

Flood Disaster

**What to do before
and after flooding**



Streamflow Advisory's

Alberta Environment monitors provincial river flows, levels, precipitation and overall weather patterns. They are also in close contact with Alberta Forestry and Environment Canada Weather Services. We receive different Advisory's that help Emergence Management with their decision on Evacuation Notices.

- **High Streamflow Advisory's means that stream levels are rising or expected to rise rapidly and no major flooding is expected.** Minor flooding in low-laying areas is possible. Anyone situated close to streams affected (campers, fishermen, boaters and general public) is advised to be cautious of the rising levels.
- **Flood Watch means that streams levels are rising and will approach or may exceed bank full.** Flooding of areas adjacent to these streams may occur. Anyone situated close to streams is advised to take appropriate precautionary measures.
- **Flood Warnings means that rising stream levels will result in flooding of areas adjacent to steams affected.** Anyone situated close to the river should take appropriate measures to avoid flood areas.
- There are three levels of evacuation orders:
 - **Evacuation Notice:** This is a notice that there is a possibility of your area being evacuated. This is the time to prepare to evacuate.
 - **Voluntary Evacuation Order:** Individuals are advised to leave but are not required to leave. If you or someone in your care has special needs or may require time to evacuate this is the time to leave.
 - **Mandatory Evacuation Order:** All individuals in the area **are required by law** to leave in the time given. Mandatory Evacuation Orders are given when there is or may be a life threat present. If emergency personnel cannot access an area due to road closures, this may be considered a life threat.

Disaster Services Act:

Offence

17 Any Person who

(a) contravenes this Act or regulations, or

(b) interferes with or obstructs ant person in the exercise of any power or the performance of any duty conferred or imposed by the act or regulations, is guilty on an offence and liable to imprisonment for a term of not more than one year or to a fine of not more than \$10,000.00 or both imprisonment and fine.

Information Is Your Best Defence

While floods cannot be predicted, flood potential can be anticipated. In order to gain advanced knowledge and thus allow communities some warning of impending flood, Alberta Environment monitors provincial river levels, precipitation and overall weather patterns. Should flood potential be present, Emergency Management Alberta and the affected community are given immediate notice. Your local government is responsible to inform you of flood threats and communicate other bulletins advising what must be done to protect your family and property.

This booklet is designed as an information tool that points out what resources are available to prepare for, go through and recover from a flood. Why not take the time to read it now? When disaster strikes, information is your best defence.

Sources of Flood Information

Here is a listing of booklets available in Alberta.

- The Town of High River has two booklets. This one and a sandbagging manual:
 - Flood Fighting: How to Use Sandbags, www.highriver.ca
- Emergency Management Alberta has two booklets. These booklets outline how to prepare for a flood, what to do during a flood and how to recover after a flood.
 - Before Flooding
 - After Flooding, www.municipalaffairs.gov.ab.ca/ema/
- A major part of the recovery is the cleanup. The hidden danger from floods is the growth of potentially dangerous molds. For more information on molds read:
 - About Your House – Fighting Mold: The Homeowner’s Guide, Canada Mortgage and Housing Corporation, www.cmhc.ca
 - Preventing and Removing Mold Growth After a Flood, Calgary Health Region, www.calgaryhealthregion.ca

What To Do When Flood Threatens

You can greatly reduce your risk of damage or loss if, at the first warning of flood, you take the following precautions:

Protect Yourself and Your Family

- Ensure that you have a portable battery-operated radio and spare batteries. Listen to the radio (AM 1140, Eagle 100.9 FM) or check the internet (www.highriver.ca) for flood reports and follow instructions given.

