



ALBERTA  
**FireSmart™**

# FireSmart™ Public Engagement Workshops



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# WELCOMING REMARKS



# TONIGHTS EVENT

- ▶ **Why FireSmart**
- ▶ **Wildfires, what are they and how they affect me.**
- ▶ **What is WUI**
- ▶ **FireSmart Treatment**
- ▶ **Case Studies**
- ▶ **Emergency Preparedness**



## Why FireSmart?

► FireSmart is more than a collection of best-practices, programs, resources, and tools. FireSmart is a way of living with and managing the risk of wildfire. It is a shared responsibility between government, community leaders, neighbourhoods, and residents. Together, we can build a wildfire resilient Alberta. A FireSmart Alberta.



## The Seven FireSmart Disciplines

► The FireSmart program helps reduce wildfire risks to homes, neighbourhoods, critical infrastructure, and vital natural resources. This is a shared responsibility between us all. Individuals, communities, governments, and private sector organizations all have a part to play.

► The FireSmart program is implemented through seven disciplines to help neighbourhoods address the threat of wildfire: education, emergency planning, vegetation management, legislation, development, interagency cooperation, and cross training.



## Education

- ▶ FireSmart neighbourhoods all have one thing in common: an organized group of passionate and educated residents, bolstered by their local government, driving positive change.
- ▶ The whole process starts with a neighbourhood, or a group, or an individual, taking an interest in learning more about the threat of wildfire and how that threat can be mitigated. The grassroots implementation of FireSmart by empowered members of the public often results in the most robust neighbourhood programs.
- ▶ Through online and printed resources available from FireSmart Canada, education can be promoted and shared within a neighbourhood and neighbourhood, raising further interest and awareness among more residents.
- ▶ Neighbours talk, friends talk, people share information that is important to them and FireSmart is no different. Phone calls and face to face conversations from residents and professionals can have a more meaningful and lasting effect on people.



## Emergency Planning

- ▶ There are two ways of approaching the planning discipline: the creation of wildfire prevention and mitigation specific plans, and accounting for wildfire in existing emergency response and neighbourhood preparedness.
- ▶ When multiple agencies join forces to respond to an emergency, the process can be complex.
- ▶ Addressing interface characteristics and response strategies will help you to prepare for wildfire. Evacuations, response and recovery from a wildfire should be considered in your emergency plans.







## Vegetation Management

► Vegetation management, broadly speaking, is the augmentation of wildland fuels (vegetation that can contribute to wildfire is known simply as 'fuel') for the purpose of mitigating the potential intensities and impact of wildfire. Intuitively vegetation management as a strategy for reducing wildfire hazard makes sense: wildfire requires fuel, in the form of vegetation, to burn; if we can augment the fuel, we can augment the wildfire.

► Projects can serve many different purposes: they can reduce wildfire intensity, severity and rate of spread, they can provide a strategic tool for incident management teams responding to wildfires near neighbourhoods and they can also additionally provide areas within a neighbourhood to promote education around wildfire and the principles of FireSmart.





- ▶ Reducing, removing and converting combustible vegetation within the home ignition zone on our private properties is critically important.
- ▶ More than 90% of homes damaged or destroyed by wildfires are ignited by embers. Maintaining a 1.5 metre non-combustible surface around your entire home will reduce the chance of wind-blown embers igniting materials near your home.

## Legislation

► Post-fire studies, experiments and models have shown that homes ignite due to the condition of the structure and everything around it, up to 100 metres from the foundation.

Legislation, bylaws, plans, policies and development standards all play a significant role in building and maintaining FireSmart neighbourhoods. Consideration of wildfire at the development planning stage is a key step in protecting neighbourhoods from wildfire.

► There are many ways to integrate FireSmart principles into planning and development in a neighbourhood. Each neighbourhood must determine what mechanisms are most appropriate for achieving their FireSmart goals. Determining which mechanism will be most effective is at the discretion of local staff.







## Development

- ▶ As neighbourhoods extend further into forested areas, homes and neighbourhoods are becoming more exposed to ignition from wildfire. A structure is more likely to be destroyed in a wildfire when it is located in a high-density area where homes can ignite and fire is able to easily transfer from building to building.
- ▶ Development standards play a significant role in reducing the potential impact a wildfire may ultimately have on a neighbourhood. The potential for damage intensifies when flammable building materials are used.



