

The background of the page is a photograph of a tree trunk, showing its rough, textured bark. A semi-transparent blue overlay covers the entire image. A horizontal band across the middle of the page features a pattern of fine, parallel white diagonal lines. The title text is centered within this band.

VICTORIA'S BUSHFIRE SAFETY POLICY 1

1 VICTORIA'S BUSHFIRE SAFETY POLICY

During the bushfires of January and February 2009 individuals and fire agencies made crucial decisions that affected many lives. These decisions were made in the context of a broad policy relating to bushfire safety, known colloquially as 'stay or go' but more accurately described as 'prepare, stay and defend or leave early'. The Commission investigated how the stay or go policy performed under the extreme conditions of Black Saturday. Although its investigation brought to light shortcomings in the policy as it applied on that day, it also revealed elements of the policy that continue to be relevant.

Each bushfire is unique in its point of ignition, speed and impact, and there is great variation in how individuals and communities plan for and respond to bushfires. The Commission considers that a more comprehensive policy is required—one that better accommodates the diversity of bushfires and human responses. This chapter looks at the changes necessary for fire agencies, communities and individuals.

The human and environmental impact of fire is influenced by the way fire agencies and individuals respond and how a particular fire burns. On 7 February 2009 factors such as fuel loads, weaknesses in the responses of fire agencies and individuals, extreme weather conditions, and an environment predisposed (as a result of drought) to a catastrophic event combined to produce one of Australia's worst natural disasters. Fierce fires such as those experienced on Black Saturday inevitably tested the stay or go policy, exposing its deficiencies—particularly in relation to severe weather, which is when the most serious fires can occur.

The Commission's view is that the main tenets of the stay or go policy remain sound. Leaving early, before there are fires, is the safest option; staying to defend a well-prepared, defensible home is a sound choice in less severe fires for those who are mentally and physically able. Modifications to the policy are, however, warranted in the light of the experience of Black Saturday. The following shortcomings became evident and are discussed in this chapter.

First, the policy did not adequately account for differences between fires and the fact that fires can have widely diverging characteristics depending on topography and other factors. In the worst circumstances a combination of high fuel loads and drought can on the worst days lead to the most ferocious fires. There is no convenient adjective or brief expression for these days. They are days when ferocious fires are expected and eventuate, when the fire agencies cannot put out the fires and should focus on putting out information to warn people to evacuate and shelter, and when individuals should upgrade their preparation and willingness to heed advice to evacuate. They are the days when too many people die—Black Friday in 1939, Ash Wednesday in 1983, Black Saturday in 2009 and a few other dreadful days when multiple bushfire deaths occurred.

Second, the focus of the warnings issued was far too narrow. They were directed to (a minority of) people with well-thought-out fire plans and did not take account of the knowledge that many people 'wait and see' and leave the area only when they receive a clear indication 'trigger' that they are in danger. In addition, the State provided no advice about alternatives to leaving early or staying and defending. Alternatives are always necessary, and these were deficient. Important options such as shelters, refuges and evacuation had been effectively sidelined. The generalised nature of the policy represented a binary approach to community safety—stay or go.

Third, the approach and the accompanying educational materials and advice were deficient in important areas. Inadequate information was provided about fire behaviour, the difficulty of making a property defensible, and the risks inherent in defending a house. Frank and direct advice is needed in a number of areas:

- Many houses are close to or even surrounded by heavily forested land with high fuel loads that seriously compromise defensibility.
- Among the risks of staying to defend are death and serious injury.
- Normally, two able-bodied people are needed to defend a home. Both must be physically and mentally strong and be prepared for a long, arduous task. Vulnerable people, including children, should not be present.
- Firefighting equipment such as pumps, generators and hoses needs to be fire resistant to withstand a bushfire. Failure of any of this equipment can have lethal consequences.
- Many houses in bushfire-prone areas are not built to withstand bushfire. Even modern building standards are designed merely to increase a building's chance of survival during the passage of a firefront and do not make houses completely ember proof.

The Country Fire Authority has improved its education material since 7 February 2009, but further changes are necessary. Fire agencies should attach the same value to community education and warnings as they do to fire-suppression operations. People also need better support when trying to make informed decisions. Further, they should accept personal responsibility for seeking information, planning and acting.

The Commission understands the attraction of a policy framework that is uncomplicated and presents just a few clear options, but to adopt such an approach is to oversimplify. Realistic advice that is unambiguous about the risks and will protect people's safety is unavoidably complex. In this chapter the Commission therefore makes seven recommendations with a view to improving Victoria's bushfire safety policy. The following effective elements of the existing policy should be retained:

- the principle of shared responsibility—that there are legitimate and crucial roles for individuals and the State
- leaving early is the safest option
- advice to stay and defend in the case of less severe fires, providing those who do stay are physically and mentally able, understand the risks involved, and take specific precautions
- an emphasis on preparation, regardless of the preferred bushfire safety plan
- providing a mix of specific and general advice to individuals and communities—including media campaigns, community education, community engagement and community fireguard groups.

The policy should, however, be extended beyond these elements to do the following:

- cover the full range of fire types—with particular recognition of the heightened risk that accompanies the most ferocious fires on the worst days
- give added weight to the role of warnings and improve their timeliness, content and methods of dissemination
- provide more practical and realistic options that are tailored to local needs—for example, community refuges, bushfire shelters, emergency evacuation, and assisted evacuation of vulnerable people
- improve the quality and availability of advice on fire behaviour and house defendability.

To be effective, these changes will need to be part of a well-designed, long-term community education program that engages people, takes account of local needs and circumstances, and is regularly evaluated and improved. Local governments should be more active in planning for bushfire, including evacuation and shelter options. School education is also a central element.

Finally, the policy needs to make it clear that bushfires—including ferocious fires—are inevitable. A change of attitude, on the part of individuals and fire agency personnel, is necessary in relation to severe bushfires, so that higher priority is given to warning communities, rather than fire suppression, in order to avoid a recurrence of the tragedy that befell Victoria on Black Saturday.

1.1 STAYING OR GOING

Although an unplanned fire of any size is a potentially challenging and frightening thing, it only becomes a hazard to human life when it interacts with people. When any fire threatens lives, homes, communities and livelihoods, it has the potential to become a disaster. Recognising this, fire authorities advise communities on how they can protect themselves and mitigate the effects of fire.

When anyone is threatened by bushfire they have two basic choices—to stay where they are or to leave. These might seem simple options, but in fact numerous factors come into play. People who choose to stay might do so for any of a number of reasons:

- They want to defend their home or protect their farm or property.
- They want to protect their livestock and pets.

- They decide it is safer to stay.
- They are not fully aware of the risk.
- They plan to leave but then circumstances change.
- They expect to be told if it is unsafe to stay but do not receive such a warning or do not recognise the risk when warned by neighbours, friends or family.
- They plan to go when it gets dangerous but leave it too late.
- They are unable to go because of a lack of transportation, because routes are blocked or because smoke obscures visibility to the point that driving is too dangerous.
- They are unaware of a suitable or available route out.

On the other hand, people who choose to leave might do so for a variety of reasons:

- They feel it is the safest option for them, their children or other vulnerable household members.
- They have planned to stay but decide on the day that staying is too dangerous.
- They receive a trigger that causes them to act—for example, seeing or smelling smoke.
- They are advised to leave by the authorities or by friends or family.
- They have a specific destination in mind or are advised or aware that a suitable route is available.
- They can readily take their pets with them.

The fundamental decision about staying or going influences many other elements of fire management and community behaviour and is central to how people respond to bushfire.

1.2 THE POLICY AT 7 FEBRUARY

The stay or go policy was based on the principle that people need to plan ahead to stay and defend or to leave early and prepare themselves and their property accordingly. The stay and defend option rested on the assumption that, with proper preparation and active defence, most homes could be successfully defended from bushfire. This was qualified by recognition that in limited cases some buildings cannot be defended against high-intensity bushfires. The leave early option was based on the idea that people must leave before the fire threatens and travel becomes hazardous; it cautioned, 'Leaving your home late once you can see flames burning nearby is a deadly option'.¹

The policy that applied in Victoria on 7 February reflected a national approach implemented by all Australian fire agencies.² In 2005 the Australasian Fire and Emergency Service Authorities Council released a paper outlining its position on bushfires and community safety. The key elements of AFAC's position were as follows:

- Bushfires are a common and normal occurrence.
- Bushfires can cause death and injury to people and animals and damage property, the natural environment and other community assets.
- Losses can be reduced; not all will be saved.
- Managing risk and reducing loss is a shared responsibility between government, householders and land managers.
- Firefighting resources cannot always protect every property.
- People need to prepare, then stay and defend their property or leave early.
- People who cannot cope with bushfire should relocate well before the fire impacts their location.
- Last-minute evacuations are dangerous.
- Mass evacuation is not the favoured option.
- The decision whether to order evacuation should be made by the lead fire combat authority.

- Road access must be carefully managed during fire events.
- It is essential for people in threatened communities to have ready access to accurate information to help with decision making.
- Fire emergency plans should be developed for all areas that are at risk of bushfire.
- Land-use planning should be part of efforts to strengthen the community's ability to cope with bushfire.
- Fire agencies should support community recovery.³

AFAC's position was generally reflected in the State's 2008 *Living with Fire: Victoria's Bushfire Strategy*. The Commission notes that this strategy was endorsed by the State and the CFA played an important role in disseminating it to residents in bushfire-prone areas.⁴

Fundamental to the stay or go policy was the idea that people should decide for themselves in advance of a bushfire whether they will stay to actively defend a well-prepared home or leave early to avoid any confrontation with the fire. People were advised to make the choice in the light of individual circumstances, without being directed by fire agencies, and to detail their intentions in a 'fire plan' to be activated on days of high bushfire risk.⁵ The policy did not tell people they risked death and serious injury if they stayed to defend.⁶

The policy directed people who decided to leave early to identify their own triggers for leaving, their destination and the route they would take to get there. Suggested triggers were 'when you hear about a fire burning in your district ... long before the fire impacts on your immediate area' or the declaration of a total fire ban or high fire danger day.⁷

The policy did not provide advice about what people should do if for some reasons it became impossible to adhere to their decision to leave early or to stay and defend or if they changed their mind. AFAC's 2005 *Position Paper on Bushfires and Community Safety* recognised that contingency plans would be required (where, for example, 'a building catches fire and [the fire] cannot be extinguished').⁸ In practice, however, neither the State nor its agencies provided advice about contingency options.

1.2.1 THE EMPIRICAL BASIS FOR THE STAY OR GO POLICY

The stay or go policy was based on the results of extensive research into previous bushfires—how buildings ignited and were destroyed, the significance of the actions of occupants in building survivability, and the circumstances in which people died. The stay and defend option drew on two main conclusions from that research:

- Most houses are damaged or destroyed by embers, rather than by direct flame contact or radiant heat.⁹
- The presence of people able to put out spot fires greatly increases the likelihood of a building surviving.¹⁰

In summary, the Commission's interim report noted that the empirical basis for the policy was research that found the following:

- If houses were attended, house losses were much reduced, although there were important exceptions to this:¹¹
 - The spread of fire when a house ignites depends on both the suppression activity of its occupants and how the house is ignited. Occupants are unlikely to survive bushfires if their houses are destroyed very quickly. Fires originating in roofs might be expected to compromise occupants' safety.¹²
 - Although 'by far the greater proportion of houses offer relatively safe havens during the passage of a fire' (compared with last-minute evacuation), residents of houses surrounded by exceptionally high concentrations of fuel, 'might sometimes be wise to evacuate temporarily to safe places nearby'.¹³
 - Although there is probably a better chance of saving a house by staying with it during a bushfire (than by leaving it), the house must be a 'safe one' and there must be adequate public warning.¹⁴
- Severe weather conditions play an important part in increasing the potential for house loss.¹⁵
- The greatest proportion of civilian deaths in bushfires occurred during attempts at late evacuation.¹⁶
- A significant proportion of deaths occurred while people were outside defending properties.¹⁷
- A minority of deaths occurred inside homes and, of those, most occurred while the victims were considered to have been 'passively sheltering' or engaged in what were described as 'meagre and unsuccessful attempts to defend'.¹⁸

The foundation of the policy was credible research that analysed available data on the way buildings had burnt and the circumstances in which people had died in previous fires. As detailed in Section 1.4, some of the assumptions of the research were called into question by the events of 7 February. The unprecedented amount of information available for analysis offers the State and fire agencies opportunities to investigate and evaluate their policies.

1.2.2 COMMUNITY EDUCATION

To a considerable degree, Victorian fire authorities have seen the 'stay or go' policy as largely non-operational, delivered by 'community facilitators'. Operational firefighters generally did not advise the public on what they should do or when they should go. Additionally, because community members were responsible for making their own decisions, effective community education was fundamental to the policy's success.¹⁹

The Country Fire Authority's approach to community education has emerged over a number of years. A research paper it prepared in 1999 highlighted areas in which change would improve the organisation's ability and capacity to increase community safety in relation to bushfire, including the need to:

- move beyond incident suppression to focus on the human dimension of emergency management
- move away from a 'prescriptive paradigm' that assumed that disseminating information to the community would result in the desired behavioural change towards a 'participative paradigm' that recognised that emergency services would not always be able to protect the community during emergencies and therefore sought to empower individuals to take greater responsibility for their own safety
- recognise the complexity of individual decision-making processes and tailor education and programs to accommodate this and facilitate heightened community preparedness
- recognise that not everyone will be well prepared and that during an incident agencies need to take account of those people whose safety is likely to be threatened because they are less prepared
- recognise the multiple dimensions of preparedness—that is, namely awareness, understanding, planning, physical preparation and psychological readiness.²⁰

The Commission considers that, although some of the elements were reflected in CFA community education, some of the messages that have a particular relevance to the 7 February fires do not appear to have been embraced.

The CFA, the Department of Sustainability and Environment and the Metropolitan Fire and Emergency Services Board 2004–2007 *FireReady* campaign crystallised the move towards the 'participative paradigm' and aimed to do three main things:

- increase community awareness—including among those living on the urban fringe—of the inevitability of fire, the need to take action to mitigate fire risk and the actions residents can take to mitigate risk on their properties
- increase understanding of the role of fuel-reduction burning in mitigating bushfire risk
- promote, among residents of and tourists visiting areas of high bushfire risk areas, awareness of available sources of information before the onset of and during bushfire.²¹

Central elements of the community education program were:

- community information forums and meetings
- community fireguard groups
- street corner meetings
- media and public relations campaigns
- online information.²²

This approach was further reinforced in Victoria's Living with Fire bushfire strategy. One of the six 'key strategic directions' identified in the strategy is 'building community capacity to live with fire'.²³ In the strategy the State Government, the CFA, DSE, the MFB and the Department of Human Services acknowledge that 'the public has a right to be involved in the decisions that affect their lives. Equally, the community needs to be supported to accept responsibility and be encouraged to become active participants in decision-making'.²⁴

The strategy notes that Victoria will augment its current programs (such as FireReady and Community Fireguard) as well as introduce new initiatives to increase individual and household capacity to 'live with fire'. The strategy emphasises the importance of participatory community involvement as an essential tool in building community strength and recognises the importance of social structures that support communities before, during and after bushfires.²⁵

The Commission's interim report noted that before 7 February 2009 the State Government devoted unprecedented effort and resources to informing the community about the fire risks Victoria faced. But that campaign did not, on its own, translate 'levels of awareness and preparedness' into universally successful risk minimisation on Black Saturday.²⁶ Indeed, the Commission appreciates that no campaign will have universal success: all campaigns are dependent on the quality of the information, the modes of dissemination, and the willingness and capacity of people to hear, understand and act on the information. The Commission does, however, consider that there is room for improvement in the State's approach to community education, as detailed in Sections 1.8.2 and 1.8.3.

The Commission's interim report also noted that the CFA has taken a multi-faceted approach to educating the community, recognising that the more important aspects of household and community preparedness accrue only in the long-term and necessitate sophisticated interaction between the community and fire agencies. The Commission commended the CFA's Community Fireguard program, noting, though, that there was scope for further development, particularly in how the program is applied to the peri-urban fringe.²⁷ Reviews of the program carried out since 7 February are discussed in Section 1.5.

1.3 LESSONS BEFORE 7 FEBRUARY

Before 7 February there was in the fire agencies some awareness of weaknesses in the stay or go policy. In a 2004 review of the policy Professor John Handmer, Innovation Professor in Risk and Sustainability at RMIT University, and others identified shortcomings with both the empirical basis of the policy and its implementation:

- the need to distinguish between survival strategies for 'normal' bushfire events and 'mega' events because 'the prepare, stay and defend option may be challenged by extreme bushfire events'
- the need to define when it is not safe to stay
- the need to define how early is early enough to leave
- the role of warnings in implementing the policy
- lack of community understanding of the stay or go message
- physical, social and economic barriers to adopting the options offered by the policy
- differences between rural communities and urban interface communities
- 'macro' social trends and their impact on the stay or go policy—in particular, people's growing expectation that authorities would protect them from risk.²⁸

Subsequently, in 2008, research conducted by the CFA and the Bushfire Cooperative Research Centre (including Professor Handmer) again identified weaknesses in the policy:

- People living in fire-prone areas had often not developed comprehensive bushfire survival plans.
- People who planned to stay were often not well prepared and did not have back-up plans.
- Even if people had knowledge of how to act, many lacked the capacity to implement the options described in the policy.
- Some people were not mentally and physically prepared to stay and defend their properties, and many underestimated the ferocity of the fires.
- The 'leave early' message was not well understood.
- During bushfires many were likely to 'wait and see', waiting for advice from authorities or evidence of fire in their immediate area, then leaving if the situation became dangerous. Triggers for leaving were often advice from authorities or the presence of smoke or flames in the immediate area.
- Many people who planned to stay and defend were consciously or unconsciously keeping last-minute evacuation as an option.²⁹

The Commission was not told of changes made to the advice the State provided to communities as a result of this research. In particular, the finding of the 2004 review that survival strategies need to distinguish between 'normal' and 'mega' bushfire events is directly relevant to the situation facing the state before 7 February 2009, yet does not appear to have been reflected in preparations for that day. This seems to be a serious failing of community safety advice. Without doubt, these valuable research findings were confirmed by the events of Black Saturday and need to be reflected in future policy advice that pertains to all bushfires, but particularly in relation to the most serious.

1.4 LESSONS FROM 7 FEBRUARY

The experiences of people who died as a result of the fires of 7 February 2009, as well as those of the people who survived, offer an extraordinary opportunity to evaluate the influence community safety policies and messages have on individuals' decisions in the face of disasters and highlight the diverse factors that influence people's decision making.

In order to evaluate the effectiveness of the overall bushfire safety policy in operation on 7 February, it is necessary to look at the full range of experiences from the fires. There were people whose plan was to stay and defend, people whose plan was to leave early, and many people who made last-minute decisions because they were waiting to see what eventuated on the day.

