

Hazard Resilience Index (HRI)

Atmospheric Hazards

Blizzards
Climate Change
Drought
Extreme Cold
Fog
Frost
Hailstorms
Heat Waves and Heat Domes
Hurricanes and Post-Tropical Storms
Ice Fogs, Ice Storms, and Freezing Rain
Lake-Effect Storms
Lightning and Thunderstorms
Microbursts
Sea Storms and Sea Surges
Seiche
Snowstorms
Tornadoes and Waterspouts
Windstorms

Atmospheric

Please refer to the *Hazard Resilience Index Instructions (HRI)* document for more information on using this tool.

Blizzards

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Building regulations require building designs that reduce and withstand snow accumulation on roofs.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based blizzard exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical power lines and sewer and water pipes are buried, where possible and protected where burying is not appropriate (e.g., in permafrost).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are regularly trimmed and/or removed near residences.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In case of an extended power failure due to a blizzard, there are plans to allow residents to evacuate to a designated shelter with back-up power.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most homes have well insulated windows, walls, attics and pipes and roofs that are maintained in good condition.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have heating sources that do not require power and/or have alternate power sources (e.g., generator) and are aware of the operation and ventilation needs.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have winter tires and winter emergency kits (including rock salt, shovels, blankets, food and water) in their vehicles.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Roads (ice, gravel and paved) and snowmobile trails are adequately maintained to allow emergency personnel to access residents during a blizzard.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify emergency response personnel of a potential blizzard.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of a potential blizzard.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify transient, migrant, homeless and visiting people of a potential blizzard.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	To increase traffic safety there are visible fixed message signs, and raised reflective pavement markers on critical roads and snowmobile trails where possible and appropriate.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss blizzards with Subject Matter Experts or Traditional Knowledge holders about traditional/historical warning systems and effective responses.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In whiteout conditions created by blizzards, people have become lost and died even when going only short distances. Community residents are aware of the risk and have safety protocols in place if they have to leave their homes even for short distances (e.g., to check on animals in barns).			<input type="checkbox"/>

Climate Change

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	To offset the growing climate change crisis most residents, businesses and organizations adopt sustainable, environmentally friendly practices.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community actively promotes reduced carbon emission activities with an eye for eliminating emissions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community members have been educated about climate change hazards and residents have been encouraged to change actions that contribute to climate change, such as increasing the energy efficiency of homes and businesses.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss climate change with Subject Matter Experts or Traditional Knowledge holders about traditional/historical warning systems and effective responses/adaptations.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has a "no idling" in your vehicle for more than one minute policy.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community promotes the building of "green" buildings including installation of solar panels, collecting of rain water, insulated windows, and use of recycled building materials.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community promotes the use of public and school transportation systems and carpooling when possible as part of an emissions reduction strategy.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Communities that have undertaken hazard, risk, and resiliency assessments, then developed and implemented appropriate resiliency measures, are more likely to reduce the impact of, respond quickly to, and rebuild after disaster, including from impacts of climate change. Has your community completed a risk or resiliency assessment?			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community actively supports recycling, repurposing, and composting.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community actively educates and supports local produce (e.g., through farmers' markets) and home-based vegetable gardens.			<input type="checkbox"/>

Drought – Natural and Human-Caused

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community officials check frequently with weather forecasting agencies such as Environment Canada and monitor the area's drought dryness level.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based drought exercises have taken place in the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gardeners, gatherers of plants, and farmers are educated about water conservation programs, plant where possible drought-resistant crops and make efficient use of irrigation.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gardeners, gatherers of plants, and farmers take advantage of incentives or subsidies to diversify business and harvesting activities.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community actively promotes or requires water conservation practices to reduce the risk and severity of drought, including having businesses and households install water saving devices, repair leaking fixtures, and collect rain water.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has fire restrictions in place during times of drought and has the personnel to enforce these restrictions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has plans to establish a drought crisis centre or hotline, during times of extended drought to educate the public about the health dangers of drought, and provide water to those in need if required.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has policies in place to discourage or prohibit (depending upon the severity of the drought) community members from washing hard surfaces, vehicles, or buildings, filling swimming pools, or watering non-essential gardens.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has policies in place to discourage or prohibit (depending upon the severity of the drought) businesses from non-essential commercial water use such as watering golf courses, operating car washes and watering plants in nurseries.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community provides education about water conservation to schools and community members.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss drought with Subject Matter Experts or Traditional Knowledge holders who have knowledge about historical impacts, traditional warning systems, and appropriate responses.			<input type="checkbox"/>

