

HOW HOMES BURN



CITIZEN ENGAGEMENT



SILVANUS

www.silvanus-project.eu

Understanding how homes burn during wildfires is critical for enhancing wildfire preparedness and developing effective strategies to protect properties.



The mechanics of home ignition in wildfires are often complex, influenced by the home's construction, its immediate environment, and the behaviour of the wildfire itself. Here's a detailed exploration of the subject:

DIRECT FLAME CONTACT

Fire Front



The most straightforward and destructive way a home can ignite is by the direct contact of the fire front with the structure. This can occur when the wildfire reaches the property due to insufficient defensible space or the proximity of the home to flammable wildland vegetation.

Materials and Construction

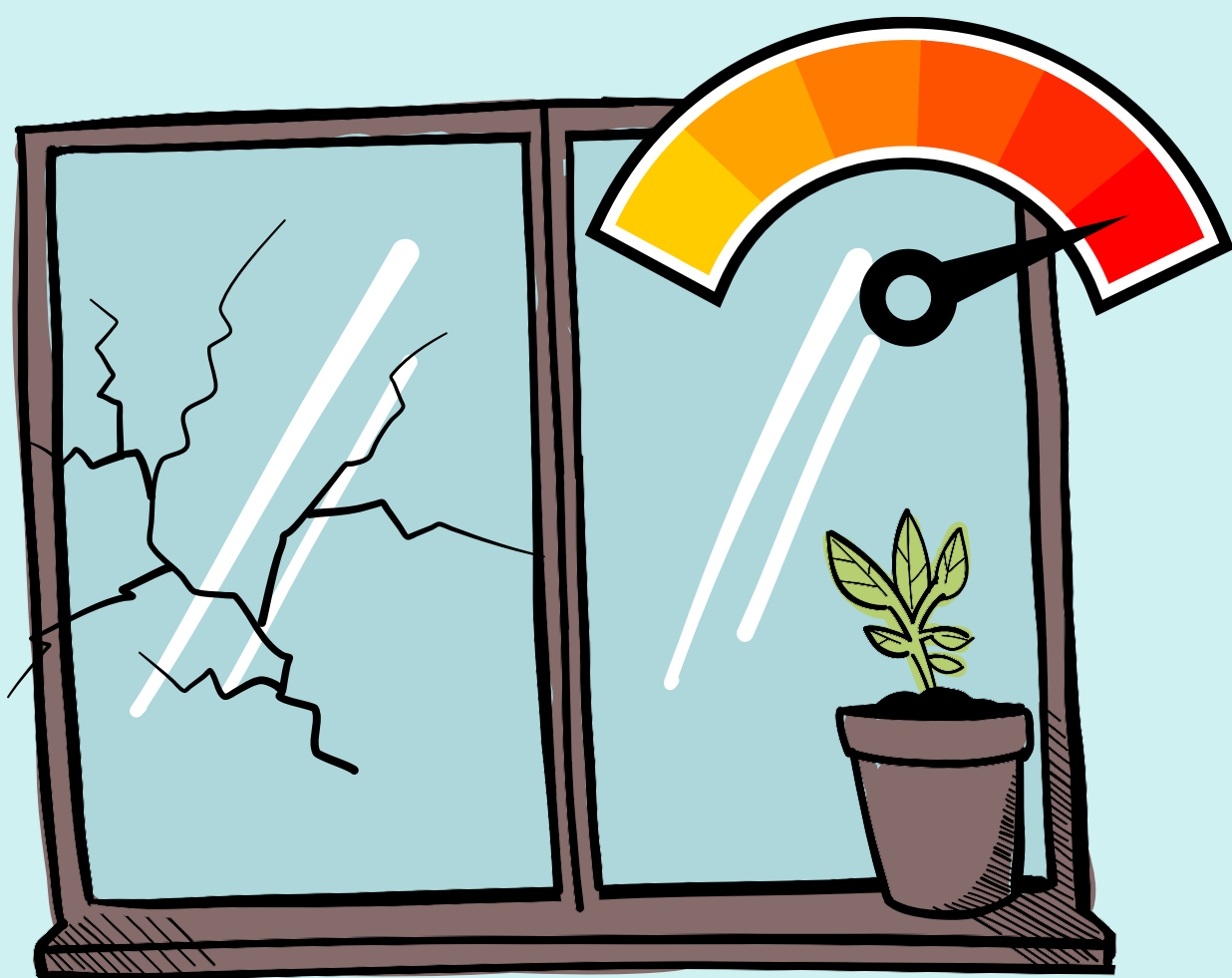
Homes built with flammable materials such as wood siding, decks, and fences are more susceptible to ignition from direct flame contact.