Although in some cases these decisions proved fatal, many people did survive. The areas affected by the two most devastating fires, Kilmore East and Murrindindi, were home to about 14,000 residents in about 6,000 homes: 159 people died in the Kilmore East and Murrindindi fires and 1,780 homes were destroyed.³⁰ The large number of deaths that occurred as a consequence of all the fires on 7 February led the Commission to investigate why those deaths occurred. It was unable to fully investigate the circumstances of the thousands who survived—who had left the area, successfully defended their homes or successfully sheltered from the fire.³¹ Evidence before the Commission, however, provides insights into these people's experiences:

- the evidence of a range of witnesses, including lay witnesses who described how they survived the fires
- the accounts of relatives, neighbours and friends and other information about those who died received in the course of the Commission's hearings into each of the 173 deaths that resulted from the fires
- a Bushfire Cooperative Research Centre mail survey of 1,350 households affected by the Kilmore East, Murrindindi, Churchill, Beechworth–Mudgegonga, Bendigo, Bunyip and Horsham fires³²
- a Bushfire CRC research report *Use of Informal Places of Shelter and Last Resort on 7 February 2009* based on the observations and experiences of people who survived the fires in Kinglake, Kinglake West, Marysville and Callignee³³

- a 2010 Office of the Emergency Services Commissioner report, *Where Are They Going? People Movement During Bushfires*, based on telephone interviews conducted with 616 households in townships at high bushfire risk³⁴
- a review by Professor Handmer of the civilian fatalities that resulted from the 7 February bushfires³⁵
- a review by Dr Joshua Whittaker, Research Fellow, Centre for Risk and Community Safety, School of Mathematical and Geospatial Sciences, RMIT University, and Professor Handmer of important bushfire research findings since 7 February.³⁶

Box 1.1 Findings of recent research

Dr Whittaker's and Professor Handmer's 2010 *Review of Key Bushfire Research Findings* examined a number of research reports that were prepared in the aftermath of Black Saturday—for example, reports by the Office of the Emergency Services Commissioner, the Bushfire CRC, the CFA and the Department of Justice. The reports contained the following common findings:

- There was a high level of awareness of bushfire risk in high-risk areas.
- Over two-thirds of all households have fire plans.
- Three-quarters of households want to be better prepared.
- There appears to be a gender distinction in individuals' intentions. Women are more likely than men to intend to leave as opposed to staying and defending.
- Many people intend to wait for official advice or direct danger before taking action.
- Understanding and good intentions do not necessarily equate to, and are not good predictors of, appropriate action.

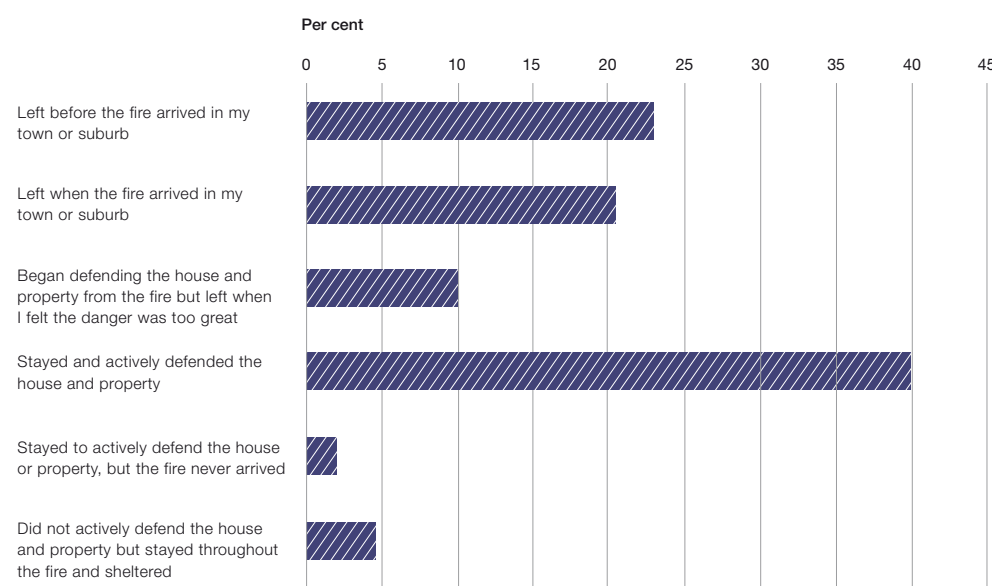
Intended responses to threatening bushfires varied because of differences in the samples and the timing of the research, as well as how questions were asked and the data were coded. For example, some surveys asked questions only of those in areas of high bushfire risk, while some asked questions only of those in areas affected by the 7 February fires.³⁷

Throughout this chapter the Commission relies on the Bushfire CRC household survey results: this was the most comprehensive survey available of people's actions on 7 February. Where appropriate, the Commission supplemented this information with information from the Office of the Emergency Services Commissioner's report, which dealt with the intentions of individuals who resided in 52 townships at high bushfire risk.

1.4.1 WHAT PEOPLE DID

Data from the Bushfire CRC household survey show that just over half the respondents stayed with their properties when the fire hit and either actively defended their property or used it as a shelter. The remainder left either before or when the fire arrived in their town or suburb.³⁸

Figure 1.1 Bushfire CRC household survey: what did you do during the bushfire?



Source: Analysis of the figures set out in Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey.³⁹

The majority of survey respondents claimed to have had a firm plan for what to do if a fire occurred before 7 February. The CRC's qualitative analysis, however, found considerable variation in the quality of people's plans and that a high level of last-minute preparation occurred on the day.⁴⁰

Evidence before the Commission shows that, although a high proportion of people do not intend to stay and defend, they also do not necessarily intend to leave early; many wait for official advice or evidence of direct danger before taking a course of action. Actual estimates of the proportion of people intending to wait vary as a result of differences in the aims, methods of data collection, samples, timing and methods of analysis. Most surveys, however, suggest that more than half of respondents do not have a clear prior intention to either stay and defend or leave early.⁴¹

It is important to note that intentions are not good predictors of actions. Dr Whittaker and Professor Handmer's *Review of Key Bushfire Research Findings* noted that research into behaviour during the 7 February fires found that a significantly higher proportion of respondents stayed to defend than suggested by research into intended responses.⁴² It is possible that some of these people were waiting for sufficiently compelling triggers to decide what to do. During this time, they might have made superficial preparations, but it is unlikely that their intent was ever to stay and defend. Perhaps as a result of the speed of the fire or because they did not receive a suitable trigger, they ended up staying. Some survived; others did not. The importance of persuasive triggers needs to be emphasised.

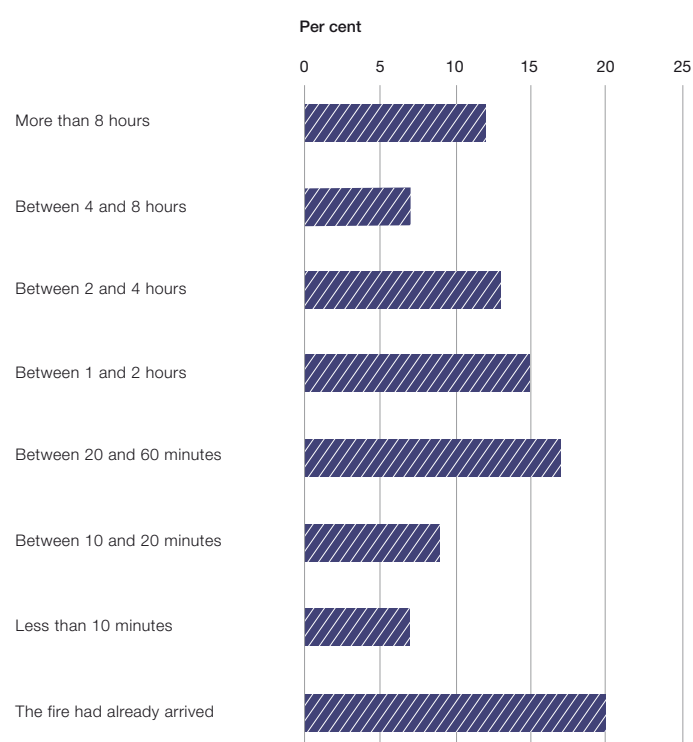
1.4.2 THE PEOPLE WHO LEFT

At 7 February the State's advice on leaving early explained that this meant leaving home 'before a fire threatens and road travel becomes hazardous'.⁴³ Possible triggers noted in the *Living in the Bush: bushfire survival plan workbook* are the declaration of a total fire ban or 'when you hear about a fire burning in your district'.⁴⁴ It is apparent, however, from individuals' responses to the Bushfire CRC household survey that people's understanding of leaving early was considerably different from that of the State. The survey results show that generally individuals considered 'leaving

early' to mean leaving more than two hours before the fire arrived.⁴⁵ Mr Russell Glenn, who owned a weekender in Marysville, told the Commission, 'We were aware of the "stay or go" policy and aware that people who wished to evacuate should "leave early". I did not know, and still do not know, exactly what "leave early" means'.⁴⁶

Despite this, the evidence before the Commission suggests that a large proportion of people did not make the decision to leave until the fire was in their area. Of the people who responded to the Bushfire CRC household survey and had left their homes and properties up to an hour before or when the fire arrived in their town or suburb on 7 February, almost half had left when the fire arrived in their area.⁴⁷ The Commission considers that, although these people survived, their safety would have been better secured if they evacuated earlier in the day.

Figure 1.2 Bushfire CRC household survey: how long before the fire arrived in your town or suburb did you leave?



Source: Analysis of the figures set out in Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey.⁴⁸

People who left early

The Bushfire CRC household survey indicated that of those who left, about 32 per cent departed more than two hours before the fires arrived; in some cases even before it started.⁴⁹ As Figure 1.2 shows, about 12 per cent left more than eight hours before the fire arrived, which was probably before the fire started. A further 7 per cent left within four and eight hours of the fire arriving, and 13 per cent left between two and four hours before the fire arrived. Many residents who planned to leave early had children, which influenced their decision.⁵⁰ For example, the Commission heard that Ms Jesse Odgers, a sole parent with two school-aged children, took her children out of school on Friday 6 February and left Kinglake to go to a property on the coast.⁵¹

People who left late

Just over half (53 per cent) of the respondents left less than an hour before the fire arrived. Of those who stayed with their properties but left at some stage during the fire, more than three-quarters left when the fire was within 500 metres of their property.⁵² The majority of people leaving did not intend to travel far. Most of them indicated an intention to travel

to a destination in their local area—half to a destination within 10 minutes away and one-third to a location less than 5 minutes away. Dr Whittaker and Professor Handmer commented, ‘The implication of this may be that, since they do not intend to travel far, they do not need to leave early’.⁵³

The Commission heard from a range of sources evidence that provided greater context in relation to the risks involved in making a choice between leaving late or staying. There are many accounts of residents who left their homes very late having to drive through smoke and sometimes flames to reach safety.⁵⁴ Mr Chris Petreis, who had a property in Humevale, told the Commission about his and his friend’s experience of fleeing ‘at the last minute when [they] felt that staying was no longer a safe alternative’:

I still thought the fire was miles away when the whole place around us just suddenly exploded into flames like someone had thrown petrol on it and lit a match. I don’t believe that any fire front actually reached us at that time and I never saw one—I think the eucalyptus trees simply exploded into flames in the intense heat ... I could see that the very large pine trees lining the driveway were on fire and I had to drive through a canopy of flames just to get out to Coombs Road. The trees along Coombs Road were also well alight.⁵⁵

Of those who left late, some successfully left areas where nearly all who stayed died. For example, a number of people left Pine Ridge Road in Kinglake West on the afternoon of 7 February in the hours before the fire reached the area. The Commission heard evidence from or about people, all of whom reached safety, who left between 3.50 and 6.00 pm, when the fire hit Pine Ridge Road. Ten people who remained died in the Kinglake West section of the road.⁵⁶ In retrospect, it is apparent that leaving Pine Ridge Road on the afternoon of 7 February was safer than staying—even when the fire had reached the street and houses were alight, despite the risks this entailed.

The Commission also heard evidence about the evacuation of about 200 people from Marysville as the fire approached the town. When the wind change drove the fire into Marysville at about 6.45 pm, police directed residents who had gathered at Gallipoli Park oval to drive in convoy to Alexandra. Although the evacuation was risky because the Buxton–Marysville Road could have become blocked, each of the three police officers who gave evidence about the evacuation judged that in this instance evacuation was safer than remaining on the oval. As it turned out, the convoy reached Alexandra safely.⁵⁷ This is discussed in Chapter 10 in Volume I.

These examples might be the exception rather than the rule. It is clear that considerable numbers of people survived by leaving their homes shortly before the fires arrived. A small number, however, died while they were fleeing. It is not known how many attempted a late evacuation, failed, sought shelter at home and subsequently died. The Commission agrees with the fire agencies that late evacuation can be deadly. Until Black Saturday most civilian deaths in bushfires in Australia had occurred during late evacuation.⁵⁸ On 7 February there were again a number of people who died when trying to flee. The Commission heard about four family members who left in four separate cars: only two reached safety.⁵⁹ A father and son also left their property in separate cars after trying to defend their home: they both died on the road while the house remained standing.⁶⁰ In other accounts there were people whose decision was made so late that the only option left was to try to outrun the fire. Twenty-four people died fleeing in vehicles or on foot. Some who were fleeing on foot had originally tried to flee in their vehicle and when this failed they left their vehicle to try to escape on foot.⁶¹

Image 1.1



Source: Courtesy of the *Herald & Weekly Times*.

Triggers and warnings

Among the respondents to the Bushfire CRC's household survey who planned to leave early in the event of a bushfire, the triggers for leaving varied greatly. Some people heeded the extreme weather warnings delivered in the days leading up to 7 February and left before the day; others made their decision on the basis of police doorknocks, community meetings and the deteriorating weather conditions on the day.⁶² Although the majority of survey respondents (72 per cent) expected to receive an official warning, 63 per cent of all survey respondents did not receive one. Many respondents (63 per cent) reported that they received information and warnings from a family member, friend or neighbour.⁶³

The evidence before the Commission relating to the people who died is consistent with the findings of the Bushfire CRC's household survey. The Commission's hearings into the fire-related deaths revealed that the majority of people who died had received information or warnings, most often from family, friends and neighbours. Some relied on monitoring websites and media broadcasts for official information, which in some cases proved inaccurate or came too late. In almost all cases those who died did not necessarily equate the warning they received with a trigger to leave.⁶⁴ Ms Donna Beattie said:

The last thing I said to John was 'Please, please leave'. John said, 'We'll be right mate'. I drove away believing that John was not going to leave. I think John may have fobbed me off to avoid a confrontation with me. This is the last time I saw them alive.⁶⁵

Research conducted by the Office of the Emergency Services Commissioner showed that many people relied on tangible signs of a fire threat as a trigger for leaving. This included advice from emergency services, a feeling that they or their family were in danger, or seeing smoke or flames. Witnesses who appeared before the Commission confirmed this.⁶⁶ Many noted that awareness of a total fire ban day was not a sufficient indication to leave. Mr Ken Rogers of St Andrews noted, 'There are many, many total fire ban days without fires, so it is not a sufficient indication that we should either do anything special or leave'.⁶⁷ This shows the importance of educating the public about appropriate triggers for evacuation.

1.4.3 THE PEOPLE WHO STAYED

The 56 per cent of respondents to the Bushfire CRC household survey who stayed with their property when the fire arrived either actively defended their property or used it as a shelter. Nearly all engaged in some form of active defence of their house. Only 7 per cent used the house solely as a means of sheltering from the fire. One-fifth (20 per cent) of those who stayed subsequently fled when they felt the danger had become too great.⁶⁸

The evidence the Commission heard about the people who survived and those who died offers insights into why people choose to stay and defend, the financial cost of being well prepared, the risks of staying, and the factors that influence the success or failure of property defence.

Eighty-three per cent of survey respondents who stayed with their properties on 7 February said they stayed to protect their house, property and/or livestock. About 10 per cent stayed because they felt it was too late to leave. A number of lay witnesses told the Commission about their decision to stay to protect their property, which often involved defending a home. The welfare of livestock and pets was another deciding factor for many who stayed.⁶⁹

This was consistent with the accounts the Commission heard about the intentions of those who died. A number of these people had stayed to protect homes. There were also a small number of cases in which people died after refusing to leave without their pets and animals or delaying their departure for too long because of concern for their animals. Their evidence demonstrates that the strong ties people have with their homes and their animals have a big impact on their decision making. Some people took the State's advice that leaving late was dangerous and stayed because they thought it was too late to leave.⁷⁰

The evidence supports the observation of Associate Professor Thomas Cova from the Department of Geography at the University of Utah—that staying to defend involves an implicit trade-off between protecting life and protecting property since a household that stays in the hope of saving their property forgoes the opportunity to leave early to ensure the protection of their lives.⁷¹ For many, this decision can be a difficult one and not just a matter of deciding between monetary loss and their lives. Rather, their decision was whether to take a risk to save their property and try to conserve the memories and emotional security embodied in their home or to leave and save their lives, knowing that an undefended house in the path of a bushfire is likely to be destroyed. Mr Roger Cook told the Commission:

When [my son] saw my reluctance to leave, he sympathised and said he understood that I had built the house and that because it wasn't insured we'd lose everything if the place burned down, but we had to go. It was probably quite true that the fact that I'd built the house was affecting my judgment. I knew that staying wasn't the safest thing to do but I just felt so much about the house.⁷²

In some cases, however, people who died thought that, by staying to defend their house, they were taking effective action in terms of their own safety.⁷³ The events of 7 February proved them wrong. The need to emphasise the risks of staying was a central theme in the Commission's interim report and is considered in further detail in Section 1.9.3 and in Chapter 9.

Defendability

The decision to stay and defend rests on an assumption that a house is defendable and that there are sufficient resources with which to successfully defend it. A number of factors affect the defendability of a house: construction, siting, proximity to and type of vegetation, access to water and power, and the geography of the surrounding area. This is complicated by the nature of the fire and the physical and mental capacity of those involved in the defence.

Many who made careful preparations and remained to defend on 7 February were not able to save their homes, and in some cases their lives.⁷⁴

The nature of defendability is variable and dependent on circumstance. The location of some houses, either in or close to heavily forested areas or at the top of ridge lines or slopes, might render them undefendable in almost all fire situations other than the most benign and slow moving fires. Other homes are rendered undefendable because there is no alternative water or power supply or the firefighting equipment is not robust enough to withstand the intense conditions.⁷⁵ A number of witnesses told the Commission how they lost access to their water supply when the power supply failed and, without generator back-up, they had no power for their electric pumps. The generally reliable water supply for the townships of Marysville and Buxton failed on the evening of 7 February because the demand for water exceeded the capacity of the pipes to deliver it.⁷⁶

Professor Handmer noted that about a third of fatalities were associated with homes with questionable defendability.⁷⁷ On the basis of the hearings and evidence, the Commission considers this estimate conservative. Many of the houses were perilously close to bushland that contained high fuel loads and was very dry because of drought; this exposed them to heavy ember attack and direct flame contact. Others were surrounded by dense forest or at the top of steep slopes and ridges, where fire behaviour is accelerated by the topography. The high fuel loads close to houses had a direct influence on the momentum and ferocity of the fire, and this meant that much of the CFA's advice about preparation around the home became of lesser consequence as a result of the broader landscape in which these houses were built. This more widespread consideration needs to be factored into future measures of, and information about, house survivability and has direct relevance to discussion on defendability in Section 1.8.3. In the Commission's view, properties in these types of places are undefendable, even if the properties themselves are relatively clear of vegetation and well maintained.

