

## **Bushfire Safety and Shelter Response Action Flowchart**

**By John Mealia, Director at My Emergency Management**

A significant challenge in bushfires is for people to make decisions in highly dynamic situations. For example, the wind may suddenly change direction and a community that was issued an 'advice' message may find themselves in a position where their only option is to take shelter or attempt a late evacuation.

Potential safety options and responses include formal and informal places of shelter. Effective use of these options requires them to be available, understood and for people to make appropriate decisions.

The most suitable option will depend upon their situation, which must be constantly assessed and reassessed as conditions change. For example, a narrow bridge, fallen tree or a motor vehicle accident might block a road or reduce traffic flow, preventing a person getting to a place of shelter such as a Neighbourhood Safer place (NSP), Community Fire Refuge (CFR) or evacuating the area to safety.

In the context of "in-home shelter", the decision to stay and defend a home may suddenly appear overwhelming in the face of a bush or grass fire front or loss of firefighting water. The highly dynamic nature of these situations means that the preferred response at the household or community level must be continually reassessed against other safety options as the circumstances change. This is consistent with experience of people involved in major bushfires.

Another important dimension is the timing of the decision and selection of a safety option, particularly in relation to the arrival of a fire front. How much time is available to select the most appropriate response action before it is no longer viable?

Generally, finding a place of shelter such as a NSP or CFR should take less time than late evacuation (and so place people at less risk), particularly if roads are heavily congested or blocked. However, the effectiveness of this strategy – if indeed it is available at all – varies with the protective qualities of the shelter options available.

For example, if a home is well-maintained and defensible, seeking shelter inside is potentially a safer option than travelling on the road to a NSP when there is fire in the local landscape. This is especially the case in heavily wooded and vegetated areas. It must be remembered, however, that the vast majority of houses are not constructed to withstand extreme bushfire conditions.

The level of 'dependability' of a home depends upon many factors, such as building design and construction, the threat scenario, available water supply, a person's level of preparedness and their physical and mental capacity to work in a difficult and stressful environment.

The Bushfire Safety and Shelter Response Action Flowchart provides an example of bushfire response actions that shows decisions required in choosing between evacuation and the various safety and shelter options.

The flowchart offers three distinct response paths (Plan A, B or C) that can be used in a fire: evacuation, in-home/private/ neighbourhood shelter and community shelter (NSP or CFR).

The decision making process to determine the safest shelter option is to some extent determined by external circumstances (e.g. is a NSP an option?) but largely based upon individual circumstances. If no "authorised" shelter options are available, then other informal

places of shelter, such as waterways or cleared paddocks, may become the last option. These are often associated with desperate, last minute protection measures that are extremely hazardous.

Studies of human actions during bushfire consistently suggest that people sheltering in their house and implementing various protection strategies have a better chance of survival than people who expose themselves to radiant heat when evacuating late (McArthur and Cheney, 1967; Wilson and Ferguson, 1984; Krusel and Petris, 1999).

The research shows that active defence by residents or brigade members significantly increases the chances of house survival (Wilson and Ferguson, 1986; Leonard, 2003; Blanchi and Leonard, 2008). When this is considered in the context that over 90% of houses are destroyed from burning embers, there is a strong argument for all homes within bushfire prone areas, as a minimum, have ember protection.

**If we accept that most people will not leave their home early during severe and above fire danger ratings, there is a reasonable case for Governments to consider adopting a policy setting that encourages and promotes all buildings within bushfire prone areas to be ember protected, have firefighting capabilities, undertaken fire prevention works and an accredited private / neighbourhood bushfire shelter.**

**This approach (Plan A of the Flowchart) would significantly reduce the number of property losses from bush and grass fires through active defence whilst providing a last resort life safety protection measure in the event people become over whelmed or their fire protection fails and the only option is to take shelter.**

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