

Before, During and After
Flooding in Calgary
YOUR GUIDE TO PROTECTING FAMILY AND PROPERTY



IMPORTANT: safety precautions

Keep this guide where you can find it.

Calls to 9-1-1 and 3-1-1 can be made 24 hours a day, seven days a week.

If flooding occurs, refer to the the following points to help protect your family and property:

- If you are in immediate danger, phone **9-1-1**.
- If you have minor sewage backup or storm sewer backup, call **3-1-1**. If your basement is flooding rapidly, call **9-1-1**. Do not enter the basement. Do not flush toilets or turn on taps because this will cause more flooding.
- If you smell gas in your home, leave immediately. On the way out, leave the doors open to air out your home. Do not touch any electrical appliances or switches because they can spark and ignite natural gas. Once you are out of your home, phone **9-1-1**.
- If your natural gas appliances are affected by flooding, phone ATCO Gas at **403-245-7222**.
- If your household electrical installation or appliances are affected by flooding, phone ENMAX at **403-514-6100**.
- If the streets are flooded, don't go on them. Flood water can hide hazards such as open manholes. It only takes 15 centimetres (six inches) or less of rushing water to pull down an average adult and less than 2.5 centimetres (one inch) to drown.

Table of Contents

| | |
|--|----|
| Introduction | 2 |
| How flooding happens | 3 |
| The City's Role | 4 |
| Your Role – Before Flooding | 5 |
| Steps to protect against flood damage | 5 |
| Contact your insurance agent | 8 |
| Prepare your family | 8 |
| 72-hour emergency kit | 9 |
| Your Role – During Flooding | 10 |
| Staying Informed | 10 |
| Flooding Advisories | 10 |
| Staying Safe | 11 |
| Sandbagging | 12 |
| Evacuation | 13 |
| Your Role – After Flooding | 14 |
| Returning home after an evacuation | 14 |
| Steps to take when you reach your home | 14 |
| Steps when you return to your apartment or condominium | 15 |
| Insurance and claim information | 15 |
| Disaster recovery | 16 |
| Your health may be at risk after flooding..... | 16 |
| Guidelines to help you clean up..... | 17 |
| Frequently Asked Questions..... | 22 |
| Calgary's Flood Plain | 27 |
| Communities at Higher Risk for River Flooding | 28 |



Introduction

Be prepared. It's your best line of defence against floods.

Flooding can strike any Calgary community in any season, often with little or no warning. The impact can be minor or devastating.

City-wide heavy rains, such as those in June 2005, show how widespread flooding can be. In 2005, for example, about 40,000 Calgary homes suffered flood damage. More than 1,500 Calgarians were evacuated in a state of local emergency.

The annual risk for communities next to the Bow and Elbow rivers is the greatest. As snow melts in the Rocky Mountains and combines with heavy rainfall, people in low-lying areas (or flood plains) may be impacted by flooding. To determine if you live in one of these high-risk communities, refer to the flood plain map on page 27, visit calgary.ca/flooding to determine your risk or call 3-1-1. It is important to remember that this map is only a guideline.

Don't live in a flood plain?

You can also experience flooding, including basement seepage, stormwater back-up and sewage back-up. (See page 3 for more information.)

Safety is everyone's responsibility.

The City of Calgary is committed to protecting citizens and ensuring critical infrastructure is safe during emergency events, including flooding.

Safety is everyone's responsibility.

The City of Calgary is committed to protecting citizens and ensuring critical infrastructure is safe during emergency events, including flooding.

This guide shows the important steps you can take to protect yourself, your family and belongings – before, during and after flooding.

How flooding happens

Your home may be flooded in one or all of these ways: basement seepage, sewage backup, stormwater backup and overland flooding.

Basement seepage

This happens when the ground absorbs water much like a sponge. This water is absorbed by the soil and raises the level of the underground water table. Water seeps through the soil and eventually reaches the foundation of your home. The water works its way into your basement through cracks and holes or through joints in the home's construction (for example, where the structure meets the foundation.)

Sewage backup

Water on flooded streets or high groundwater may drain into the sanitary sewer system. This overloads the sanitary sewer pipes and can force sewage back through the sewer line and into your basement.

Stormwater backup

The City's stormwater system empties into the Bow and Elbow rivers through large pipes. When the rivers rise, river water can flow back into the stormwater pipe system. Water may spill back onto streets through stormwater drains. This back-flow of water can lead to both sewage backup and overland flooding.

Overland flooding

In Calgary and area, overland flooding happens when water overflows the banks from streams, rivers and lakes, or through stormwater backup. This can occur quickly and with little warning. Initially low spots on streets are filled and water levels may continue to rise and flood residential lots. Any underground structure, such as underground parking and basements, is most susceptible.

In winter, frozen catch basins, storm drains or piled snow, combined with quick thawing and/or rain can cause overland flooding, which can enter basements or garages.



The City's Role



The City of Calgary's priority when planning for and responding to flooding is to protect its citizens, property, and environment.

The City of Calgary's priority when planning for and responding to flooding is to protect its citizens, property, and environment.

The City of Calgary is prepared for flooding year round:

- By working with Alberta Environment to monitor snow pack, rainfall and temperatures, as well as stream-flow gauges in the mountains and foothills.
- By developing and maintaining emergency plans.
- By conducting training sessions for emergency personnel.
- By identifying those areas of the city and pieces of critical infrastructure that are most vulnerable to flooding.
- By ensuring adequate emergency resources are in place.
- By educating the public.