With ferocious fires such as those on 7 February there is no guarantee that good preparation and defendability will result in successful defence. The Commission heard many times of hoses and fittings melting in the heat. It also heard of a small number of cases where the petrol in petrol-powered pumps evaporated.⁷⁸ There is evidence that strong winds preceding and/or accompanying the firefront caused roof and other structural damage to houses, exposing the houses to ember and direct flame attack and effectively rendering them undefendable.⁷⁹

Defending a house against a fire calls for physical and mental fortitude often for a long time. Lay witness Dr John Ferguson, who successfully defended his home at Buxton with the assistance of his wife and neighbours, spoke of the physical demands of fighting the fire: 'I couldn't believe we had been going for five or six hours, it seemed like a much shorter time ... I probably drank something like 5 litres during the time of the fire ... it is very hard work. We were absolutely exhausted. You need to be reasonably physically fit ...'⁸⁰

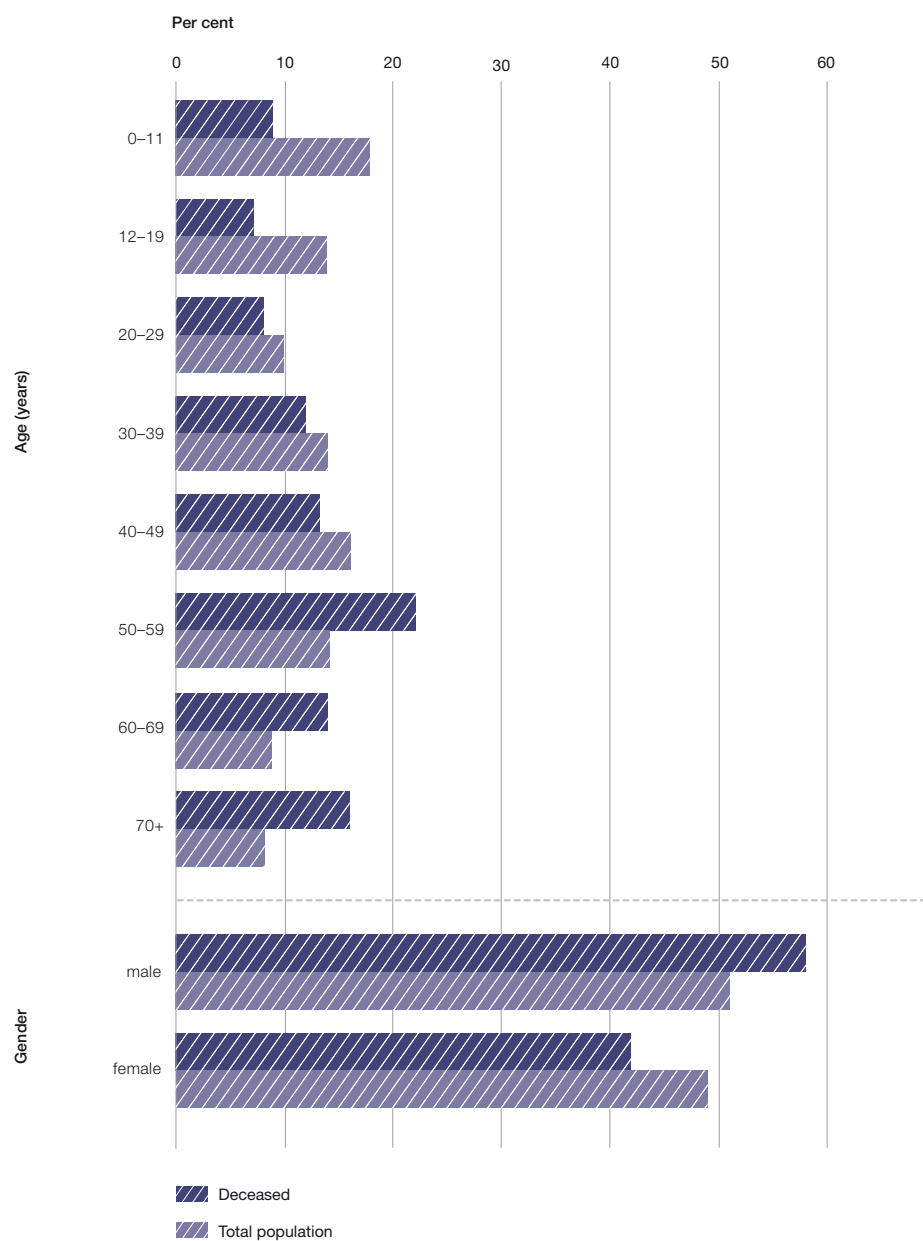
Many witnesses spoke of the firefront lasting much longer than the 10 to 20 minutes they had expected.⁸¹ Ms Pat Easterbrook's experience of the Beechworth–Mudgegonga firefront was typical:

The 'firefront' never really seemed to pass. The fire just raged and roared around the house for those whole two hours. The ute, the barbecue, the tool shed, the hay shed, the tractor—everything was just burning. The trees were burning and the wind just kept roaring through.⁸²

According to the Bushfire CRC survey, more than half the respondents whose homes had been damaged or destroyed on 7 February believed that luck or chance had played a role.⁸³ Section 1.8.3 discusses the need for individuals to understand defendability—and the need for the State to provide frank and expert advice on defendability.

The Commission also notes, even if a house is built to the relevant building standard, this standard is not designed to ensure survivability without active defence. Experience bears this out: a large number of houses that were unoccupied during the passage of the fires on 7 February did not survive. Additionally, the Commission found that houses that are not actively defended are an inadequate shelter and, unless the occupants intend to actively defend the house, they should not be there.

Figure 1.3 Demographics of a representative fire-affected local census area and demographics of those who died: a comparison



Source: Analysis of the figures set out in Exhibit 894 – Review of Fatalities in the February 7, 2009 Bushfires.⁸⁴

The analysis shows that the people who died were disproportionately older compared with the community profile. In addition, men were disproportionately more likely to die. The Commission considers that the State should have regard to these statistics and specifically target these groups' education about the risks of staying to defend.

1.4.4 VULNERABLE PEOPLE

The Commission heard evidence about people who were particularly vulnerable in the face of the Black Saturday fires. The evidence suggests that the concept of vulnerability and vulnerability's impact on a person's risk, needs, decision making and actions is complex. This is discussed further in Section 1.8.7.

The Commission was told about two organised evacuations of vulnerable people on 7 February, both in response to fire threat. The Bunyip Hillview aged care facility and Neerim Hospital were evacuated at the instigation of staff members, who, on becoming aware of the possible threat of the Bunyip fire, notified the Department of Human Services and contacted the Municipal Emergency Response Coordinator, who in turn contacted the Incident Controller. When the trigger point for evacuation of Hillview (agreed by the Incident Controller and the MERC) occurred, the MERC advised the facilities' CEO to begin the evacuation and arranged for Victoria State Emergency Service volunteers, a bus and ambulance transport for those who required it. The hospital evacuation proved difficult because it was coordinated by an incident control centre that was not responsible for the fire and the transport was inadequate.⁸⁵ These evacuations are discussed in Chapter 4 of Volume I.

Victoria State Emergency Service at Marysville evacuated older people and others who needed assistance in consultation with local police and with some assistance from Murrindindi Shire Council.⁸⁶ In 2006 and 2007 VICSES had put together a list of people who might need assistance with evacuating.⁸⁷ Murrindindi Shire Council also kept a list of vulnerable residents, including the elderly, people with disabilities and people from non-English speaking backgrounds, who might need special consideration, although this list was not used on 7 February.⁸⁸ These evacuations are discussed in Chapter 10 of Volume I.

The Commission also heard evidence of vulnerable people on 7 February who remained in the fire area and died. A significant number—more than 40 per cent—of the people who died were considered by Professor Handmer to be potentially vulnerable to bushfire because of age, ill-health or a combination of both. Of the 172 civilians who died, 16 per cent were aged 70 or over and 9 per cent were children under 12. Twenty-four per cent of the 172 civilians had chronic health conditions, and 5 per cent had acute disabilities that probably affected their mobility, judgment or stamina.⁸⁹

Figure 1.3 shows the demographics of the areas affected by the Kilmore East and Murrindindi fires with the demographics of those who died in those fires.

1.4.5 BUSHFIRE AWARENESS AND KNOWLEDGE

Bushfire awareness and knowledge are crucial if people are to be able to make informed decisions about protecting themselves and their belongings. This is relevant for the entire community. Of the 173 people who died, six were tourists caught on unfamiliar roads and three were house-sitting.⁹⁰ Population growth and changing demographics in rural-urban interface areas mean that many people who are now living in areas that are highly fire prone do not have the benefit of generational knowledge of local fire history and historical fire events.

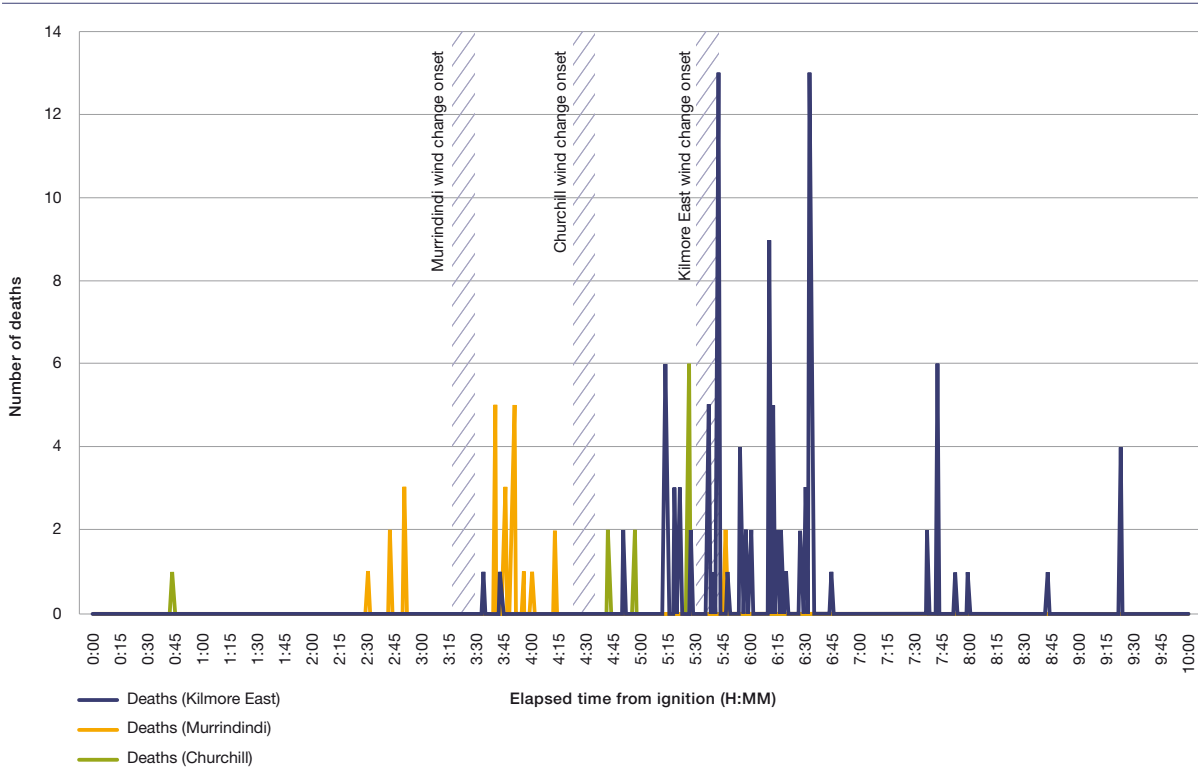
The potentially lethal impact of a late wind change—a feature of Australia's bushfire history—does not appear to be understood by many members of the public. The evidence before the Commission highlighted that on Black Saturday many people were caught by surprise. This lack of awareness was clearly illustrated by the comments by Mr Glenn Rogers of Callignee. Just before dinner on 7 February Mr Rogers received a phone call from his brother, who told him a strong wind change was expected and it would turn the wind in Glenn's direction. Neither Mr Rogers nor his father-in-law Rodney understood the implications of this:

Rodney and I didn't understand fire behaviour. We expected that the front of the fire would turn like a snake. What I mean by this is that if the fire was going one way and the front was 500 metres wide, it would turn and the front would still be 500 metres wide. I've since learnt that the whole flank of the fire becomes the new front. I had no idea that was how fire worked or that the front would be heading directly for us when the wind changed. Rodney and I both thought it would horseshoe around us.⁹¹

The Commission also analysed the time between fire ignition and death. It found that 35 per cent of the deaths in the fire zone occurred before the wind change. Among this 35 per cent, the average time between fire ignition to the estimated time of death was just under five hours. In striking contrast, the average time between the wind change and the estimated time of death for those who died after the change was 32 minutes. For Marysville the figure was even less—an average of about 18 minutes.⁹²

Figure 1.4 shows some of the results of this analysis, looking at the three deadliest fires of 7 February. The dotted vertical line represents the time after ignition of the three individual fires when the wind change first affected the three firegrounds. A noticeable ‘spike’ in deaths occurs at or immediately following this point for each of the three fires.

Figure 1.4 Elapsed time from fire ignition to death



Source: Commission analysis from evidence of the fire-related deaths.

The relatively long period from reported fire ignition to death is important. The 7 February fires demonstrated a considerable amount of time can elapse between when a fire is first reported and when it affects communities. The proximity of the fire’s ignition point to populated areas is a central factor, and an understanding of the significance of this can give fire authorities—and people in the potential path of a fire—an opportunity to respond in differing ways. Traditionally, fire authorities have used this time to focus on suppression. The events of 7 February show, however, that on days when fire suppression is likely to be ineffective fire authorities can use this period for analysis and the development and distribution of warnings, giving residents better information with which to make decisions. Contrary to the State’s previous advice, there might be an opportunity for people in the potential path of the fire to evacuate to a safer place if timely warnings are given. The options are described later in this chapter. The Commission notes, however, that although these options are important, the later the choice is exercised the greater the risk of death or injury.

The Commission also records a note of caution. Although there was a relatively lengthy period between ignition and many of the deaths that occurred during these fires, this will not always be the case. The Narre Warren and Upper Ferntree Gully fires were suppressed and as a result did not spread into the Dandenong Ranges (see Chapter 12 in Volume I). Had this not occurred, many houses would have very rapidly faced the full impact of a ferocious fire travelling uphill. As emphasised throughout this report, all fires differ in their ferocity and their location vis-a-vis population centres. On 7 February there was an extended period between ignition and deaths for some fires; for others there was less time.

1.4.6 PREPARATION AND PLANNING

Preparation is an essential part of a fire plan, whether staying to defend or leaving.⁹³ People who stayed to defend their properties on 7 February or used their house as a shelter from the fire made a range of preparations. One theme that emerged from the evidence of lay witnesses concerns the effort and expense that goes into having a well-prepared home. Fire preparations covered areas such as building design, access to water and power, protective clothing, vegetation management, defensible space around the home, and protective devices such as free-standing and permanently fixed sprays and sprinklers, as well as the development of an overall fire plan.⁹⁴

A good fire plan helped many people defend their homes on 7 February, although it was not a guarantee of success.⁹⁵ A fire plan prepared and rehearsed over a number of years appears to have greatly bolstered people's confidence in their ability to safely defend their home. Witnesses told the Commission how they had spent years making alterations to their property and ensuring that every fire season all aspects of their fire plan were viable and 'ready to go'. For the most part, people developed these plans after attending CFA community meetings and participating in CFA fireguard groups, where the importance of preparation during the bushfire season had been stressed.⁹⁶ The evidence before the Commission showed, however, that some people were overly confident about their level of preparedness, a factor that in some cases had dire consequences. In addition to having confidence in their fire plans, many lay witnesses who successfully defended their property spent the days up to and including 7 February seeking out information about the weather, fire alerts and advice. This information was obtained a number of ways—774 ABC radio and ABC local radio stations, the CFA, the Bureau of Meteorology and DSE websites, and watching the sky for changes to the weather.⁹⁷ On 7 February preparations for defending properties started early and continued throughout the day. All this activity culminated in the active defence of property—carried out according to what often were well-structured and closely followed fire plans—which extended over a number of hours, often into the early hours of 8 February. On the basis of their experiences on 7 February, many of these residents said they would stay and defend if their homes were threatened by another fire. Almost all, however, would amend their fire plans to ensure an even higher level of preparedness.⁹⁸ The Commission also heard from witnesses whose experience of 7 February led them to conclude they would not stay and defend in the future.⁹⁹

Although being well prepared was noted as a central factor in the successful defence of properties, other evidence showed that preparedness is no guarantee of success. Evidence from the hearings into the fire-related deaths revealed that many people who died did act in accordance with their fire plan and were well equipped, with adequate water, power and suitable firefighting equipment.¹⁰⁰ In one account, when the inhabitants had planned to stay and defend, the evidence suggested that wind damage to the roof exposed the house to ember and flame attack. Despite having substantial firefighting equipment, the inhabitants were forced to shelter in the house. By this time, though, the house could no longer provide shelter while the firefront passed, and the couple were unable to leave the building before they were overcome.¹⁰¹ A Bushfire CRC survey of houses affected by the Kilmore East, Murrindindi, Churchill, Bunyip, Bendigo, Beechworth–Mudgegonga, Horsham and Narre Warren fires found that wind was an important factor in house damage: 13 per cent of houses damaged were damaged by both fire and wind.¹⁰²

This evidence underpins the Commission's view that, although staying to defend remains a valid option in limited circumstances (having regard to the intensity of the fire, the defensibility of a home, the adequacy of firefighting equipment and the mental and physical fitness of the people involved), it should be attempted only by people who understand and accept the risks—including the risk of death. Householders who fail to prepare in advance of a fire expose themselves to serious risk as they are forced to make last-minute decisions that might ultimately prove fatal. Inadequate planning might result in a late evacuation hampered by smoke and poor visibility, ember and flame attack, or having the escape route blocked by a fallen tree. It could leave no choice but to shelter where there is inadequate protection.¹⁰³

