

Severe Storms

Thunderstorms, hail, blizzards, ice storms, high winds and heavy rain can develop quickly and threaten life and property. Severe storms occur across Alberta in all seasons.

Listen to the local radio or television stations for severe weather warnings and advice. Keep a battery-powered or crank radio or [“Weatheradio”](#) on hand as there can be [power outages](#) during severe storms. Download the [Alberta Emergency Alert](#) app for updates to be sent directly to your phone.

What to Do (Storm Specific)

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Before a Severe Storm

Having a [family emergency plan](#) in place saves valuable time if severe weather strikes. Take the opportunity now to choose the best shelter in your home and office, and make sure everyone knows where it is. To ensure everyone is safe and accounted for if you are separated during a storm, choose a meeting place to gather after the storm.

- Maintain an [emergency kit](#) stocked with supplies such as water and ready-to-eat food, as well as battery-powered or crank flashlights and radios (do not forget extra batteries).
- **Keep extra batteries or a charger** for your mobile device in your emergency kit. Consider getting a solar-powered, crank or vehicle phone charger.
- Keep your vehicle fuel tank full, in case fuel stations close down after a storm. When an [Alert](#) is issued, stay calm and follow your plan.

Tips for preparing for severe storms

- If a severe storm is forecast, secure everything that might be blown around or torn loose - indoors and outdoors. Flying objects such as garbage cans, lawn furniture and trampolines can injure people and damage property.
- Before storm season starts, trim dead branches and cut down dead trees to reduce the danger of these falling onto your house during a storm.
- If you are indoors, close your windows, blinds and curtains. Stay away from windows, doors and fireplaces.
- You may want to go to the sheltered area that you and your family chose for your emergency plan.
- Remember to include preparations for pets, livestock, service animals, children and individuals with special care needs - which may increase the time you need to prepare.
- If you are advised by officials to evacuate, do so. Take your [emergency kit](#) with you.
- You can use a cellular telephone during a severe storm, [but it is not safe to use a land-line telephone in a thunderstorm](#).
- If you are in a car, stop the car away from trees or power lines that might fall on you.

During a Severe Storm

- If possible, take shelter. This is not the same thing as [shelter-in-place](#). Taking shelter during a severe storm means selecting a small, interior room, with no or few windows and taking refuge there.
- If you are indoors, stay away from windows, doors, exterior walls and fireplaces. Avoid buildings with large, unsupported roofs such as arenas, supermarkets and barns.
- Go to the basement or to a small interior room in the center of the house, such as a closet, bathroom or hallway, on the lowest floor of the building. If this is not an option, take cover under a stairway or sturdy table and use a cushion or mattress to protect your head.
- You may want to go to the sheltered area that you and your family chose for your emergency plan.
- If you are advised by officials to evacuate, do so. Take your emergency kit with you.
- Never go out in a boat during a storm. If you are on the water and you see bad weather approaching, head for shore immediately. Always check the latest forecast before leaving for a day of boating and listen to weather reports during your cruise.

If you need to [evacuate](#)

- Vacate your home when you are advised to do so by local emergency authorities. Ignoring such a warning could jeopardize the safety of your family or those who might eventually have to come to your rescue.
- Take your emergency kit with you.

- Follow the routes specified by officials. Do not take shortcuts. They could lead you to a blocked or dangerous area.
- Drive carefully with headlights. Make way for pedestrians and emergency vehicles. Stop at the pre-determined marshaling point(s). Report in to authorities and wait for further instructions. Do not leave again without informing officials.
- Make the necessary arrangements for [pets](#). If you do not already have a pet kit, make sure you bring your pet carrier and a supply of food.
- If time permits, leave a note informing others when you left and where you went. If you have a mailbox, leave the note in there.

After a Severe Storm

Restore your home to good order as soon as possible to protect your health and prevent further damage to the house and its contents.

Re-entering your home

- Do not return home until authorities have advised that it is safe to do so.
- Use extreme caution. If you have experienced flooding and the main power switch was not turned off, do not re-enter your home until a qualified electrician has determined it is safe to do so.
- If you suspect structural damage, rely on the professionals to ensure it is safe before re-entering.
- Depending on where you live, your municipal or provincial inspection authority is responsible for permitting before your electric utility can reconnect power to your home.

Be Informed

- Download the [Alberta Emergency Alert](#) app to receive current information about disasters or emergencies impacting your community.
- Refer to the [Meteorological Service of Canada](#) for [Public Alerts](#) through radio and television stations.
- Refer to the [Weather Office Website](#) for Canadian weather forecasts.
- [Get Your Weather](#) through a variety of sources (e.g. telephone, weather radio, public weather alerts).