The City strives to maintain all critical business functions and services to customers during any emergency or disaster (including flooding). As a part of this, The City is one of the first municipalities in Canada to have a dedicated Emergency Water Operations Centre (H2OC) that is used as the central hub for the flow of information and communications during any flood event.

Your Role – Before Flooding



Steps to protect against flood damage

Know your risk

The flood plain is the low land bordering our rivers. As a naturally occurring feature of the landscape, a flood plain carries excess water when heavy rains cause streams to overflow. Understanding the risks that come with living in a flood plain can help you prepare and protect your property and family.

To find out if your home or business is located in a flood plain, refer to the flood plain map on page 27 for a general outline. For more specific information, visit calgary.ca/flooding to determine your risk or call 3-1-1.

Most Calgarians face the threat of flooding in their homes or businesses, whether or not they live on a flood plain, or low-lying area.

The following steps will help reduce the threat of flood damage in all areas.

Improve yard drainage

To prevent water from collecting beside your house and seeping into the basement make sure yard and flower gardens slope away from your house and onto a grassed area in the front or backyard – not toward a neighbour's yard.

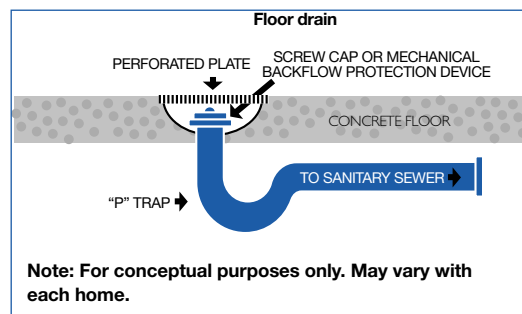
Your Role – Before Flooding

Check around outside walls, under stairs and decks where soil settles, and fill in any hollow or sunken areas. Cover your window wells with a plastic protector to prevent rainfall from collecting. During the winter, remove snow from the foundation of your home.

Prevent sewage and stormwater from backing up into basements

When water on flooded streets drains into sanitary sewer manholes, sewer pipes may become overloaded and cause flooding in basements. You can stop sewage from entering your basement by installing a back-flow prevention device on your sewer pipe. Back-flow prevention devices can also be individually installed in basement showers, toilets and sinks. Call a qualified plumber for more information.

Weeping tile is a perforated pipe surrounding basement foundations. It's used to drain high groundwater into the storm-sewer system. A weeping tile back-up prevention device stops water from entering basements when the storm-sewer system overloads.



It's a good idea to locate the floor drain, the clean out and the back-flow prevention device (if you have this device) on your sanitary sewer line in case you have to respond to a sewer backup.

Don't connect eavestrough extensions or downspouts to other pipes

Don't connect extensions from your eavestrough to the sanitary sewer line or weeping tile because excess water could overload pipes and cause flooding in your basement.

Don't connect eavestroughs that drain directly onto a street, lane or sidewalk. This kind of connection can wash out gravel lanes and increase the chances of flooding in your community. Eavestrough extensions should drain away from your house and onto your grass, so the water soaks into the ground.

Clear eavestroughs

Clearing leaves and other debris from your eavestrough prevents rainwater from running down the sides of your house, where it could accumulate and seep into your basement.

Downspouts should lead away from your house. Make sure your downspout extensions are at least 1.5 metres (five feet) away from your house. If your front and backyards drain toward the street, put the downspout extensions toward your front yard.



Don't over-water lawns

Over-watering your lawn and flowerbeds next to your house can cause seepage into the basement. A leak in an underground sprinkler system can do the same thing. If you have an underground system, check for leaks and drain it every fall before the ground freezes.

Maintain your property level's height

When it rains, streets, dry ponds, wet ponds, rivers and streams hold excess water. Lowering the level of your property for a walk-out basement, garage or any other reason, creates a pathway for water to enter your home.

Keep drainage gutters clear of debris

Some yards have concrete drainage gutters in the backyard. The concrete drainage gutter at the back of your property should be clear of debris. This gutter is designed to drain water from the backyards on your block. Homeowners are responsible for keeping these gutters clean.

Report plugged storm drains

Call us about plugged storm drains. If you see a plugged storm drain, call 3-1-1. We'll clear the debris from the drain to allow proper drainage.

Check your sump pump

Some homes have basement sump pumps. Sump pumps send water away from a house to any place where it no longer presents a problem. If you have a sump pump, check it periodically to ensure it's working properly. It's important to note that if you lose electrical power your sump pump will not work.

Move electronic equipment

If possible, move television sets, computers, appliances, stereo and electronic equipment to higher levels of your home and away from windows.



Your Role – Before Flooding

Move valuable documents and personal items

If there is a threat of flooding, protect what you can. Safely store important documents such as insurance papers, family documents (such as wills, tax returns and passports) in water-tight bags or at another location. Store items of personal value such as photos, family videos or treasured mementos in water-tight bags and move them to a safe place.

Move business records and waste

Businesses potentially affected by flood water should move business records and dangerous goods from basements or lower floors to upper floors. Businesses should also secure any waste stored at ground level.

Park your vehicles on high ground

If you have low spots on the street where water collects, park your vehicles on higher ground.

Contact your insurance agent

It is important to be aware of how your insurance policy covers flooding. Most policies do not provide coverage for certain types of flooding. Talk to your agent regarding how you can make a potential insurance claim easier such as maintaining a good inventory of your belongings

Prepare your family

You can't always avoid a disaster or emergency – but if you're prepared, you can lessen the impact. Depending upon the amount of flooding, Calgary emergency response personnel might not be able to assist you or respond directly for up to 72 hours (three days).