- Have a full tank of fuel in your vehicle. An electrical outage due to flooding may shut down service station pumps. If you don't have personal transportation, make alternative arrangements with a neighbour.
- Be prepared to be on your own for 72 hours. Stock up on food that requires little or no cooking or refrigeration, and gather emergency lighting and cooking equipment such as flashlights, gas lights, candles, camp stoves, spare batteries, fuel and waterproof matches. Have this gear operational and within easy reach.
- Store water in clean containers (i.e. empty bleach bottles, etc.). The water supply may be contaminated well before it becomes necessary to evacuate. Each person requires 4 litres of water per day.
- Call your family together and review your emergency plan.
- Decide what your family requires in basic supplies and stock up immediately. Pack supplies in conveniently handled, waterproof containers such as plastic garbage bags. Essentials include:
 - warm clothing and rubber boots;
 - rain coats;
 - blankets in sealed plastic bags;
 - prescription medicines and first aid supplies;
 - personal identification for each family member (name tags and wallet cards);
 - towels, soap and toiletry items; and
 - carriers, food and toys for your pets.
- Know potential danger areas in your locality and devise ways to avoid them in case of flood.
- Know your neighbours. Do your neighbours need assistance? If you are new to the area talk to your neighbours about what has happened in the past.
 - Consider joining or forming a Community Emergency Response Team (CERT) This is a community based program for neighbours to prepare and respond to an event in an organized fashion.

Protect Your Property

Remember: It is the responsibility of each homeowner to protect their home.

- Ensure that you have such materials as sandbags, plywood, plastic sheeting and lumber at hand to protect your house.
- Refer to:
 - [Before Flooding](http://www.municipalaffairs.gov.ab.ca/ema/), Emergency Management Alberta
 - [Flood Fighting: How to Use Sandbags](http://www.highriver.ca), Town of High River www.highriver.ca

Take special note of the preparations you must take to protect your house and major electrical and gas-fired appliances.

General Preparations

- Remove what household effects you can. If this is not possible, move possessions from the basement to an upper floor.
- Seal water polluting materials such as weed killers and insecticides in plastic garbage bags and move them into safe storage or dispose of them safely.

NOTE: Lock all windows and doors before leaving your home.

What To Do During A Flood

- Listen to your radio, watch local TV stations or check the municipal web site on the internet. Important instructions for your safety will be broadcast on local stations.
 - Eagle 100.9 FM
 - AM 1140
 - www.highriver.ca
 - A-Channel, CBC Calgary, CFCN, Global

(Note: your best source will be the radio or the Internet.)
- If you must leave the area or are requested to do so, leave immediately and report to the registration or reception centre designated by your municipal authorities.
 - The High River Reception Centre is normally located at the Highwood High School
- Even if you plan on staying with friends or family please register at the Reception Centre.
- There are three levels of evacuation orders:
 - **Evacuation Notice:** This is a notice that there is a possibility of your area being evacuated. This is the time to prepare to evacuate.
 - **Voluntary Evacuation Order:** Individuals are advised to leave but are not required to leave. If you or some one in your care has special needs or may require time to evacuate this is the time to leave.
 - **Mandatory Evacuation Order:** All individuals in the area **are required by law** to leave in the time given. Mandatory Evacuation Orders are given when there is or may be a life threat present. If emergency personnel cannot access an area due to road closures this is may be considered a life threat.

- **Note:** Time constraints and circumstances of the event dictate which orders are given. There may not be time to issue an Evacuation Notice or a Voluntary Evacuation Order.
- Stay out of the flooded area until permission to return is given by municipal authorities.
- Do not attempt to drive over a flooded road. There could be a hidden sink hole or a missing manhole cover. You could also be stranded.
- Watch for damaged roads, loose or downed wires and fallen objects on the road.
- Do not drive through water unless you are certain the road is safe and the water is not over your vehicle's wheels. Proceed slowly to avoid splashing water on the engine and stalling. On emerging from water, drive carefully because wet brakes do not work well
- Whether in a car or on foot, avoid areas prone to flash flooding.
- Do not attempt to cross a flowing stream.
- Do not phone the emergency management office, police or fire department unless you need help or are calling on behalf of others requiring assistance. Your radio/TV/or internet will keep you informed.
 - If you do require Fire, Police or Emergency Medical Services (Ambulance) **dial 911**
 - The High River Disaster Line is 652-6960.
 - It is only staffed when required.
 - The Reception Centre is the best location to receive current and accurate information.
- Do not attempt search and rescue operations on your own. Volunteer your services to the proper authorities. They have trained leaders and only properly registered volunteers are covered by compensation.
- The High River Volunteer Centre is normally located at the Bob Snodgrass Recreation Centre.

What To Do After Flooding

After a flood, High River Emergency Management will notify you at the Reception Centre or through the news media when it is safe to return to your home.

