



RETURNING HOME

A recovery guide for
Mackenzie residents
after wildfire

Returning to your home after wildfire

The District of Mackenzie is located 190 km north of Prince George and 188 km West of Chetwynd British Columbia Hwy 97. The municipality was incorporated on May 19, 1966. The population of Mackenzie is 3,262, according to the 2016 Census there are 1,630 private dwellings, of which approximately 220 residences are occupied on a part time basis (Statistics Canada, 2016). The majority of private residences are concentrated in and around the town centre, with a smaller development existing north of the town centre - Gantahaz, and a less dense development occurring in the southern Gagnon area.

The District of Mackenzie is at high risk of wildfire from May through to September (CWPP, 2017 p.33). "Climate scientists expect that the warming global climate will trend towards wildfires that are increasingly larger, more intense and difficult to control" (CWPP, 2017 p.33).

Mackenzie homes are surrounded by forest, and Mackenzie often experiences high winds, these factors create an increased risk of wildfire activity.

If a wildfire threatens the Mackenzie community, a community wide evacuation will commence. Residents will be evacuated until the threat to life and property has been removed (Evacuation Plan 2018). For more information on the District of Mackenzie's Evacuation plan, please visit the District of Mackenzie municipal office or the District of Mackenzie Website under emergency preparedness.

Your home may be impacted by smoke, soot and ash, chemicals, structural damage and water damage.

This information is a collection of health and safety considerations during initial work to restore your home. This document is intended to be for Mackenzie residents, not all information may apply to your specific situation.

This guide was drafted by Danielle Dysserinch based on Information from the First Nation Health Authority publication "Returning to your Home After Wildfires" (First Nations Health Authority, 2017). The information has been altered to cater to the residents of Mackenzie.

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Hazards and Safety

Do not re-enter areas damaged or destroyed by wildfire until the area has been cleared by the Mackenzie Fire Rescue Department. Once you are able to enter burned out areas safely, be very careful. Take basic precautions and be aware of hazards to your health and safety.

Hazards to watch for:

- Tripping hazards from unstable structures, open pits or wet and slippery surfaces.
- Sharp objects, such as nails, metal, concrete or wood debris.
- Ash, soot and demolition dust.
- Hazardous materials such as kitchen and bathroom cleaning products, paint, batteries, and pesticide, herbicide and fuel containers which have been partially damaged or destroyed.
- Confined or poorly ventilated areas where carbon monoxide may be present from the operations of pumps, generators, or pressure washers. Be careful entering tight spaces (if you are concerned about carbon monoxide, you can obtain a personal monitor from Home Hardware).
- Propane cylinders for heating or from BBQ appliances.

Fire Ash

The ash deposited by forest fires is relatively nontoxic and similar to ash that might be found in your fireplace. Any ash will contain small amounts of cancer-causing chemicals

- Ash may be irritating to the skin, especially to those with sensitive skin.
- Irritating to the nose and throat and may cause coughing
- a trigger of asthmatic attacks in people who already have asthma

The following pages will outline recommended Personal Protective equipment use to reduce exposure to hazards. Use personal protective equipment when entering your home. Residents with asthma or respiratory conditions should only spend short periods of time in areas exposed to wildfire and wear respiratory protection.

Breathing protection:

- Use N95 rated masks to help filter out and reduce exposure to fine dust particles such as ash, soot, and other nuisance-type particles. A mask rated N95, when properly fitted will be more effective than a dust mask in blocking particles from ash.
- Look for "NIOSH 95" on the package. N95 means the mask blocks about 95 percent of particles that are .3 microns in size or larger.
- Purchase N95 masks at Home Hardware, or Ace Victory Building Centre.
- Masks can add physical stress to a person by making it harder to breathe. Individuals who have any doubts concerning their ability to wear a mask should consult with their physician.
- If you cannot locate N95 masks, a well-fitting dust or surgical mask may provide some protection during cleanup.

