The Corporation of the District of Saanich

Report

To: Mayor and Council

From: Sharon Hvozdanski, Director of Planning

Michael Burgess, Fire Chief

Date: May 19, 2022

Subject: Planning for Extreme Heat Events in Saanich
File: 2560-50 • Climate Change

RECOMMENDATION

That Council receive this Report for information.

PURPOSE

The purpose of this Report is to provide:

- An overview of the climate projections and impacts associated with extreme heat;
- Information on Saanich Emergency Program actions during a heat emergency;
- A summary of the communications campaign being undertaken by Saanich on extreme heat preparedness and adaptation; and
- Information on future opportunities being considered by the Sustainability Division to improve community-wide resiliency to the impacts of extreme heat.

DISCUSSION

Background

Cities and people across the world are facing adverse and often devastating effects of climate change including; flooding, heat waves, wildfires, drought, and associated damages and losses to lives, infrastructure, food productivity, water quality and biodiversity. It is estimated that in 50 years, a third of the world's population could be living in places where the average summer temperature is higher than 40°C (Xu et al., 2020). The Intergovernmental Panel on Climate Change (IPCC) released its Sixth Assessment Report on Impacts, Adaptation and Vulnerability in February, 2022. The Report stresses that humanity only has a brief and rapidly closing window to secure a liveable future, and confirms that worldwide climate adaptation and resilient development is more urgent than previously assessed.

In the summer of 2021, British Columbia experienced an unprecedented heat dome where the mean maximum temperature stayed in the high thirties for multiple days. The extreme heat event contributed to 595 deaths province-wide, with 20 heat-related deaths occurring on southern Vancouver Island. Scientists believe it would have been nearly impossible for this heat dome to occur in the absence of human-caused climate change (Henderson et al., 2022).
The District of Saanich is expected to have hotter, drier summers as a result of global warming, and extreme heat events should not be unexpected or treated as an anomaly. Although the

impacts of the 2021 heat dome were less severe in South Vancouver Island than in other parts of the province, the District of Saanich needs to prepare and plan for extreme heat emergencies in the near future.

Heat Response Roles and Responsibilities

Saanich Emergency Program (SEP), District of Saanich – SEP actions during a heat emergency must follow the lead of provincial health and emergency authorities, who include:

- The Ministry of Health;
- The Ministry of Public Safety, e.g., Emergency Management BC (EMBC);
- Provincial Health Services Authority, e.g., BC Centre for Disease Control (BCCDC), Health Emergency Management British Columbia (HEMBC); and
- Island Health.

Saanich Fire Department
The Saanich Fire Department responds to urgent medical emergency requests from British Columbia Emergency Health Services (BCEHS) after the 911 caller is first directed to BCEHS. This includes responses to urgent medical emergencies that are either directly related to extreme heat or a result of a pre-existing condition exacerbated by extreme heat.

It should be noted that the impacts from last year's extreme heat events were disproportionate across the province. Island Health, BCEHS and other emergency service providers in the Capital Region were less impacted than other areas of the province such as the Lower Mainland. The Saanich Fire Department did not receive an overwhelming amount of calls to assist BCEHS nor were there significant delays in BCEHS response within the District of Saanich, as experienced by the Fire Department.

Saanich Heat Response throughout 2021
Leading up to and during the 2021 extreme heat event, emergency actions followed the lead of Island Health, the Ministry of Health, EMBC and HEMBC. SEP also promoted communications provided by Island Health, BCCDC, BC Housing and other stakeholders as appropriate.

Throughout the 2021 heat events, the District of Saanich promoted the use of public libraries and recreation centres to cool off during the day, and rapidly adapted policies at these locations to allow pets.

As a result of the 2021 heat events, EMBC and HEMBC have committed to providing an updated policy that will inform how Local Governments respond to extreme weather events. We expect this updated policy in the coming weeks. We understand it will provide clarification regarding which response costs are eligible for reimbursement from EMBC and an overview of what supports are available through the "Emergency Program Act". It should be noted that EMBC's support is to mitigate emergent life safety issues, and veers away from providing social support services that are provided by other organizations.

SEP addresses climate emergencies such as extreme heat in their Neighbourhood Emergency Preparedness Program. They have also developed a Hazard, Risk, and Vulnerability Assessment that will inform updates to the Emergency Response and Recovery Plan, including the addition of heat within severe weather emergency protocols. SEP supports the Sustainability Division by presenting on emergency preparedness at the Sustainability Online Climate Action

Workshop Series and by reporting to the Sustainability Division on ongoing progress of Climate Plan Action C1.3: Work with partners to ensure coordinated response during severe weather events.

Sustainability Division - District of Saanich

The Sustainability Division is responsible for the development and implementation of longer-term climate change adaptation actions aimed at mitigating the impacts of extreme heat. The division works closely with the Saanich Emergency Program (SEP) and others to maximize opportunities to communicate about extreme heat preparedness with the public, and to identify and implement longer-term strategies to improve resiliency to extreme heat events.