You may have to evacuate your home – or you may have to stay home without basic services such as electricity, gas, water, sewage treatment or telephone.

You and your loved ones may not be together when an emergency happens. To ensure you can locate one another, identify an out-of-town contact. Ensure everyone knows his or her telephone number. This person can help co-ordinate a meeting place for the family.

Or, in advance, you can plan a safe meeting spot outside your neighbourhood. Everyone must know the location and phone number of the meeting spot if it's not safe to enter your home or return to your neighbourhood.



72-hour emergency kit

Assembling a 72-hour (three-day) emergency supplies kit is a key step in protecting yourself and your loved ones in any type of emergency.

Water, food and clean air are essential. However, there are many other items that you will need as you wait for help to reach your door or for the emergency to end.

Ensure these items are packed in an easy-to-move, waterproof container. Keep foods in a dry, cool place and store in a tightly closed, plastic container for safekeeping from pets and water damage. Keep a list of important medications to take along if evacuated.

Review contents annually and update according to your family's changing needs.

To find out how to make your own kit and for a detailed list of what you should include, visit the federal government website at www.getprepared.gc.ca.

Some items you may need

Food and Bottled Water

First Aid Supplies

- First Aid Kit
- Medication
(prescription and non-prescription)

Clothing/Bedding

- Clothing, footwear, raingear
- Blankets or sleeping bags

Tools/Emergency Supplies

- Candles/lighter/matches (waterproof)
- Duct Tape
- Extra Keys (house and vehicle)
- Flashlight and spare batteries
- Large garbage bags
- Money (cash and coins)
- Paper towel/toilet paper/handwipes
- Personal hygiene items
- Radio (battery-operated or crank)
- Small fuel-driven stove plus fuel
- Tools: shovel, knife, scissors, plastic cutlery, pliers, manual can/bottle opener, and screwdriver
- Whistle
- Specialty Items
- Baby Supplies, pet supplies
- Copies of important documents and ID

Your Role – During Flooding



Staying Informed

The degree of flooding will determine whether you and your family need to stay at home or evacuate.

Visit calgary.ca or call **3-1-1** if power is available. If power is out, listen to updates through a battery-powered radio or TV to hear what the authorities recommend.

Flooding Advisories

The City of Calgary works with Alberta Environment which provides timely information on forecasts and advisories for high stream flows, flooding and ice jams in rivers and streams in Alberta.

All advisories and reports are available on their website: <http://environment.alberta.ca/forecasting/advisories/>

Alberta Environment releases advisories in three stages:

- **High stream flow advisory**

A high stream flow advisory means that stream levels are rising or expected to rise rapidly and no major flooding is expected. Minor flooding in low-lying areas is possible. Anyone situated close to the streams affected (campers, fishermen, boaters and the general public) are advised to be cautious of the rising levels.

- **Flood watch**

A flood watch means that stream levels are rising and will approach or may exceed the banks. Flooding of areas adjacent to these streams may occur. Anyone situated close to the streams is advised to take appropriate precautionary measures as instructed by the authorities through calgary.ca, 3-1-1, radio, or TV. People can also prepare by using steps outlined in this guide.

- **Flood warning**

A flood warning means that rising river levels will result in flooding of areas adjacent to the streams affected. Anyone situated close to the river should take appropriate measures to avoid flood damage as instructed by the authorities through calgary.ca, 3-1-1, radio, or TV. People can also prepare by using steps outlined in this guide.

Staying Safe

Your electricity and natural gas

Do not enter your basement if the water level has reached any plug, electrical outlet, extension cord or baseboard heater. This is a dangerous situation. You could be electrocuted.

Call The City of Calgary immediately at 3-1-1 if rainwater or sewage slowly enters your basement. Although not guaranteed to work, the following steps may help prevent sewage from backing up into your basement: if your basement is safe to enter, install the cap in the basement sewer floor drain. If the cap cannot be found, stuff rags down the floor drain tightly enough to help prevent sewage from backing into the basement. Secure the rags by placing a heavy object on top. Plug basement toilets, shower drains, sinks and sewer standpipe openings in the same way. (The standpipe may be located by following the discharge hose from a clothes washer or a water softener.)

If water or sewage rises quickly on your floor, stay out of the basement and phone 9-1-1.

Don't re-enter your basement until the authorities (Calgary Fire Department, ATCO Gas, ENMAX) say it is safe.

Why your electricity may be turned off

Flood or sewer backups can damage electrical installations and appliances, creating a potential safety hazard.

During an evacuation, ENMAX officials may turn off electricity on a house-to-house basis or in larger sections as required. They may be required to turn off the power to a zone beyond that which is being directly impacted by flooding.

Your Role – During Flooding

The decision to turn off electricity is based on two main goals: protect the lives of residents and emergency personnel; and keep the electrical system from being seriously damaged.

If your power is turned off you'll need to have a qualified electrical contractor check your electrical installation and affected appliances.

Qualified contractors are listed in the Yellow Pages under electricians. Once the work has been completed, phone ENMAX at 403-514-6100 to have the electricity turned on.

Why your natural gas may be turned off

Flood or sewer backups can damage gas appliances by clogging burners and short-circuiting control systems and monitors.

ATCO Gas turns off the natural gas supply to flood-damaged appliances because damaged appliances can cause carbon monoxide or raw natural gas buildup in your home.

During an evacuation, ATCO Gas officials may turn off natural gas on a house-to-house basis as required. If the situation is more serious, officials may turn off an entire block.