Extreme Cold

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Building designs can withstand extreme cold and freezing temperatures.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based cold-weather exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In case of an extended power failure, there are plans to allow residents to evacuate to a designated shelter with back-up power.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most homes have well insulated windows, walls, attics and pipes and roofs that are maintained in good condition.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have heating sources that do not require power and/or have alternate power sources (e.g., generator) and are aware of its safe operation and ventilation needs.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have winter tires and winter emergency kits (including rock salt, shovels, blankets, food and water) in their vehicles.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a cold-weather shelter in the community that is accessible to transient, migrant, homeless and visiting people.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify emergency response personnel of extreme cold conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of extreme cold conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify transient, migrant, homeless and visiting people of extreme cold conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss extreme cold with Subject Matter Experts or Traditional Knowledge holders about traditional warning systems and effective responses.			<input type="checkbox"/>

Fog

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading outside.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There are installed fixed message signs, raised reflective pavement markers, lighted pavement markers, and variable message signs where possible and appropriate.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify emergency response personnel of potentially heavy fog.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system to notify residents of potentially heavy fog and to instruct people to limit travel, especially by pedestrians who are difficult to see when walking on roadsides.			<input type="checkbox"/>

Frost

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most farmers, hunters, gatherers and gardeners check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings to protect crops and livestock.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify Emergency Response Personnel of potentially heavy frost.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system to notify residents of potentially heavy frost and the associated risks.			<input type="checkbox"/>

Hailstorms

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Airport operators prepare for hailstorms by putting planes under cover.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based hailstorm exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most farmers, hunters, gatherers and gardeners check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings in order to protect plants, animals and property.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents know to prepare for hailstorms by putting vehicles, dogs/pets under cover and protecting any vulnerable structures.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents are educated about storm safety and know to keep family members and pets safe indoors and away from windows, skylights and glass doors during hail and avoid contact with plumbing, corded electrical equipment, concrete floors and walls if there is lightning along with the hail.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify emergency response personnel of potential heavy hailstorms.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of potentially heavy hailstorms.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss hailstorms with Subject Matter Experts or Traditional Knowledge holders about traditional/historical warning systems and effective responses.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most farmers have purchased crop insurance.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most homeowners have purchased insurance to cover potential losses.			<input type="checkbox"/>

Heat Waves and Heat Domes

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based heat wave exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plans are in place to install portable and widely available emergency drinking fountains for the public via portable water tanks or fire hydrant hook-up systems in the event of a heat wave.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community plans are in place to check on vulnerable populations during a heat wave, especially the elderly.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Developers and property owners are encouraged to install air conditioning in new commercial buildings and community centres.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If there is an extended heat wave, plans are in place to allow residents to evacuate to a designated shelter with air-conditioned or cool temperatures.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most farmers, hunters and gatherers check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents are educated about heat waves and know the warning symptoms of heat exhaustion and heat stroke and how best to keep cool including reminders not to leave children or pets in cars during extreme heat are part of regular advertisements shared in summer.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There are open green spaces, shade trees and light-coloured buildings in business or downtown areas.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify Emergency Response Personnel of potential heat waves.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of potential heat waves and the appropriate action to take.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Direct access to clinics or other medical facilities can assist in providing immediate care for heat exhaustion or heat stroke. Does your community have access to clinics or other medical facilities?			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Communities with designated cooling centres can minimize the impacts of heat waves and heat domes – especially for older persons and persons with compromised health issues. Does your community have designated cooling centres and do residents know where they are?			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does your community actively work with seniors' homes, places with assisted living and seniors' organizations to ensure that seniors can access information and know when they should be heading to a cooling centre?			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Many seniors do not have ready access to social media and email. Does your community have a telephone or personal check-in service with at-risk seniors to make sure they are aware of potential heat waves?			<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Some northern/remote communities have access to remote medical services, ensuring people can receive treatment for heatstroke and heat exhaustion. Does your community have remote access to medical services?	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--	--------------------------