Heat Communications Campaign

Sustainability, with the support of SEP and Corporate Communications, is preparing a pre-heat season communications campaign that will provide information on heat awareness and cooling tips to the public. This is a proactive communications campaign aimed at improving community-preparedness for a future extreme heat emergency.

Many residents are unaware of the dangers of extreme heat, the increasing risk of extreme heat emergencies under climate change, or how to prepare for an extreme heat event. Indoor temperature was thought to be a major factor contributing to mortalities in British Columbia last year, as the majority of deaths occurred in homes that remained overheated throughout the nights during the heat dome. Thus, the communications campaign will focus on home preparedness by providing information on affordable home cooling tips as well as rebate programs for heat pumps and other home renovation measures that will improve cooling. A variety of communication tactics will be used to reach multiple audiences, including seniors and other vulnerable populations in multi-unit residential buildings.

The communications campaign will run from May to mid-June 2022 in preparation for summer, and will resume as needed throughout the summer. This campaign aligns with the District of Saanich's Climate Plan Action C2.4: "Carry out a communications campaign on urgent climate action". Attachment 1 to this Report, provides an example of a utility bill insert on extreme heat preparedness.

Integrating equity into extreme heat preparedness

The risk of mortality during the 2021 heat dome in BC was linked to material and social deprivation, lower neighbourhood tree canopy cover, isolation, age and sex (Henderson et al., 2022). This finding reinforces statements made in the latest IPCC report, and the District of Saanich's Climate Plan, that integrating equity is a critical solution for climate adaptation.

The District of Saanich staff are partnering with the Community Social Planning Council (CSPC) of Greater Victoria to co-host a two-part workshop/webinar to explore how equity can be incorporated into extreme heat planning and to provide information on climate change related heat risk, the health impacts of heat, and residential heat mitigation and adaptation options. The webinars, which are expected to be designed and delivered by late spring 2022, will support Climate Action C1.6: "Work with service providers to vulnerable populations to develop adaptation strategies".

Future opportunities to increase resiliency to extreme heat

Heat Vulnerability Mapping

Heat vulnerability maps for the District of Saanich could help extreme heat response and planning by identifying areas and people at most risk during a heat event and inform which building archetypes are most at risk of overheating. Development of heat vulnerability maps will support Climate Plan Action C1.2: "Undertake urban heat mapping". Heat vulnerability mapping would also support the Urban Forest Strategy, future housing and transportation policies, and cooling infrastructure placement, e.g. splash parks, and water fountains. The Sustainability Division is currently working closely with the City of Victoria to explore needs and opportunities for heat mapping.

Ecosystem service valuation to inform reduction of the Urban Heat Island Effect

Urban forest cover can reduce temperatures and the urban heat island effect through evaporative transpiration and shading, which may help save lives during extreme heat events (Henderson et al., 2022). Lower tree canopy cover is also correlated with low income and vulnerable neighbourhoods, giving even more importance to retaining and replanting trees to provide shading in socio-economically deprived areas.

The Urban Forest Strategy, Resilient Saanich Framework, Biodiversity Conservation Strategy, Asset Management Strategy, and future housing and transportation policies present key opportunities to develop actions that will reduce the Urban Heat Island Effect on the health and safety of the most vulnerable groups in the District of Saanich.

FINANCIAL IMPLICATIONS

Funding has been allocated within the 2022 Sustainability Budget to deliver climate adaptation projects and programs, including a communications campaign on extreme heat and collaboration with regional and provincial groups to identify further actions. This supplements other climate programs and projects that also positively address this climate adaptation measure, e.g. top-up incentives and financing provided for heat pumps, and online climate action series. In addition, annual funding is committed to the delivery of emergency preparedness workshops through SEP. As such, there are no additional financial implications at this time or associated with this Report.

STRATEGIC PLAN IMPLICATIONS

This report summarises the extreme heat work underway that delivers on Council's Strategic Initiative to "implement actions" from the Climate Plan. It further delivers on Council's Strategic Initiative to "support continued improvement of our emergency preparedness programs" and "contribute to the mitigation of climate change and its effects."

CONCLUSION

In the summer of 2021, British Columbia experienced an unprecedented heat dome, which resulted in 595 deaths province-wide. Although the impacts of the 2021 heat dome were less severe in South Vancouver Island than in other parts of the province, the District of Saanich is projected to have hotter, drier summers as a result of global warming, and extreme heat events should not be unexpected or treated as an anomaly.

As such, Staff are proactively preparing for future heat events and working to support a reduction in the risks and impacts of extreme heat on human health and safety. This spring, the

District of Saanich will launch a communications campaign on heat awareness and safety in addition to strengthening communications on home cooling options in our other programs (e.g. oil to heat pump financing, home energy retrofit top-up rebates, and online climate action series).