- Refer to:
 - [After Flooding](http://www.municipalaffairs.gov.ab.ca/ema/), Emergency Management Alberta

- About Your House – Fighting Mold: The Homeowner’s Guide, Canada Mortgage and Housing Corporation, www.cmhc.ca
- Preventing and Removing Mold Growth After a Flood, Calgary Health Region, www.calgaryhealthregion.ca

Caution: Flood water is heavily contaminated with excrement, garbage and other pollutants, and therefore poses a serious health hazard. Proper cleanup is vital.

Do not allow children into the house or yard until everything has been cleaned and disinfected. If children must be present during cleanup, supervise them closely to protect their health.

Returning to the House

As soon as flood waters have receded and you have been notified that the flood danger is over, you will want to return to your house and start cleanup. Do not attempt to live in the house, however, until you take the following precautions:

- Make sure the normal water supply has been officially inspected and declared safe for drinking.
- Ensure that satisfactory toilet facilities are provided.
- See that all flood contaminated rooms have been thoroughly cleaned and disinfected.

The above conditions are established by law under authority of local health officials. In addition, you should take these precautions:

- Do not switch on electric power until a qualified electrician has checked the system.
- Do not use the natural gas appliances until the system has been checked by a qualified gas fitter.
- Do not use propane appliances until the complete system has been checked by your propane gas serviceman.

Restoring Water Supply

The High River water supply comes from a series of wells spread throughout the town. During a flood the water supply is vigorously tested by the town in cooperation with the Calgary Health Region. Should a well be at risk it is shut down. This protects the town water supply.

Other risks to the water supply come from possible damage to our water treatment plant or to a water main. The water treatment plant receives priority for protection during a flood.

Should our water supply become contaminated residents will be notified immediately by the most rapid means possible.

Householders will be notified when the municipal water system has been restored.

Water must be boiled or chlorinated before use until water samples are analyzed as safe.

Until the water supply is made safe, purify available water according to the following table. Add the solution to the water, thoroughly mix and allow to stand for 30 minutes. The water should then have a slight chlorine or iodine taste. If this taste isn't present, repeat the dosage and allow to stand for another 30 minutes.

When a Boil Water Order is issued you must boil water at a rolling boil for at least one minute.

Emergency Water Purification

Litres/ gallons of water to be treated	Dosage of disinfecting compounds		
	Chlorine bleach drops	Tincture of iodine drops	Water purification tablets
(clear) 4.5 L(1 gal.)	4	10	8
(cloudy) 4.5 L(1 gal.)	10	40	16

Restoring Sewage System

A house should not be re-occupied until satisfactory toilet facilities have been restored. Solid or liquid wastes must never be deposited on the ground where insects and animals can spread disease germs.

Municipal Sewers

Householders will be notified when the municipal sewage system has been restored.

Yard Clean-up

- Pile refuse for removal by the local collection service.
- Remove all materials which attract insects or animals.

Insect Control

- Repair all screens.
- Use household insecticide, but not while the rooms are occupied. Don't inhale vapors; they will harm eyes and lungs.

NOTE: For advice on insect control in flooded areas, contact your district agriculturist or health unit.

Restoring the Interior of Your House

All areas and items touched by floodwater must be disinfected.

- Refer to:
 - After Flooding, Emergency Management Alberta
www.municipalaffairs.gov.ab.ca/ema/
 - About Your House – Fighting Mold: The Homeowner’s Guide, Canada Mortgage and Housing Corporation, www.cmhc.ca
 - Preventing and Removing Mold Growth After a Flood, Calgary Health Region, www.calgaryhealthregion.ca

Handling Damaged Foods

REMEMBER: flood waters carry disease from raw sewage. The only safe flood-exposed foods are those in sealed metal cans, and even then, only if cans have not been dented. Proceed as follows with foods:

- Thoroughly clean and disinfect all undamaged cans before opening.
- Thoroughly wash all contaminated utensils and dishes and sterilize by boiling or immersing in a suitable sterilizing solution for 10 minutes.
- Dispose of the following items:
 - the contents of your freezer or refrigerator, if electricity has been interrupted and contents thawed or if appliances have been exposed to flood waters;
 - all exposed meats;
 - all exposed fresh fruits and vegetables;
 - all exposed boxed foods;
 - all products in jars, including home preserves, and all bottled drinks. The area under the seal of a jar or bottle cannot be adequately disinfected.
 - all exposed medicines, cosmetics and other toilet items.