Hurricanes and Post-Tropical Storms

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>	FACTORS	This factor is important to my community <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Coastal wetlands are in place or are being re-established to protect against storm surge and coastal erosion.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Community-based hurricane and post-tropical storm exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Critical power lines and sewer and water pipes are buried where possible and secured against high winds where burying is not appropriate (e.g., permafrost).	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Critical roads are designed to drain well and are maintained to keep roads clear of pooled water during heavy rainfall.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Designated shelters are in place in areas which are not likely to be impacted by hurricanes or arrangements are in place with neighbouring communities who can provide shelters to evacuated residents.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Development regulations in areas susceptible to hurricanes and post-tropical storms limit land use, prohibit development or require wind and flood resilient building features including elevated buildings, concrete walls and roofs designed to withstand severe wind and rain.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Hazardous trees are regularly trimmed and/or removed near residences.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Most buildings have secure roofs attached to building frames with straps or clips.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Most residents have designated areas of refuge in their homes.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Protective dykes or levees are in place and well maintained in areas likely to experience hurricane and post-tropical storm damage.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Residents are aware of disaster evacuation routes for hurricanes and post-tropical storms and signs are clearly posted to guide them to safety.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Residents know to prepare for high winds and flooding by covering windows with storm shutters or plywood, reinforcing garage doors, clearing rain gutters and downspouts, protecting dogs/pets in a safe shelter, securing boats to land or storing them on land and removing potential windborne missiles such as barbecues and patio furniture.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Plans are in place to develop and preserve coastal forests which act as protection against hurricane- and post-tropical-related storm surge.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					There is a warning system in place to notify Emergency Response Personnel of potential hurricanes and post-tropical storms..	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					There is a warning system in place to notify residents of potential hurricanes and post-tropical storms.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					The community has in place a means to discuss hurricanes or post-tropical storms with Subject Matter Experts or Traditional Knowledge holders about traditional/historical warning systems and effective responses.	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Communities that have undertaken hazard, risk, and resiliency assessments, then developed and implemented appropriate resiliency measures, are more likely to reduce the impact of, respond quickly to, and rebuild after disaster, for example, after a hurricane or post-tropical storm strikes. Does your community have a risk or resiliency assessment completed?	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most homeowner have purchased insurance to cover losses from hurricanes or post-tropical storms.	<input type="checkbox"/>

Ice Fogs, Ice Storms and Freezing Rain

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based ice storm exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical power lines and sewer and water pipes are buried where possible and secured against ice accumulation where burying is not appropriate (e.g., permafrost).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are regularly trimmed and/or removed near residences.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In case of an extended power failure, there are plans to allow residents to evacuate to a designated shelter with back-up power.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have heating sources that do not require power and/or have alternate power sources (e.g., generator) and are aware of its safe operation and ventilation needs.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have winter tires and winter emergency kits (including rock salt, shovels, blankets, food and water) in their vehicles.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plans are in place to locate persons without power over extended time periods and to transport these persons to designated shelters.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify Emergency Response Personnel of a potential ice storms and freezing rain.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of potential ice storms and freezing rain and to avoid any outside activity as it can be dangerous to drive or walk under those conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss ice storms and freezing rain with Subject Matter Experts or Traditional Knowledge holders about traditional/historical warning systems and effective responses.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Driving any vehicle in low visibilities due to ice fog can be hazardous, therefore, warning signs are in place in areas subject to ice fog to reduce driving speeds.			<input type="checkbox"/>