RADIANT HEAT

Heat intensity

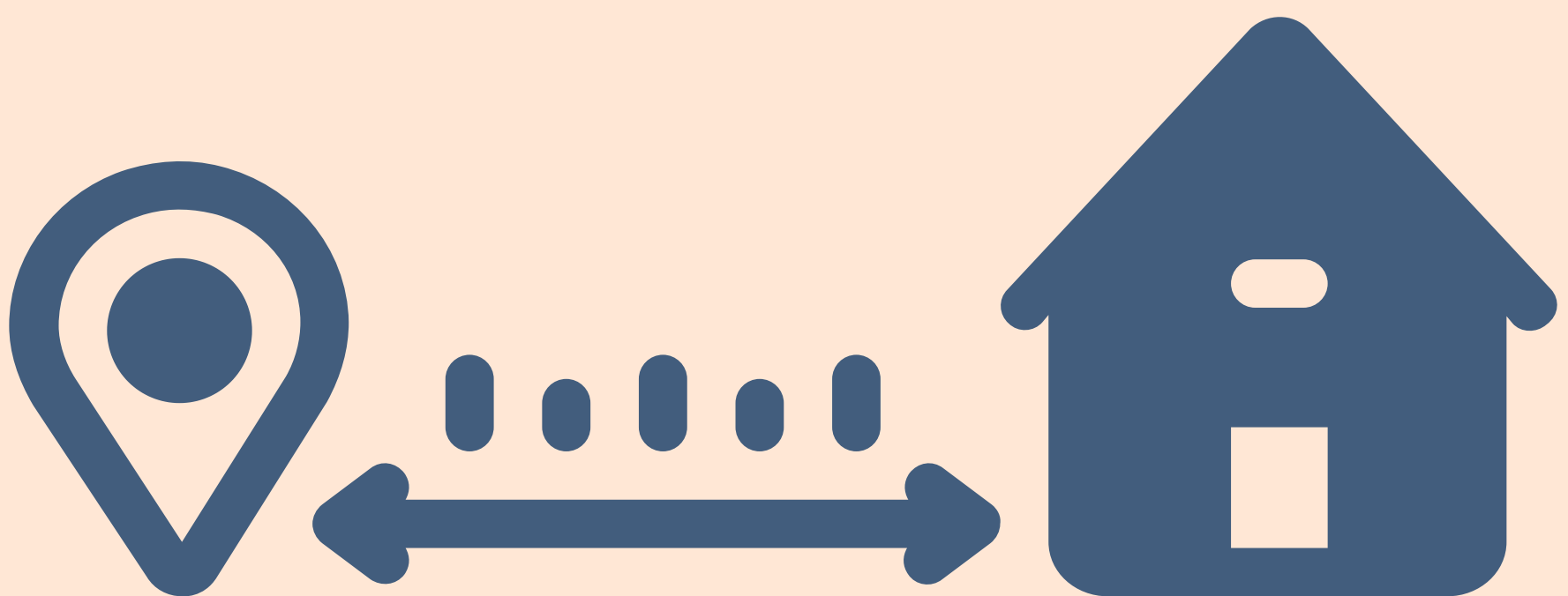
Radiant heat from a nearby fire can cause materials to reach their ignition temperature without direct flame contact. The intensity of the heat can crack windows, allowing heat and embers to enter the home, igniting curtains, furniture, and other flammable materials inside.



Distance and Duration

The risk from radiant heat increases with the intensity of the fire and the duration of exposure.

Homes that are closer to large amounts of vegetation or neighbouring structures that catch fire are particularly at risk.



