (if such is determined to be needed) and provides at its own cost fill, landscaping, and a trail for Area C to become a park; and• Limiting maximum building height.	1-Nov-22	Planning	Bylaws 2022-09 and 2022-10 were given second and third reading with amendments at the June 6, 2023 regular meeting of Council.	6-Jun-23	6-Jun-23
31-2022FIN	**Finance Committee Deliberation and Direction**	Develop a Paid Parking Revenue Allocation Model (PPRAM) for approval prior to the 2024 budget amendment in fall of 2023.	24-Nov-22	Fin	Administration began preliminary discussions on the allocation model in April.	25-Apr-23	
57-2022FIN	**Finance Committee Deliberation and Direction**	Explore options with regards to a car share program and report back to Council no later than the end of 2023.	29-Nov-22	Eng			
61-2022FIN	**Finance Committee Deliberation and Direction**	Reassess the Canmore Community Housing requisition in the fall of 2023 for the 2024 budget amendment to ensure alignment with any new programs or priorities.	29-Nov-22	Council/CCH	This motion has been sent to the Interim ED of CCH for planning purposes	27-Mar-23	

62-2022FIN	**Finance Committee Deliberation and Direction**	Include provincial downloading in the annual budget process.	29-Nov-22	CST	Administration has started a tracking system in advance of the 2024 budget amendments process. Mayor Krausert sent the 2022 document to the candidates before the recent Provincial election.	20-Jun-23	
285-2022	**Update on Council Resolution 251-2021 – Election Signage**	Return to Council with options for regulating or managing election signage on municipal property by December 2023.	6-Dec-22	Planning	Report being brought to the September 5, 2023 Council Meeting.	12-May-23	
69-2023	**Mandatory Commercial Food Waste Diversion Bylaw**	Direct administration to return with a process and recommendations for directing revenue resulting from enforcement from the specified fines except for sections 4.7(a) and 7.1 in Bylaw 2023-15 to the Wildsmart Program.	4-Apr-23	Finance			
70-2023	**Procedural Bylaw Amendment 2022-04 Omnibus**	Have the procedural bylaw amendment 2023-16 omnibus and bylaw 2016-19(finance committee bylaw) reviewed by an independent governance expert and that council direct administration to report back to council with alternative methods for the public to be heard by council before or during regular business meetings and committee of the whole meetings.	4-Apr-23	CAO	The work was awarded to Nolan Crouse and was presented to Council at the June 6 business meeting. Council gave three readings to Bylaw 2022-04 with amendments.	6-Jun-23	6-Jun-23
104-2023	**Capital Project Budget and Staging Amendments**	Cancellation of the 2024 approved capital projects: CAP 7355 Teepee Town 2nd Avenue Rehabilitation Construction and CAP 7369 BVT Wastewater Upgrade – Phase 3 and bring the projects back into the future capital plan.	16-May-23	Engineering			
105-2023	**Capital Project Budget and Staging Amendments**	Direct administration to update the 2024-2028 capital plan to account for future project budget and staging approvals as part of the 2024 budget amendment process.	16-May-23	Finance			
118-2023	**Canmore Downtown Business Improvement Area**	Refer the Downtown BIA delegation requests made at the May 2, 2023 regular meeting of council to administration to consider as part of their report to Council on paid parking after one full year of paid parking in Canmore Town Centre, along with any recommended changes to the program, which must return to Council no later than the regular meeting of Council on October 3, 2023	6-Jun-23	Protective Services/ Engineering			
120-2023	**Housing Accelerator Fund Action Plan**	Direct administration to report back to Council with proposed amendments to the Land Use Bylaw and policy amendments to phase out "Tourist Home" as a use.	6-Jun-23	CST			
121-2023	**Housing Accelerator Fund Action Plan**	Direct administration to return to Council with a report on property tax policy options to incentivize purpose-built rentals and full-time/long-term occupancy of residential units.	6-Jun-23	CST			
122-2023	**Housing Accelerator Fund Action Plan**	Direct administration to investigate and report back on changes to residential districts in the Land Use Bylaw that can facilitate provision of additional housing supply.	6-Jun-23	CST			
124-2023	**Housing Accelerator Fund Action Plan**	Direct administration to report back on options and funding required for adding a comprehensive planning process to establish parameters to consider infill, or "missing middle" housing opportunities in established neighbourhoods and explore options for eliminating single detached dwellings.	6-Jun-23	CST			

