



Hazard Resilience Index (HRI)

Atmospheric Hazards

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- Lake-Effect Storms
- Lightening 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 ^{1 2 3}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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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"/>



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<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	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are 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 walls, attics and pipes and roofs are 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	<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)	<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 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 police, fire and ambulance 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 and homeless 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 where possible	<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"/>

Climate Change ^{4 5}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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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, locals, including residents, businesses and organizations adopt sustainable, environmentally friendly practices.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Carbon emission is reduced 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 driving vehicles less often and 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 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 car pooling when possible.	<input type="checkbox"/>

Extreme Cold⁶⁷

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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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 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 walls, attics and pipes and roofs are 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	<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)	<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 and homeless 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 police, fire and ambulance 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 and homeless 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"/>

Fog^{8,9}

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

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	<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.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify police, fire and ambulance 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.	<input type="checkbox"/>

Frost¹⁰

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

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 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"/>	There is a warning system in place to notify police, fire and ambulance 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.	<input type="checkbox"/>

Hailstorms ^{11 12}

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

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 car dealers prepare for hailstorms by putting vehicles under cover	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most farmers 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"/>	Most farmers prepare for hailstorms by putting vehicles under cover, protecting greenhouses and bringing in animals wherever possible	<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"/>	Most residents know to prepare for hailstorms by putting vehicles under cover	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents are educated about storm safety and know to stay 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 police, fire and ambulance 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"/>

Heat Waves ^{13 14}

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

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"/>

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<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 and poor.	<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	<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 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"/>	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 how best to keep cool	<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 building in business 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 police, fire and ambulance 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	<input type="checkbox"/>

Hurricanes ^{15 16 17 18 19}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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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	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based hurricane exercises have taken place in schools and the community-at-large	<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	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical roads are well-draining	<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 hurricanes	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Development regulations in areas susceptible to hurricanes 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 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	<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 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	<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, 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 police, fire and ambulance personnel of potential hurricanes	<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	<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"/>

Ice Fogs, Ice Storms and Freezing rain ^{20 21 22 23}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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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	<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	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are 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	<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)	<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 police, fire and ambulance 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 a potential ice storms and freezing rain	<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"/>

Lake-Effect Storms ^{24 25 26 27}

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

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	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical roads are well-draining	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are 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 walls, attics and pipes and roofs are 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)	<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	<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 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 police, fire and ambulance 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 and homeless 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 where possible	<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"/>

Lightning and Thunderstorms ^{28 29 30 31}

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

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 limit land use or require wind, rain and lightning resilient building features including roofs designed to withstand severe wind and rain	<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 staying 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	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical roads are well-draining	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are 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. For example, see the report <i>How to Protect Your House and Its Contents from Lightning</i> by Cohen, Dorr, Funke, Waterer and Jensen (2005).	<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"/>	Playgrounds, golf courses and other outdoor areas with large numbers of the public have warning systems to notify the public of potential lightning 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 police, fire and ambulance 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"/>

Microbursts ^{32 33}

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

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	<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	<input type="checkbox"/>

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				microbursts	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most businesses 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"/>	Development regulations in areas susceptible to hurricanes limit land use, prohibit development or 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 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	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residents are aware of disaster evacuation routes for microbursts	<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, 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 police, fire and ambulance 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"/>

Sea Storms and Storm Surges ^{34 35 36 37 38}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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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	<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	<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	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical roads are well-draining	<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 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	<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, 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"/>	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 police, fire and ambulance 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"/>
<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"/>

Seiche [39](#) [40](#) [41](#) [42](#) [43](#) [44](#)

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

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"/>	Citizen-based disaster recovery groups are in place	<input type="checkbox"/>
<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 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"/>

Hazard Resilience Index

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify police, fire and ambulance 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"/>

Snowstorms ^{45 46 47}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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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	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical roads are well-draining	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hazardous trees are 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 walls, attics and pipes and roofs are 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	<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)	<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 police, fire and ambulance 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 and homeless 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	<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"/>

Tornadoes and Waterspouts ^{48 49}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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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 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	<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 and flooding by: - covering windows with storm shutters or plywood, reinforcing garage doors, clearing rain gutters and downspouts, 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 police, fire and ambulance 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 and homeless 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"/>

Wind Storms ^{50 51 52}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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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	<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 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	<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, 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 police, fire and ambulance 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 and homeless 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"/>

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