Lake-Effect Storms

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Building regulations require building designs that reduce and withstand snow accumulation on roofs.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based lake effect storm exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical power lines and sewer and water pipes are buried where possible and protected against damage from heavy snow and high winds where burying is not appropriate (e.g., permafrost).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical roads are designed to enable effective snow removal (e.g., with space for snowbanks) and also to drain well.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are regularly trimmed and/or removed near residences.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In case of an extended power failure due to a lake effect storm, there are plans to allow residents to evacuate to a designated shelter with back-up power.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most homes have well insulated windows, walls, attics and pipes and roofs that are maintained in good condition.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have heating sources that do not require power and/or have alternate power sources (e.g., generator) and are aware of safe operating and ventilation needs.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have winter tires and winter emergency kits (including rock salt, shovels, blankets, food and water) in their vehicles.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Roads are adequately maintained to allow Emergency Response Personnel to access residents during a lake effect storm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify Emergency Response Personnel of a potential lake effect storm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of a potential lake effect storm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify transient, migrant, homeless and visiting people of a potential lake effect storm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	To increase traffic safety there are visible fixed message signs, raised reflective pavement markers on critical roads and snowmobile trails where possible and appropriate.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss lake effect storms with Subject Matter Experts or Traditional Knowledge holders about traditional/historical warning systems and land use options based on historic observations of impacts from these storms.			<input type="checkbox"/>

Lightning and Thunderstorms

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Building regulations require wind, rain and lightning resilient building features including roofs designed to withstand severe wind and rain and regulations are enforced and monitored.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community members have been educated about lightning safety, such as avoiding contact with plumbing, corded electrical equipment, concrete floors and walls and keeping family members and pets safe indoors and away from windows and doors during lightning events.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical power lines and sewer and water pipes are buried where possible and protected against damage from lightning and high winds where burying is not appropriate (e.g., permafrost).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical roads are designed to drain well and are maintained to keep roads clear of pooled water during heavy rainfall.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are regularly trimmed and/or removed near residences.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most buildings are grounded.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Playgrounds, golf courses and other outdoor areas with large public gathering places have warning systems to notify the public of potential lightning events and signage to show appropriate behaviour and designated locations where they can take cover.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify emergency response personnel of potential lightning and thunderstorms.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of potential lightning and thunderstorms.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss lightning and thunderstorms with Subject Matter Experts or Traditional Knowledge holders about traditional/historical warning systems and appropriate responses.			<input type="checkbox"/>

Microbursts

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based microburst exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Designated shelters are in place in areas which are not impacted by microbursts.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most businesses and community centres have emergency kits on hand and have business continuity plans in place.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are regularly trimmed and/or removed near residences.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most buildings have secure roofs attached to building frames with straps or clips.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents are aware of disaster evacuation routes for microbursts due to the potential for damages similar or worse to what is experienced in a tornado.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents know to prepare for high winds and flooding by covering windows with storm shutters or plywood, reinforcing garage doors, clearing rain gutters and downspouts, protecting dogs/pets in a safe shelter, securing boats to land or storing them on land and removing potential windborne missiles such as barbecues and patio furniture.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify emergency response personnel of potential microbursts.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of a potential microburst and to instruct people to seek ground-level or underground shelter.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss microbursts with Subject Matter Experts or Traditional Knowledge holders about historical impacts, traditional warning systems and appropriate responses.			<input type="checkbox"/>