Correspondence

DATE OF MEETING: **June 20, 2023** **Agenda #: H**

1. **Letter from Council Re: CIB Housing Infrastructure Financing May 9, 2023**
2. **Letter from Council Re: RCMP Retroactive Payments May 18, 2023**
3. **Letter from Council Re: Provincial Downloading on Muni's May 18, 2023**
4. **Letter from Liricon and Plenary Re: Calgary Airport to Banff Passenger Railway**

Town of Canmore
902 7 Avenue
Canmore, Alberta T1W 3K1
Phone: 403.678.1500 | Fax: 403.678.1534
www.canmore.ca

May 9, 2023

The Honourable Dominic Leblanc
Minister of Intergovernmental Affairs, Infrastructure and Communities

sent via email: dominic.leblanc@parl.gc.ca

Dear Minister Leblanc,

RE: Canadian Infrastructure Bank (CIB) – Housing Infrastructure Financing

I am writing to you today on behalf of my community, the Town of Canmore, concerning the Canada Infrastructure Bank and its $35 billion mandate to meet the next generation of infrastructure needs for Canadians.

Earlier this year I met with Jodie Parmar, Senior Director of Project Development for Western Canada for the bank. Mr. Parmar recommended that I connect with you directly to advocate for potential changes to the qualifications to access funding from the bank.

Canada is facing a housing crisis, and my community of Canmore, Alberta is on the frontlines of finding solutions to this complex problem. According to the 2021 census, we have the highest wealth inequality level in the country. Due to our location within the same valley as the entrance to Banff National Park, there is extremely high demand for housing, high cost, and low availability.

Our beautiful Rocky Mountain landscape further restricts the development footprint of our community. Our responsibility for stewardship of this special place also demands that growth is restricted to our current footprint as a municipality. We find ourselves with a restricted footprint, highly sought-after housing and prices that rival Toronto and Vancouver for rental and ownership opportunities.

As leaders in our community, past Councils formed a municipal housing corporation and delivered a model of housing that has been shown to reduce our living wage, which sits at $32 an hour, by $10 an hour.

Due to the high cost of housing in our community, the segment of the market our housing corporation has targeted means our projects have not necessarily qualified for Canadian Mortgage and Housing Corporation funding.

We are looking at the recently announced Housing Accelerator Fund and are excited about its potential. However, our future housing needs will require significant capital to deliver. That is a significant hurdle, not only due to the lack of favourable interest rates available to us from the provincial government and banks, but also because of our debt limits as a municipality.

Given the CIB's mandate to grow innovative partnerships between different levels of government, and to fund projects in the public interest, we feel there is merit for you to consider opportunities to deliver on that scope in new ways. This kind of innovation to the program could support the delivery of housing across the country and continue the work your government has undertaken to support municipalities and build much-needed housing from coast-to-coast.

If you are attending the upcoming Federation of Canadian Municipalities conference in Toronto, I would request a meeting with you, or your team, to discuss this idea. Several council members and I will be in attendance and available to meet in person.

Thank you for taking the time to consider this request.

Sincerely,

Mayor Sean Krausert

cc via email: *Jodie Parmar, Senior Director, Project Development, Wester Canada, Canada Infrastructure Bank*
MP Blake Richards
Sally Caudill, CAO for the Town of Canmore

Town of Canmore
902 7 Avenue
Canmore, Alberta T1W 3K1
Phone: 403.678.1500 | Fax: 403.678.1534
www.canmore.ca

May 18, 2023

The Honourable Mona Fortier
President of the Treasury Board — *sent via email: mona.fortier@parl.gc.ca*

The Honourable Marco Mendicino
Minister of Public Safety — *sent via email: marco.mendicino@parl.gc.ca*

The Honourable Bill Blair
Minister of Emergency Preparedness — *sent via email: bill.blair@parl.gc.ca*

Dear Ministers Fortier, Mendicino, and Blair:

RE: RCMP Retroactive Payments

Despite months of municipal advocacy led by the Federation of Canadian Municipalities (FCM), provincial-territorial associations and local leaders across Canada, the federal government has indicated in the recent federal budget that it will not be absorbing the retroactive costs associated with the RCMP collective bargaining agreement.