The decision to turn off natural gas is based on two main goals: protect the lives of residents and emergency personnel; and keep the utility system from being seriously damaged.

If your gas service was turned off, you need to have a Licensed Gas Fitter inspect, dry and repair flood-damaged appliances (furnace, water heaters, natural gas dryers, etc.). Once the work is finished, phone ATCO Gas at 403-245-7222 to have your gas turned back on.

Sandbagging

It is not possible for The City of Calgary to provide sandbags to hundreds or thousands of homes. Therefore, it is the responsibility of individual property owners to protect their property, and sandbag if required.

If you choose to sandbag your property, keep in mind that it takes two people one hour to fill and place 100 sandbags, to build a wall about 30 cm (1 foot) high and six metres (20 feet) long. Make sure you have enough sand, burlap or plastic bags, shovels, strong helpers and time to place them properly.

Contact your local landscaping or home building supply company for sandbags.

State of Local Emergency

If there is danger to life, great widespread risk to public and private property or if there is a need to free up resources, City of Calgary officials can declare a State of Local Emergency. Once this has been done, it gives the Director of Emergency Management special powers to take measures to protect life and property, including ordering areas to be evacuated.

Evacuation

If you need to be evacuated, you will receive an evacuation notice. A representative of The City of Calgary will deliver the notice.

Evacuate for everyone's safety

For your personal safety, evacuate according to the notice The City of Calgary gives you.

Flood water is dangerous. It carries bacteria and pollutants that can make the water a health risk. Electrical shorts, caused by water, can light fires in homes or garages and flood water can become energized by power lines.

Flood water also carries fast-moving debris, which can hurt you or damage your home.

Stay out of flood water, regardless of depth. It only takes 15 cm (six inches) or less of rushing water to pull down an average adult and less than 2.5 cm (one inch) to drown.

By not evacuating, you also put the lives of rescue workers in danger.

The evacuation process

Pack enough clothes, prescription medicine, identification and other essential items to last at least a few days including requirements for your pets. Please refer to the 72-Hour Emergency Kit Checklist on Page 9.

If it's safe to do so, shut off your gas appliances (i.e. water tank, stove, hot water furnace) at the valve.

If it's safe to do so, turn off all electrical appliances (i.e. computers, TVs, microwaves), then shut off the main breaker panel.



When departing, secure and lock your home. If you were able to turn your power and gas off prior to leaving, please leave a note on your front door to advise City crews. City police will block off a perimeter around the evacuated area.

You may choose to stay with other family members or friends. Or you may register at a designated City of Calgary reception centre where City of Calgary Disaster Social Services will assist you in finding accommodation. To locate a reception centre nearest you, please call 3-1-1.

Your Role – After Flooding



Returning home after an evacuation

The evacuation order will be lifted when it's safe for people to return home. Fire crews will go into evacuated areas to conduct a general assessment and determine which homes can be re-occupied and when. Please do not return home until notified that it is safe to do so.

The message that you can return to your home will be relayed by The City website at calgary.ca, by news media, by staff at the reception centres and 3-1-1.

Steps to take when you reach your home

1. Look for a notice(s) on your door. There may be notices from ATCO, ENMAX and/or The City of Calgary Building Inspections depending on the current assessed status of your home.
2. If you have water in your basement, contact 3-1-1.
3. If your natural gas isn't working, contact ATCO at 403-245-7222. Or if you have a red City of Calgary Inspection Notice perform the actions indicated on the notice. Once you have completed the actions shown on the notice, call 3-1-1 to book an inspection.

4. If you have no electricity, contact ENMAX at 403-514-6100. Or if you have a red City of Calgary Inspection Notice, perform the actions indicated on the notice. Once you have completed the actions shown on the notice, call 3-1-1 to book an inspection.

Steps when you return to your apartment or condominium

Contact your building manager or condominium management company. They will be responsible for ensuring power and gas services and building inspections are made to ensure the building is safe.

Insurance and claim information

Act quickly to protect property and minimize damage. Wastewater or sewage backup damage may be covered by insurance. If possible, record the details of damage with photos or video.

Prepare an insurance claim as soon as possible. Follow these steps:

1. Phone your insurance agent and report the damage. Discuss how to proceed with your agent.
2. Ask your agent if you should take a sample of the flood water, and if your insurance covers the cost of analyzing the sample.

3. Photograph the damage.

4. Even if you are covered by insurance, limit further damage by cleaning up and repairing the flooded property. Protect yourself from hazards in the water. Keep your receipts from this work.

5. Keep a record of any property you dispose of for health or safety reasons.

6. To discuss a damage claim with The City of Calgary, call 3-1-1. If you're calling from outside Calgary dial 403-268-2489 and ask for Claims.

7. The Insurance Bureau of Canada answers general insurance claim questions Monday to Friday from 8:30 a.m. to 4 p.m. Call toll-free at 1-800-377-6378.

When insurance coverage is not an option begin the cleanup immediately. Make sure to keep a log of all the hours that you spend working on cleanup, hold onto any receipts, and if possible take pictures of all damage. If carpet is damaged, keep a small sample about 30 cm by 30 cm (12 inches by 12 inches).

Your Role – After Flooding

Disaster recovery

Provincial disaster recovery programs may cover damage to items deemed essential for day-to-day living. This can occur when insurance is not readily and reasonably available. For example, insurance policies traditionally cover damage from causes such as sewer backup and hail. But insurance coverage is not available for damage from overland flood water entering through basement windows.