Sea Storms and Storm Surges

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Coastal wetlands are in place or are being re-established to protect shorelines and coastal infrastructure from erosion and damage.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based sea storms and storm surges exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical power lines and sewer and water pipes are buried where possible and protected against water and flooding where burying is not appropriate (e.g., permafrost).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical roads are designed to drain well and are maintained to keep roads clear of pooled water during heavy rainfall.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Designated shelters are in place in areas which are not impacted by sea storms and storm surges.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Development regulations in areas susceptible to sea storms and storm surges limit land use, prohibit development or require wind and flood resilient building features including elevated buildings, concrete walls and roofs designed to withstand severe wind and rain.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are regularly trimmed and/or removed near residences.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most buildings have secure roofs attached to building frames with straps or clips.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Subject Matter Experts or Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have designated areas of refuge in their homes.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents know to prepare for high winds and flooding by: covering windows with storm shutters or plywood, reinforcing garage doors, clearing rain gutters and downspouts, protecting dogs/pets in a safe shelter, securing boats to land or storing them on land and removing potential windborne missiles such as barbecues and patio furniture.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Protective dykes or levees are in place and well maintained in areas likely to experience sea storms and storm surges damage.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plans are in place to develop and preserve coastal forests and wetlands which act as protection against storm surge.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Homes and buildings in low lying areas have effective water removal mechanisms (e.g., sump pump) or water barriers in place to prevent significant indoor flooding associated with storm surges.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents are aware of disaster evacuation routes for sea storms and storm surges.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify Emergency Response Personnel of potential sea storms and storm surges.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents, boaters and fishers of potential sea storms and storm surges.			<input type="checkbox"/>

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss storm surge with Subject Matter Experts or Traditional Knowledge holders about historical impacts, traditional warning systems and appropriate responses.			<input type="checkbox"/>

Seiche

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based seiche exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Designated shelters are in place in areas which are not impacted by seiches.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Development regulations in areas susceptible to seiches limit land use, prohibit development or require wind and flood resilient building features including elevated buildings, concrete walls and roofs designed to withstand severe wind.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Evacuation routes for a potential seiche are marked with visible signage.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flood protection structures such as dykes have been built and are well maintained.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazard zonation maps for seiches are prepared and used for development as well as being shared with the community.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plans are in place to develop and preserve coastal forests which act as protection against seiches.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents are educated about seiches and know how and where to evacuate.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify Emergency Response Personnel of potential seiches.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents, boaters and fishers of potential seiches.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss seiches with Subject Matter Experts or Traditional Knowledge holders about historical impacts, traditional warning systems and appropriate responses.			<input type="checkbox"/>

Snowstorms

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Building regulations require building designs that reduce and withstand snow accumulation on roofs.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based snowstorm exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical power lines and sewer and water pipes are buried where possible and protected against damage from heavy snow where burying is not appropriate (e.g., permafrost).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical roads are well-draining and have sufficient space (e.g., ditches) for snow accumulation related to road clearing following heavy snowfall.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are regularly trimmed and/or removed near residences.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In case of an extended power failure due to a snow storm, there are plans to allow residents to evacuate to a designated shelter with back-up power.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most homes have well insulated windows, walls, attics and pipes and roofs that are maintained in good condition.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use traditional knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have heating sources that do not require power and/or have alternate power sources (e.g., generator) and are aware of the appropriate operation and ventilation needs.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have winter tires and winter emergency kits (including rock salt, shovels, blankets, food and water) in their vehicles.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Roads are adequately maintained to allow emergency personnel to access residents during a snow storm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify emergency response personnel of a potential snow storm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of a potential snow storm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify transient, migrant, homeless and visiting people of a potential snow storm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	To increase traffic safety there are visible fixed message signs, raised reflective pavement markers on critical roads and snowmobile trails where possible and appropriate.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss snowstorms with Subject Matter Experts or Traditional Knowledge holders about historical impacts, traditional warning systems and appropriate responses.			<input type="checkbox"/>