## Interagency Cooperation

► A successful neighbourhood FireSmart program requires engagement and strong partnerships. Elected officials, neighbourhood planners, developers, government, industry and residents all have an important role to play.

► Public education is one of the most challenging components of creating a FireSmart neighbourhood as many residents do not understand the local threat from wildfire and assume emergency services will be able to protect the neighbourhood during a wildland urban interface wildfire (WUI) event.



## Cross Training

- ▶ Wildfires do not respect jurisdictional boundaries and can move from forested lands into neighbourhoods and from neighbourhoods into forested lands. In many cases, wildland urban interface (WUI) events require the response of many different emergency response organizations. In order for response to be efficient, safe and organized, planning and training must be completed ahead of time, training cannot be effective when done in isolation.
- ▶ Cross-training aims to bring emergency response organizations together for the purpose of identifying potential weaknesses and gaps in response efforts prior to an actual emergency.
- ▶ Training can also be completed to familiarize organizations with the equipment, procedures and strategies of other agencies which may potentially be involved in a wildfire emergency. The overall all goal is to reduce any required on-the-job learning that might occur during an emergency.





## What is the Wildland Urban Interface (WUI)?

► The wildland urban interface is typically described as the area where human development meets or intermingles with the natural environment. Over time, our communities and lifestyles increasingly extend further into forested areas and as such, we find interface communities all over Canada, in both remote rural locations and in urban centers. When we live, work and play in WUI zones, we become more exposed to the danger of wildfire, but it is possible to live safely with this natural event.





# FireSmart

- Wildland Urban Interface - Structures in locations where conditions result in the potential for their ignition from flames and firebrands of a wildland fire
- No fire suppression system in the world can stop losses from large conflagrations
- 85 to 90% of homes without flammable roofs and 10 metres of clearance will survive a major wildfire
- More than 50% of homes destroyed by wildfires are ignited by embers
- Reduce fire intensity as influenced by the surrounding vegetation
- Reduce ignitability of the structure

## HOW WILDFIRES SPREAD

### SPARKS/EMBERS

This is the burning debris that can be thrown up to two kilometres ahead of a wildfire. Sparks and embers can ignite materials on or near your home, causing severe damage.



### EXTREME HEAT

Radiant heat from a wildfire can melt vinyl siding, ignite your home and even break windows. Extreme heat can come from flames within 30 metres of your home.



### DIRECT FLAME

As wildfires spread toward homes, they ignite other flammable objects in their path. Breaks in this path, especially close to your home, can help reduce this threat.



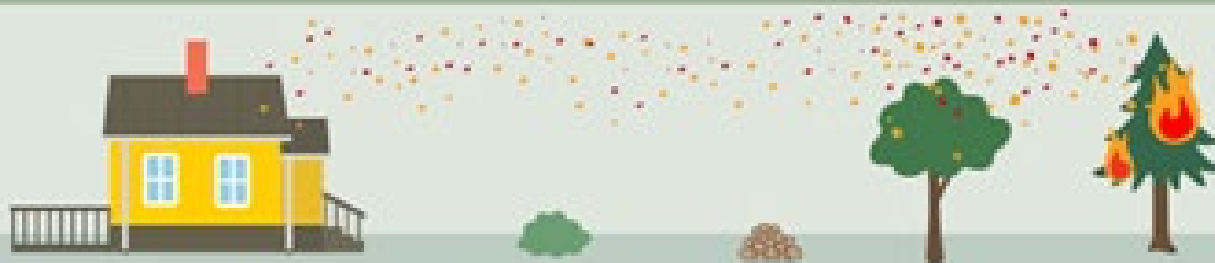
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## FIRE + FUEL = WHY HOMES BURN



**Unmitigated Property**



**FireSmart-Mitigated Property**

## HOW WILDFIRES GROW





## FACTORS INFLUENCING WILDFIRE SPREAD

### DENSE, CONTINUOUS FORESTS

Wildfire can spread quickly in forests where trees are in close proximity to each other. Fire spreads quickly and directly from tree to tree and can produce sparks and embers that may travel distances of two kilometres. These embers may land on trees or homes well ahead of the fire and create a multiple fire situation. It is important to be aware of the dangers of sparks and embers when creating a FireSmart property.

