ADAPTATION OPTIONS

Extreme Heat

This document offers different ways to adapt to extreme heat for individuals, communities, and municipalities including planning ahead, using nature-based approaches, built infrastructure, and policies and programs. It is not intended to be comprehensive. Instead, this is a short summary of well-researched adaptation approaches that may be relevant for Atlantic Canada.

Context

- An extreme heat event or heat wave is an extended period of high temperatures which can be harmful to human health and damage infrastructure and natural systems.
- Extreme heat events are not common across Atlantic Canada but are likely to become more frequent and intense with climate change.
- People may have different sensitivities to heat. For example, older adults, people experiencing homelessness, or people with chronic heart problems are among those at greatest risk of heat illnesses.

Planning Ahead

- **Stay informed.** Heat-related deaths are largely preventable by learning the signs of heat stress and taking action to keep the body cool. Heat may affect members of your family differently. Emergency alert systems are available for cellphones and email. In heat events, public health authorities often provide recommendations to reduce the potential harms.
- **Making adjustments.** During a heat wave, changing work hours, and adjusting living or sleeping arrangements can lower exposure to heat. For example, basements or rooms that receive less sunlight are usually cooler. Being outside during the hottest time of the day stresses the body, so staying in a cool place is best. Reducing the use of ovens, dryers, or dishwashers can reduce indoor heat.
- **Collaboration and engagement.** Engaging with others in communities offers opportunities to connect, exchange experiences, and share ideas. Public participation in heat risk preparedness, with a focus on learning and addressing the needs of those most likely to be severely affected, helps people become educated and engaged.

Nature-Based Approaches

- **Planting trees.** Leafy trees are excellent at providing shade and cooling the surrounding air. Planting and maintaining a diverse mix of native tree species will lower the surface temperature of buildings, streets, and parking lots by providing shade.
- **Vegetation cover.** Natural surfaces tend to retain less heat than artificial ones. Replacing concrete and asphalt with vegetation can cool temperatures in the surrounding area.
- **Green roofs or façades.** Adding plants to roofs can reduce temperatures in the building envelope, keeping buildings cooler. Green roofs or façades can be added to a wide range of buildings, from industrial buildings to homes.

Built Infrastructure

- **Passive cooling.** Improving insulation and reducing air leaks in buildings (e.g., through windows, doors, cracks, etc.) can help keep indoor temperatures from getting too high. Light-colored or reflective roofs or walls absorb less heat than dark materials. Shutters or awnings can provide exterior shade, and blinds or curtains can provide interior shade. High-performance windows can limit the amount of heat that comes inside.
- **Active cooling.** While it's best to start with behaviour change or passive methods to reduce the need for cooling using equipment, it may be necessary to use active cooling during a heat wave. Heat pumps or air conditioning units can be used to cool indoor temperatures. Air conditioners are quite inefficient at using electricity, so are typically not a preferred option. Ceiling or portable fans can increase air movement, cooling skin.
- **Heat-resilient infrastructure.** Roads, railways, power lines, and telecommunications towers may not operate as well in high-heat conditions, which could interrupt essential services. Materials or construction techniques that are less sensitive to extreme temperatures may need to be considered.

Policy and Programs

- **Community support programs.** Check-in programs can help those who are more likely to experience health effects to stay safe during heat events. Community-led support programs can strengthen the sense of community and encourage help among neighbours during heat events. Public buildings can be opened as cooling centres for those who do not have access to cooling in their homes.
- **Land use planning.** Municipal bylaws or guidelines can encourage development that addresses and reduces heat risks. For example, adding requirements for shade cover or light-coloured surfaces in official community plans can help reduce the effects of heat in built areas.
- **Urban forestry.** Municipalities can use tree planting and maintenance programs to expand shade cover. Evidence shows that lower income urban areas typically have lower amounts of shade cover. Tree protection bylaws can limit or manage the removal of healthy mature trees.

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