These provincial recovery programs include funds for municipalities, homeowners, tenants, institutions, non-profit organizations and small businesses. Depending on the size of the flood event, funding for disaster recovery programs can be available through the province's Sustainability Fund, which can be used for disaster assistance.

Visit http://aema.alberta.ca/ps_disaster_recovery_program.cfm for information.



Your health may be at risk after flooding

Alberta Health Services – Calgary provides some basic information to consider if you have flood water in your home.

1. Flood water is heavily polluted with viruses, bacteria and parasites. When building materials and furniture become wet with flood water, extensive mold growth will likely occur.
2. Failure to remove contaminated materials and reduce moisture and humidity can present serious long-term health risks such as respiratory disease and allergic reactions. People with mold allergies or compromised immune systems are most at risk of potential illness.
3. Mold may also damage building materials long after the flood.
4. Protective waterproof clothing and footwear is necessary if there is contact with flood water and sewage backup.

Visit albertahealthservices.ca for more information.

Visit Calgary.ca or call 3-1-1 if you are concerned about drinking water quality issues.

Guidelines to help you clean up

Remember, as you clean up...

According to City Bylaws, raw sewage and/or other wastewater that can include soaps, detergents and hydrocarbons are considered prohibited materials and are not allowed on any portion of a street or discharged into the storm drainage collection system. To dispose of prohibited materials, such as paint, motor oil and other chemicals, please call 3-1-1 or visit calgary.ca for a drop-off location nearest you.



The following information provides basic, suggested guidelines for cleaning up after a flood. For more comprehensive cleanup assistance consider calling professional cleaners. Many cleaning companies offer free estimates. Look under “cleaners” and “water removal service” in the Yellow Pages for professional assistance.

If you decide to clean up on your own, without hiring a professional, proceed with caution.

Wear coveralls, rubber boots, gloves, and a protective face mask (a respirator) to prevent inhalation of fine water droplets and dust. Always wash your hands with soap and properly treated water before preparing or eating food, after toilet use, after participating in flood cleanup activities, and after handling articles contaminated with flood water.

For more comprehensive information about protecting yourself during cleanup, visit the Alberta Health Services – Calgary website at albertahealthservices.ca.

STEP 1: Gather the necessary cleaning supplies

You will need brooms, mops, buckets, hose, rubber gloves, rags, cleaning products, brushes, sponges, disinfectants and trash bags.

STEP 2: Sort damaged items to be repaired or discarded

Things you might throw away include bedding, clothing, upholstered furniture, carpets, carpet padding and books.

Always throw away food. The only safe flood-exposed foods are those sealed in metal cans, and they are safe only if the cans have not been dented. Thoroughly clean and disinfect all undamaged cans before opening.

Always throw away these flood-exposed items: cosmetics, medicines, medical supplies, stuffed animals, toys, rugs, mattresses, pillows, cardboard, household chemicals. (Place flood-damaged household chemicals in separate leak-proof bottles, cans or plastic bags.)

For more information about how to dispose of any of the items above, call 3-1-1.

Your Role – After Flooding

STEP 3: Clean up one room at a time

Suitable cleaners:

- Dishwashing liquid for lightly soiled items.
- Laundry detergent for heavily soiled items.

Suitable disinfectants:

- Household chlorine liquid bleach (5.25 per cent).
- 250 ml (one cup) of bleach to 4.5 litres (one gallon) of water for disinfecting concrete.
- 15 ml (one tablespoon) of bleach to one litre (one quart) of water for disinfecting wood and other materials.

Important: Do not **mix** bleach with other household chemical products, especially ammonia or toilet bowl cleaner. The chemical reaction can create a poisonous gas.

A two-bucket approach is most efficient. Use one bucket for the cleaning solution and the other for the rinse water. After using the cleaning solution, rinse your mop, sponge or cleaning cloth in the rinse bucket.

Wring it dry. Re-wet your mop in the cleaning solution.

Using two buckets keeps most of the dirty rinse water out of your cleaning solution.

Replace the rinse water frequently.

After cleaning a room or item, go over it again with a disinfectant to kill the germs and smell left by flood water. You may also need to get rid of mildew. In case of heavy contamination, you should spray all surfaces with disinfectant.

STEP 4: Dry out your home and remove mildew by lowering the humidity

- Open doors and windows to air out your home.
- Open up closet doors and cabinet doors.
- Circulate the air with fans.
- Run a dehumidifier.



How to restore your belongings

You may need the help of an expert to restore many of your belongings. Look in the Yellow Pages under “cleaners” and “water removal service” for professional assistance. Many cleaning companies offer free estimates. If you decide to clean some of your belongings yourself, keep the following guidelines in mind.

Disinfect flooded areas

Clean and disinfect flooded areas and your belongings by following the steps outlined in Steps 1 through 4 and using the cleaners and disinfectants recommended on pages 17 and 18, as flood water is often contaminated with sewage and other pollutants.

Cleaning out mud

Remove mud with detergent. Bury the mud 30 to 60 cm (one to two feet) deep in the ground, spread lime on top, and then cover it with clean soil. You can also take the mud to the Shepard Landfill, 114th Avenue and 52nd Street S.E., Monday through Sunday from 7:30 a.m. to 5 p.m. Do not leave the mud where children or pets will contact it.

Cleaning concrete walls and floors

After all mud has been removed, concrete floors and walls can be scrubbed down with detergent. Then disinfect with a solution of 250 ml (one cup) of bleach to 4.5 litres (one gallon) of water.