## SLOPE CAN AFFECT WILDFIRE

Fire moves fastest uphill. The steeper the slope, the faster a wildfire will spread. Homes on hills or at the top of hills face the greatest risk from wildfire. If your home is located on a hill, you should consider taking on extra measures suggested in this manual, such as removing trees adjacent to the slope and planting fire-resistant plants. If you are planning on building a new home, consider having your home set back at least 10 metres from the crest of any hills or slopes, as well as the landscaping around it.



**EXTENDED ZONE**  
10m to 30m

**INTERMEDIATE ZONE**  
1.5m to 10m

**IMMEDIATE ZONE**  
0m to 1.5m

# HOME IGNITION ZONE



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# The Home Ignition Zone FireSmart

## Immediate Zone: 0 - 1.5 metres

Clear vegetation and combustible material down to mineral soil and cover with non-combustible materials like gravel, brick, or concrete. Avoid planting woody shrubs or trees.

## Intermediate Zone: 1.5 - 10 metres

Avoid incorporating any woody debris, including mulch. Keep combustible items like firewood piles, construction materials, patio furniture, tools, and decorative pieces out of this zone.





## Extended Zone: 10 - 30 metres






If your property extends into this zone, a few important steps you can take include: Selectively remove evergreen trees to create at least 3 metres of horizontal space between the single or grouped tree crowns. Remove all branches to a height of 2 metres from the ground.



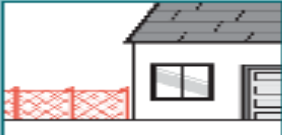


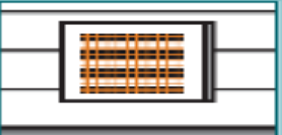
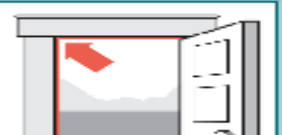
## THREE STEPS TO COST-EFFECTIVE WILDFIRE HOME PROTECTION

Complete these 3 steps to reduce the risk of a wildfire spreading to your home. For items listed under step 3 check with your municipality about any permit requirements and the availability of subsidies. Give decks, sheds and outbuildings within 10 m of your home the same FireSmart consideration as you do your home.






### STEP 1: MAINTAIN WHAT YOU'VE GOT A LEAST TWICE PER YEAR

<p><b>\$0 - \$300</b></p>	 <p>Remove needles, leaves and other debris from gutters, roof surfaces, decks and balconies. Regularly clean vents.</p>	 <p>Remove combustible materials (firewood and lumber) stored within 10 m of the house perimeter and under decks.</p>	 <p>Remove all combustible ground cover (mulch and plants) within a 1.5 m of the house perimeter.</p>	 <p>Mow the lawn to &lt;10 cm and plant low-growing, well-spaced shrubs and other vegetation.</p>	 <p>Prune trees to create a 2 m clearance from the ground to the lowest tree branches.</p>
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### STEP 2: COMPLETE SIMPLE UPGRADES

<p><b>\$300 - \$3,000</b></p>	 <p>Install non-combustible fencing within 1.5m of the house (cement fibre, metal, chain link or stone).</p>	 <p>Install non-combustible ground surfaces within 1.5 m of the house (mineral soil, rock, concrete or stone).</p>	 <p>Create a 15 cm ground-to-siding non-combustible clearance (e.g., install cement board or metal skirting).</p>	 <p>Add a non-combustible 3 mm screen to all external vents, except dryer vents.</p>	 <p>Replace worn or missing weather stripping on all doors, including garage doors.</p>
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### STEP 3: COMPLETE MORE COMPLEX UPGRADES

<p><b>\$3,000 - \$30,000</b></p>	 <p>Install Class A fire-resistant roof covering (e.g., cement fibre, metal or asphalt shingles).</p>	 <p>Install non-combustible siding (stucco, metal, stone, cement fibre board).</p>	 <p>Install multi-pane or tempered glass windows and exterior fire rated doors.</p>	 <p>Remove conifer trees that are within 10 m of the house.</p>	 <p>Retrofit all deck components to be fire-rated, with a continuous surface.</p>
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NOTE: Not all actions will be applicable to each home. Completing these steps does not guarantee the prevention of fire.  
 • Cost estimates are based on a 2,500 sq ft home.