EMBERS AND FIREBRANDS

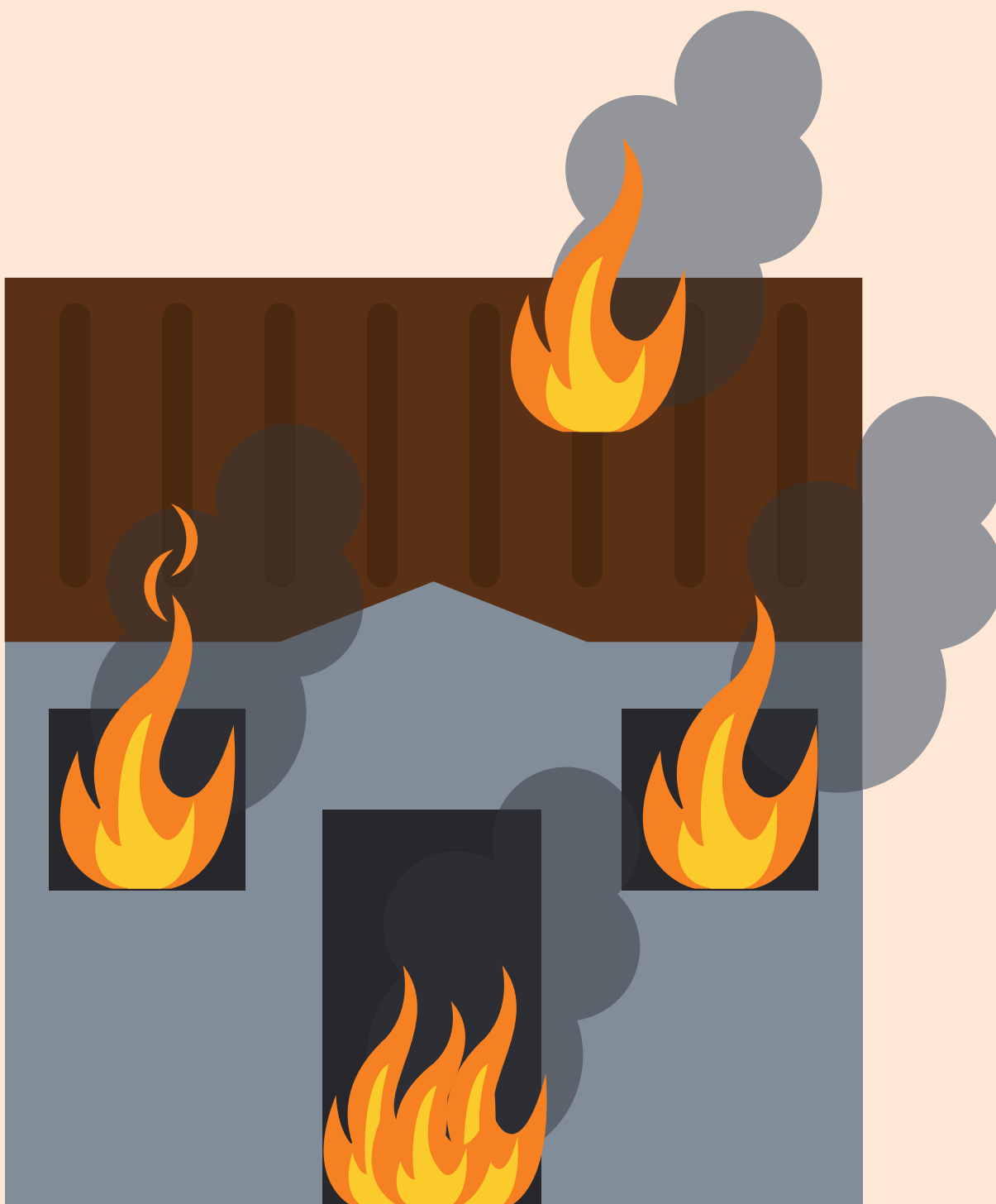
Most Common Cause

Embers, or firebrands, are burning pieces of airborne wood or vegetation that can travel more than a mile away from the main fire. They are the leading cause of home ignitions in wildfires.



Vulnerable Spots

Embers can accumulate and ignite materials on roofs, in gutters, on decks, and near or under vent openings, through cracks in windows and doors, and in other nooks and crannies where combustible materials are present.



INTERNAL SOURCES

Pre-Existing Fires

Sometimes, fires start internally due to electrical failures, gas leaks, or other mechanical failures that occur during a wildfire due to infrastructure damage.



Secondary Fires

After the initial wildfire threat has passed, homes can catch fire due to smoldering vegetation nearby or residual heat retained in surrounding materials.