Cleaning walls and wallpaper

All drywall affected by accumulated rainwater or flood water should be cut out and replaced 1-2 feet above the highest water mark.

Allow plaster walls and ceilings to dry completely then brush off loose dirt and wash with cleaner. Re-paint walls only when they are completely dry. Discard and replace wallpaper unless it is washable.

Cleaning wooden and laminate floors

Before you clean your wooden or laminate floors ask for professional advice. Look in the Yellow Pages under “flooring” or “restoration.”

Cleaning doors

Remove all doorknobs. Unhinge doors and lay them on a level surface. Use wooden strips to raise the doors away from the floor. This permits even drying and minimizes warping.

Take locks and hinges apart and clean with cleaner. Wipe working parts with kerosene to remove old oil, then re-oil lightly. If locks cannot be removed, squirt machine oil through a keyhole or bolt opening and turn the knob to distribute the oil.

Your Role – After Flooding

Cleaning wood furniture

Consult a furniture expert on how to restore your furniture. Refer to “furniture” or “furniture restoration” in the Yellow Pages for professional advice on cleaning wood furniture.

Cleaning upholstered furniture

If the upholstery has been soaked with flood water, consider discarding the piece. Or, refer to “upholstery cleaning” in the Yellow pages.

Cleaning rugs and carpets

You may be able to save some absorbent surfaces (such as wall-to-wall carpeting, rugs and carpet underlay) if they were affected **only** by clean water (such as water from a burst water pipe, failed supply lines on appliances, or vertically falling rain water). Discard these items if drying is not complete with 48 hours, evidence of mold develops, or there has been contact with sewage.

If you are able to save your carpets, remove as much water as possible with a wet-vac.

Use a dehumidifier and large fans to blow air over the surface of the carpet. To rent a dehumidifier and carpet dryers, look in the Yellow Pages under “rental services.”

Clean with commercial rug shampoo containing disinfectant. Spot-clean first to ensure the colours don't run. Commercial rug shampoos are available at janitorial supply stores.

When cleaning carpets with an underpad, first remove as much water as possible with a wet vac.

Pull back the carpet gently. You may have to loosen or remove the baseboards holding the carpet in place.

Remove the carpet and underlay and hang to dry. The underlay may have to be replaced. The sub-floor should be cleaned.

Clean with commercial rug shampoo containing disinfectant. Spot clean first to ensure the colours don't run. Commercial rug shampoos are available at janitorial supply stores.



Cleaning bedding and clothing

Discard pillows, mattresses, box springs, comforters and plush toys soaked with flood water as they cannot be disinfected adequately.

Have wool, silk, and rayon clothes dry-cleaned as soon as possible.

Remove mud from the remaining clothes and bedding by rinsing in cold water. Wash in warm soapy water – several times if necessary – adding disinfectant at the end of each washing cycle. Wash coloured clothing in separate loads to prevent colours from running.

Remove mildew or stains from linens and clothing by washing them with soap and water and drying them in the sun.

Cleaning leather

Before cleaning your leather furniture or clothing, ask a professional for advice. Look under “furniture,” “furniture restoration” or “leather” in the Yellow Pages.



Cleaning books

Alternate between drying and pressing pages to prevent mildew. Dry by placing books on their end with the pages separated and press by stacking books on top of each other. Pressing prevents the pages from rippling.

Cleaning dishes and utensils

Clean dishes and utensils with the cleaning solution and then disinfectant solution. Clean brass, copper and silver with recommended product cleaners.

Frequently Asked Questions



Why does flooding occur?

The Bow River's source of water is the Bow Glacier in the Rocky Mountains and the Bow River watershed which contains 7,770 square kilometres of contributing waterways that drain into the Bow River. The Elbow River originates in Elbow Lake also in the Rocky Mountains, and has a watershed of 1,210 square kilometres.

When the winter snow melts, especially in the Rockies, much of that water ends up in the rivers. Combined with heavy rainfall, the additional water in the rivers can cause flooding.

Is there a time of year when river floods are most likely to happen?

Historically, river floods occur in the late May early June period although there are a few incidents both before and after this period.

Why don't the dams stop flooding?

There are 11 dams located along the Bow River before Calgary. The closest are the Bearspaw Dam (located on Calgary's western city limit) and the Glenmore Dam (on the Elbow).

Many people assume these dams provide protection from flooding, but this isn't the case. These dams are built for two reasons. The first is for hydro-electric power generation. The second is to store water for the various water systems along the river.

Frequently Asked Questions

When high water levels cause the rivers to rise, the dams along them release water almost as fast as it enters. Dams can provide a small amount of protection because they can slow the release of water temporarily.

Why doesn't The City build barriers along the riverbanks?

The City of Calgary has constructed berms, dykes and floodwalls in high-risk areas along the Bow and Elbow rivers. Still, these structures don't guarantee protection from flooding because they can collapse, erode, or water might flow right over them if the flood is large enough.

In addition, berms, dykes and flood walls may affect views, walking paths and access to the river and would adversely encroach on privately owned residential property.

What is a flow rate?

A flow rate is how much water is flowing in a certain amount of time. It's measured in cubic metres per second (m³/s). A cubic metre is 1,000 litres of water.

Can floods be predicted?

The City of Calgary and Alberta Environment monitor snow pack, rainfall and temperatures year round. As well stream-flow gauges in the mountains and foothills indicate when a large run-off of water is occurring.

If stream flows rise and it begins to rain, Alberta Environment puts out notices that fall into three categories: high stream flow advisory, flood watch or flood warning (see pages 10 and 11).