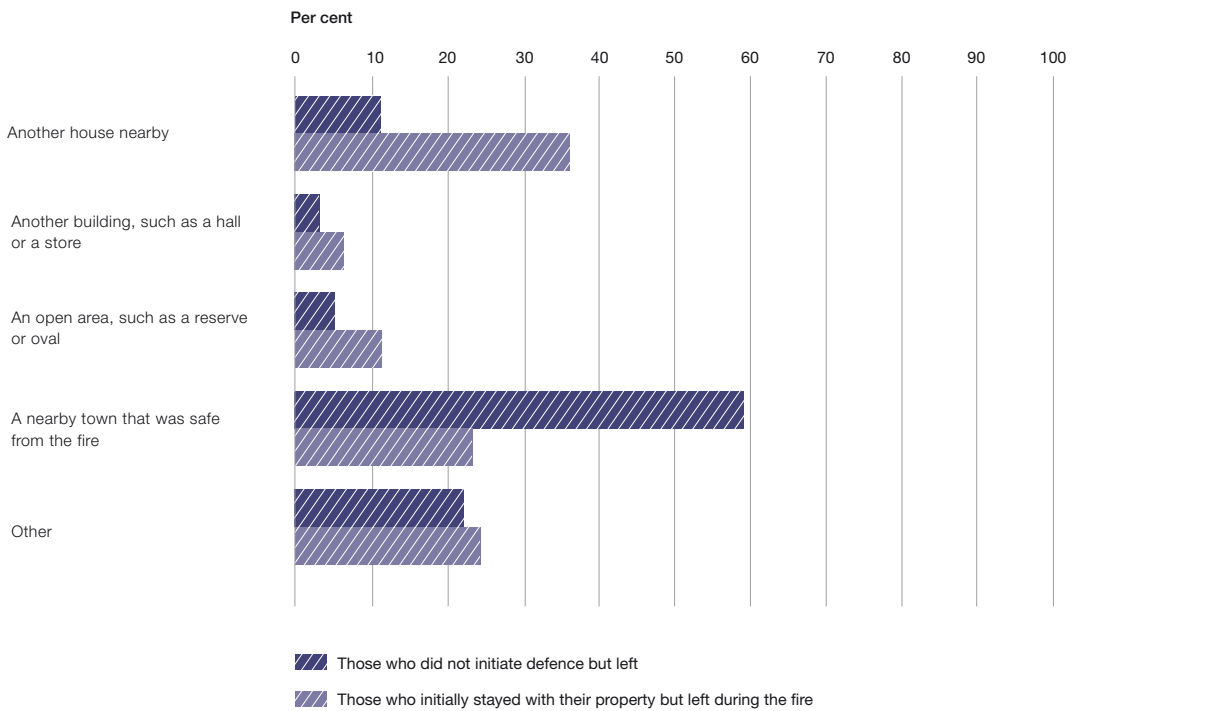
1.4.7 PLACES OF SHELTER

The people who left their homes sheltered in a variety of locations—other houses or buildings, bunkers, reserves and ovals, pubs, in-ground swimming pools, cars, dams, and so on. Some people reported that these were pre-planned alternatives and that they helped people survive.¹⁰⁴ The Commission also heard examples of people dying in very similar locations, which serves to highlight that these locations do not guarantee safety, despite apparently offering

better protection than the situations from which the people had fled. Others fled conditions that threatened their lives but died before being able to find a safer haven.

Figure 1.5, derived from the results of the Bushfire CRC household survey, shows that people who left well before the fire were able to travel further than those who stayed with their properties then left at some stage during the fire. More than twice as many respondents who left before or when the fire arrived went to a nearby town that was safe from fire. In contrast, those who left at some stage during the fire were twice as likely to go to a house nearby or shelter in an open area or another building.¹⁰⁵

Figure 1.5 Bushfire CRC household survey: when you left, where did you go?



Source: Analysis of the figures set out in Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey.¹⁰⁶

Box 1.2 Shelter

Many people sought shelter in the centre of Kinglake township, inside their cars and inside the CFA shed. Others sheltered inside the CFA sheds in Kinglake West and Marysville. Some people sheltered in Kinglake Central Primary School until it burned down; people also found shelter in open spaces such as Gallipoli Park oval in Marysville, Kinglake West oval, Kinglake Memorial Reserve oval and Callignee oval. Some sheltered in ploughed paddocks.¹⁰⁷ Mrs Vicki Ruhr abandoned her burning house with her family. She recalled:

The smoke was very thick and pungent, but the fires provided enough light to see where we were going. We all marched in single-file hurriedly down into the middle of the back paddock, which contained our olive grove, and covered our mouths and noses with the wet towelling. We lay face-down on the ground in the olive grove after helping each other place the towels and dressing gown over the top of us.¹⁰⁸

None of these places of shelter were designated fire refuges. The Bushfire CRC report on informal places of shelter concluded, in relation to Kinglake and Kinglake West, that many people simply ‘ended up’ there because they did not know of any likely safer alternative.¹⁰⁹

Some witnesses sheltered in a bunker on their property. Others described seeking shelter behind a structure that provided a barrier between them and the radiant heat of their burning home.¹¹⁰ Others found shelter in a body of water:

- Mr Daryl Hull immersed himself in the lake next to Gallipoli Park oval for up to an hour during the worst of the fire.¹¹¹
- Mr Peter Brown and his family took shelter under wet blankets in their in-ground swimming pool, both as the firefront hit and then as they watched their St Andrews home burn down.¹¹²
- Others took shelter in concrete water tanks and dams.¹¹³

Not all were successful in their shelter attempts. In Kinglake West a family of five, including three young children, left their burning house to seek shelter in a nearby dam. Three succumbed to the fire and did not reach the dam. The father and his young daughter did, but they were seriously burnt and the child later died.¹¹⁴ In another instance, in Strathewen, a young man appears to have fled a burning house in which four people died. He, too, died, being found 300 metres from the house, close to a dam.¹¹⁵ The Commission also heard of seven people who died in bunkers or bunker-like structures.¹¹⁶

Firefighters are taught survival drills, including how to identify places that offer a high chance of survival, among them dams, creeks and wet gullies. DSE firefighters are trained to recognise these 'natural refuges' in a forest fire. This training was put to good use by Mr Michael Lauder and his crew from the Toolangi DSE office, who kept themselves and 19 campers, including nine children, safe in the Murrindindi River after they had been cut off by the Murrindindi fire.¹¹⁷ Such experiences show that there could be benefits in transferring some of the messages incorporated in firefighter training to the broader public.

A number of witnesses protected themselves inside their cars—either near their burning homes or after driving to a place where they felt safer. The car provided both immediate protection from radiant heat and a means to move to a safer place. Some witnesses spoke of using their car's air-conditioning while sheltering inside the car.¹¹⁸ Mr Ken Rogers, who lived in St Andrews, told the Commission about his experience, and that of his wife, Annie, and their son, Danny, of sheltering in a car as the fires destroyed their house:

We decided together that the safest thing to do was to move our car to a clear area and shelter inside it. Accordingly, I dashed back inside and collected my car keys and my wallet. I then moved my car away from the house and to a clear and flat part of our driveway. We then sat inside the car and watched our house burn down. When the house fire was at its height, Annie turned to me and said 'I think the chops will be done by now'.¹¹⁹

The Commission notes however, the imperfect protection offered by a vehicle and the fact that in cases such as this a vehicle was used in order to move away from burning fuels rather than being a preferred choice as a place of shelter. Nevertheless, Professor Handmer noted that the evidence of people generally surviving in conventional cars was in contrast to that associated with past fires.¹²⁰ This area warrants further research (see Chapter 11).

As discussed in Section 1.8.6, the Commission considers that a revised bushfire safety policy should provide information about places in which to shelter and support for individuals in identifying such places.

1.4.8 THE PSYCHOLOGICAL IMPACT

The psychological impact of bushfire cannot be underestimated. Exposure to such an event is traumatic and can have long-term adverse psychological consequences, especially for children. Professor Alexander McFarlane of the University of Adelaide, a psychiatrist who has conducted longitudinal studies of the effects of the Ash Wednesday fires on children, found that the trauma and hardship caused by the Ash Wednesday bushfires was a significant cause of psychological disorders in children. He also noted that the many strains on families and communities in the aftermath of a fire can have a 'snowballing effect' that compounds the initial trauma of the fire.¹²¹

Of course, it is not only children who suffer psychologically after the trauma of a bushfire: the impact on adults is often profound.¹²² The Commission heard from lay witnesses of the complex and varied emotional and psychological reactions children and adults have experienced since the 7 February fires.¹²³ Mrs Vicki Ruhr told the Commission:

I am blessed with a strong disposition and have been holding up mostly. I have my 'blue' days but am yet to have my own 'breakdown'. I know it's coming and I know it will be hard, but I also know it is inevitable and a normal part of the recovery process. For now, I experience a wide range of human emotion on a daily basis. I am exhausted, I feel despair and dismay every day and I have immense trouble thinking about the future. I've noticed myself become impatient and intolerant, and this is something very foreign to me and I don't like it. I'm sick and tired of dealing with bureaucracy, paperwork and processes. I hear my friend, Suzanne Hyde, who perished in the fires. I hear her voice and I hear her screams—often. I worry about my husband and my children. I miss my community, my home, my garden and my farm animals.¹²⁴

This can, in turn, further affect children's psychological wellbeing. Professor McFarlane noted that it is not only a child's exposure to a bushfire that can have adverse long-term psychological consequences, but also parents' exposure and its impact on the parents' psychological health.¹²⁵ The longer term psychological effects of these fires remain to be seen. The recovery section of the report, Chapter 8 of this volume, provides further information about trauma and long-term impacts.

The Commission calls on individuals to consider very carefully the potential impact on their mental health of staying to defend as part of their bushfire safety planning.

1.5 CHANGES SINCE 7 FEBRUARY

1.5.1 THE STAY OR GO POLICY

The Commission's interim report considered implementation of the stay or go policy as it was on 7 February and recommended changes. In summary, the recommendations focused on the following:

- reinforcing the need to prepare
- clearly conveying the message that the safest option is always to leave early
- providing to householders information on defendability—including that not all homes are defendable in all circumstances
- clearly explaining the risks associated with staying to defend—including the risk of death
- discouraging children and vulnerable people from staying and defending
- emphasising the need for contingency plans
- providing advice directed at the needs of communities on the urban–rural interface.¹²⁶

The State, including the CFA, has made a number of important advances in response to the Commission's recommendations, although these have not been fully tested because the 2009–10 bushfire season was relatively benign. The State conducted an extensive community education campaign for the 2009–10 bushfire season, incorporating the revised messages recommended by the Commission. The initiative involved a media campaign, distribution of education materials to individuals in high-risk areas, and community meetings. Materials were developed for specific audiences, including children, non-English speakers, tourism operators and tourists. Information covering subjects such as what to do with pets was also produced.

Specific advice on the defendability of individual properties was also offered to households. The CFA has developed a household bushfire self-assessment tool to help residents determine whether their properties are defendable. The tool is available online and in hard copy and is supported by a telephone helpline and trained officers who can visit private properties to provide specific advice about defendability. The Commission welcomes this development, although it notes the concern of the Victorian Bushfires Royal Commission Implementation Monitor, Mr Neil Comrie APM AO, that the CFA should promote these services more widely.¹²⁷

To support the campaign, education materials were revised to reflect the changes to the messages, and facilitators and educators were trained in conveying the information. Additionally, there was an internal CFA campaign aimed at educating CFA members about changes to community advice.¹²⁸

Municipal councils also contributed to education efforts:

- Colac Otway Shire Council worked with community groups to develop a community fire plan.
- Glenelg Shire Council distributed newsletters about FireReady preparation and personal safety.
- Horsham Rural City Council held a Living with Fire expo in partnership with the CFA and other agencies.
- Moira Shire Council implemented a campaign to inform tourists, emphasising FireReady principles and encouraging tourists to register their location.
- Queenscliffe Borough Council facilitated the creation of personal emergency plans for vulnerable people.¹²⁹

The Commission was advised that the 2009–10 campaign is part of a long-term initiative designed to encourage behavioural change and community engagement.¹³⁰ The Department of Justice commissioned expert research to assess the effectiveness of the summer fire campaign. The researchers found that the campaign built awareness and understanding about bushfire safety and led some people to take preparatory action. They also found, however, that complacency was still evident.¹³¹

Work on implementing the Commission's recommendations continues. The State is currently updating its fire education program for schools and intends to roll out the revised program in early 2011.¹³² It is also evaluating existing tools to ensure that they continue to meet current needs (and will meet future needs) and has already conducted two reviews of its Community Fireguard program, which highlight options for improving the program and some important policy matters. As discussed in Section 1.8.2, the Commission considers that the Community Fireguard program should continue to be a central plank of the CFA's community education program in the future.

Box 1.3 Review of CFA's Community Fireguard program

The CFA Community Fireguard program, launched in 1993, is a community development program that aims to help residents develop local bushfire survival strategies that correlate with their lifestyle, values and the local environment. The objective is to 'reduce the loss of life and property by developing self-reliant communities who have made a commitment to managing their own fire safety'.¹³³

CFA facilitators deliver the program and provide information and support to residents so that they can establish Fireguard groups and develop survival plans. The program is delivered over four or five meetings that provide information on fire behaviour, personal safety, house survival, fire protection equipment and include a street walk around the group's local area.¹³⁴

Two reviews of the Community Fireguard program conducted since Black Saturday found that being a member of a Community Fireguard group helped members actively manage their experience of the bushfires. They also found that Community Fireguard participants' houses were more likely to survive a bushfire, even if the house was undefended.¹³⁵ The reviews did, however, identify some limitations and problems with the program:

- Some participants did not fully understand the concept of leaving early or thought it was impractical in some circumstances—for example, leaving on total fire ban days because of the number of such days declared in the bushfire season.¹³⁶
- Although the program encouraged participants to prepare contingency plans to accommodate possible changes in circumstances, very few people prepared for enough scenarios, suggesting that this level of complexity is not well understood. Many participants trying to clear vegetation and carry out general fire management on their property in accordance with Community Fireguard training encountered difficulties with local councils.¹³⁷
- The Community Fireguard program was not always implemented as intended and the training needed greater reach, understanding and implementation.
- There was scope for greater involvement of all three levels of government to link the training messages with the practicalities of implementation—particularly in relation to warning systems and fuel reduction.¹³⁸

Among the suggested improvements to the program were the following:

- ensuring that a consistent standard of training is provided across the State
- more regular meetings
- developing a quality assurance process for individual and household fire plans
- incorporating problem-solving components in the training
- promoting 'plan for all possibilities' as opposed to stay or go
- increasing community awareness of the program
- making completion of training a condition of Community Fireguard group membership
- developing CFA guidelines and advice about equipment standards.¹³⁹

The reviews concluded that the costs and benefits of expanding the program to involve more communities and develop more active membership should be further examined.¹⁴⁰

1.5.2 INFORMATION AND WARNINGS

In addition to its interim report recommendations about the stay or go policy, the Commission made recommendations relating to the role of information and warnings. These focused on the following:

- ensuring that warnings are founded on the principle of maximising the potential to save lives
- improving the content, format and method of disseminating warnings—including identifying greater opportunities for the use of sirens, the Standard Emergency Warning Signal and telephones
- improving fire severity scale that denotes the risk posed by dangerous and extremely dangerous bushfires
- expanding the capacity of existing information sources such as websites
- clarifying fire agencies' responsibility to issue warnings
- clarifying the ability of appropriately qualified personnel to issue warnings where the Incident Controller is not available.¹⁴¹

All agencies have introduced commendable changes to improve the content and dissemination of information and warnings. The new national framework for advice and warnings to the community, established by the Australasian Fire and Emergency Service Authorities Council in late 2009, was a major achievement.¹⁴² A national review of the AFAC policy for community safety during bushfires was under way on 7 February, when this subject was brought into sharp focus.¹⁴³ The new framework and the nationally agreed community education message 'Prepare. Act. Survive.' is based on the following principles:

- Fires affect people and communities.
- The framework therefore places public safety as its primary consideration.
- A fire can threaten suddenly and without warning.
- People living in high-risk areas need to be prepared to take protective action at any time.¹⁴⁴

Figure 1.6 Prepare. Act. Survive. bushfire survival kit



Source: Courtesy of the Country Fire Authority.

The *Prepare. Act. Survive.* bushfire survival kit distributed by the CFA during the 2009–10 bushfire season, contains material on:

- understanding the environment—the impact of weather, vegetation and road access
- assessing whether a home has adequate defensible space
- preparing a home—how fires impinge on houses, managing vegetation, and house maintenance and improvements
- leaving early—who should leave early (for example, children, the elderly, other vulnerable groups), when they should leave (including what triggers to use), where they should go, how they should get there, what they should take and what back-up plans they should make
- defending—personal capacity, property preparation, recommended equipment and resources, the role of house structure and building design, personal safety, contingency plans, activating plans and managing animals.¹⁴⁵

The kit emphasises the following:

- Bushfires can kill.
- Careful planning and preparation are vital.
- Those who plan to stay and actively defend should be physically fit and able and mentally prepared.
- Even well-prepared homes can be destroyed by bushfire.¹⁴⁶

Among other important achievements by the State, the Commonwealth Government and fire agencies to improve information and warnings are the following:

- clarifying fire agencies' responsibility for issuing warnings, with greater emphasis on the obligation to warn the community¹⁴⁷
- elevating the Information Unit within the AIIMS structure and augmenting its role by creating the position of Public Information Officer¹⁴⁸
- developing new protocols for issuing warnings, to enable the Incident Controller and other personnel to issue warnings in the event of imminent danger, and adopting new technology for the creation and dissemination of warnings¹⁴⁹
- developing and implementing a single 'One Source One Message' portal for CFA and DSE to upload bushfire warnings and information to the CFA and DSE websites, the Victorian Bushfire Information Line, and relevant radio and television broadcasters¹⁵⁰
- implementing the National Emergency Warnings System, which can distribute voice and text warnings and messages via landline and mobile phone¹⁵¹
- negotiating new memoranda of understanding to broadcast emergency information (similar to that already in operation with the ABC) with commercial radio and television stations¹⁵²
- improving the content of warnings, including adoption of the Common Alerting Protocol¹⁵³
- developing guidelines for the use and authorisation of the Standard Emergency Warning Signal, plus using the signal on three occasions during the 2009–10 bushfire season¹⁵⁴
- developing new guidelines for using fire sirens as a community warning method¹⁵⁵
- developing a new nationally agreed fire danger rating scale that includes the new category of 'code red', which applies to days where the fire danger index is predicted to be above 100¹⁵⁶
- incorporating fire danger ratings in Bureau of Meteorology forecasts and warnings¹⁵⁷
- commissioning expert research into the development of a new fire severity scale¹⁵⁸
- upgrading the Victorian Bushfire Information Line with extra trained staff, extra office space and telephone lines, improved IT infrastructure, faster access to warning information and access to more overflow staff on 'spike' days
- amending the *Country Fire Authority Act 1958* to clarify the Chief Officer's responsibility for issuing warnings.¹⁵⁹

Many of these changes reflect a shift in the responsibility of fire agencies, increasing the need for timely advice and triggers to the public. The changes expand the responsibilities of the Incident Controller, particularly during more severe fires, to oversee the safety of local communities, as much as manage the response to the fire.