How to Self-Fit N95 Masks

- Always read and follow the manufacturer's directions when using a mask.
- The mask must cover both the nose and mouth to keep you from breathing in dust and ash.
- If the mask does not have a snug fit, it will not work properly. Correct fit of the respirator requires contact with smooth skin. Masks will not work properly for people with beards or facial hair.
- Always use both straps on the respirator to hold it in place to keep air from leaking around the respirator.
- Do a user seal check, including both positive and negative pressure checks, to confirm that the respirator is adjusted and fits properly.
 - Negative pressure check – Place both hands completely over the respirator and inhale sharply. Be careful not to disturb the position of the respirator. The respirator should pull into your face. If air leaks around your face or eyes, adjust the nosepiece and straps and repeat the positive pressure check.
 - Positive pressure check – Put your hands over the respirator and breathe out sharply. If your respirator has an exhalation valve be sure to cover the exhalation valve when you exhale. No air should leak out of the respirator if the respirator fits properly. If air leaks out, re-adjust the nosepiece and straps and repeat the negative pressure check.



Protective clothing, gloves and boots:

- Depending on the extent of the damage to your home, consider durability, including cut, puncture, abrasion and slip resistance (FNHA, 2017).
- At minimum, wear long sleeve shirts, long pants, or coveralls, leather gloves and boots with thick soles to prevent punctures from sharp objects

Eye, face and head protection:

- Wear safety glasses or goggles which provide wrap-around protection.
- Protective hard-hats are recommended for clean-up of areas where there is a risk of falling debris due to structural damage to the home.

Hearing protection:

- Ear plugs or safety ear muffs should be used when operating heavy machinery or power tools

Safe Re-entry To your Residence

Return to your home only once the District of Mackenzie officials have said it is safe to do so.

Do Not Enter your home if:

- There is any danger of a structural failure or collapse. Check for any visible structural damage to your home that was caused by fire
- Roofs and floors may be damaged and subject to collapse.
- The foundation of your home and any brick or cement fireplace chimneys can be severely damaged by heat
- The concrete foundation of your home may be cracked and leaning or looking like it will actually fall down.
- Take all appropriate precautions to protect yourself and family.

Use these tips to protect yourself and property once in your home:

- Wear the appropriate personal protective equipment (PPE) including masks, gloves and boots.
- Never try to turn utilities back on until they have been checked first by your local utility provider and they have told you it is safe to do so. It is possible that the District of Mackenzie and utility service providers may have had to turn off the supply of natural gas, electricity and drinking water as a result of this fire.
- Do not try to use any electrical appliances or power in your home or garage that may have come in contact with fire, water or fire retardant until they have been checked and cleared for use by a qualified electrician.
- Visually check the stability of the trees around your property. Look for damage on the tree trunk or for visible damage of burned tree roots. Any trees that have been damaged by fire may soon become another hazard. They will need to be cut down and removed.
- Stay away from damaged or fallen power lines and power poles. Wet down any remaining fire debris to minimize health impacts to you and your family from breathing soot and ash particles left by the aftermath of this fire. Do not wash the fire debris into the street.
- Impacted sites will likely smell very smoky for a number of days, and there may be soot and ash, as well as fire debris all around your home and yard.

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- If you or any of your family members have breathing difficulties or asthma, take all appropriate precautions to protect yourself. Lingered smoke and fire ash at your home and yard can temporarily worsen your personal respiratory issues
 - Smoke can irritate the skin, nose, throat, lungs and eyes and can cause coughing and wheezing.
 - These symptoms may be significant depending on the type of soot/ash, amount of exposure, and underlying respiratory condition.
 - Call Health Link at 811 or consult your family physician for any required medications or extra precautions you may need.

Be careful near fire retardants and fire residues

Two major types of fire retardants have been used in B.C. to fight the recent wildfires. They can appear in both off-white and red colours.

- Avoid eye contact and wash hands when removing coloured fire suppressants from structures.
- Once no longer visible, these products and residues are harmless.
- Refer to section “Clean up fire retardant and residue” for more details.
- For more information, please see:

http://www.bccdc.ca/Documents/fire_retardants.pdf

Fire retardants and your pets

- Ensure animals do not ingest water from puddles containing fire retardants or fire residue.
- If your pet appears to be ill from ingesting fire retardants or fire residue, take them to a veterinarian.