How to Flood proof Your Home

Help Your Municipality to Help You

The Town of High River strives to provide adequate service through its sewer systems. If you are troubled by drainage problems, you may be able to solve these problems by ensuring that the source of your problem is not occurring on your property.

Take steps to floodproof your home. First, learn how and why flooding occurs.

What is a Sanitary Sewer?

A sanitary sewer is a pipe, located in the street, that is designed to transport only wastewater. This consists of water from sanitary fixtures and floor drains homes and businesses.

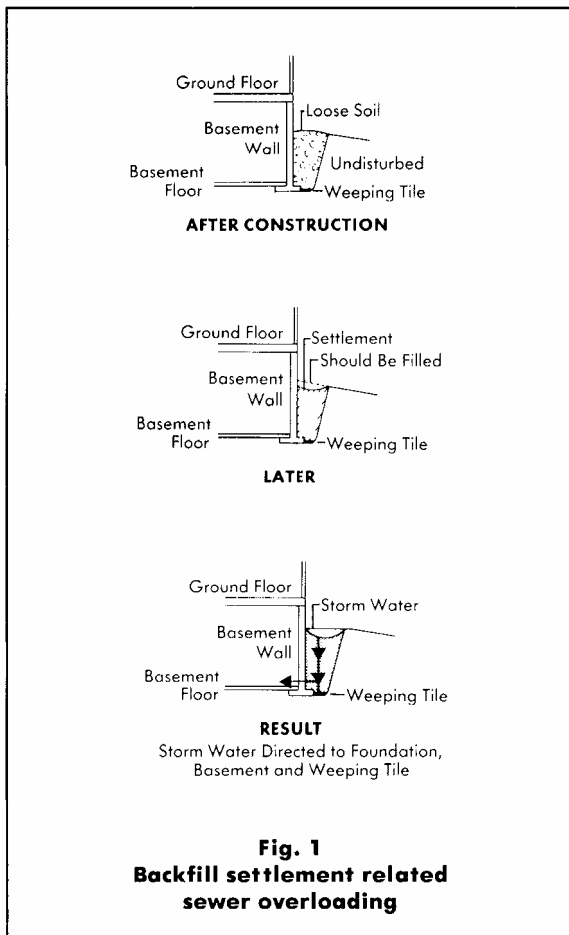
What is a Lift Station?

A lift station is a specific kind of pump station. It is a small sewer pump used when gravity can no longer carry wastewater through sewer. The lift station pumps wastewater from a lower elevation to a higher elevation so that gravity can again be used to carry the wastewater.

What is a Storm Sewer?

A storm sewer is a pipe, located in the street, which is designed to carry storm related water runoff. Storm sewers are normally much larger than sanitary sewers because they are

designed to carry much larger amounts of flow. The ground water from the weeping tiles around the house foundation is sometimes directed directly into the storm sewer system.



What Causes a Sewer Backup?

Extra storm related water (water from sources other than wastewater and groundwater) should flow into the storm sewer or soak slowly into the ground without entering the sanitary sewer. If excess storm water does enter the sanitary sewer system, it causes surcharged sewer flows. An eight-inch (20 cm) sanitary sewer can handle wastewater flow from up to 500 homes; however, it takes only a few unexpected sources of water to overload such a system.

Downspouts and Roof Drainage

Most homes are equipped with downspouts which discharge water collected by the eaves troughs directly to the ground, where the water soaks in. Excess water runs into the front street where it enters the storm sewer. It is very important that this water does not enter the sanitary sewer.

Damage or sanitary sewer surcharging may occur if rainwater drains improperly close to your house where the ground may not be compacted tightly (see Fig. 1). The excavation for your basement may have been dug a few feet wider on all sides to allow working room during construction of your basement walls. When this extra space was backfilled, it may not have been tamped down as tightly as original soil, leaving it more likely to settle and trap surface water.