Figure 1.7 New fire danger rating scale

FIRE DANGER RATING	Recommended Action
CODE RED (CATASTROPHIC)	If you live in a bushfire prone area the safest option is to leave the night before, or early in the morning.
EXTREME	The safest option is to leave early in the day if you live in a bushfire prone area and your Bushfire Survival Plan is to leave. Only stay if your home is well prepared, well constructed and you can actively defend it.
SEVERE	The safest option is to leave early in the day if you live in a bushfire prone area and your Bushfire Survival Plan is to leave. Only stay if your home is well prepared and you can actively defend it.
VERY HIGH	If you live in a bushfire prone area and your Bushfire Survival Plan is to leave, the safest option is to leave at the beginning of the day.
HIGH	Check you Bushfire Survival Plan.
LOW-MODERATE	Check you Bushfire Survival Plan.

Source: Courtesy of the Country Fire Authority.

Each of these developments is welcomed. The Commission notes, however, that, although a significant number of changes have been initiated, many of the new features have not yet been fully tested or embedded in practice. In addition, because there were few major incidents in the 2009–10 bushfire season, the Commission is unable to comment conclusively on the success of these changes. The State will need to continue to review and assess their suitability.

The Commission considers that the language of warnings could be further improved. (This is discussed in Section 1.9.1) As outlined in the note to readers, the Commission did not reach a firm view on terminology, but it notes that plain language is preferable and encourages further work in this area (see also Chapter 11). One recommendation relating to warnings has not yet been implemented. The Commission recommended that a second phase of the National Emergency Warnings System project be undertaken to investigate whether it is technically possible to send warnings to mobile telephones according to their location. The State has received information from the telecommunications industry, but it is not yet clear whether the second phase of the project is technically possible. The Commonwealth has, however, committed funding to identify a technical solution.¹⁶⁰

Nevertheless, the Commission considers that there remains room for improvement in relation to the content of warnings, particularly in the templates that have been developed for use by the Chief Fire Officer, Incident Controllers and their delegates. The Bushfires Royal Commission Interim Report Implementation Monitor noted that aspects of these templates are potentially confusing.¹⁶¹

The Commission is particularly concerned about the lack of action on sirens. The Implementation Monitor considered that the guidelines for sirens are onerous and difficult to meet, and the Commission agrees.¹⁶² No communities have applied to obtain or use a siren. Emergency Services Commissioner Mr Bruce Esplin said moves were under way in three locations.¹⁶³ Although this is encouraging, there should be fewer barriers to action. Greater action is required, particularly in high-risk areas such as the Dandenong Ranges and the Otway Ranges.

1.5.3 EMERGENCY CALLS

In its interim report the Commission also recommended improvements to the systems for emergency calls. This included improving the information flow between government agencies and 000 to facilitate better emergency telephone services and surge capacity on days of high bushfire risk.¹⁶⁴

The Commission notes that a new procedure has been implemented for the efficient provision of warnings from the CFA to other relevant government agencies and 000. The State has also introduced a number of initiatives to ensure that the Emergency Services Telecommunications Authority has greater capacity to deal with emergency calls during bushfires—including improving IT infrastructure, adding office space and arranging additional surge capacity.¹⁶⁵ The Commission welcomes these developments.

1.5.4 EVACUATION AND REFUGE

The Commission also made recommendations on the role of evacuation and refuge, focusing on the following:

- enabling trained CFA personnel to recommend to people that they leave early, that recommendation being based on a risk assessment of their household and property
- creating a greater role for local government in facilitating evacuation
- replacing the existing fire refuges policy
- developing criteria for the identification and operation of 'neighbourhood safer places'
- identifying community refuges and neighbourhood safer places, recording their locations and advertising their availability to the community
- developing appropriate signs for neighbourhood safer places
- allocating resources to defend neighbourhood safer places while they are being used during a bushfire
- reviewing the adequacy of existing bushfire protection measures for children's services facilities
- evaluating trials of the Victorian Fire Risk Register.¹⁶⁶

The State has incorporated evacuation as an option in its new warning templates. This is discussed in Section 1.8.6.

The Commission's interim report also recommended that the State 'amend the State Emergency Response Plan so that the word relocation is used in preference to the word evacuation (except in cases where evacuation is clearly more appropriate)'. The intent of this recommendation was to remove possible confusion from the compulsory or mandatory connotations of the word 'evacuation'.¹⁶⁷ The SERP was duly amended and now defines 'relocation' as a voluntary decision made by residents, in advance of the possible impact of the emergency, which is based on the advice and recommendation of the control agency but is made in most cases without the assistance of emergency agencies. 'Evacuation' is defined as a planned strategy, usually involving direct assistance from emergency agencies and when the risk of impact from an emergency is highly likely. Although the terms are defined separately, they are used interchangeably elsewhere the SERP; this is potentially confusing.¹⁶⁸ The Commission considers that the definitions used in the SERP are appropriate but the use of the terms interchangeably is not. Its vision for the role of evacuation and relocation, including the terminology, is described in Section 1.8.7.

In its interim report the Commission made recommendations about 'neighbourhood safer places' and adopted the State's terminology it was mindful of the level of safety people might ascribe to such places.¹⁶⁹ The State has since amended the relevant legislation, developed guidelines for the assessment of potential neighbourhood safer places and established neighbourhood safer places in at least 29 of Victoria's 52 nominated high-risk towns; many other

potential sites have been assessed. Established neighbourhood safer places have also been incorporated in local planning and listed on council websites.¹⁷⁰ The Commission is, however, concerned about the progress of the State and councils in identifying and promoting neighbourhood safer places (see Section 1.8.6) and about the current terminology (see Section 1.8.6 and Chapter 11).

The State has not yet replaced the existing Fire Refuges Policy, and the Commission is disappointed at the lack of progress that has been made (see Section 1.8.6). In its interim report the Commission found that the lack of refuges left people's needs unmet if they found themselves in danger when their plans failed, they were overwhelmed by circumstances, they changed their minds, they were away from home or they had no plan. The Commission was not convinced by the argument of the Municipal Association of Victoria and the CFA that the mere provision of refuges might encourage people to leave late, thus placing them at risk.¹⁷¹ It recommended that the State replace the 2005 Fire Refuges Policy following its review by the Office of Emergency Services Commissioner. The State accepted the Commission's recommendation and initially advised that the review could be completed within months. More recent advice suggests that, although the review is under way, it has not progressed beyond the stage of a discussion paper released on 25 June 2010. This is partly because of concern about dealing with the question of refuges in isolation from the stay or go policy and other 'risk and refuge' matters and partly because of the complexity of the review. The Commission was also advised that the State does not intend to finalise its policy until a new standard for the construction or retrofitting of fire refuges is developed.¹⁷²

The State accepted that the old policy did not take account of the need for contingency plans for people who could not or did not implement the choices presented by the policy but appears to retain a level of resistance in implementing these options.¹⁷³ Mr Esplin, argued:

The difficulty with a 'suite of options' being part of a behaviour change program is that it might encourage individuals who would otherwise choose the less risky 'leave early' option to feel unrealistically more secure that there are 'other options' available to them. Whilst bushfire planning necessarily requires a level of contingency planning, it is a real concern that the 'contingency plan' will become 'Plan A', leaving the individual at far higher risk of death or injury by fire.¹⁷⁴

The Commission is concerned that the State's reservation about a 'suite of options' is reflected in the slow progress on community refuges and bushfire shelters and that the State simply does not face up to the reality that the policy approach in place on 7 February did not adequately reflect human behaviour and was therefore irrelevant to many people. In future a range of bushfire safety options should be available to try to help people who, for a variety of personal reasons and situations, do not find either the option to leave early or the option to stay and defend to be acceptable in their circumstances.

Since February 2009 the State has done a good deal of work to ensure that aged care facilities, hospitals, schools and children's services have emergency management plans, including detailed and comprehensive evacuation plans.¹⁷⁵ For example, the Department of Health and the Department of Human Services have a policy framework for planning and preparing for and responding to bushfires. It incorporates the potential for assisted evacuation (before a code red day) and evacuation (emergency response when a fire is imminent). Among other things, the departments can direct the transfer and early cessation of some services. In many cases the policy requires planning to be activated three days before a code red day to enable adequate planning, preparation and implementation.¹⁷⁶

There are some similarities between Victoria and California in relation to the threats posed by bushfire. As part of its deliberations, the Commission explored the approach to evacuation in California.

Box 1.4 Evacuation in California

The Commission heard evidence from Mr Tim Streblow, Deputy Chief of the Sonoma–Lake Napa Unit of CAL FIRE (the California Department of Forestry and Fire Protection), about evacuation policies in California, where evacuation is the primary protective action taken when a community is threatened by fire. The Incident Commander and the Operations Section Chief make the decision to evacuate and local law enforcement officers enforce it. People subject to an evacuation order are notified through the media, telephone warning systems, social networking and door-to-door advice from law enforcement officers. This approach is supported by a community education program that encourages people to leave early in response to an evacuation order and encourages them to plan and prepare for an evacuation. The California Penal Code contains general powers for law enforcement officers to order evacuations in the event of a disaster. Mr Streblow told the Commission, however, that the preferred legal basis for making evacuation orders is the Emergency Services Act, which relies on a local governing body proclaiming a state of local emergency.

In California evacuation orders can be voluntary or mandatory. In either case an evacuation is ordered only after a fire is burning. The Commission heard evidence that ‘in some cases, areas may be under a voluntary evacuation order for days to weeks and on occasion areas will be under mandatory evacuation for days to weeks’.

The Commission also heard about civilian deaths in ‘wildfires’ in California during late evacuation but notes that the limitations to the available data and research in this area make it difficult to draw strong conclusions about the connection between these deaths and the timing and management of ordered evacuations. It is not possible for the Commission to make a direct comparison between the United States and Australia because of potential differences in factors such as topography and population spread, the number of fire starts, weather conditions, forest types, rates of fire spread and fire spotting behaviour, and cultural differences. There are, however, similarities. Incident command teams in California face challenges in effecting safe evacuations that are likely to be encountered in south-eastern Australia, including fast-moving fires, isolated communities with poor road access, lack of time, power and communications failures, evacuation routes affected by traffic congestion or by fire, early wind changes, and confusion among law enforcement officers and the public.¹⁷⁷

The Commission considers that there are elements of the Californian approach to evacuation that the State of Victoria should consider, and adapt to local conditions as appropriate, when reassessing its own approach to evacuation:

- There is a strong focus on local evacuation planning. Most Californian communities with a history of wildfire have prepared a community evacuation plan, which makes evacuation a great deal easier because people know in advance what to expect, how to prepare, where they might be directed to go and how to get there.¹⁷⁸
- The Californian approach caters for communities for which evacuation might not be a safe option—for example, isolated communities with one road in and out through heavily wooded country. Contingency options such as ‘shelter in place’ are developed.¹⁷⁹

School closures and preparation for bushfires

In its interim report the Commission made a number of recommendations related to schools. These involved completion of reviews of identified refuges in schools in areas of bushfire risk, developing priorities for any necessary rectification work, and reviewing bushfire protection measures in children’s services facilities. The Department of Education and Early Childhood Development has completed its review of school refuges, assessed 36 refuges and identified two further acceptable refuges. Although not all rectification works are complete, the Commission is satisfied that such works have been assigned priority as recommended and are progressing.¹⁸⁰

Since 7 February the department has also implemented major policy changes and projects to ensure that all Victorian schools and children’s services are well prepared for bushfires. The department’s regional directors now decide whether to close government schools and licensed children’s services after consulting with the CFA and emergency services on total fire ban days and days of extreme risk. A number of schools have been closed on total fire ban days since 7 February. Other projects include developing and distributing a bushfire self-assessment tool for children’s services and for government, Catholic and independent schools, and providing a bushfires resources kit to schools.¹⁸¹ These are positive developments.

National park closures

Closing national parks or state forests on days of high bushfire risk can be an important way of reducing the risk of accidental and deliberately lit fires, as well as the risk to both members of the public and park and forests employees from fires that do start.

On 7 February national parks were closed but there was no policy governing closure of state forests, although DSE issued a media release warning the public to be mindful of the extreme fire danger.¹⁸² DSE has since developed a new policy on closure of national parks and state forests; it is based on the new national fire danger rating system introduced after 7 February.¹⁸³ Parks Victoria has identified national parks exposed to high bushfire risk and developed a bushfire risk register to determine which sites will be closed on code red, extreme and severe fire danger days. In general, state forests, and national parks in bushfire-prone areas, will be closed on code red days. On extreme and severe fire danger days most national parks will remain open, but some will be closed and the services provided modified, depending on the risk. Assessment of whether or not parks will close on extreme or severe fire days is based on predominant vegetation type, overall fuel hazard assessment and proximity to townships and schools in high-risk areas of Victoria.¹⁸⁴

Closure of national parks and state forests is effected through a variety of means—for example, physically using gates at access points. But restricting physical access to the majority of areas and enforcing the declared closures is not always possible. To help ensure voluntary compliance with park closures, DSE and Parks Victoria are focusing on providing warnings and information to the community to foster an understanding of the level of fire risk when visiting national parks and state forests.¹⁸⁵ The Commission commends this approach.

1.6 TOWARDS A BETTER BUSHFIRE SAFETY POLICY

As is evident, at present Victoria has a bushfire safety policy in transition. Although a number of initiatives and changes have been implemented since Black Saturday and the publication of the Commission's interim report, there is a need for further work—and ultimately a change of mindset, which could take some years. A coherent framework is also necessary, and in this section the Commission sets out the primary components of an improved Victorian bushfire safety policy.

The Commission understands the attraction of a policy framework that is uncomplicated and capable of being presented in a way that gives clear advice to the community, without ambiguity or uncertainty. In the Commission's view, however, giving sound and realistic advice on how people can best protect their personal safety is unavoidably complex and has become more so as a result of the experience of Black Saturday.

The revised bushfire safety policy reflects the Commission's analysis of the strengths and weaknesses of stay or go, the central tenets of which are sound. To leave early remains the safest option, and to stay and defend should also continue to be a key part of the policy, although there should be greater emphasis on important qualifications. The main limitations of the stay or go policy are described at the beginning of this chapter; for convenience, they are summarised in the following paragraphs.

1.6.1 EVERY FIRE IS DIFFERENT

Stay or go failed to provide for the variations in fire severity that can result from differing topography, fuel loads and weather conditions.¹⁸⁶ In particular, it did not adequately take into account the potential for ferocious fires such as those experienced on Black Saturday. What is needed is a policy capable of dealing with the fact that every fire is different. There should be recognition that potential firestorms should be differentiated from most bushfires. The former call for a different approach from a community safety point of view and different advice and support from fire authorities. On such days the operational focus and the thoughts of fire agencies should be directed at providing information to help the community stay safe, as opposed to fire suppression.

1.6.2 HUMAN BEHAVIOUR VARIES

The stay or go policy tended to assume that individuals had a fire plan and knew what to do when warned about a bushfire threat. But many people did not have a well-thought-out plan and were left to make their own decisions without the benefit of assistance from the authorities.¹⁸⁷ In addition, warnings were too narrow: they were directed at getting people to put their fire plans into action, rather than giving more specific directions or advice. The Commission heard that many people wait to see what eventuates before leaving in response to a range of prompts, such as a fire being in their area, the situation becoming dangerous or being told to leave. For these people the lack of alternatives—the provision of shelters and refuges or evacuation—can become critical because they have no fallback option.¹⁸⁸

Although the Commission considers that any policy must encourage people to adopt the lowest risk option available to them—which is to leave well before a bushfire arrives in their area—the reality is people will continue to wait and see, and a comprehensive policy must respond to this by allowing for more options and better warnings.

1.6.3 ADVICE AND LOCAL PLANNING ARE CRUCIAL

Advice about bushfires must be provided to the community in an effective way. The population exposed to fire is growing and is diverse. A continued focus on providing frank and meaningful advice on the risks and what is required to adequately prepare for and survive a bushfire is essential. Local planning and emergency management processes are also essential if this advice is to have a sound basis. The fact that not all houses are defendable under all circumstances was recognised before 7 February, but the Commission considers that this information needs to be conveyed more forcefully. It is necessary to stress that staying—given the forecast conditions for a day as severe as Black Saturday—would involve grave risk to one's life.

1.7 THE REVISED POLICY FRAMEWORK

The Commission sees the need for a number of important changes to be made in order to make the State's bushfire safety policy more comprehensive and to accommodate the lessons of 7 February. To improve communities' and households' ability to live with the threat of fire in Victoria, the changes focus on personal survival and the knowledge, capability and commitment required by the State, municipalities and individuals. The changes the Commission recommends do not diminish the role of effective land management (including fuel reduction) or the need for improved building and planning measures. These and other actions are essential to a truly strategic approach to fire management and are dealt with in subsequent chapters of this volume.

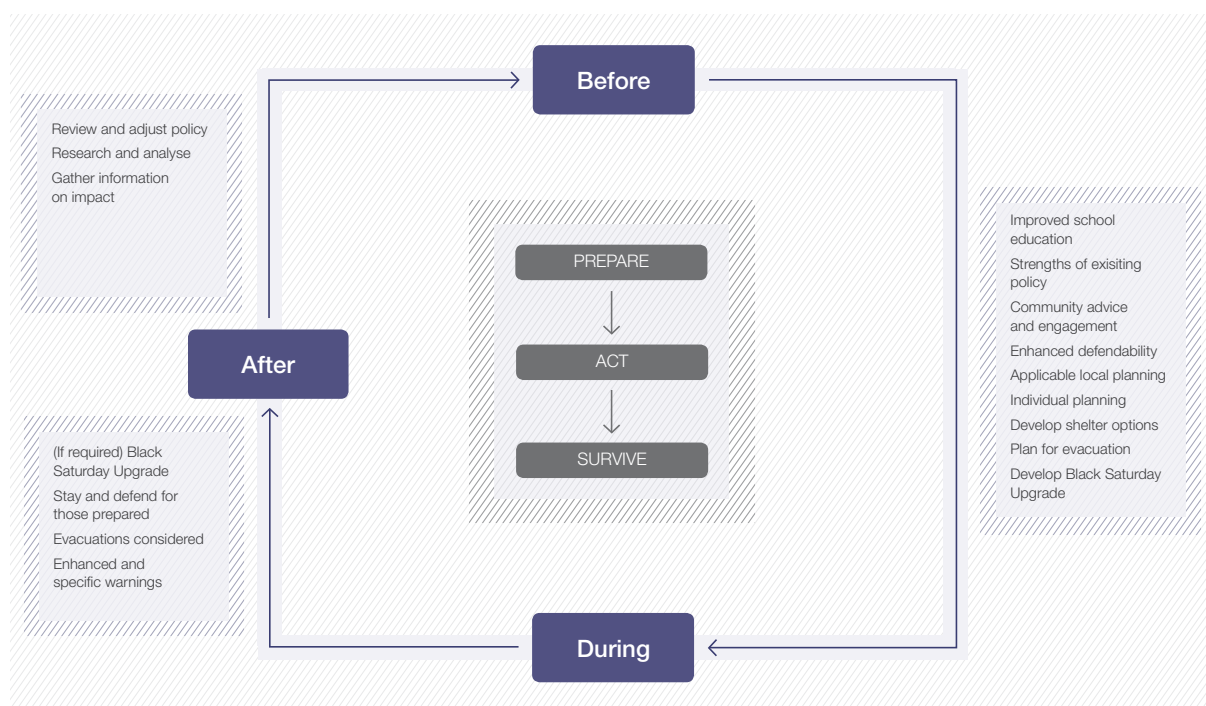
The Commission's recommended bushfire safety policy has three sections, describing the actions required before, during and after a bushfire. These three distinct phases are crucial to bushfire survival and are characteristic of any fire of any severity in any place. They align with Prepare. Act. Survive.—the national approach adopted in late 2009 by the Australasian Fire and Emergency Service Authorities Council.¹⁸⁹ The policy the Commission recommends is designed to ensure that Prepare. Act. Survive. is implemented effectively in Victoria. The following actions are proposed under each phase:

- before a bushfire
 - building on the strengths of the existing policy—leaving early
 - strengthened continuing community advice and engagement
 - a more holistic understanding of defendability
 - greater focus on local planning for bushfire safety
 - identification and development of shelter options—including community refuges and shelters
 - planning for evacuations
 - development of a Black Saturday Upgrade for operational planning

- during a bushfire
 - issuing warnings that are timely and more specific
 - a clearer role for Incident Controllers and individuals when considering evacuations
 - supporting the stay and defend option for those who are well-prepared, on all but the most dangerous days
 - on days where ferocious fires break out, the existing Prepare. Act. Survive. framework being supplemented by an operational upgrade that focuses more strongly on recommending evacuation from areas likely to be in the path of a bushfire
- after a bushfire
 - gather information about the impact
 - monitor and review
 - review and adjust the policy.