A vehicle covered in fire retardant during the 2017 wildfire season

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Review your insurance information or other options

Insurance options available depend on ownership of the home and insurance coverage. Please contact your landlord if you are renting. For individually owned homes:

If you are insured:

- Contact your insurance company/ broker as soon as possible. Try to create an inventory of household items, both inside and outside the buildings, which have been damaged by fire.
- Photograph or videotape the damage as much possible. Do not throw away any damaged goods until after the inventory is made by the insurance assessor.
- Work with your insurance company and their accredited fire restoration companies to try to restore or rebuild your home.

If you are not insured:

Check with your local, private service organizations to see what help you may be eligible for:

- Canadian Red Cross Mackenzie (250-997-6114)
- St Peter's Pantry (250-997-3193)
- Care & Share (250-997-4819)
- District of Mackenzie Emergency Support Services (250-997-4221)
- BC Emergency Support Services toll free (1-800-585-9559)

A link to more community group and club contact information:

<http://districtofmackenzie.ca/discover-mackenzie/moving-to-mackenzie/community-groups-services/>



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Drinking Water Quality

Flushing your water system before you use it:

Prior to using your water system for consumption (drinking, cooking or bathing), flush the system to remove all stagnant water from the water lines.

- Run all cold and hot water taps for at least 5 minutes before you use them (even if the water is not hot).

For residents on the District of Mackenzie water system:

- Questions about the quality of drinking water should be directed to the District of Mackenzie public works department. Public works staff is best able to assess how the system has been affected and whether there is any impact on the quality of drinking water.
- If there is a need for a drinking water advisory, this will be communicated to each residence. Please follow the instructions provided to protect your health.
- Where fire retardant was used in a watershed, there will be increased monitoring for changes in water quality.

For residents on individual/private water systems:

- If there is any evidence that the water supply has been affected by fire, an alternative source of drinking water should be used until the water source can be assessed or tested.
- Testing can be arranged by contacting the District of Mackenzie Public Works



Restore your home

Discard items impacted by smoke, heat, ash and chemicals

- Food, medicines, cleaners, cosmetics and other toiletries can be damaged by heat, smoke and lingering chemical residues.
- There will be items that, after inspection of your fire-damaged home, need to be properly disposed of. Before disposing items, make sure that you inventory those items as part of your fire insurance claim.
- Follow local waste disposal requirements (information can be obtained from the District of Mackenzie Public Works) for disposal of hazardous materials.

Foods

Take stock of the foods in your home. Your fridge and freezer may have been without power for some time now. Take plenty of photos and write down an inventory of the contents of your fridge(s) and freezer(s).

Check the food in your home and discard:

- Food stored in the refrigerators, coolers and freezers IF the temperature was greater than 4°C at any time. Please note that the temperature may have exceeded 4°C when the power was disrupted and then returned to 4°C.
- Any food that has spoiled, even if the cooler remained at 4°C at all times.
- Frozen foods that have thawed must be discarded. Once thawed food should not be refrozen.
- Fire or smoke damaged foods like dry goods (i.e. flour, sugar, spices, etc.) even if the package isn't open.
- Unrefrigerated raw vegetables or fruits.
- Foods that were stored in porous containers (e.g. cardboard, foam containers, etc.).
- Canned food where the can is bulging, rusted or dented.
- Jarred foods, including home canned items, as the heat from the fire likely compromised the safety seal.

Power outages

Determine how long your power outage lasted (contact BC Hydro or the District of Mackenzie):

- A full chest freezer will keep food frozen for up to 2 days.
- A half-chest freezer will keep food frozen for 1 day.
- A cooler or fridge will keep food cold for 4 hours.