The federal government was negotiating with municipal dollars without any municipal participation. These extraordinary one-time costs, which in some jurisdictions amount to millions of dollars, will cause significant hardship for many communities and residents across the country, and were negotiated without a seat at the table or any meaningful consultation with the municipalities who are now expected to pay the bill. Local governments may be forced to make difficult decisions that will impact residents, such as cutting essential services, reducing policing levels, raising property taxes significantly, and/or cancelling work on local infrastructure, at a time when Canadians' concerns about community safety and the cost of living are already rising.

Beyond falling well short of the call from municipalities for the federal government to fully absorb these retroactive costs, this decision is an example of a federal commitment that deeply impacts municipalities without them being properly consulted or involved. Municipal governments are already paying a growing share of policing costs, but unlike other orders of government, cannot run deficits to spread out the impact of these extraordinary one-time sums and have limited revenue tools.

Going forward, it is critical that municipalities be proactively engaged in any forthcoming processes related to contract policing to prevent this scenario from recurring.

Sincerely,

Mayor Sean Krausert

cc via email: *The Right Honourable Justin Trudeau, Prime Minister of Canada*
The Honourable David Lametti, Minister of Justice & Attorney General
MP Blake Richards
Mayor Scott Pearce, Acting President/First Vice-President, Federation of Canadian Municipalities
Mayor Cathy Heron, President of Alberta Municipalities
Sally Caudill, Chief Administrative Officer for the Town of Canmore
Town of Canmore Council

Town of Canmore
902 7 Avenue
Canmore, Alberta T1W 3K1
Phone: 403.678.1500 | Fax: 403.678.1534
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May 18, 2023

The Honourable Danielle Smith,
MLA – Brooks-Medicine Hat
Premier of Alberta *sent via email: premier@gov.ab.ca*

The Honourable Rachel Notley,
MLA – Edmonton-Strathcona
Leader of the Official Opposition *sent via email: rachelnotley@albertandp.ca*

Dear Premier Smith and Ms. Notley,

Re: Provincial Downloading on Municipalities

On behalf of the Town of Canmore Council, I am writing to you on a matter of great importance for our community, and I suspect of great importance for all Alberta municipalities. Canmore taxpayers, like taxpayers from other municipalities, are being significantly burdened with downloading of funding obligations that should rest with the province.

According to our calculations, provincial downloading totalled over $4,000,000 for the Town of Canmore in 2022. This represents 14.4% of the $28,130,186 municipal tax dollars collected in 2022 or, put another way, $1 out of every $7 collected from Canmore property taxes went to fund amounts that we believe should have been paid by the provincial government. Attached to this letter is a table breaking down this total amount into its individual components.

What do we mean when we say provincial downloading? First, it includes those municipal expenditures that are a provincial responsibility, but there has been a change to the funding formula or no increase for inflation or program changes which result in the municipality picking up the tab for the void left by the province. This includes changes to the municipal funding formula, increased retention of traffic fines by the province, cost of fire rescue responding to medical calls in absence of an ambulance, non-indexing of FCSS programs, and much more. Second, provincial downloading includes costs of additional requirements by the province in order to be compliant. While only a small amount, this includes items like traffic reporting system updates and additional certified peace officer training. Third, it includes items paid for by the municipality due to lack of resources provided by the province. Here we are talking about management of feral animals, responding to wildlife issues, homelessness, and administering affordable housing programs amongst other things.

In addition to the above, it should be noted that there are additional items identified in the attached table that we know will impact Canmore in 2023 or 2024 and beyond. Also, while not included as part of the provincial downloading amount, it is worth noting that Canmore property owners pay a disproportionate amount of education taxes, which increased from $18.7 million in 2019 to $24 million in 2022, and which represents far more dollars leaving the community than are provided for funding to our schools.