What to Do (Storm Specific)

Blizzards, Blowing Snow and Snowfall

- A blizzard, in general, is when winds of 40 km/h or greater are expected to cause widespread reductions in visibility to 400 metres or less due to blowing snow or blowing snow in combination with falling snow, for at least four hours. Blizzards do not necessarily bring newly falling snow and can even occur with clear skies overhead.
- If you live in a rural area and a blizzard or heavy blowing snow is forecast, you may want to string a guideline between your house and any outbuildings to which you may have to go during the storm.
- In wide open areas, visibility can be reduced to virtually zero during heavy blowing snow or a blizzard. You can easily lose your way. If a blizzard strikes, take caution. If you must travel during a winter storm, do so during the day and let someone know your route and anticipated arrival time.
- If your car gets stuck in a blizzard or snowstorm, remain calm and stay in your car. Allow fresh air in your car by opening the window slightly on the sheltered side - away from the wind. You can run the car engine for about 10 minutes every half hour if the exhaust system is working well. Beware of exhaust fumes and check the exhaust pipe periodically to make sure it is not blocked with snow. Remember, you cannot smell potentially fatal carbon monoxide fumes.
- To keep your hands and feet warm, exercise them periodically. In general, it is a good idea to keep moving to avoid falling asleep. If you try to shovel the snow from around your car, avoid overexerting yourself.
- Overexertion in the bitter cold can cause death as a result of sweating, leading to hypothermia or a heart attack.
- Keep watch for traffic or search and rescue.

Hail

- Hailstorms occur mostly from May to October.
- Some hailstones are the size of peas while others can be as big as grapefruits.
- For farmers whose crops are crushed, and for others whose homes and cars are damaged, a hailstorm can be a financial disaster.
- Hail comes down at great speed, especially when accompanied by high winds. If hail is forecast, you may want to protect your vehicle by putting it in the garage.
- Take cover when hail begins to fall. Do not go out to cover plants, cars or garden furniture or to rescue animals. Keep yourself and your pets away from windows, glass doors and skylights which can shatter if hit by hailstones.
- Avoid using the telephone during a storm, and do not touch metal objects like stoves, radiators, metal pipes and sinks.
- If you are in a vehicle, find a place to safely pull off the roadways and protect yourself from possible shattered glass.

- If caught outdoors and there is no available shelter, crouch down, face away from the wind and protect your head and neck with your hands.
- Look out for flooded areas, (especially in urban areas) where excessive hail and heavy rain can plug storm drains and suddenly create local flooding.

Heavy Rain

- There are two types of summer heavy rains:
 - Large scale weather systems with long-term rainfall. These large weather systems can last several days.
 - Short-lived thunderstorms with significant rainfall. Within a short period of time, sometimes only minutes, localized downpours from thunderstorms can produce flash flooding.
- Heavy rainfall can result in flooding. This is particularly true when the ground is still frozen or already saturated from previous storms.
- During heavy rains, avoid roadway underpasses, drainage ditches, low lying areas and water collection areas. They can unexpectedly [flood](#) or overflow.
- Stay away from power lines or electrical wires during floods.
- Consider checking the drainage around the house to reduce the possibility of basement flooding after a heavy rain.
- Monitor the [provincial government](#) flood forecasts and warnings.

Ice storms

- Freezing rain clings to everything it touches and is more slippery than snow.
- Ice from freezing rain accumulates on branches, power lines and buildings. If you must go outside when a significant amount of ice has accumulated, pay attention to branches or wires that could break and fall on you. Ice sheets could also do the same.
- Never touch power lines. A hanging power line could be charged (live) and you would run the risk of electrocution. Remember also that ice, branches or power lines can continue to break and fall for several hours after the end of precipitation.
- When freezing rain is forecast, avoid driving. Even a small amount of freezing rain can make roads extremely slippery. Wait several hours after freezing rain ends so that road maintenance crews have enough time to spread sand or salt on icy roads.

Lightning

- Lightning occurs when the air becomes charged with electricity during a thunderstorm.
- Bolts can deliver as much as 100 million volts of electricity and can strike a target many kilometers away (rarely, lightning can strike more than 40 km away with clear skies overhead – literally a bolt from the blue!)
- On average, lightning causes more fatalities in Canada annually than do hail, rain, flooding, wind, tornados and hurricanes combined.