If you do not have a thermometer, look for the following signs of spoilage and souring:

- Milk and other dairy products that have spoiled or become sour.
- Ice cream that has thawed and refrozen.
- Fish products that smell bad upon thawing.
- Food in the freezer that has (or may have) reached 4°C or warmer.

Check if your refrigerator or freezer is damaged.

If your refrigerator or freezer is damaged by the fire and is not working, contact the insurance company (if applicable) about coverage as an eligible expense, or the District of Mackenzie to determine if you are emergency support services. Contact the District of Mackenzie Public works about its safe disposal at the landfill.

If your refrigerator or freezer was not damaged by the fire and continues to work, take the following steps to clean refrigerators and freezers:

- Remove everything from the refrigerator or freezer.
- Use paper towels or rags to wipe up spills and leaks and dispose of them with the food waste.
- Wash out the appliance with warm, soapy water.
- Disinfect the refrigerator or freezer with a strong bleach solution (1 tsp household bleach per 4 cups water).
- Use latex or rubber gloves if you have sensitive skin that may be irritated by the bleach solution.
- To remove odors, wipe out the appliance with a mixture of water and baking soda, or keep a box of baking soda in the appliance. You also may want to air out the appliance for a few days before plugging it in and using it again. Secure doors in an open position to provide air flow and keep children away.
- Wait until the refrigerator has returned to 4°C or freezer has returned to -18°C before restocking with food (FNHA, 2017).

Clean up smoke damage and soot

There may be smoke damage and soot in your home after the fire. With the use of Personal Protective Equipment, such as masks, rubber gloves, rubber boots, long sleeved shirts and pants, you can do the following things on your own, if you don't hire a fire restoration company:

Exterior

- Use a hose, sprayer or pressure washer on the exterior of your home, driveways, walkways, vehicles, patios, decks and outdoor furniture. Rinse off air intakes and air conditioners. Be sure NOT to use air hoses or leaf blowers — you do not want to drive more contaminants into your house.
- Be careful when using pumps, pressure washers or generators in enclosed spaces. Carbon monoxide may be present in confined or poorly ventilated areas where from the operation of pumps, generators, or pressure washers.
- Attic insulation can retain smoke odours, and you may wish to consider replacing it.
- If you have a private septic system, see the section on septic systems (page 18).

Air Circulation

- Get the air moving inside your house by using a fan and open your windows, providing there is no smoke or air quality advisory for your neighbourhood.
- Replace your furnace filter and/or air conditioner filter.
- Use a humidifier to reduce how much ash becomes airborne.
- Have a professional clean your ducts and air conditioning system.
- Ozone generators do not function as “air cleaners” despite advertising claims.
- Stay indoors,
- Close all external doors and windows, and
- Turn off the ventilation as much as possible for air conditioners and furnaces.

Interior Surfaces

- Wash all interior surfaces with mild detergent or appropriate cleaning solution and rinse thoroughly.
- Include the inside of closets, cupboards, drawers and other locations if there is any ash, dust or the odour of fire.
- Vinegar helps remove odour and residue from smoke damage.
- Wet wiping or mopping is safer and more effective than dry or dust mopping. Change the water if it gets dirty and dispose of the solution out of the house.
- Only vacuum with a unit which has a "HEPA" filter which can catch ash particles. Using unfiltered vacuums will just move the ash around the house. Change your HEPA filter frequently.
- Ash left in place is reduced into smaller particles and becomes harder to remove from carpets and surfaces.
- Wash and clean all ash-contaminated household items with mild detergent, changing the water frequently.

Fabric, carpets and clothing

- Soot is oily and can stain carpets, curtains and soft furnishing. It must be removed before you try to clean or deodorize those items.
- Steam clean carpets, drapes, curtains and furniture, changing the water frequently.
- Launder or dry clean all affected clothing and other materials. You may have to run numerous rinse cycles to extract all materials. Consider doing this laundering off-site using a machine tagged for heavy contaminants at a laundromat. These are usually marked as "oilers." Washable textiles may benefit from adding one to two cups of vinegar to each wash load.