# FireSmart Structures

- Use construction materials that are fire-resistant or non-combustible whenever possible
- Consider using materials such as Class-A asphalt shingles, slate or clay tile, metal, or cement and concrete products for roof construction





# FireSmart Structures

- Keep your gutters, eaves and roof clear of leaves and other debris
- Any structure attached to the house, such as decks, porches, fences and sheds should be considered part of the house
- Use masonry or metal as a protective barrier / fence





# FireSmart Structures

- Use non-flammable metal when constructing a trellis and cover with high-moisture, fire-resistant vegetation
- Prevent combustible materials and debris from accumulating beneath patio deck or elevated porches; screen underneath or box in areas below the deck or porch with wire mesh no larger than 1/8 of an inch





- Ensure address or lot number is clearly visible for quick identification by emergency vehicles
- Ensure that access to the house is wide enough for emergency vehicles
- Have an emergency water supply such as a pond
- Ensure your chimney is installed to code, has a spark arrester screen and is kept clean
- Locate propane tanks at least 10m from building
- Have shovels, rakes, axes, garden hoses, sprinklers and roof ladders immediately available
- Consider a Sprinkler Protection Unit
- Have a family emergency fire and evacuation plan





# Case Study





# IBHS Research Center Ember Storm Test

Insurance Institute for Business & Home Safety



## “Hawaii -Lahaina miracle house”

\* Source - Global News / NPR

Architectural blueprints are shown in the background, partially unrolled, with various dimensions and technical drawings visible. The blueprints are set against a dark blue and green geometric background.

## Wildfires - Get Prepared

- ▶ To better prepare for a wildfire event, make sure that you know the risks specific to your community, geography, and region, and that you and the members of your household are prepared so that you'll know exactly what to do if a wildfire is possible in your area.



## Before a Wildfire

- ▶ Educate the members of your household
- ▶ Make sure that your family and the members of your household are prepared, should a wildfire occur:
- ▶ Ensure that you have an emergency plan in place and that your emergency kits are ready in case you need them.
- ▶ Stay informed of weather conditions and advisories in your area. Be especially aware of potentially triggering weather conditions, such as droughts and lightning storms.
- ▶ Contact your local municipal, provincial or territorial emergency management organization to familiarize yourself with evacuation routes and procedures.
- ▶ Know and practice your primary escape route, as well as multiple routes out of your community. Remember that evacuation routes can be impacted by the wildfire.



What is a to go bag?

► In the event of an emergency that requires you to evacuate, everyone in your household should have a Go Bag or a 72hr kit packed and ready to go. Your Go Bag should be a sturdy and easy to carry backpack or duffle bag containing things you would want to have with you if you have to leave in a hurry.

- ▶ **Get an emergency kit!**
- ▶ **Assemble one...**
- ▶ **Basic emergency kit checklist:**
- ▶ **Water** — two litres of water per person per day (include small bottles)
- ▶ **Food** that won't spoil, such as canned food, energy bars and dried foods (replace once a year)
- ▶ **Manual can opener**
- ▶ **Wind-up or battery-powered flashlight** (and extra batteries)
- ▶ **Wind-up or battery-powered radio** (and extra batteries)
- ▶ **First aid kit**
- ▶ **Extra keys** for your car and house
- ▶ **Cash, travellers' cheques** and change
- ▶ **Important family documents** such as identification, insurance and bank records
- ▶ **Emergency plan** — include a copy in your kit as well as contact information





## Consider these additional emergency kit supplies:

- ▶ Two additional litres of water per person per day for cooking and cleaning
- ▶ Candles and matches or lighter (place in sturdy containers and do not burn unattended)
- ▶ Change of clothing and footwear for each household member
- ▶ Sleeping bag or warm blanket for each household member
- ▶ Toiletries and personal hygiene items
- ▶ Hand sanitizer, toilet paper and garbage bags
- ▶ Prepaid phone card, mobile phone charger
- ▶ Pet food and supplies
- ▶ Infant formula, baby food and supplies
- ▶ Activities for children like books, puzzles or toys
- ▶ Prescription medications, medical equipment
- ▶ Utensils, plates and cups
- ▶ Household chlorine bleach or water purifying tablets
- ▶ Basic tools (hammer, pliers, wrench, screwdrivers, work gloves, pocket knife)
- ▶ Small fuel-operated stove and fuel
- ▶ Whistle (to attract attention)
- ▶ Duct tape



# Emergency Wildfire Preparedness Checklist



## ✓ Evacuation Tips

Monitor conditions and follow the advice of local officials. If ordered to evacuate, do so IMMEDIATELY.