Tornadoes and Waterspouts

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>	
Yes	No	Need More Info	Not Applicable	FACTORS				This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based tornado exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Development regulations require building reinforcements and wind resilient infrastructure.				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are regularly trimmed and/or removed near residences.				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Traditional Knowledge to assess weather prior to heading out onto the land.				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have designated safe areas/tornado refuge areas in their home.				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents know to prepare for high winds by: covering windows with storm shutters or plywood, reinforcing garage doors, clearing rain gutters and downspouts, protecting dogs/pets in a safe shelter, securing boats to land or storing them on land and removing potential windborne hazards such as barbecues and patio furniture.				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify emergency response personnel of a potential tornado.				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of a potential tornado.				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify transient, migrant, homeless and visiting people of a potential tornado.				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.				<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss tornados with Subject Matter Experts or Traditional Knowledge holders about historical impacts, traditional warning systems and appropriate responses.				<input type="checkbox"/>

Wind Storms

Hazard Resilience Rating				High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Yes	No	Need More Info	Not Applicable	FACTORS			This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based windstorm exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical power lines, sewer and water pipes are buried where possible and protected against damage from high winds where burying is not appropriate (e.g., permafrost).			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Development regulations require building reinforcements and wind resilient infrastructure.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are regularly trimmed and/or removed near residences.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In case of an extended power failure due to a windstorm, there are plans to allow residents to evacuate to a designated shelter with back-up power.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents check regularly with weather and storm forecasting agencies such as Environment Canada and take care to follow warnings and/or use Traditional Knowledge to assess weather prior to heading out onto the land.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents know to prepare for high winds by: covering windows with storm shutters or plywood, reinforcing garage doors, clearing rain gutters and downspouts, protecting dogs/pets in a safe shelter, securing boats to land or storing them on land and removing potential windborne missiles such as barbecues and patio furniture.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify Emergency Response Personnel of a potential windstorm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of a potential windstorm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify transient, migrant, homeless and visiting people of a potential windstorm.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing homeless shelters have made provisions for increased capacity and hazard specific conditions.			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place a means to discuss windstorms with Subject Matter Experts or Traditional Knowledge holders about historical impacts, traditional warning systems and appropriate responses.			<input type="checkbox"/>

References

- Bush, E. & Flato, G. (2019). [Canada's changing climate report](#). Government of Canada.
- Centers for Disease Control and Prevention. (2019). [Natural disasters and severe weather. Preparing for a winter storm](#).
- Climate Atlas of Canada. (n.d.). [Health impacts of extreme heat](#).
- Cohen, C., Dorr, F., Funke, H., Waterer, K., & Jensen, L. (2005). [How to protect your house and its contents from lightning: IEEE guide for surge protection of equipment to AC power and communication circuits](#). IEEE Press.
- Davenport, A. G. (1988). The reduction of windstorm hazard through the IDNDR. *Natural Hazards*, 1, 235-243.
- David Suzuki Foundation. (n.d.). [Top 10 things you can do about climate change](#).
- Delica, Z. G. (1993). Citizenry-based disaster preparedness in the Philippines. *Disasters*, 17(3), 239-247. <https://doi.org/10.1111/j.1467-7717.1993.tb00497.x>
- Environment Canada. (2009). [Canadian drought alert and monitoring program](#).
- Federal Emergency Management Agency. (1999). [Protecting building utilities from flood damage: Principles and practices for the design and construction of flood resistant building utility systems](#).
- Federal Emergency Management Agency. (2010). [Natural hazards and sustainability for residential buildings](#). FEMA.
- Gilbert, D., Krauss, T. W., Boe, B. (2016). [Twenty seasons of airborne hail suppression in Alberta Canada](#). *The Journal of Weather Modification*, 48(1), 68-92.
- Gopalakrishnan, C., & Okada, N. (2007). Designing new institutions for implementing integrated disaster risk management: Key elements and future directions. *Disasters*, 31(4), 353-372. doi:10.1111/j.1467-7717.2007.01013.x
- Gordon, J. A. (2001). [Risk assessment and management in local government emergency planning](#). Institute for catastrophic loss reduction.
- Government of Canada. (2011). [Severe storms: What to do?](#)
- Government of Canada. (2018a). [Before a hurricane](#).
- Government of Canada. (2018b). [Be prepared for winter weather](#).
- Government of Canada. (2018c). [Before a severe storm](#).
- Government of Canada. (2019). [Cold season weather hazards](#).
- Government of Canada. (2020). [Canada's action on climate change](#).
- Grains Research & Development Corporation. (n.d.). [Tips and tactics. Managing frost risk](#). National GRDC.