We respectfully request that whoever forms the provincial government after May 29th that the issue of provincial downloading be addressed. This would include indexing program funding to inflation, increasing the municipal funding envelope, and treating municipalities as partners whenever there are discussions that could impact them financially, i.e., inviting us to the table to discuss proposed changes. It is my hope that during this election that your respective parties would both be able to speak to municipal funding to address these issues as they really should be non-partisan given that they very directly affect the well-being of our common constituents, especially with respect to affordability.

Yours sincerely,

Sean Krausert
Mayor of Canmore

Attached: 2022 Provincial downloading estimates (as of 2023-05-05) table

cc via email: *MLA Rebecca Schulz*
MLA Joe Ceci
MLA Miranda Rosin, Banff-Kananaskis
Candidate Sarah Elmeligi, Banff-Kananaskis
Mayor Cathy Heron, President – Alberta Municipalities
Mr. Dan Rude, CEO - Alberta Municipalities
Mayor Jeff Genung, Chair – Alberta Mid-Sized Cities Mayors' Caucus
Council, Town of Canmore
CAO Sally Caudill, Town of Canmore

Impacts on Local Governments from Provincial Downloading and/or Changes

Funding Formula and/or Program Changes (includes things that are Provincial responsibility and are no longer fully covered or have not increased with inflation)						
Div/Dept	Type	Impacts	Timing of Change	Estimated Financial Impact 2021	Estimated Financial Impact 2022	Other Comments
MS/Fire	Fire Services Level impacts	Ambulance delays	2020	$ 85,067	$ 100,744	More Fire Services time on site due to Ambulance delays. Cost calculated using the Master Fee Schedule rates multiplied by time required for medical calls.
MS/Fire	Advanced Life Support (ALS) capable program	Kept some staff ALS capable after divesting from EMS	2009	$ 20,000	$ 20,000	Estimated ongoing cost captures training time, licencing and certification fees, and maintaining a supply of equipment/consumables used only by ALS providers
MS/PS	Traffic Fine Revenue	Increase provincial portion	2020	$ 250,000	$ 250,000	No consultation, fine retention went to 50%
MS/PS	RCMP / Policing Biology Casework	Annual costs for municipalities	2020	$ 5,000	$ 3,500	No control over amounts - Tracking and reporting
MS/PS	RCMP Payback 2017 onwards	Unionization labor costs passed back	2021	N/A	$ 521,000	Federal Budget 2023 billed these costs to Municipalities in 2023. Canmore's bill was for $521k. To date the Province has offered no funding support to date
MS/PS	Policing	Provincial Police Force	TBD	none	none	Potential move from RCMP to Provincial Force
MS/CSD	Changes to victim services	Local service will change to regional zone (4 for the whole province) or municipalities can apply to take on the program locally	2023 or 2024	none	none	Potentially lose funding for victims of trauma and non-violent crimes. Bow Valley municipalities may be asked to provide additional grant funding to Bow Valley Victim services society or add the community service to CSD. Financial impact will not begin until April 1, 2024.
MS/FRN	Cancellation of Parent Link	Replaced with FRN which gets less funding but has more delivery requirements	2020	$ 56,500	$ 110,000	Some programs cancelled completely. FRN grant is $125,000 less than Parent Link grant (the result is a reduction in services). In 2022, Town reclassified the Supervisor position and Family Support Worker position to better reflect role and responsibilities.
MS/ FCSS & FRN	No indexing of FCSS or FRN programs	Staff salary top-ups (no indexing of funding) and corporate supports (IT, HR, MCO, Finance, etc)	FCSS no funding increase since 2015 and FRN three years of static funding 2020-2023	$ 150,000	$ 175,000	Funding does not increase with cost of living or Town's salary grid. To keep service delivery levels and staff on salary grid, municipality must top up wages.
MS/ CSD & Rec	Childcare	Child care subsidy ended in 2020 which in turn increased its cost. This had a significant impact on community affordability. Subsidy was reinstated in 2022; the new provincial subsidy only supports full-time childcare, parents who require part-time childcare are accessing full-time spaces, which reduces the already limited childcare spaces available. FCC has piloted interim childcare during the summer to support parents who cannot access childcare. In addition, Recreation supports summer camp programs and after school programs to provide additional childcare options. In 2022, the province also announced funding for additional childcare spaces, to access this funding the province requires a community assessment, which CSD is currently completing.	2020	$ 15,000	$ 25,000	Province of Alberta released new funding for childcare but childcare centre's struggle with space and staffing. FCC is supporting parents with navigating childcare (approximate time spent is 1 day per week). In addition in 2022, a childcare assessment was completed to understand childcare needs and support centres with funding requests.