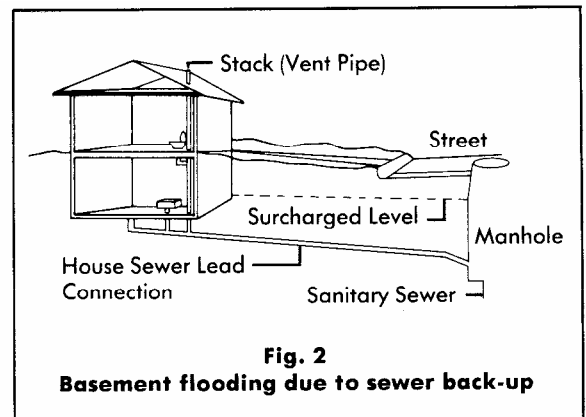
Surface water soaking down to your foundation can create problems: it can damage your foundation; seep through cracks in your basement wall, causing dampness.

What You Can Do to Prevent Flooding:

- Fill any settlement next to your house.
- Direct storm water away from your house.
- Make sure the ground slopes away from your house on all sides.
- Always keep your downspout extension in place.
- Check to see that your downspout extension drains a good distance away from your house in an area which will not erode.
- Be careful that water does not drain into your neighbor's property.
- If your downspout is connected to the weeping tile adjacent to your home, disconnect immediately.

How Can a Surcharged Sanitary Sewer Cause Basement Flooding?

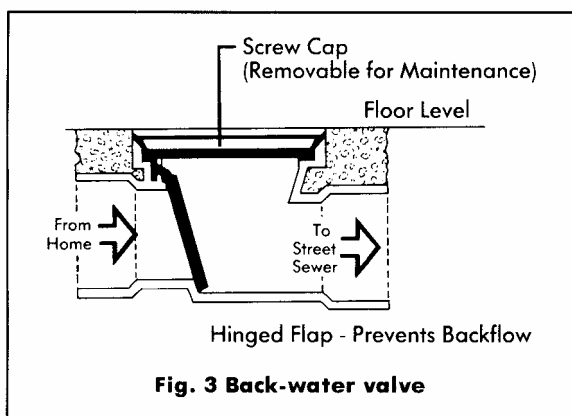
A surcharged sewer flows at a level greater than the normal level. If the home (see Fig. 2) has sanitary fixtures or floor drains below the surcharge level, basement flooding can occur.



Sewer Backup Protection Can Help

Talk to a qualified plumber before you install any sewer backup protection devices. Plumbing fixtures such as toilets, sinks, showers, floor drains and washing machines which are set below ground level require special protection from sewer backflow. Read about the following devices and decide if they can help you.

Screw Cap. If you're having trouble with your floor drains, a screw cap installed upstream from the trap seal of the floor drain may be all you require.



A Canadian Standards Approval (CSA) Inline Sewer Backwater Valve (see Fig. 3). This simple device should do the job if you maintain it properly and have it checked regularly. Your plumber can give you all the details on maintenance.

A Gate Valve. Where a backwater valve isn't sufficient protection, you may need a gate valve and a backwater valve for basement plumbing fixtures that are subject to backflow.

A Sump Pump: A sump pump is a pump used for drainage that removes accumulated water

from a sump pit. A sump pit, commonly found in the home basement, is simply a hole dug in the ground to collect water. The water may enter via perimeter drains funneling into the pit, or may arrive from natural ground water in the earth.

Sump pumps are installed particularly where basement flooding is seen as a problem, but are also used to reduce or eliminate dampness by lowering the water table under the foundation. They pipe water away from the house to any place where it no longer presents a hazard, such as a municipal storm drain or dry well. Older properties may have their sump pumps connected to the sanitary sewer, but this is against code because it can overwhelm the municipal sewage treatment system. **It is important that you ensure that your sump pump is not connected to the sanitary sewer!**

Sump pumps are usually hardwired into a home's electrical system, and may have a battery backup. Some even use the home's pressurized water supply to power the pump, eliminating the need for electricity.

There are generally two types of sump pumps: pedestal and submersible. The pedestal pump's motor is mounted above the pit, where it is more easily serviced but also more conspicuous. The submersible pump is entirely mounted inside the pit.

If you are really serious about flood proofing your home, there is a whole range of other devices available to help you.

The cost of these measures will depend on the amount of existing development in your basement and on the degree of flood proofing certainty you wish to achieve. **Your plumber is the best person to advise you on the appropriate method for flood proofing your basement.**