The figure below shows the proposed approach.

Figure 1.8 Framework for Victoria's bushfire safety policy



1.8 BEFORE A BUSHFIRE

Most actions need to occur, or be planned, before a bushfire starts. Fewer actions need to be taken during or after a bushfire. The Commission recognises that its approach calls for long-term changes in thinking and behaviour, such as changing the community's understanding of bushfire and of agencies' planning and response. As a result, the revised policy might take more than five years to implement, even with a strong commitment by all stakeholders. If efforts are adopted nationally and the Commonwealth supports the states and territories, faster and more successful program implementation might be achieved. The Commission strongly supports Commonwealth participation in this process.

1.8.1 BUILDING ON THE STRENGTHS OF THE EXISTING POLICY: LEAVING EARLY

Encouragement to leave early is a fundamental strength of the policy in place on 7 February. The Commission heard evidence that, although some people did leave early on 7 February, there remains confusion about the best time to leave, and many people report that they do not intend to leave early, even on code red days.¹⁹⁰ The Commission considers that leaving bushfire-prone areas early on days of high bushfire risk, especially on days predicted to be code red, is the safest response to the threat of bushfire. It also concurs with the State that it is crucial to encourage people to adopt this lowest risk behaviour.¹⁹¹

As part of its bushfire safety strategy, the State should ensure that the message to leave early is well understood, particularly by the following groups:

- people living in bushfire-prone areas
- people living in areas where late evacuation will probably be very dangerous—for example, in heavily vegetated areas with limited road access and egress
- people responsible for vulnerable people, who might face difficulties leaving later and are likely to be at greatest risk if caught in a fire.

A further message for consideration in a revised bushfire safety policy is that areas in larger towns could offer greater protection than smaller townships or settlements, and these need to be identified and promoted as potential places for evacuation or relocation.

1.8.2 CONTINUING COMMUNITY ADVICE AND ENGAGEMENT

In the past two decades Victorian fire services have raised the priority of community education about the risks posed by bushfires and how people might act to mitigate those risks.¹⁹² Successful community education should aim to influence people who might be at risk of bushfire and encourage their participation as well as an appropriate safety response. The information needs to promote changes in behaviour that increase the chances of survival for people in bushfire-prone areas.

Victoria has a diverse population. People have various reasons for choosing to reside where they do and have different perceptions of bushfire risk. This affects their reaction to safety warnings.¹⁹³ Similarly, the threat posed by a bushfire is unpredictable, a fact clearly demonstrated on Black Saturday. Tailoring messages in such a way as to accommodate these factors is therefore important: what might be suitable for one community, or even a section of a community, may not be suitable for another. The CFA already disseminates information in an integrated and multi-faceted way, ensuring that a range of delivery modes and media are used to maximise community engagement with the information.¹⁹⁴

The Commission also supports expanding the CFA's Community Fireguard program to involve a greater number of communities and develop more active membership. Reviews of the program suggest that greater community capacity would be beneficial in mitigating the risks from bushfires.

Current international research also provides direction about how community education could be continuously improved. The 2010 Human Dimensions of Wildfire Conference in the United States showcased research into ways to engage with diverse communities and help those communities to become bushfire aware. For example, a well-educated, financially comfortable community living in a semi-rural setting and having members who are mostly compliant with rules and regulations will require an engagement strategy that differs from that appropriate for an isolated or fringe-dwelling community with limited financial resources and members who may distrust authority and government.¹⁹⁵

Although much progress with community education has been made, the Commission considers more could be done. This would require even greater resources to be directed at community engagement and, ideally, the development of a nationally consistent approach. This idea of a consistent approach has merit: much of Australia is bushfire-prone and increasingly people are living in rural or semi-rural areas as well as regularly moving between jurisdictions.¹⁹⁶ The reach, profile and recognition of campaigns such as *Life. Be in it* and *Slip Slop Slap* illustrate the impact national awareness campaigns can have. The success of the cyclone warning messages in northern Australia, across Western Australia, Northern Territory and Queensland, is an example of a national approach to a natural hazard. The same is required for bushfire across southern Australia.

Improved engagement with communities at risk of bushfire also needs to be explored. Although appropriate information is essential, its provision will not necessarily change behaviour or ensure safety. Individuals are more likely to become involved when they consider information useful and relevant to their circumstances. The inference the Commission drew from the evidence is that many people in bushfire-affected communities might not have fully embraced the stay or go message because they did not recognise the danger of facing a ferocious bushfire.

Community education strategies must also reflect how people actually behave.¹⁹⁷ Faced with a bushfire threat, some people will leave early, others will be intent on staying to defend their home, and many will decide whether and when to leave on the basis of triggers that might be specific to their individual circumstances and location. Timely and accurate warnings can provide such triggers, but the content and delivery must be carefully developed to elicit the right response.

The Commission considers that volunteers have unrivalled access and credibility in local communities and are therefore in a very good position to meet and communicate with local residents. In this context, the revised policy will require a whole-of-workforce approach: all firefighters will become communicators of the message and will need to have a sound knowledge of the bushfire safety policy and be able to discuss it with members of the community. This will allow firefighters to better harness local resources and will result in communities and individuals becoming less dependent on the State, more 'fire adapted', and more responsible for their own safety.¹⁹⁸

This expanded education role could place strain on CFA volunteers, who expressed concern about already being stretched when trying to meet community demands. A revised mix of paid and volunteer positions might help to resolve this.¹⁹⁹ Ultimately, a number of specialists are probably required to run education programs, but all firefighters might be asked questions from time to time and need to be able to respond to those questions properly.

1.8.3 CRUCIAL KNOWLEDGE

It is vital that people have an accurate understanding of several topics if they are to make better informed decisions when preparing for and facing bushfire.

Fire behaviour

The main determinants of fire behaviour are summarised in Chapter 1 of Volume I. The impacts of wind and a wind change are particularly important. Wind affects the shape, direction, rate of spread and behaviour of a fire. A south-westerly wind change can turn the flank of a long, narrow, cigar-shaped fire pushed by northerly winds into a firefront several kilometres wide.²⁰⁰ If this information had been more widely and better understood on 7 February, it would have helped people recognise the danger associated with the wind change.

A more holistic understanding of defendability

In its interim report the Commission identified one of the main gaps in information and advice to be the lack of access to technical expertise to help people to determine the level of defendability of their house. Fire agencies need to be explicit in their advice about defending a home, spelling out in plain language that defending a house against a bushfire is a serious undertaking accompanied by grave risks, including the risk of death. The Commission is concerned that people who do choose to stay and defend their home must be under no illusion that even the most carefully prepared of houses can be destroyed by fire; that even people who are extremely well prepared can die fighting fires at home; and that the best laid plans are vulnerable to failure. The Commission recommended in its

interim report that the CFA advise people about the defendability of their homes and that advice on staying to defend should specifically contain the warning that being in a bushfire can be a terrifying, life-threatening experience that can cause serious, long-term psychological damage. This is particularly the case for ferocious and fast-moving fires.

Following adoption of these recommendations, the CFA now advises people about the defendability of their homes through community education materials, the Household Bushfire Self-Assessment Tool and direct advice (see Chapter 6). The Commission welcomes this important development. It notes that the most recent CFA advice to householders, *Prepare. Act. Survive. Your Bushfire Survival Kit* has incorporated the following:

- the risks of staying to defend—including the risk of death
- that defending is not an option for children, the elderly or those with vulnerabilities
- that not all houses are defendable
- that many houses that are defendable in moderate fire conditions will be undefendable in extreme conditions
- that preparation involves more than creating a defendable space around the home and having an adequate water supply. For example, equipment such as pumps, hoses and fittings must be specifically designed to endure extreme fire conditions.²⁰¹

The Commission considers that there are still some weaknesses in the guidance the CFA provides in relation to house defendability. First, advice given about improving building defendability must make it clear that current building standards are only designed to provide for individuals protection from the firefront for only about 15–20 minutes. It should also be made clear that the standards assume a house will be actively defended. The Commission heard from a number of witnesses who experienced firefronts that lasted over an hour.²⁰²

Second, the CFA's current focus on defendability appears to be largely confined to the immediate surrounds of a house. Analysis conducted by the Commission showed that a considerable proportion of those who died in or around dwellings or who died fleeing from their properties were in areas that were closely adjoining or in some cases completely surrounded by heavy forest. Others were on the crests of hills or on upper slopes surrounded by large concentrations of forest and in similar positions the Commission considers would have been undefendable on 7 February, even if the properties themselves were relatively clear and well maintained.²⁰³ Defendability is affected by the surrounding environment, such as proximity to a heavily forested area. These broader factors affect the ferocity of the approaching fire and whether the house could be subject to very heavy ember attack.

Properties close to heavily forested areas are more prone to ember attack than those in open farmland. The momentum and ferocity of a fire travelling through heavy forest will be different from and greater than a fire burning in grazed paddocks. Assessments of defendability should therefore consider the nature of the nearby undergrowth and fuel load. On the basis of the evidence before the Commission, broader landscape influences are not adequately identified, considered or explained by the CFA when it is assessing the defendability of properties.

A Bushfire CRC study of bushfire penetration into urban areas in a selection of fires in south-eastern Australia since 1967 (including Marysville and Kinglake) concluded that, by avoiding building structures within 100 metres of bushland boundaries, 'the majority of building damage would be avoided'. This has implications not just for limiting property damage (see Chapter 6) but also for the safety of people who choose to stay and defend.²⁰⁴

Professor Roz Hansen, an urban planner, provided advice to the Commission about how far away houses and the urban edge should be from adjacent bushland. The 2007 CFA kit, *Building in a Wildfire Management Overlay*, focuses on vegetation and fuel within 100 metres of the proposed house; the New South Wales Rural Fire Service advises this should be 140 metres. Professor Hansen went on to say:

Land in more isolated locations, or on allotments on the edge or fringe of township boundaries, or adjacent to but outside these boundaries, may require a wider assessment of existing vegetation cover beyond distances of 100–140 metres. This is especially relevant to land which is close to large tracts of forest and bushland where fuel loads can be high and the severity and extent of an approaching bushfire can be potentially catastrophic.²⁰⁵

The Commission's hearings into the fire-related deaths revealed that a large number of people died in homes the Commission considered were undefendable on 7 February. This question needs more serious analysis, and objective measures and tools to help determine minimum set-back distances from heavy fuel concentrations when assessing a house's defendability need to be developed. Further research into this is required as a matter of urgency (see Chapter 11).

Third, the Commission notes that the guidance the CFA provides does not include the defendability of farm, commercial and industrial premises since these require separate expert advice. Information provided about houses under Victoria's new bushfire safety policy is unlikely to apply to more complex structures and should not be relied on for offices, warehouses, factories or farm sheds. Larger premises will require specific advice, and this should be specifically sought from fire agencies or commercial providers of advice.

Finally, evidence before the Commission suggested that demand for individual site visits had been minimal, possibly reflecting the CFA's reluctance to date to provide such advice. The CFA needs to more actively promote the option of individual assessments of defendability.²⁰⁶ Interim Report Implementation Monitor Mr Neil Comrie also identified this as an area for improvement.

Changes to the CFA Act following recommendations in the Commission's interim report empower the CFA to provide advice on defendability and give CFA officers immunity from legal liability for doing so, but they do not mandate giving defendability advice as part of the Chief Officer's core responsibilities.²⁰⁷ As a consequence, the CFA might continue to be reluctant to provide such advice. The Commission believes that good advice about defendability is as essential as issuing warnings on the day of the fire. The State should strengthen arrangements to ensure that the CFA provides an appropriate level of advice to individuals on the defendability of their properties. The State should evaluate the arrangements within two years and consider amending the CFA Act to require the Chief Officer to provide defendability advice if the evaluation shows that the arrangements are not sufficient.

Bushfire safety options

Contingency planning is very important: when a fire plan fails and things go wrong, people need alternatives. The Commission's recommendations broaden the range of contingency measures available to communities. Community education is required so individuals understand the options that are available, make informed choices about the relative safety of the alternatives, and know what assistance will be provided during a fire to help them make a decision. For example, education on evacuation might cover the processes for evacuation, the availability of shelters and the information provided in warnings.

1.8.4 LOCAL PLANNING FOR BUSHFIRE SAFETY

The Commission envisages that local councils, with adequate resources and support from the Victorian Government and fire agencies, would play a central role in local bushfire planning. Emergency Services Commissioner Mr Esplin accepted the need for and importance of local planning in Victoria's bushfire safety policy, specifically in relation to community alert sirens, shelters and evacuation.²⁰⁸ The Commission heard from a number of witnesses, such as Associate Professor Cova, who emphasised the benefits of developing plans at the local level.²⁰⁹ Mr Streblow of CAL FIRE provided an Incident Controller's point of view. He explained that having a community evacuation plan makes it much easier to evacuate an area threatened by fire.²¹⁰ He also stated:

We do as much as we can prior to an event, prior to the fire. So through an educational process we will explain to people why we do this. An example is the Paradise plan. That plan gets out to the public. They understand it. They know why we are doing it. They know what the components are. So education is probably the greatest component that we use to get compliance.²¹¹

A local planning approach would overcome one of the primary shortcomings identified in relation to 7 February: the stay or go policy did not accommodate diverse local circumstances.

Individual and household fire plans have long been a feature of the CFA's approach, and this should continue. Local planning can help individuals by highlighting community circumstances and ensuring these are recognised in individual plans. Consistent with the Commission's view on shared responsibility (see Chapter 9) all parties in bushfire-prone areas—the State, councils, communities and individuals—should work to develop comprehensive plans that identify and respond to local risks. Such plans would provide a range of safety options that meet the needs of the local community, consider how vulnerable people would be catered for, and clearly describe the alternatives available to the local community.

Existing local planning processes

The Commission has identified three existing processes that could be used to improve bushfire safety planning:

- municipal emergency management planning
- municipal fire prevention planning and its successor, integrated municipal fire management planning
- township protection planning.

Under the *Emergency Management Act 1986* all councils must prepare and maintain a municipal emergency management plan. These plans must be prepared in accordance with guidelines published in the *Emergency Management Manual Victoria*. Emergency management plans are developed on the advice of municipal emergency management planning committees and must identify the resources available in the municipality that can be used for emergency prevention, response and recovery and specify how those resources are to be used.²¹²

Councils are also required to prepare a municipal fire prevention plan.²¹³ Under the CFA Act the CFA may appoint a municipal fire prevention committee in country Victoria. These committees make recommendations to council about the preparation and content of a fire prevention plan. This plan identifies the municipality's fire risks, determines the appropriate responses to or treatment of those risks, and specifies who is responsible for implementing each response or treatment.²¹⁴

Township protection plans were originally developed by the CFA as operational response plans to prepare for firefighting operations and identify local access routes and vulnerabilities such as schools, nursing homes and hospitals.²¹⁵ The purpose of the plans was revised in the wake of the 2009 bushfires to include more detailed consideration of the actions community members could take when fire threatens their town.²¹⁶ The Commission was advised that 66 township protection plans had been developed, including one for each of the 52 high-risk towns identified by the State Government. These plans have three parts, covering community information, township planning factors (focused on initial operational response) and fire prevention works. The community information is produced in the form of a map detailing important locations and facilities, such as neighbourhood safer places, and where to obtain emergency information. The plans were produced quickly after Black Saturday and those provided to the Commission varied greatly in their quality. Some contained details about local information sources and clearly showed the location of neighbourhood safer places, but others appeared of limited benefit to local residents, lacking clear guidance on the location of safer places.²¹⁷ At present there is no formal connection between township protection plans and emergency management plans and fire prevention plans. Township protection planning is a CFA initiative that has taken place outside local emergency management and fire prevention planning processes. Given the relevance of some of the content of township protection plans, particularly fire prevention works, the Commission considers there is scope for better aligning these plans with other local plans in the future.

The Commission is of the view that the existing emergency management, fire prevention and township protection plans do not facilitate the level of planning necessary to mitigate the risks of bushfire at the local level. The Commission would prefer a single bushfire management plan, although it acknowledges that the CFA should carry out separate operational response planning. Fire prevention works, one of the three elements of township protection plans, should form part of the single local plan.