MS/FCSS	Social Services Regionalization (FCSS)	Province moving to a centralized provincial service model that has resulted in less local service, longer local wait time, and more complicated access. Consequently, FCSS is supporting increased system navigation and providing interim services. Service changes include: Alberta Works (2020) for emergency income/intervention supports; AHS (2021) for mild/moderate mental health; Hospital Social Worker (2022) for coordination of medical services.	2020	$ 15,000	$ 15,000	Less local control over service delivery; increased time supporting community with navigating the systems (1 day per week)
CS/HR	Summer Temporary Employment Program (STEP)	The STEP program was eliminated in October 2019. In 2019 we received $14,000. In 2018, we received $9,500	2019	$ 14,000	$ 14,000	
CS/Finance	Grants in place of taxes (GIPOT)	Less local tax revenues for the same services	2019	$ 44,000	$ 44,000	Although Crown-owned properties are exempt from assessment and therefore exempt from taxation, the Province of Alberta pays a grant equivalent to the property taxes that would otherwise be levied on many of these properties. The Province began reducing the amount of Grants in place of taxes in 2019 by 24% and another 32% in 2021 and beyond.
CS/Finance	Grant Reductions	Reduction of MSI funding	2022	.	$ 2,200,000	MSI funding for the Town has reduced from a $4.8 million allocation each year to $2.6 million starting in 2022 and 2023. This is a reduction of 40.6% of 2021 MSI allocation.
CS/Finance	LGFF Migration from MSI	New funding formula still being developed. Current draft will mean a reduction in funding for Canmore as tourism impact and affordability are not factors at this time	2023-2024			No certainty of funding yet. Based on current proposed LGFF funding models, a further reduction of 12-15% is been estimated for 2024 and beyond
CS/Finance	Education Tax	To ensure that communities are affordable and viable, municipal tax collections should be cognisant of economic conditions facing many Alberta residents. Municipalities are facing increased operation costs due to climbing utilities charges, limited tax base, and overall increased operations. Just over half of every residential tax bill in Canmore is the Education requisition. Canmore's high assessment values result in our taxpayers paying amongst the highest education taxes in the province. The Province has essentially taken tax "room" from the municipality especially since the cap on the amount of education tax to come from a community was removed.	2016		Canmore's education tax requisition has grown from $18.7 million in 2019 to $24 million in 2022	The amount of Education Tax that leaves Canmore does not come back to the local school system, leaving Canmore taxpayers funding education throughout the Province and contributing to our affordability issues.
CS/Finance	Preferential debt servicing rates	The Province removed the ability for municipalities to secure debt at lower rates leading to an increase in our interest rates	2020			
		SECTION TOTAL:		**$ 654,567**	**$ 3,478,244**	

Provincial Requirements of Municipalities						
Div/Dept	Type	Impacts	Timing of Change	Estimated Financial Impact 2021	Estimated Financial Impact 2022	Other Comments
MS/PS	Traffic Reporting System Updates	Online traffic reporting requirements	2022	N/A	$ 5,000	Software and Hardware updates to be compliant, staffing time captured
MS/PS	Certified Peace Officer (CPO) Training	Fewer required courses available, run through other municipalities	2022	N/A	$ 25,000	Estimated $5k in staff time, $20k in uncollected fine revenue. Limited information/engagement regarding training availability despite standardization of CPO classification
MI/PW	Weed Control	enforcement of provincial legislation	ongoing	unknown	unknown	Future impact may increase from provincially approved projects (Gondola and TSMV)
		SECTION TOTAL:		**$ -**	**$ 30,000**	