Electronics

- Take electronic equipment outside and "blow out" the components with an air hose before using. Ash can cause static charges.

Repair water damage

If your home was damaged by water, you will need to get rid of all excess water to prevent mold growth. Before starting any work, ensure proper Personal Protective Equipment is worn, such as a mask and rubber gloves.

- To help prevent mold growth, any water-damaged or water-stained surfaces and appliances should be checked for damage. Clean the affected areas using warm water and soap.
- Dry all wet items as soon as possible.
- Dry wet or waterlogged carpeting as quickly as possible and any underlay should be removed.
- Steam clean carpets with a disinfectant.
- Remove excess moisture from the air inside your home using a dehumidifier.
- Let your insurance company and restoration contractor know as soon as possible if you find any visible mold growth or smell mold inside your home
- If you discover a small amount of mold (typically under 10 square feet), and you wish to complete the work yourself, more information is available here: <https://www.healthlinkbc.ca/healthlinkbc-files/air-quality-mould>



Clean your yards and outdoor play areas

Your yard and surrounding areas may be impacted by fire ash and soot. These materials will contain polycyclic aromatic hydrocarbons (PAH,) as well as heavy metals.

If you decide to manage this yourself:

- Use Personal Protective Equipment as appropriate, such as masks, rubber gloves, rubber boots, long sleeved shirt and pants.
- Wet down remaining fire debris. Do not wash the fire debris into the street.
- Scrape up fire ash and soot remaining on your property as much as possible, place it in plastic bags or other containers that will prevent it from being disturbed, and take it to a landfill.
 - If your home/property was totally destroyed by fire then the restoration company will look after this for you as they begin the demolition and recovery process.
- If you choose to remediate lawns, you can re-sod or reseed grassy areas.
- Consider adding new, clean soil to gardens if you suspect or know the area was impacted.
- For children's play areas and equipment, clear away any debris and ensure water that may have been used in the fire is gone.
- If there is fire or structural damage to play equipment, consider blocking access to the area until play equipment is repaired or replaced.
- Use mild detergent and clean water to wash children's outside toys, play equipment, and recreational equipment.
- Sand, gravel or other loose materials placed beneath playground equipment should be removed and replaced whenever there is visible presence of ash, silt and small debris.
- If you suspect or know a sand box was impacted by fire or firefighting materials, the sand should be replaced.

Residential Pools

Wildfires may impact residential pools and make them unsafe to use. Inspect your pool for structural damage to the pool basin or equipment. If the pool water was not circulating or was not treated, harmful bacteria may have grown in the stagnant water. Work with a pool service company to restore your swimming pool and ensure it is safe to use. Small whirlpools (hot tubs) should be drained, scrubbed clean, and re-filled. Balance the water prior to using the whirlpool.

Clean up fire retardant and residue

Health and safety of retardants used in BC has been reviewed. In the long term, environmental toxicity is low because products degrade over time and turn into fertilizer. The following precautions are recommended:

If your home was sprayed with fire retardants or was impacted by windblown fire retardant, these products need to be removed from the outside siding and roof of your house, your vehicles, and any outside toys, furniture, tools etc. before you move back home. A fire restoration contractor will be able to help you with this (Northern Capital Restorations Ltd is based out of Prince George, contact information is located in the Directory on page 21 of this guide).

If you decide to manage this yourself:

- Wash down your home's roof and siding, vehicles, and outdoor patio furniture with clean water.
- Never use Bleach, as the reaction between bleach and the fire retardants will produce harmful and explosive gases.
- To clean windows and glass, use clean water and a razor blade tool to help to remove the sticky residue.
- Rinse retardant off vegetation.
- Use mild detergent and clean water to wash children's outside toys, play equipment, and recreational equipment to remove any residual fire retardant.
- Keep your pets and children away from any water pooling from these cleaning activities.
- Consult your family physician as soon as possible if you experience a reaction.