Figure 1.9 Integrated Municipal Fire Management Plan Framework

A need for greater integration

Fortunately, work is under way to better integrate emergency management plans and fire protection plans through the development of an integrated municipal fire management plan framework. The concept of integrated fire management plans emerged in a 2002 CFA review of municipal fire prevention arrangements. The review identified areas for improvement, including revision of the municipal fire prevention planning guidelines, better integration of planning processes between all agencies and levels of government, and review of the unwieldy fire prevention plan structure.²¹⁸ A plan documenting the new framework was developed in 2004. Its objectives included reforming fire prevention planning to encompass a risk-based approach to the planning and management of fires and assimilating the proposed framework into the emergency management planning process for Victoria.²¹⁹

The framework was approved in February 2007 and is to be supported by State, regional and municipal committees established by the Minister for Police and Emergency Services.²²⁰ Over time, existing fire prevention committees in country areas of Victoria will be replaced by fire management planning committees, which will be responsible for integrated planning at the municipal and local level and developing municipal fire management plans. They will report, as a sub-committee, to the municipal emergency management planning committee, under guidelines in the *Emergency Management Manual Victoria*.²²¹

A closer connection between municipal fire management planning and municipal emergency management planning, as proposed under the framework, is much needed and is welcomed by the Commission, even though this framework does not currently, but should, include consideration of elements of township protection plans. Fire management planning committees will produce municipal fire management plans, according to ministerial guidelines also published in the *Emergency Management Manual Victoria*. Fire management plans will be sub-plans to the existing municipal emergency management plan, ensuring that fire prevention, response and recovery are linked, consistent and holistic. The plan must consider the social, economic and built and natural environment aspects of fire and guide participants in fire management planning activities. It will also cover ecological and cultural use of fire.²²² The Commission heard positive feedback about the advent of integrated fire management planning at the municipal level.²²³

State and regional fire management planning committees have been formed. Only 10 councils have established fire management planning committees, however, and by March 2010 only two had disbanded their prevention committees, which are to be replaced. A draft state strategy has been approved and published; it shows the framework being implemented between 2010 and 2012.²²⁴ The Commission notes that the progress of implementing the framework has been frustratingly slow and urges the State to give priority to the roll-out of the integrated fire management plan framework.

One of the main outcomes of the framework is the development of the Victorian Fire Risk Register, a tool used to map bushfire risk and considered in the Commission's interim report. At least 22 councils have mapped their bushfire risk using the register, and mapping is in train in several others.²²⁵ The Commission heard that the register provides a consistent and uniform way of identifying and documenting fire risk across Victoria. Mr Kevin Kittel, the municipal fire prevention officer for Corangamite Shire, told the Commission that the ability to see the identification and treatment of risks in map form had tremendous advantages over having to read very long documents.²²⁶

A need for better guidance

The guidelines for municipal emergency management planning in the *Emergency Management Manual Victoria* provide very little advice to councils on what emergency response arrangements are required.²²⁷ This leads to inconsistency and could also mean that the arrangements are inadequate. For example, the Murrindindi municipal emergency management plan had been assessed as complying with the guidelines of the Emergency Management Act but it did not include plans to prevent or respond to bushfire or to evacuate Marysville or any other township in the shire.²²⁸ The Commission considers this unacceptable. The State should review the guidance it provides to councils, to help them develop and implement more focused and useful local emergency planning, particularly in relation to bushfires.

Mr Kittel expressed concern about the level of guidance provided when preparing municipal fire management plans. The CFA provided a broad template on which to base the plans. The template did not include the mandatory information required or fully developed aims and objectives. As Mr Kittel pointed out, this could result in very different fire management plans being developed across the state, which is at odds with the objectives of an integrated framework.²²⁹ The framework states that ministerial guidelines for municipal fire management planning would be published in the *Emergency Management Manual Victoria*. Although this has not occurred, the State advised the Commission that work is under way and that, once the Commission's final report is delivered, it will give urgent attention to finalising the guidelines.²³⁰ The Commission urges the State to publish, without delay, guidelines for the development of municipal fire management plans. The guidelines should be clear and concise and should contain a list of the bushfire risks to be identified in each municipality and the treatments that may be applied to each of those risks. They should also require use of the Victorian Fire Risk Register to identify, document and treat fire risk.

Enhancing the role of local planning

Victoria's bushfire safety policy must be described in state policy documents, given force through state legislation, communicated in the training of emergency personnel, and accounted for in statewide resourcing decisions. Success is dependent, however, on local application and implementation. Local governments, in consultation with the CFA and other agencies, need to assess which bushfire safety options are available in their local area in advance of a fire, and include alternatives in their emergency management planning.

Local planning for each community should cover the following:

- evacuation—assisted evacuation for vulnerable people who require support and emergency evacuation in the face of a bushfire threat
- shelter options—community refuges and bushfire shelters.

Detailed plans should include possible evacuation routes, who would take action to effect an evacuation, and triggers for that action. Activities could also include building shelters and modifying local areas to make them safer. Additionally, local plans would be the primary source of information on bushfire safety options for people living or

visiting the area and should be prepared with this in mind. Information and advice about contingency options must stress that people's individual and household fire plans should draw on those local plans to identify the options available in their community.

In the highest risk areas the Commission considers practical exercises such as simulated evacuations should be conducted. Professor Dutch Leonard of Harvard University and Professor Paul 't Hart of the School of Politics and International Relations at the Australian National University stress the importance of training and practice.²³¹ Conducting local trials or drills could involve responding to a recommendation to evacuate or a siren. Planning and trials should envisage different types of fires, including firestorms. Plans should also explicitly consider how safety options will be implemented on the most dangerous days and how the community response on those days should differ because of the heightened risk.

Integrated planning by municipal fire management planning committees is the Commission's preferred approach, and it urges the State to continue the roll-out of the integrated fire management plan framework in line with its current timetable, if not sooner. It notes with regret, however, that this is not under way in most municipalities and is not expected to be completed before 2012. As a consequence, interim measures are required. This could include 'fast-tracking' the development of municipal fire management plans in areas of highest bushfire risk, integrating information already completed in township protection plans, and distributing this widely across local communities. Whatever the approach, councils, the CFA, and other local agencies should be involved in determining shelter and evacuation options, and a primary outcome should be developing and distributing information about the options in a form that is able to be understood by residents.

1.8.5 INDIVIDUAL PLANNING AND PREPARATION

Individuals played a key role in implementation of the stay or go policy, and this should continue under the revised policy, although with additional support from the State and local councils. Household preparedness in advance of a fire is crucial and must be encouraged and assisted through advice and education to give people the best chance of survival. 'Preparedness' should be distinguished from an approach that assumes that households will implement a predetermined fire plan come what may. The Commission envisages that residents of fire-prone communities would take personal responsibility for living in a high-risk area, seek the knowledge and skills to allow them to prepare their home for bushfire, evacuate early and safely when it is recommended and, if trapped, make use of learned skills to survive the fire.

Individual plans should draw on an area's local plan, applying local options to the household's circumstances and needs. The CFA should provide updated guidance about the main components of a household fire plan, including contingency options and the need to obtain and understand warnings. Contingency options should include alternatives for situations where people find themselves trapped in a house, motor vehicle or out in the open.

Planning for animals

Section 1.4.2 notes the importance of the attachment between individuals and their pets and livestock and how that attachment can influence an individual's actions when threatened by fire. This attachment needs to be recognised, and there is a need for practical information about how individuals can include their animals in their evacuation or prepare themselves for leaving their animals behind. As with humans, early evacuation of animals is the safest course, but this might not be easy for people with numerous or large animals. Dr Sarah McCaffrey, Research Forester and Social Scientist with the US Department of Agriculture's Forest Service told the Commission her research showed that animals were a barrier to people's willingness to evacuate: 'They know they can't get their animals out in time so they're going to just figure out how to manage internally. I have actually met a number of people who would like to evacuate but recognise they can't get their animals out and so are going to stay'.²³²

The difficulties associated with planning for animals were highlighted by a number of lay witnesses, among them Dr Renee Paulet, who lived in Callignee on 7 February. She told the Commission:

If we were to leave, I wouldn't leave before there was a fire because I wouldn't leave without the horses and anywhere I moved them to, a fire could start there. So, I would be waiting until I heard that a fire had started, whether it be on the ABC or on the internet, and then I could make a decision as to where would be the safe place for us and our animals to go.²³³

Farmers occupying broad-acre holdings have traditionally relied on clearing their land to provide a place of refuge for their animals, and the Commission heard evidence of this occurring during the 2009 fires. In other cases animals were moved to safer locations: well-resourced farmers generally have the equipment and knowledge to do this relatively quickly. For hobbyists and people with pets, though, removal requires careful prior planning; and the intended means of removal also needs to be realistic and be able to be implemented quickly and in a way that does not endanger the carer.²³⁴

1.8.6 IDENTIFICATION AND DEVELOPMENT OF SHELTER OPTIONS

In its interim report, the Commission expressed support for a new approach to shelter and proposed the following options:

Designated community fire refuges, identified, constructed or refurbished by the State (following the review of the 2005 Fire Refuges Policy) and maintained by councils

Neighbourhood safer places, identified by the State in consultation with councils, and maintained by councils. It is noted that the State's proposal suggests that the CFA would assess and manage neighbourhood safer places

Privately identified safer places, being arrangements made by individuals should their plan to stay and defend fail, or should they find themselves otherwise exposed. These arrangements could include options like their own inground swimming pool, or a neighbour's ploughed paddock.²³⁵

Having considered further evidence on these three options, the Commission reiterates its view that more options are required. It proposes that further attention be given to making a range of shelter options available, depending on the location, level of bushfire risk and needs of each community. The Commission considers, however, that the terminology currently used could be simplified and has adopted the following terms to describe the three options just outlined above: community refuge, bushfire shelter and personal shelter. The Commission adopted the term 'community refuge' to acknowledge the role this facility might play in an 'all-hazards' approach to emergency management, although the current emphasis is on bushfires.

The Commission focused on what needs to be done to increase the availability of government-sanctioned shelter options—that is, community refuges and bushfire shelters—as opposed to personal shelters since these will vary greatly depending on individual circumstances. Following a recommendation in the Commission's second interim report, a national standard for the construction of private bushfire shelters, or bunkers, has been developed and adopted in Victoria. The Commission notes that this could provide another valuable personal shelter option.

The Commission is mindful that there will be situations where people find themselves trapped in their house, in a motor vehicle or out in the open during a bushfire. The State should advise people about how to make themselves as safe as possible in these circumstances. This should include providing advice about when and how to use informal shelter options (for example, a water body such as a dam or pool) and large cleared spaces (for example, an oval or paddock) particularly if they are in a motor vehicle. Section 1.8.4 outlines how the options should be incorporated in local planning.

Community refuges

The history of fire refuges in Victoria and their status as at 7 February 2009 were canvassed in detail in the Commission's interim report. Councils are responsible for providing fire refuges, in accordance with the State's 2005 policy, *Fire Refuges in Victoria: Policy and Practice*. The policy states that refuges will be provided only in rare and exceptional circumstances, and must comply with published standards and guidelines.²³⁶ By 7 February 2009 fire refuges had all but disappeared from Victoria's bushfire-prone areas: there were only nine designated community fire refuges in two municipalities. At present the Woods Point mine is Victoria's only community refuge (see Chapter 8 of the Commission's interim report).²³⁷

The Commission's interim report recommended that the State replace the 2005 refuges policy with a new policy. It also highlighted a number of challenges, particularly for local councils, that would need to be considered in

developing a new policy. These included identifying communities and areas where refuges might be appropriate; determining suitable locations; standards for design, construction, siting, operation and performance; capacity; assigning responsibility for establishment and maintenance; funding; and legal liability.²³⁸ Councils' concern about legal liability and the possibility of litigation was one of the perceived stumbling blocks, and the Commission indicated that the State should consider immunity or indemnity in its revision of the refuges policy. The Commission also recommended that the CFA give priority to providing crews to defend refuges and neighbourhood safer places and considered that people present should have available to them the equipment necessary to actively defend these locations.²³⁹

The State's recent discussion paper on the refuges policy identified a number of options for dealing with the question of liability, among them providing an immunity, the State indemnifying councils for a death or injury arising from the use of a refuge, and providing a policy defence similar to that applying for neighbourhood safer places.²⁴⁰ The Commission also notes that the relevant legislation about neighbourhood safer places offers councils some protection against legal actions arising from the places' designation and operation.²⁴¹ It has not considered in detail the operation or adequacy of the policy defence, though. The Commission urges the State to consider the impact liability could have on councils' decisions to designate community refuges and develop protections to ensure this does not operate as a disincentive. This assessment should consider all options, including a policy defence, an indemnity or an immunity.

The Commission repeats its view that active defence of shelter locations, particularly by the CFA, is an essential element of the policies that underpin those locations. The concept of community fire units, as used by New South Wales Fire Brigade, might have merit when considering community refuges and bushfire shelters. These units are staffed by trained volunteers in specific streets and have access to water, a pump and hoses to assist with local protection.²⁴² The Commission does not suggest this approach for Victoria because it is concerned that it could encourage residents to stay rather than leave. For refuges and shelters, however, the placement of such units could provide an additional element of protection without any reliance on fire agency resources being present. This approach should be investigated.

Although the Commission did not nominate a deadline for the State to revise the refuges policy and accepts that this is a complex task, it is disappointed that more progress has not been made. It is also concerned about the estimate that a standard for refuges could take years, rather than months, to develop.²⁴³ Refuges must undoubtedly sit within the broader bushfire safety policy, but development of standards for refuges is a relatively discrete component of the policy and could be completed early in the overall policy review.

The Commission is concerned that isolated communities surrounded by forest, where evacuation is unlikely to be a safe option once a fire is burning, need options such as community refuges for people who are unable or unwilling to leave early. Councils should be considering community refuges as part of their local contingency planning but are effectively unable to do so until the state policy is finalised. The Commission repeats its earlier proposal that the State give priority to developing a new refuges policy, to enable councils to implement the contingency options that will form a central element of Victoria's bushfire safety policy in the future.

Neighbourhood safer places

In the Commission's interim report 'neighbourhood safer places' were conceived of as an alternative place in which people might seek shelter. As discussed in this section, the State has published assessment guidelines for NSPs, established a legislative framework in which they operate, and assessed potential sites against the guidelines.²⁴⁴ The legislation has it that councils, rather than the State, are responsible for designating NSPs. By 21 May 2010 the CFA had assessed 534 potential sites and councils had designated 81 such places in 23 municipalities; a further 186 were undergoing council designation. By 7 July 2010, 94 NSPs had been designated.²⁴⁵ The Commission welcomes this progress, but it considers that improvements could be made to the terminology, process and criteria used by councils to designate these places.

The Commission was informed that New South Wales has about 600 NSPs and notes that the NSW framework for designating such places is substantially different from that in Victoria. Significantly, the NSW Rural Fire Service has sole responsibility for designating NSPs, and there is no statutory obligation on the service to designate them. There is a single criterion for designation—exposure to radiant heat—and the question of liability has not yet been determined.²⁴⁶ It is not clear from the evidence which authority is responsible for factors such as maintenance, access and egress. In addition, while Victoria has focused on areas of very high risk, it is not clear whether NSW has taken this approach. The Commission did not examine the NSW model in sufficient detail to be able to offer a view as to its desirability, but it does note NSW's achievements. Mr Esplin said work to identify and designate NSPs was continuing in Victoria. A comprehensive review of NSP policies and procedures based on the experiences of the 2009–10 fire season has begun. It is not known when the results of this review will be delivered.²⁴⁷

The State's original proposal defined an NSP as 'a space which is a place of last resort for individuals to access and remain in during the passage of fire through their neighbourhood, without the need to take a high risk journey. They are intended to provide a place of relative safety'.²⁴⁸ The State has since adopted the term Neighbourhood Safer Place—Places of Last Resort.²⁴⁹ The Commission notes that the State and councils have quite deliberately—through the relevant legislation, community education material and signage—positioned NSPs as places of last resort that provide relative, rather than guaranteed, safety. Promotional material, including signage at the sites, includes a range of caveats about the level of safety to be expected.²⁵⁰

The Commission appreciates that people using NSPs must be informed about the limitations to the protection NSPs provide and the risk of using them. It considers, however, that the current terminology is clumsy, and it urges the State to adopt a more suitable name. 'Bushfire shelter' more accurately describes the intent and function of NSPs, and the Commission uses this term in this final report. The Commission has not, however, made a detailed assessment of the most suitable description and considers that more work is needed. Research into terminology for a range of concepts is discussed in Chapter 11.

In addition to its concern about terminology, the Commission considers that the way NSPs have been promoted might actually discourage people from using them.

Figure 1.10 is an example of NSP signage.

The Municipal Association of Victoria argued that NSP signage plays 'an important community education function' and that councils should not, 'by omission, mislead people about what NSPs provide so as to induce or encourage more people to attend NSPs'.²⁵¹ The State argued, 'It is important that individuals are aware that the shelter offered by an NSP is not complete'.²⁵² The Commission considers that the signage, as it currently is, is evidence of a reluctance on the part of councils to endorse the use of NSPs during the passage of a fire. The Municipal Association of Victoria disputes this, but the Commission nevertheless considers there is scope to improve the language used and encourages the association to reframe its education materials, including signage, to focus on the purpose and benefits of bushfire shelters as well as their limitations.²⁵³

Figure 1.10 Daylesford NSP signage



WARNING

THIS DESIGNATED NEIGHBOURHOOD SAFER PLACE (NSP) IS A PLACE OF LAST RESORT DURING THE PASSAGE OF A BUSHFIRE. WHILST IT MAY OFFER SOME PROTECTION FROM BUSHFIRE, THE SAFETY OR SURVIVAL OF THOSE WHO ASSEMBLE HERE IS NOT GUARANTEED.

BEFORE DECIDING TO HEAD TOWARDS, OR ENTER, THIS NSP IN THE EVENT OF BUSHFIRE, BE AWARE THAT:

- MANY HOUSES MAY OFFER BETTER PROTECTION THAN THIS NSP
- TRAVELLING TO THIS NSP WHEN THERE IS BUSHFIRE CAN BE EXTREMELY DANGEROUS. THERE IS NO GUARANTEE THAT YOU WILL BE SAFE DOING SO
- THIS NSP MAY NOT PREVENT DEATH OR INJURY FROM FIRE, EMBERS OR RADIANT HEAT WHEN YOU GET HERE
- YOU SHOULD ONLY USE THIS NSP WHEN YOUR PRIMARY BUSHFIRE PLAN HAS FAILED OR CANNOT BE IMPLEMENTED
- THIS NSP ONLY HAS LIMITED CAPACITY
- THERE IS NO GUARANTEE THAT CFA OR OTHER EMERGENCY SERVICES WILL BE PRESENT AT THIS NSP DURING A BUSHFIRE
- NO FACILITIES ARE PROVIDED FOR PEOPLE WITH SPECIAL NEEDS, INCLUDING THOSE REQUIRING MEDICAL ATTENTION
- THIS NSP MAY BE UNCOMFORTABLE AND NO AMENITIES SUCH AS FOOD AND DRINKS WILL BE PROVIDED
- THERE IS NO PROVISION FOR ANIMALS.

VICTORIAN BUSHFIRE INFORMATION LINE – 1800 240 667

Box 1.5 The legislative framework for neighbourhood safer places

The legislative framework underpinning NSPs came into operation on 2 December 2009. Responsibility for designating NSPs is divided between the CFA and councils. The CFA develops criteria for assessing nominated NSPs, assesses proposed NSPs nominated by a council, and if a proposed site meets the criteria provides written certification of that fact.