Impacts from Lack of Needed Provincial Resources						
Div/Dept	Type	Impacts	Timing of Change	Estimated Financial Impact 2021	Estimated Financial Impact 2022	Other Comments
MS/PS	Feral Rabbit Management	Municipality to manage wildlife issues	2011	$ 50,000	$ 54,000	Province does not deem feral rabbits as wildlife and will not remove
MS&MI/ PS&PW	Conservation Officer (CO) and/or Fish & Wildlife (FW) Resources	Limited CO/F&W resources mean more calls for service to Town	2021	$ 10,000	$ 15,000	Relying on RCMP and Municipal Enforcement (ME) to respond to wildlife issues - Province no longer responding to "elk calls" in summer. Province directs callers to ToC for removal of deceased animals (elk) within Town limits.
MS/CSD	Homelessness	No provincial operational rural homelessness funding. Increased need with no provincial funding mechanism.	2020	$ 15,000	$ 25,000	Province recently announced homelessness funding (it is unclear if some is allocated to rural communities). CSD/ FCSS staff supports an increasing number of individuals impacted with homelessness, as well as community development to address homelessness.
MS&CS\ CSD & Finance	Fiscal Agent Arrangements	Increased requests for municipalities to be intermediary between federal/provincial grant programs as fiscal agents, and community groups applying (additional administrative work required)	Recent years	TBD	TBD	Financial impacts of this work have not been quantified but with increasing requests come increasing workload demands for both CSD and Finance. The Town has begun to say no to some of these requests due to lack of resources to accommodate and manage the number of requets.
MS/Fire	River Rescue Program	Kananaskis Public Safety (KPS) unable to respond to many river calls as quickly as Canmore Fire-Rescue (CFR).	long standing	$ 11,925	$ 11,500	Town got in to river rescue business years ago - ongoing cost impacts still exist
Council	Affordable Housing	Local investment required to provide	2000	$ 450,000	$ 450,000	The Town of Canmore established CCH in 2000 to provide housing solutions for a healthy and balanced community
		SECTION TOTAL:		**$ 536,925**	**$ 555,500**	
		GRAND TOTAL:		**$ 1,191,492**	**$ 4,063,744**	

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June 5, 2023

Dear Premier Smith and Bow Valley Corridor Alliance Mayors,

Calgary Airport to Banff Passenger Railway to link Blue Line LRT to YYC

After consulting with Calgary Airport and City staff, we are writing to inform you that the proposed Calgary Airport Banff Rail project is prepared to extend its system east from the Calgary Airport to the Blue Line LRT, which will provide an optimal solution for connecting Northeast Calgary and the airport together with an express service to downtown and communities in the Bow Valley. The CABR Extension to Blue Line will provide a superior service at a small fraction of the cost relative to a potential Calgary Transit Blue Line connector.

With this potential major expansion of CABR, ridership of CABR will increase significantly beyond the 11.8 million trips per annum previously forecast, and could also potentially achieve greater network efficiencies using state-of-the-art hydrogen multiple unit trains.

Liricon Capital and Plenary Americas, CABR's joint developers, are ready to work with the Province of Alberta and the City of Calgary to quickly advance CABR's expansion.

Faster, better and cheaper solution

The CABR Extension to Blue Line will enable the City's approved Airport Transit Line stage one to be delivered much more quickly, with simplified infrastructure and operations and at a far lower cost than the $600m estimated in the Airport Transit Line Study in 2020.

CABR will provide integrated services for airport employees, commuters and passengers from Northeast Calgary into YYC, transfers within airport lands and seamless onward connectivity to Downtown Calgary and to the Bow Valley.

This initiative by CABR will provide more efficient, cost effective and sustainable connectivity between Northeast Calgary, the airport and downtown than a standalone automated people mover between the Blue Line LRT and YYC could provide.

The project will provide an intermodal transportation hub at Calgary Airport, which will support future CABR expansion along Airport Trail to meet the Green Line LRT at 96th Avenue Northwest. This will also improve connectivity for residents of the Northwest, including through a park-and-ride station servicing the Bow Valley at the Calgary West Station near Stoney Trail. Further, CABR will support future development of high-speed rail between Edmonton and Calgary. Continued engagement between CABR and CP Rail will provide engineering to resolve a pinch point by Inglewood in downtown Calgary.