<input type="checkbox"/>	<p>Review your home emergency plan with the people you live with.</p> <p><b>Visit <a href="https://www.preparedbc.ca/EmergencyPlan">PreparedBC.ca/EmergencyPlan</a> for helpful tips and a fill-in-the-blank template.</b></p>
<input type="checkbox"/>	<p>Have your grab-and-go bag ready and stocked with food, water, battery-powered/hand-crank radio and flashlight, power bank, first aid kit and prescriptions, cash in small bills, toiletries, change of clothes and an emergency blanket. Also include a copy of your emergency plan and copies of important documents, such as insurance and emergency contact information. Don't forget a bag for your pets!</p> <p><b>Visit <a href="https://www.preparedbc.ca/EmergencyKit">PreparedBC.ca/EmergencyKit</a> for more information and a complete list of supplies.</b></p>
<input type="checkbox"/>	<p>Pre-register for Emergency Support Services through the BC Services Card app. Connect with friends and family who may be able to provide a place to stay if an evacuation order is issued. This will help ensure local accommodation is available for those who have no other option.</p> <p><b>Visit <a href="https://www.ess.gov.bc.ca">ESS.gov.bc.ca</a> for more information.</b></p>

## ✓ Quickly address outside surroundings

Complete a scan around the home and property and take steps to remove combustibles.

<input type="checkbox"/>	Remove leaves, pine needles and other debris from your roof and gutters.
<input type="checkbox"/>	Mow grass within 10 metres of the house to 10 centimetres in length, or less.
<input type="checkbox"/>	Clear all dead plants, leaves, and weeds within 10 metres of your home. Maintain a 1.5 metre non-combustible zone around your home and deck.
<input type="checkbox"/>	Move combustible items that are within 10 metres of your home such as propane tanks, doormats, toys, patio furniture, cushions, decorative items, firewood, and potted plants. This includes items on or under decks. Move all combustible items into your home or garage.
<input type="checkbox"/>	If you have a large stationary propane tank located on your property, remove all combustible material surrounding it.
<input type="checkbox"/>	<p>If you have a combustible fence that attaches to your home:</p> <ul style="list-style-type: none"> <li>• Secure gate in an open position.</li> <li>• Clear vegetation and debris along both sides of combustible fence lines.</li> </ul>

## ✓ Check around the house

Check vents on roof, foundation and exterior walls to prevent embers from entering the home.

<input type="checkbox"/>	Ensure all vents on the home are in good condition (i.e., are operating correctly, not damaged or poorly attached). Cover dryer vents and wall-mounted make-up air openings for furnaces with a plywood cover, or non-combustible tape. <b>Be sure to remove tape when you return home.</b>
<input type="checkbox"/>	<p>If you store cardboard boxes and other easily ignited materials near a vent in your attic or crawl space, move them as far away as possible from vent(s).</p> <ul style="list-style-type: none"> <li>• Another option is to place tape over vent(s) at these locations.</li> </ul>
<input type="checkbox"/>	Before evacuating: Turn off air conditioning. Close all doors, garage doors, windows, and skylights. Do not turn off gas unless directed to do so, or if you suspect a gas leak.



Visit [firesmartbc.ca](https://www.firesmartbc.ca) and [preparedbc.ca](https://www.preparedbc.ca) for additional resources and information.





## Evacuation Tips

Monitor conditions and follow the advice of local officials. If ordered to evacuate, do so **IMMEDIATELY**.

Review your home emergency plan with the people you live with. Have your grab-and-go bag ready and stocked with food, water, battery-powered/hand-crank radio and flashlight, power bank, first aid kit and prescriptions, cash in small bills, toiletries, change of clothes and an emergency blanket. Also include a copy of your emergency plan and copies of important documents, such as insurance and emergency contact information. Don't forget a bag for your pets!





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# Resources

FireSmart Alberta

<https://firesmartalberta.ca>

FireSmart Canada

<https://firesmartcanada.ca>

FireSmart BC

<http://firesmartbc.ca>

Government of Alberta

<http://www.alberta.ca>firesmart>

Farm FireSmart

<http://farmfiresmart.ca>

Government of Alberta

<http://www.alberta.ca>emergency-prepardness>

Public Safety Canada

<http://publicsafety.gc.ca>





Questions?

THANK YOU