Drinking water supplies

Fire retardant contaminated water is not considered harmful. Open sources (e.g. ponds, dugouts) may receive small amounts of retardant over spray during fire application. This will have no appreciable effect on the quality or toxicity of the water supply. Water containing small amounts of retardant could taste slightly salty and may not, consequently, be palatable. Immediate medical attention would not be considered necessary except in rare cases involving adverse reactions based on individual intolerances or allergic reactions.

Fruit and Vegetable Gardens

It may not be safe to eat fruits or vegetables that were growing above ground during the fire, especially if they came into contact with fire retardants.

- Discard fruits and vegetables if visible fire-suppressant residues are present.
- Rinse fire retardant off vegetation such as trees, shrubs and plants, if possible.
- Regularly wet down your garden and lawn until the smoke and ash have been diluted and/or reabsorbed into the air. Ash and soot on vegetation will continue to emit smoke odours for some time.

For more information, please see:

http://www.bccdc.ca/Documents/fire_retardants.pdf

Septic Systems

If a home is directly impacted by a wildfire, there is a possibility that some parts of the sewage disposal system may be damaged. There is also the possibility that wildfire response activities can damage the sewage system, such as heavy equipment or trucks driving over the dispersal field. If your home was impacted by wildfire and you have a septic tank make sure to have your system inspected. In Mackenzie Diggers Impact Enterprises provides septic tank services (contact information in the local directory on page 19)

Air Quality

Smoky conditions can still be present after returning home. Health risks may be present under conditions of prolonged and heavy smoke conditions, and for specific sensitive populations.

Guidance for understanding and reducing health risks:

<http://www.fnha.ca/Documents/FNHA-Wildfire-Smoke-Health-Information.pdf>

You can monitor general air quality conditions at:

BC Air Quality Health Index:

<http://www.env.gov.bc.ca/epd/bcairquality/readings/aqhi-table.xml>

Directory of Mackenzie Resources

Information

- District of Mackenzie Municipal Office 250-997-3221
- Mackenzie Fire Department 250-997-4221
- Hub International Insurance Agency 250-997-6250

Health and Support Services

- Mackenzie Counselling Services 250-997-6595
- Mackenzie Hospital 250-997-3263
- District of Mackenzie Recreation Centre 250-997-5283
- Mackenzie Pharmachoice 250-997-5472
- Mackenzie Coop Pharmacy 250-997-5000
- Mackenzie Hospital Auxiliary 250-997-6619

Home Restoration Supplies and Services

- District of Mackenzie Public Works 250-997-3761
- Ace Victory Building Centre 250-997-3003
- Hagen's Home Hardware Building Centre 250-997-4555
- Consider it done cleaning services 250-997-8282
- Mackenzie Drycleaning 250-997-4712
- Mackenzie Hose and Fitting 250-997-5757
- Norlite Furnaces Ltd 250-997-1804
- Osprey Custom Carpentry 250-997-1423
- Ain't No Body Got Time for That - Home Decor 250-990-0002
- Brush and Roll Painting 250-988-1399
- Diggers Impact Enterprises 250-997-4627

Utilities

- Fortis BC 1-888-224-2710 (emergencies 1-800-663-9911)
- T.R. Electric Ltd 250-997-3559
- Telus 1-866-558-2273
- BC Hydro 250-561-4990

Emergency Support Services Contacts

- Provincial Emergency Support Services toll free 1-800-585-9559
- Red Cross Mackenzie 250-997-6114
- District of Mackenzie Emergency Support Services - 250-997-4221
- St Peters Pantry 250-997-3193
- Care & Share 250-997-4819
- Meals on Wheels 250-997-6537
- Mackenzie Legion 250-997-3900
- Work BC - Mackenzie Employment Centre 250-997-4333

Links to more resources

Chamber Of Commerce Business Directory Mackenzie

- <https://www.mackenziechamber.bc.ca/community/business-directory>

District of Mackenzie Community Groups and Services

- <http://districtofmackenzie.ca/discover-mackenzie/moving-to-mackenzie/community-groups-services/>

Small Businesses Mackenzie (love Mackenzie)

- <https://lovenorthernbc.com/community/mackenzie/>



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