The expanded CABR project will play an important role in the revitalization of downtown Calgary, and will be a great complement to other initiatives planned for the City of Calgary – including the new arena and event district announced for Victoria Park in close proximity to the CABR line!

Very Strong Public Support

During the election campaign (between May 1 and 11, 2023), Liricon/ Plenary commissioned Janet Brown to conduct polling with respect to the views of Calgarians and Albertans on the CABR project. Consistent with our earlier polling in 2019, the study demonstrated very strong support amongst all groups for a passenger rail project between Calgary Airport and Banff. Specifically, 76% of Albertans and 85% of Calgary residents are supportive of CABR as a direct express link between the airport and the downtown, with over three quarters of Albertans identifying the importance of encouraging the use of public transit to access Banff National Park and the benefits that the project will bring to the economy. While the full details of the project set out in this letter are not yet in the public domain, this study reinforces the high degree to which CABR's design plans are valued by the community.

We appreciate the interest that you all have shown to date in the benefits of the CABR project. We urge Government of Alberta, working collaboratively with the City of Calgary, to focus the studies planned in its current budget for analyzing airport connectivity solutions on the CABR solution, which then would benefit from additional funding from the federal government, Canada Infrastructure Bank and Liricon/Plenary to put these important transportation networks in service as quickly as possible.

As we studied connectivity to YYC and the proposed Airport Transit Line, we concluded that a CABR route expansion is the obvious solution to address the proposed first stage of the Airport Transit Line linking the Blue Line to the Airport, as well as eventually linking to Phase Two of the Green Line.

CABR Extension to Blue Line – Summary Advantages

CABR adding to its currently-planned 150 km route a short 4.5 km extension from the airport along Airport Trail to the Blue Line is superior to a standalone Airport Transit Line for several reasons:

1. Lower Capital and Operating Cost: The CABR extension can be built and operated for a small fraction of the cost.
2. Higher Ridership and Revenue: A seamless, express connection between Northeast Calgary and downtown on to Banff will increase ridership and revenue.
3. Sooner Built: CABR's simple required infrastructure (non-electrified, heavy gage rail) and financing structure allows it to be built sooner.
4. Simpler Infrastructure: A single rail solution within the Airport will simplify and minimize the required rail infrastructure.
5. Better Rollingstock and Technology: CABR plans on utilizing the next-generation, high comfort rollingstock, potentially using hydrogen power - a premium system that CABR is able to justify by amortizing over a 150 km journey.

Lower Capital Cost

Capital costs for the CABR to Blue Line extension could be as low as 10% of the estimated costs for the Airport Transit Line as a standalone project, based on the differences between the capital costs of a heavy gauge rail link (approximately $10m per kilometre in the CPCS study of CABR that Government of Alberta commissioned) and the estimated costs for an electrified automated people mover identified in the City's Airport Transit Line study ($600m in 2020$).

Lower Operating Cost

CABR simply extending its system another 4.2 km east to the Blue Line would be able to leverage the same staff, supervision, maintenance depot, etc., resulting in substantial efficiencies.

Conversely, the Blue Line is a traditional high floor LRT, which would not be appropriate for an extension into the airport. The Green Line is being developed as a low floor LRV. Hence it will not be possible to connect the Blue and Green Lines as a continuous loop network. The City's Airport Transit Line study recognized this when it settled on a relatively small scale "automated people mover" as the preferred rollingstock option for the Airport Transit Line. Thus, the Airport Transit Line would be a unique operating segment of Calgary Transit operating a short distance, inevitably resulting in operating inefficiencies.

Higher Ridership and Revenue

The Blue Line connection to Calgary Airport and CABR are complementary – allowing riders a seamless, express connection between northeast Calgary and downtown. Independent ridership and revenue forecasts have been conducted for each of the projects, but the combined projects will drive higher ridership on both parts of the network and will open up new trip options. This potential will need to be explored in greater detail in the proposed Airport Rail Hub study and will require assumptions on service levels, frequencies and pricing to optimise ridership. The Calgary International Airport Authority's objectives are similar for both the Airport Transit Line and CABR in increasing the proportion of airport

employees, passengers, and meeters and greeters who access the airport using public transit and allow YYC to reconfigure valuable airside land which is currently used for parking for higher value opportunities. An integrated approach to the Blue Line connection to YYC and CABR would better allow the airport to make the strategic decisions necessary to support the success of both projects.