- Health Canada. (2011a). [*Adapting to extreme heat events: Guidelines for assessing health vulnerability*](#). Government of Canada.
- Health Canada. (2011b). [*Extreme heat events guidelines: Technical advice for health care workers*](#). Government of Canada.
- Health Canada. (2018). [*Extreme cold*](#).
- Johnstone, W. M., & Lence, B. J. (2009). [*Assessing the value of mitigation strategies in reducing rapid-onset, catastrophic floods*](#). *Journal of Flood Risk Management*, 2, 209-221. <https://doi.org/10.1111/j.1753-318X.2009.01035.x>
- Knutson, C., Hayes, M., & Phillips, T. (1998). [*How to reduce drought risk*](#). Western Drought Coordination Council.
- Liu, Q., Ruan, X., & Shi, P. (2011). Selection of emergency shelter sites for seismic disasters in mountainous regions: Lessons from the 2008 Wenchuan ms 8.0 earthquake, China. *Journal of Asian Earth Sciences*, 40(3), 926-934. <https://doi.org/10.1016/j.jseaes.2010.07.014>
- McBean, G., & Henstra, D. (2003). [*Climate change, natural hazards and cities*](#). The Institute for Catastrophic Loss Reduction.
- Ministers Responsible for Emergency Management. (2017). [*An emergency management framework for Canada*](#) (3rd ed.). Public Safety Canada.
- National Science and Technology Council's Subcommittee on Disaster Reduction. (2006). [*Windstorm impact reduction implementation plan*](#). United States Army Corps of Engineers.
- Natural Resources Canada. (2020). [*Impacts and adaptation*](#).
- Office for Coastal Management, National Oceanic and Atmospheric Administration. (2021). [*General information. Reports on lessons learned from storms, hurricane and coastal flooding*](#). NOAA.
- Olick, D. (2019, May 21). [*Here's how to build a hurricane-resistant house – not as expensive as you may think*](#). CNBC.
- Ontario Ministry of Agriculture, Food and Rural Affairs. (2021a). [*Weather risks: Strategies to mitigate the risk of frost*](#).
- Ontario Ministry of Agriculture, Food and Rural Affairs. (2021b). [*Weather risks: Strategies to mitigate the risk of hail injury*](#).
- Osti, R., Tanaka, S., & Tokioka, T. (2009). [*The importance of mangrove forest in tsunami mitigation*](#). *Disasters*, 33(2), 203-213.
- Pendleton, L. D., (2000, September 20). [*Microbursts and other thunderstorm nastiness*](#). AVweb.
- Perks, G. (n.d.). [*Heat waves and hope*](#). [Video]. Climate Atlas of Canada.
- Philipsen, K. (2017). [*An overview of resilient construction for natural disaster mitigation*](#). Smart Cities Dive.

Potash, C. B., & Brown, J. R. (1988). [Fog mitigation update: Fog mitigation measures as applied to highway bridge structures](#). *Transportation Research Record*, 1172, 74-77.

Public Safety Canada. (n.d.). [Preparing your family for emergencies: A step-by-step guide](#).

Roth, A. P. & de Loë, R.C. (2015). [Addressing drought: A survey of Canadian and international experiences](#). Water Policy and Governance Group.

Singh, K., Walters, B. B., & Ollerhead, J. (2007). Climate change, sea-level rise and the case for salt marsh restoration in the Bay of Fundy, Canada. *Environments Journal*, 35(2), 71-84.

Smoyer-Tomic, K. E., Kuhn, R., & Hudson, A. (2003). Heat wave hazards: An overview of heat wave impacts in Canada. *Natural Hazards*, 28, 463–485.