Staff are also working to integrate equity considerations into future climate actions and cross-departmental projects, as climate emergencies such as extreme heat events disproportionately affect vulnerable populations and those who are marginalized. In addition, assessing the ecosystem values (such as shading and cooling) of trees and natural areas could inform policies that help reduce the Urban Heat Island Effect on the health and safety of the most vulnerable District of Saanich populations. Several current projects, including the Urban Forest Strategy, Resilient Saanich Framework, Biodiversity Conservation Strategy, and Asset Management Strategy, as well as future housing and transportation policies, present key opportunities to incorporate demographics, health and ecosystem services data to inform future heat mitigation and adaptation planning. The District of Saanich will continue to update Council as this work progresses.

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MW/jsp

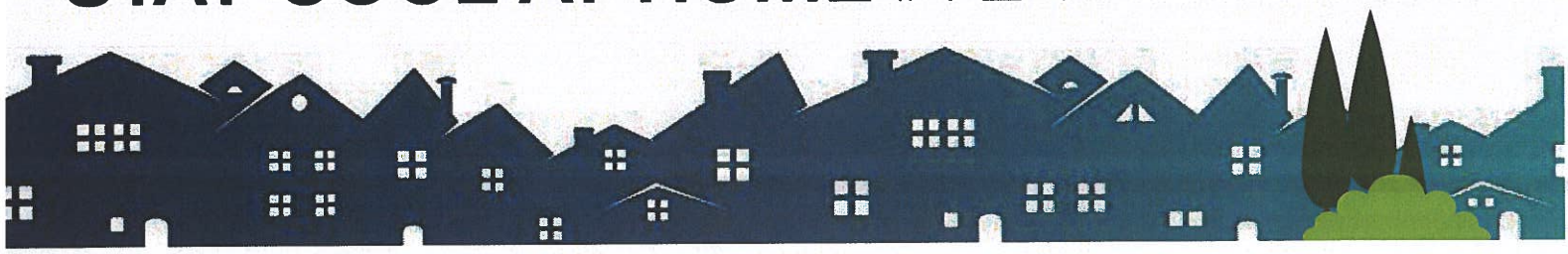
Attachment: Extreme Heat Utility Bill Insert May, 2022

ADMINISTRATOR'S COMMENTS

I endorse the recommendation from the Director of Planning and the Fire Chief.

Brent Reems, Chief Administrative Officer

STAY COOL AT HOME IN EXTREME HEAT



Summer temperatures are increasing and extreme heat events are becoming more common as the climate changes. Here are some tips to keep your house cool during the day and at night.

WINDOWS & DOORS
Install high-performance windows and seal windows and doors with weatherstripping.

REDUCE SUNLIGHT
Keep windows and blinds closed all day during an extreme heat event. Consider installing blackout curtains or outdoor shades.

USE APPLIANCES LESS
Reduce indoor heat generation. Cook outdoors or eat cold meals and avoid doing laundry on the hottest days.

INSULATION AND VENTILATION
Upgrade insulation and ventilation to help keep your home cooler.

AIR FLOW *
Install a ceiling fan and set it to rotate counter-clockwise. Place a floor fan near a window at night.

COOLING
Install a heat pump for energy-efficient heating and cooling. Rebates are available!

TREES
Plant deciduous trees near windows exposed to direct sunlight to increase shade in the summer.

LIGHTING
Switch to energy-efficient light bulbs and turn off the lights when they're not in use.

Questions?
Contact Sustainability
Phone: 250-475-5471
Email: sustainability@saanich.ca

* If indoor temperatures reach dangerously hot levels, fans alone cannot reduce core body temperatures, especially in older adults. Best practice is to relocate to a cooler environment.

saanich.ca/homecooling

Saanich

BE PREPARED AND ADAPT IN EXTREME HEAT

1 INFORM

- Check the weather: **weather.gc.ca/warnings**
- Heat safety information: **islandhealth.ca/learn-about-health/environment/heat-safety**
- Share this brochure with family, friends and neighbours, and follow **@SaanichEP** on Twitter.

2 PLAN

- Be prepared: **saanich.ca/prepare** and **saanich.ca/homecooling**.
- Have a plan to check in on family, friends and vulnerable neighbours.
- Have a plan for someone to check on you, especially if you are a senior or have a pre-existing medical condition.

3 ADAPT

- Spend time in an air-conditioned space.
- Reduce high energy activities, especially outdoors.
- Drink lots of water.
- Stay in the coldest room in your home.
- Wear loose clothing and have a misting bottle.
- Walk pets in the shade and off hot pavement.

Energy-efficient home upgrade rebates and programs:

saanich.ca/heatpumpfinancing
saanich.ca/rebates
betterhomesbc.ca
bringithome4climate.ca (free virtual home energy check up)
nrcan.gc.ca/home (Canada Greener Homes Grant)

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