Network ridership and revenue will also be significantly enhanced with a CABR extension to provide service to Lake Louise. Capital costs of this approximately 56km extension are moderate and would offset costs otherwise required to provide sustainable transportation services within Banff National Park. Service to Lake Louise, combined with measures by Parks Canada to incentivise use of the train, would increase CABR's ability to capture enough of the market for visitors to Banff National so that no long term Government of Alberta financial support would be necessary.

Sooner Built

The Province will be in a position to initiate CABR's 5 Phase construction process by March 2025. CABR is now in Phase 4, Design, a planned 18-month period to advance engineering, public consultation, and regulatory approvals. The next and final phase, Construction is expected to take 3 years. CABR will build its extension to the Blue Line at the same time it constructs its downtown route.

The CABR Extension to Blue Line would likely receive strong support from the Federal and Provincial governments that could build upon the Canada Infrastructure Bank and private sector funding support. An integrated delivery and financing approach to the projects would avoid any potential mixed messaging regarding priorities and provide a compelling basis for strong support from all layers of government.

Conversely, the proposed Airport Transit Line is as yet unfunded.

Simpler Infrastructure

A single system could provide connectivity to the Blue Line, to CABR's express Downtown line and to other services such as the proposed Edmonton to Calgary High Speed Rail at the proposed Airport Trail Station adjacent to the Aurora Business Park. When the Green Line Phase Two is built then a Green Line spur could meet CABR at this proposed Airport Rail Hub station to complete the transportation links envisioned by the Airport Transit Line.

Conversely, a separate Airport Transit Line and CABR system would result in two separate lines running parallel to CABR for several kilometres along Airport Trail and interchanging at up to three separate stations. If the rolling stock and operational decisions described below are adopted, then it makes no sense to build parallel infrastructure.

Better Rollingstock and Technology

CABR is planning on utilizing the next-generation, high comfort rollingstock – and is exploring using hydrogen power – a premium system that CABR is able to justify by amortizing over a 150 km journey. The City's Airport Transit Line study settled on a relatively small scale "automated people mover" as the preferred rolling stock option for the Airport Transit Line. However, this may have too limited capacity to support the ridership potential, particularly with the ability to integrate seamlessly with CABR. CABR's

multiple unit rolling stock would have the potential to adjust train lengths to meet demand and would benefit from the efficiencies of a larger vehicle fleet.

Given that the Blue Line connection to the Calgary Airport may not be a good project for Calgary Transit to undertake as a standalone project, the CABR Extension to Blue Line can be developed as part of the CABR project under our alternative project delivery mechanism (albeit supported by some Transport Canada, Province and City grant contributions).

Next Steps – Airport Rail Hub Study

Focus on this CABR proposal would streamline the Airport Rail Hub study and avoid the mixed messaging/priorities which the study would otherwise risk.

Liricon/ Plenary leadership of the study using our competitively selected engineering consultant Mott MacDonald would allow clear and efficient focus on the design and engineering issues necessary to advance the project quickly. Mott MacDonald staff previously undertook the Airport Transit Line study done for the City and would be able to come up to speed quickly.

If the study were to be undertaken through the Province of Alberta's unsolicited proposal framework (under which the Liricon/ Plenary proposal is already being evaluated), then we do not believe there would be any requirement to undertake an RFP process for the engagement of consultants which could result in lengthy delay getting started. This would also leverage additional funding from Canada Infrastructure Bank and Liricon/ Plenary which would allow comprehensive understanding of all of the issues affecting the integrated project, including the detailed alignment within the CP Rail corridor between the airport and downtown.

We look forward to discussing this innovative and cost-effective proposal further with the Government of Alberta and the City of Calgary. We are making this letter public so that we can engage with other stakeholders to solicit their feedback.

Yours sincerely,

Jan Waterous

Managing Partner, Liricon Capital

Brian Budden

President & CEO, Plenary Americas

cc: Hon Devin Dreeshen
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