While conditions might seem right for flooding, weather patterns in Calgary and the surrounding foothills can change rapidly. So, while we may assume that flooding will happen, it's sometimes difficult to accurately predict.

What does history tell us about flooding?

The City and Alberta Environment study flood plains and historical occurrences of flooding. This information is compiled into flood risk maps or flood inundation maps. These maps can be used to estimate areas at risk of flooding to a certain level.

Flood maps often show various levels of predicted and worst-case scenario flooding. But estimating flooding beyond the "100-year flood" is a difficult task, especially when there is a lack of historical flood information to compare estimates to.

I've heard the terms '1-in-20-year flood' or '1-in-100-year flood' – what do they mean?

Phrases like "1-in-20-year flood" or "1-in-100-year flood" are an estimate of how often a flood will occur in a given time period based on the amount of the flooding.

Frequently Asked Questions

The longer the time period, the larger the flood event. Statistically a 1-in-100-year flood will have a one per cent chance of occurring in any given year. It would be rarer and much bigger than a 1-in-20-year flood, which means a five per cent chance in any year.

This does not mean that if a 100-year flood happened this spring, it wouldn't happen again for another 100 years. It could happen again in the following year or even twice or more in any given year. These terms only express probabilities.

How does the storm sewer system work?

Typically in Calgary, the storm sewer system is a network of underground pipes that drain water from the streets during low-intensity rainfalls. Water enters the pipes through storm drains in the streets and flows into the nearest river or stream.

In newer communities, a series of streets and ponds are built to collect water temporarily during heavy rainfalls. Some excess water collects in low spots on streets. The rest flows through pipes into wet or dry storage ponds.

When the rain stops, water stored on the streets and ponds is released at a rate that prevents pipes from overloading.

What is a dry pond?

This pond is dry 90 per cent of the time and can have playing fields on it. They fill with water rapidly in heavy downpours and can take as long as 24 hours to drain once the rain stops.

What is a wet pond?

This pond always has water in it but the water will get much deeper during a storm. The wet pond can help clean the water that comes off the roads because it allows the water to slow down, at which point the heavy dirt and garbage will settle to the bottom.

How deep are these dry and wet ponds?

If you live near a dry pond or a wet pond, make sure your children stay away from them when it rains. Although dry ponds fill and drain slowly, most of them can reach a depth of 1.5 metres (five feet) and remain that deep for several hours. Wet ponds can rise two metres (6.5 feet) above their normal levels.

What is the purpose of the stormwater gates on outfalls along the river?

In winter months, ice can build up and force water from the river into the storm mains and into surrounding communities. The gates are in place to prevent this from happening. As such, standard procedure is to keep the gates closed and monitored daily during the winter months (November to April) because the ice pack on the river can change dramatically in a short period of time.

The gates are monitored for stormwater buildup in the system and if the level of stormwater is significant, the gates are opened and the water is released. The gates are then immediately closed again. During summer months (May to October) the gates are fully opened. However, the gates are monitored throughout summer and can be closed during high river flows to prevent backflow into the community.

Does The City do any upgrades to areas at risk?

The City evaluates potential storm sewer system improvement projects in communities subject to flooding before every construction season.

Evaluations are based on these safety considerations: amount of flood damage, number of floods in each area and design and cost-effectiveness of the project.

Projects are funded by the drainage charge on your monthly utility statement.

Why doesn't The City provide sandbags to individual residents?

City crews and staff have identified key locations (which may include some residences) where The City must distribute resources such as sandbags, to protect critical infrastructure and facilities that are needed for emergency operations and response to the event. The key locations identified are also those which if not protected from flooding, could cause significant damage to the adjacent communities, drinking water distribution system, storm drainage system, other utilities and outlying communities, as well as those which will allow for maximum protection with limited resources.

It is not possible for The City to provide sandbags to hundreds or thousands of homes. Therefore, it remains the responsibility of the individual property owner to protect their property and sandbag, as/if required.

My basement has some water in it. What do I do?

Safety first. Do not enter your basement if the water level has reached any electrical outlet or appliance. After the authorities (Calgary Fire Department, ATCO Gas and ENMAX) declare your basement safe to enter, call your insurance company or agent to get advice to report the damage. Ask them how you can limit damage while cleaning up. They may recommend you photograph the damage before you clean up.

You have asked me to evacuate, why can't I stay and clean water out of my basement?

When we ask people to evacuate it is because there is a clear danger to life. We ask that you leave your home so that you or those who may need to rescue you are not put in harms way.

During a state of local emergency, evacuation orders are enforced by the Calgary Police Service.

Who pays to repair damage done to my property by flood, water seepage or sewer backup?

It is all dependant on the event and your insurance coverage. If you are wondering if you can get compensation from The City, please call 3-1-1 and ask for Claims. City Claims will investigate and determine if compensation is appropriate. You can also call your agent or The Insurance Bureau of Canada which answers general insurance claim questions Monday to Friday from 8:30 a.m. to 4 p.m. Call toll-free at 1-800-377-6378.

I live in an apartment or condo, what steps should I take?

Please contact your condominium board, property management company or landlord to inquire about preparation and actions you and they can take before, during and after flooding in addition to the information in this booklet.

Why is there an outdoor water-use restriction during some flooding situations?

The City of Calgary sometimes restricts outdoor water use during flooding situations related to rainfall or snowmelt. As the turbidity (the level of silt and debris) of the water is very high during these times, the water treatment facilities must work at full capacity to treat the high levels of sediment in the water. Therefore, to reduce the load on the treatment plants, we may ask Calgarians to refrain from outdoor water consumption.