- Lightning causes thunder. If you can hear thunder, you are within striking distance of lightning. Remember, “if you see it, flee it and if you can hear it, fear it - when thunder roars, go indoors”
- Not all indoor locations are safe. Safe shelter includes a sturdy, fully enclosed building with wiring and plumbing. If this is not available, get into a metal-roofed vehicle with the windows up and do not touch any electrical devices or switches connected to the vehicle.
- Rubber footwear does not offer any significant protection from lightning.
- Rubber tires do not offer any significant protection from lightning. Do not ride bicycles, motorcycles, tractors or golf carts. These will not reduce your chance of or protect you from a lightning strike.
- Once indoors, stay away from electrical appliances and equipment. Avoid using a telephone that is connected to a landline. Stay away from doors, windows, fireplaces, and objects that will conduct electricity. This includes sinks, tubs and showers.
- If you are in a car during lightning, do not park under tall objects that could topple, and do not get out if there are downed power lines nearby.
- If you are caught outside, do not stand near tall objects or anything made of metal, and avoid open water. Take shelter in a low lying area.
- If caught on the water in a small boat with no cabin during thunder and lightning, quickly get to shore. Boats with cabins offer a safer environment.
- Wait 30 minutes after the last thunder heard from any storm before venturing outside again. Be aware that local noise may mask hard to hear faint thunder.
- Most lightning fatalities come from thunderstorms that are not intense enough to be described as being “severe” storms and therefore do not have an associated Severe Thunderstorm Warning in effect. For more information on lightning science and safety, visit: [Lightning in Canada](#).

Thunderstorms

- All thunderstorms are in fact potentially deadly electrical storms, whether or not they also bring “severe” weather.
- A “severe” thunderstorm is one that brings potentially damaging conditions such as high winds, hail, lightning, heavy rain and tornadoes. Straight-line winds can be as strong as some tornadoes but usually cover a much larger area.
- Thunderstorms are usually over within an hour, although a series of thunderstorms can last for several hours.
- Before any thunderstorm, unplug radios and televisions; listen for weather updates on your battery-powered or crank radio.
- During thunderstorms, you should also stay away from items that conduct electricity, such as corded telephones, appliances, sinks, bathtubs, radiators and metal pipes.

Tornadoes

- A tornado is a violently rotating column of air extending between a cloud base and the surface (when over water, it is called a waterspout). Tornadoes can occur at any time of the day or night - most tornadoes develop in the late afternoon and early evening but may occur outside of this timeframe, including overnight.
- Tornadoes may appear nearly transparent until dust and debris are picked up or a cloud forms within the rotating column which often, but not always, looks like a funnel. The average tornado comes from the south, southwest or west, but tornadoes can come from any direction and suddenly change their direction of motion.
- Maintain tornado vigilance through the season they are most likely to occur in. In Alberta, that is from May through September, with mid-June through early August the peak time. [Monitor for severe weather watches and warnings](#), including listening to local television, radio or "[Weatheradio](#)".
- No geographic location is safe from tornadoes. They can form on lakes, rivers and near mountains as well as over flat terrain.
- Mobile homes are not safe during tornadoes. Abandon your mobile home and seek shelter in a sturdy building immediately. If you live in a mobile home, ensure you have a plan in place that identifies the closest sturdy building.
- When sheltering, leave windows closed. An underground shelter, basement or safe room are the safest places. If none of these options are available, go to a windowless interior room or hallway.
- If you are in a rural area and a tornado is visible in the distance, if the traffic is light you may be able to drive out of its path by moving at right angles to the tornado. Be cautious, if the tornado does not appear to move to the left or right, it may be moving towards you.
- If threatened while travelling in a vehicle in an urban area, you may need to abandon the vehicle to seek nearby shelter on foot. It is certainly dangerous and likely impossible to outdrive a tornado in dense urban traffic.
- If you are caught by extreme wind or flying debris while driving your vehicle and the tornado is near, park your car and immediately seek shelter in a sturdy building. Avoid seeking shelter under bridges or overpasses, which can create traffic hazards while offering little protection against flying debris.
- Keep your radio on to find out what areas are affected, what roads are safe, where to go and what to do if the local emergency team asks you to leave your home.
- Keep your emergency kit close at hand, in a portable container such as a duffel bag, back pack, or suitcase with wheels.

Wind

- Strong winds, and especially gusty winds, can cause property damage or turn any loose item into a dangerous projectile, and create unsafe travelling conditions that affect your ability to safely steer your car.

- When there is a wind warning for your area, you should expect inland winds to be blowing steadily at 70-80 km/h or more, or winds that are gusting to 90 km/h or more. Secure or put away loose objects such as outdoor furniture or garbage cans, put your car in the garage, and bring livestock to shelter.
- With winds between 60 and 70 km/h, you will have difficulty with balance and walking against the wind. Twigs and small branches could also blow off trees and cause a hazard, so stay inside until it is safe. Seek shelter, preferably indoors away from outside walls (especially large glass surfaces). Avoid large open spans in buildings such as gymnasiums or malls.

For more information on hazards in Alberta, contact your municipality or community's Director of Emergency Management or the Alberta Emergency Management Agency at 780-422-9000 (Dial 310-0000 for toll-free access outside Edmonton). You can also visit www.aema.alberta.ca.