I have heard the terms floodway and flood plain. What is the difference?

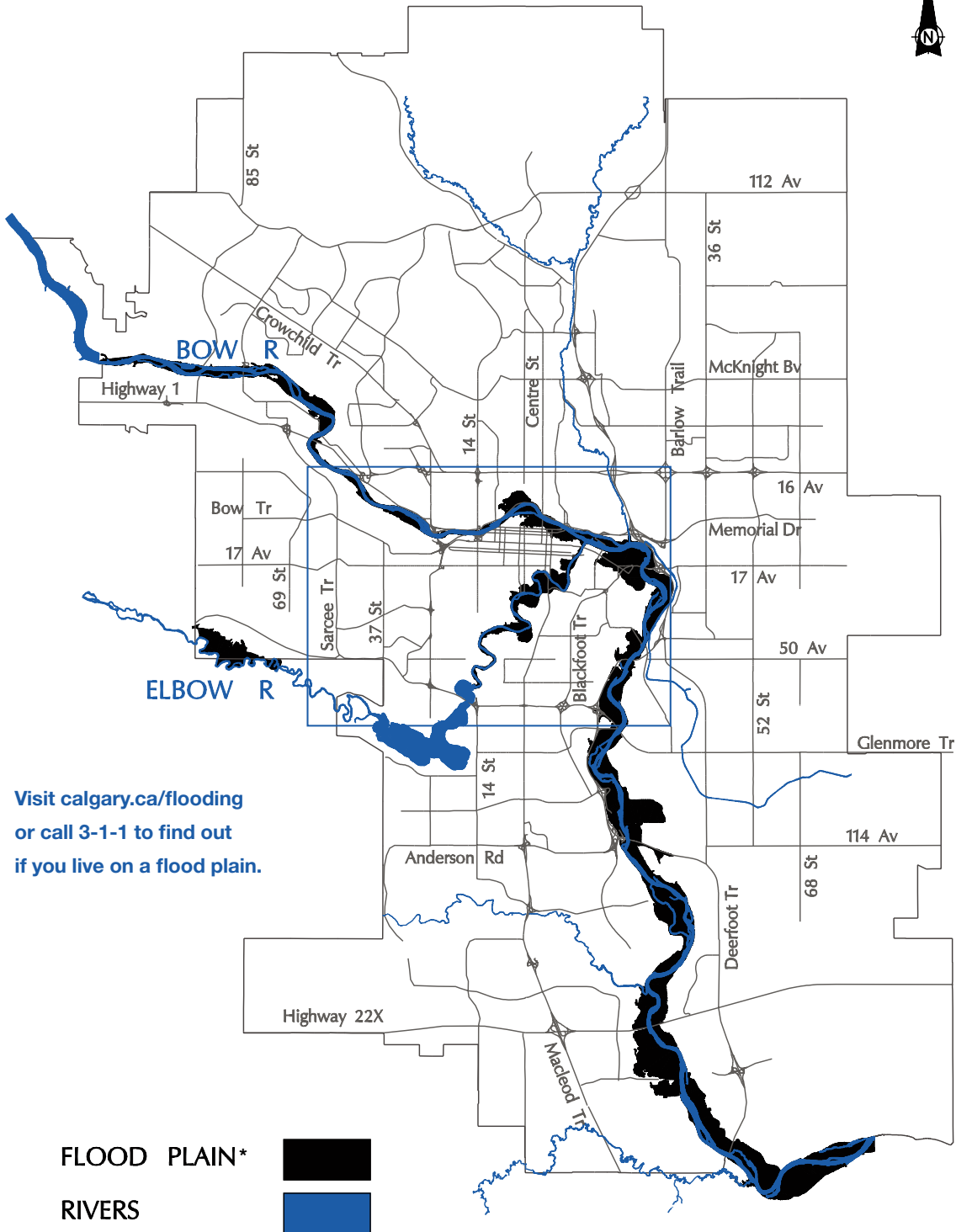
Floodway comprises the river and adjacent bank area that would see active flow during a 1:100 year flood.

Flood fringe or flood plain is an area that could be inundated overland by 'still-water' but would not see appreciable river flow during a 1:100 year flood. So, if you live on a flood plain, you are at a higher risk of flooding.

How can I find out if I live on a flood plain?

You can find out if your home is on a flood plain by visiting calgary.ca/flooding to view our detailed flood plain maps. Or, call 3-1-1 to determine if you are located on a flood plain.

Calgary's Flood Plain



Visit calgary.ca/flooding
or call 3-1-1 to find out
if you live on a flood plain.

FLOOD PLAIN*



RIVERS



*Based on a 1-in-100-year flood plain. See page 23 for more information.

Communities at Higher Risk for River Flooding

| Bow River | Elbow River |
|----------------------------|--------------------|
| Bowness | Riverdale |
| Sunnyside | Mission |
| Chinatown and Eau Claire | Elbow Park |
| City Hall and East Village | Stanley Park |
| Montgomery | Parkhill |
| Westmount | Erlton |
| Hillhurst | Rideau Park |
| Bridgeland | Roxboro |
| Inglewood | Victoria Park |
| Point McKay | Connaught |
| River Bend | Discovery Ridge |
| Deer Run | East Village |
| Douglas Glen | Altadore |
| Douglasdale Estates | Lindsay Park |
| Deer River Estates | |
| Bonnybrook Industrial Park | |



Calls to 9-1-1 and 3-1-1 can be made 24 hours a day, seven days a week.