Councils identify proposed NSPs within their municipality, but they may designate a site only if it has been certified by the CFA. Councils are not required to designate all sites certified by the CFA as NSPs and may decline to do so if 'satisfied on reasonable grounds that it is not appropriate to designate the place as a neighbourhood safer place'. The Act does not provide any guidance on what would constitute 'reasonable grounds'. The legislation's explanatory memoranda do, however, note that a valid consideration might be ease of access to the proposed NSP. If a proposed NSP is not located on council land, the consent of the occupier must be obtained before the NSP can be designated.²⁵⁵

For each NSP within each district a council is also required to provide appropriate identifying signage, maintain the NSP, and conduct an annual review to determine if the NSP is still suitable. The annual review must include a re-assessment by the CFA of the NSP criteria and, if a venue is no longer compliant with those criteria, it must be decommissioned by the council.²⁵⁶

Although the Commission's interim recommendations assigned responsibility for identifying and establishing NSPs to the State, the amended CFA Act clearly allocates that responsibility to councils. The State did not explain why it decided to allocate responsibility for designating and maintaining NSPs to councils when councils had indicated they preferred the State to control the process and provide the necessary funding.²⁵⁷

Legal liability also sits with councils. The Act does, however, offer them some protection against legal action arising out of the designation, non-designation or operation of NSPs. To be entitled to protection from liability, councils must establish a Neighbourhood Safer Places Plan. This documents the identification, suitability and designation of sites as NSPs and the inspection, maintenance and decommissioning of NSPs. If a council acts in accordance with its NSP Plan, it will not be liable for death or injury arising out of the use of a designated NSP or the failure to designate an NSP, unless the NSP Plan is so unreasonable that no reasonable council could have made the plan. Although the CFA Act does not make it mandatory for councils to prepare and publish an NSP Plan, a council without such a plan will be unable to make use of this policy defence.²⁵⁸

In October 2009 the CFA published the document entitled *Neighbourhood Safer Places, Places of Last Resort During a Bushfire: Interim Assessment Guideline (2009/10 Fire Season)*.²⁵⁹ The guideline defines the required distance between the outer edge of an NSP and fire hazards (especially vegetation):

- for open spaces, 310 metres or such distance as ensures that the maximum potential radiant heat impacting on the site is no more than 2 kilowatts per square metre
- for buildings, 140 metres or such distance as ensures that the maximum potential radiant heat impacting on the building is no more than 10 kw/m².²⁶⁰

Mr Terrence Hayes, the CFA officer with overall responsibility for implementing the NSPs program, explained that, although the guideline nominates separation distances, what is most important is radiant heat. If a site complies with the radiant heat limit, a lesser separation distance might be allowed. He could not, however, nominate any sites where a lesser separation distance had been approved by the CFA.²⁶¹

Council's designation of neighbourhood safer places

As discussed, councils have statutory responsibility for identifying potential NSPs and referring these to the CFA for assessment. In an effort to expedite the first round of NSPs, however, the CFA accepted nominations from a wider variety of sources, including community groups and local CFA brigades. The priority areas for identification and assessment of NSPs were the 52 high-risk bushfire townships identified by the State Government.²⁶²

In late 2009 about 20 CFA staff took a one-day training course to enable them to carry out NSP assessments. The assessment process was then managed at the regional level.²⁶³

Certification by the CFA that a site complies with NSP criteria does not guarantee that the site will be designated an NSP. On receiving notice of certification, a council will consider the CFA's assessment and then make a final decision on the basis of additional factors, among them safety of access routes; ability to gain access to and operate the NSP 24 hours a day, seven days a week; defendability of the venue; traffic management; ownership of the land; the presence of hazardous objects around the NSP; access for people with a disability; and liability insurance.²⁶⁴

The Commission heard evidence from Ms Samantha Dunn, councillor for the Shire of Yarra Ranges, and Mr Robert Spence, CEO of the Municipal Association of Victoria, that one of the more complex questions for councils was obtaining the occupier's consent to designate NSPs on non-council land, including private and public land.²⁶⁵ Mr Spence said that obtaining consent from private landowners or occupiers was time consuming partly because landowners need to take legal advice and that use of Crown land generally requires ministerial consent. He advised that dealings with non-council landowners had involved questions of access (both for maintenance and during a bushfire), potential conflict with other uses of the land, and the security of the facility.²⁶⁶

Notwithstanding these difficulties, councils have designated a broad range of places that meet the CFA's assessment criteria—from a car park to a river bank, a football oval and a shopping strip.²⁶⁷ The diversity of venues highlights that shelter options will vary depending on the particular community, its risk profile and the available places.

The Commission considers that shelters offer a valuable 'second-tier' safety option, and should not be subject to the same requirements as refuges. It notes the evidence from lay witnesses about the strong community desire for this type of shelter and frustration at not having some locations designated as NSPs. Councils have obviously been assigned a complex task without commensurate resourcing.²⁶⁸ Nevertheless, the Commission is concerned that the additional level of scrutiny imposed by councils—beyond the CFA's radiant heat requirements might be too onerous for what is intended to be a 'safer' but not 'safe' shelter option.

The Municipal Association of Victoria advised the Commission that extensive efforts had been made to identify and designate NSPs in the 52 high-risk townships identified by the State in 2009. NSPs have been designated in at least 29 of those townships, but there are a number of townships that have no places that comply with the CFA's assessment guidelines.²⁶⁹ The Commission notes the efforts of councils in this regard but is concerned that some areas of high risk—especially popular holiday destinations, including Apollo Bay—remain without a shelter. This emphasises the need for a range of options in high-risk areas and the importance of local planning in these areas to determine whether other options such as evacuation, refuges and shelters should be promoted. In the case of high-risk areas where evacuation is likely to be unsafe and shelters are not available, the Commission notes its recommendation in Chapter 6 that the State adopt a voluntary program of assisting resettlement. It is the Commission's strong view that people should be helped move away from areas of unacceptably high risk if safe options cannot be provided.

Future shelter options

Mr Esplin canvassed the possibility of NSPs and refuges being supplemented by a third option—'safer precincts'. These are used in South Australia to provide an additional place for people to go to during bushfires. The South Australian policy provides that a safer precinct might be 'any area that is further than 500 metres from continuous bushlands or forest or more than 200 metres from continuous grassland'.²⁷⁰ In his evidence in December 2009 Mr Spence from the Municipal Association of Victoria also acknowledged that safer precincts might be worth considering in the Victorian context.²⁷¹ The Commission did not reach a conclusion about safer precincts but encourages the State to investigate their merits. The State has acknowledged that the stay or go policy did not, as at 7 February, cater for those who could not implement their bushfire plan and has recognised that additional shelter options are required for those who might be unable to shelter in their homes or who are caught in the open during a bushfire.²⁷² The efforts made to date in relation to NSPs have started to redress the need for additional options. With many of the 52 high-risk townships still lacking a designated NSP, however, there is a great deal of further work to be done.²⁷³

1.8.7 PLANNING FOR EVACUATION

The policy and legal framework for evacuation as at 7 February is set out in detail in Chapter 6 of the Commission's interim report.²⁷⁴ In summary:

- The *Country Fire Authority Act 1958* and the *Emergency Management Act 1986* provide for a limited form of compulsory evacuation of areas threatened by fire, subject to a broad 'pecuniary interest' exception.
- Consistent with the State Emergency Response Plan, a decision to recommend that people evacuate rested with the control agency, in conjunction with police and other expert advice. The SERP noted that there were instances when evacuation might not be the best strategy and, specifically in relation to bushfires, advised there should be no attempt to evacuate in the face of a fire.
- Police had responsibility under the SERP for carrying out a recommended evacuation. Victoria Police emergency response coordinators also had responsibility for ensuring that the control agency considered whether evacuation was necessary.
- The CFA's policy was that the decision to leave an area or stay with a property was an individual decision that should be made well in advance of a fire and that late evacuation was dangerous.
- CFA personnel were advised not to provide specific directions as to whether an individual should stay or leave and to discourage late evacuation.

The CFA's policy was generally consistent with AFAC's 2005 position paper on bushfires and community safety: those who choose to leave early should do so well before the impact of a fire, because late evacuation is dangerous. While AFAC noted that in some cases 'selective early relocation of vulnerable people may be appropriate', it did not support large-scale evacuations as the preferred option. Another important element of the AFAC position was that in some circumstances it might be appropriate to consider evacuation, in which case the lead fire combat authority would be best placed to decide whether evacuations should be ordered. It noted, however, that 'adequately prepared and resourced people should not be forcibly removed from adequately prepared properties' and that 'forcible evacuation of residents who resist should not be pursued at the cost of missing out on notifying others, or where this would unreasonably endanger the lives of police officers or others'.²⁷⁵

The Commission's analysis suggests that some of the subtleties of the AFAC position on evacuation were not reflected in Victorian policy or practice. The CFA did not recommend evacuation once a fire was burning, and its policies on evacuation did not take account of evacuation of vulnerable locations. On 7 February no Incident Controller recommended evacuation of an area threatened by fire. There were some instances of assisted evacuation of vulnerable residents, which were initiated by the facilities responsible for those people and, in one instance, by Victoria State Emergency Service rather than by an Incident Controller (see Section 1.4.4).²⁷⁶

In its interim report the Commission recommended that the 'CFA and DSE amend operational policies to require the Incident Controller to assess whether relocation should occur and to recommend relocation when warranted'. In response to this recommendation the CFA and DSE adopted a joint standard operating procedure—JSOP4.01, Incident Information and Warnings. It requires the Incident Controller to provide advice to threatened communities on appropriate responses, including relocation. The Commission is concerned, however, that the State did not go far enough in implementing this recommendation since JSOP4.01 does not require an Incident Controller to actively assess whether evacuation should be recommended. The recommendation called for a fundamental change in the fire agencies' approach, moving active assessment of the need for relocation as an integral part of the response to a fire. This has not occurred.

Fire agencies' reluctance to use evacuation as an emergency response appears to be strongly grounded in the evidence available before 7 February that most civilian deaths in Australian bushfires have occurred during late evacuations.²⁷⁷ The experiences of those who died and those who survived on 7 February challenge previous research results and suggest there might be greater opportunities for evacuation—particularly when an intense fire approaches—than previously considered.

The Commission reiterates its conclusion in the interim report: compulsory evacuation should not be the policy of Victoria's fire agencies and the pecuniary interest exception should remain.²⁷⁸ The Commission is, however, of the

view that the State should reassess its approach to evacuation, so that it is planned for, considered as a viable option for saving lives even after a fire has started, and used where it is likely to offer a higher level of protection than other contingency options in the circumstances. As part of Victoria's revised bushfire policy, the State should introduce a more comprehensive approach to evacuation that focuses on the following:

- *Relocation.* This involves an undertaking by individuals and households independently deciding to leave (preferably early) a threatened or potentially threatened area.
- *Assisted evacuation for vulnerable people who require support.* This involves vulnerable people who are living in facilities or in the community being given tailored warnings and being helped to move away from the danger zone well before a fire arrives.
- *Emergency evacuation.* This is planned agency-initiated evacuation in the face of an actual threat. It is implemented by police on the recommendation of an Incident Controller.

All these actions need to be planned and, ideally, carried out before the arrival of a bushfire. In the worst case, noting the increased dangers, evacuation can occur later, when there is a perilous tension between sheltering in a dangerous place and moving in a dangerous environment. Local planning will be essential for the development of options for communities implementing evacuations. As discussed in Section 1.9.2, whether or not emergency evacuation is a viable or likely option should be determined well in advance of a fire. Successful evacuations will depend on people having information about the evacuation process, so that they know what to expect, are familiar with evacuation routes and are able to respond quickly when necessary.

Assisted evacuation for vulnerable people who require support

The Commission recognises that there are people who might be vulnerable to varying degrees in bushfires. The concept of vulnerability can encompass different people, depending on the circumstances. Similarly, the extent to which a person's vulnerability affects their ability to make decisions and do certain things in a bushfire situation will differ. It is important to identify the groups of individuals referred to when classifying them as vulnerable. The Department of Human Services has determined that special consideration needs to be given to the following 'client groups' to facilitate safe movement during bushfires:

children, young people, people with a disability, frail aged people, non-ambulant people, people who require support in daily living, women and families escaping domestic violence, and people with a mental illness who are vulnerable and may have status under the *Mental Health Act*.²⁷⁹

This is not an exhaustive list but, since the Commission heard only limited evidence in relation to particular groups, it adopted the groups identified by the department for this report. The Commission appreciates, of course, that some individuals who come within one of these categories will not see themselves as such, while others who are not identified in the listing might also be vulnerable.

Vulnerable people living in bushfire-prone areas, and the people who care for them, face particular challenges because they might need more time, and sometimes extra support, to relocate. The Commission therefore emphasises the need for contingency planning, noting that the act of moving some vulnerable people, such as frail aged people or people in ill-health, has major implications for their health and wellbeing. Mr Esplin recognised in his evidence that it is the Government's responsibility to plan and execute evacuation plans for locations where vulnerable people are likely to be, such as schools and aged care facilities.²⁸⁰

As noted in Section 1.4.4, a range of mechanisms exist for ensuring that facilities where vulnerable people are located appropriately plan for and effect evacuations during bushfires. What is missing is a means of ensuring that these locations are considered in any decision to recommend evacuation and are given tailored advice about a threatening fire and a specific recommendation to evacuate. Such locations should be identified in advance of a fire, mapped on the Victorian Fire Risk Register and documented in a way that is accessible and useful to decision makers and agencies. These include the Incident Controller (as the person who recommends an evacuation), the police (as the agency with legislative responsibility for carrying out evacuations) and other organisations, such as Victoria State Emergency Service, that might have a role in assisted evacuation. The State should consult with these agencies to determine the most effective way of documenting and disseminating this information. The Commission considers that including this information in all relevant local plans would be appropriate.

Attention must also be paid to the needs of people who are living independently in the community but might be vulnerable in the event of a bushfire. The Commission did not specifically consider the level and types of assistance such people might require or who could or should provide that assistance. These variables are likely to differ depending on personal circumstances, but at a minimum this group of people would need tailored advice of a recommendation to evacuate. They might well need physical assistance to evacuate and a place to go to. If this is the case, local agencies would need to do much more substantial forward planning.²⁸¹

The means by which vulnerable people are identified would need to be established in advance. This is a matter for local councils and health and welfare support organisations. The Commission urges the State and councils to implement systems for identifying and helping people who might be particularly vulnerable during bushfires. It notes that some work is already under way for clients of Home and Community Care services, who are 'frail older people and younger people with moderate, severe or profound disabilities residing in the community'. For example, HACC assessment services (local councils and district nursing services) and aged care assessment services are developing agreed indicators of vulnerability and helping vulnerable clients develop emergency management plans. In cases where a client uses multiple services, the Department of Human Services is working with the Municipal Association of Victoria to identify a worker to assist them. For clients of other services, such as in-home mental health services, the department has also determined that it might, in conjunction with councils, need to provide coordination for and relocation of some clients.²⁸²

The Commission notes a modest but highly effective initiative taken by Marysville VICSES. It compiled a list of residents who might need assistance to evacuate in an emergency and provided that assistance in the late afternoon of 7 February.²⁸³ Local governments in bushfire-prone areas should also, as part of the municipal emergency management planning process, develop and maintain a list of vulnerable residents living independently who might need additional support during a bushfire. The register could also be used to identify in advance what, if any, assistance beyond early warning is required and the appropriate agency or agencies to provide such assistance. Residents would need to 'opt in' to the service, and privacy considerations would need to be considered and resolved well in advance of an emergency.

1.9 DURING A BUSHFIRE

Several crucial actions are needed leading up to and during a bushfire. Some of these are policy positions that were clarified ahead of the 2009–10 fire season and others are specific actions:

- issuing specific and timely warnings
- encouraging the use of shelters and refuges
- Incident Controllers considering and recommending evacuation and individuals responding
- supporting people to stay and defend—except on the most dangerous days, when evacuation is recommended as the only option
- suspending the existing Prepare. Act. Survive. framework on days when ferocious fires are expected and replacing it with a Black Saturday Upgrade that firmly recommends evacuation from all bushfire-prone areas likely to be threatened by fire.

1.9.1 WARNINGS ON SPECIFIC BUSHFIRE THREATS

In its interim report the Commission said there were serious problems with the timing, content and delivery of warnings on 7 February. As outlined in Section 1.5.2, the State has done much to redress these shortcomings. The evidence before the Commission suggests there is a strong case for continuing, increasing, attention to the preparation, delivery and receipt of warnings.

In order that they can make informed decisions about the best options for protecting themselves from bushfires, communities and individuals need specific fire information and advice during, as well as before and after, the fire. The State must provide timely warnings to the community and should distribute them through every available means,

embracing new initiatives and technology and using local arrangements such as sirens where they are favoured. This will improve the suite of tools available to meet the widest possible audience.

Warnings must be concise during the passage of a bushfire. They cannot contain all the detailed information on the many variables that will inform people's planning and decision making: this is the domain of education and information before the event. But they must resonate with people so that they take the best course of action in their particular circumstances. This balance is not easy to achieve. Follow-up information should include the reasons fires did not eventuate after warnings were provided in certain instances. This completes the cycle of effective public information and reduces the risk that people become complacent and ignore future warnings or lose confidence in the authority of warnings.

Effective warnings rely on the availability of good information and sound technology for dissemination. If they are to be effective, the recipient needs to understand what the information contained in the warning means for their personal circumstances and to act accordingly. Provision of reliable, timely information from the fireground is vital, but the dynamic nature of fires often makes it difficult, particularly in the early stages, to obtain a good understanding of a fire's behaviour and its potential to threaten communities. In addition, by its nature fire poses challenges for the issuing of warnings because it destroys much within its path, and even the most basic warnings generally rely on electricity, telecommunications or radio signals.

The Commission recognises that, despite their best endeavours, fire authorities might be unable to issue timely warnings in every case—for example, if a fire breaks out and threatens people or homes very quickly. It considers, however, that in most situations it should be possible. Whether people receive a warning ultimately depends on whether they listen to the radio, contact relevant websites, telephone the Victorian Bushfire Information Line, or answer their phone. Even when people receive warnings, there is also no guarantee that they will act in the manner intended. The Commission was told of individuals who, despite explicit warnings on 7 February of the dangers they faced and in some cases their unlikely ability to defend, refused to leave their homes. Some of these people died. Nevertheless, greatly improving warnings is one of the fundamental ways the State can increase people's chances of surviving a bushfire.

The Commission welcomes the implementation of the One Source One Message system and web-based template messages for bushfire warnings. It includes important information such as the size, nature and specific location of the fire, the expected time of impact, the extent of spotting, and the expected wind change. The availability of this information will considerably improve the speed with which warnings are created and disseminated. Warnings could be further improved by including more information about important variables, helping people determine the best action to take. This further information could include details of road closures, expected wind changes and locations likely to be affected. The State should continue to evaluate the One Source One Message templates regularly to ensure that the content, delivery methods and technology remain up to date.

Warnings also need to support the types of action envisaged in the State's bushfire safety policy. The Commission recommends a number of changes to this policy, and warnings need to be adapted to facilitate the new approach. For example:

- On days when catastrophic conditions are expected, warnings should reinforce the notion that most homes in bushfire-prone areas might not be defensible and strongly urge people to evacuate the area early.
- Warnings should also include triggers for vulnerable people or those responsible for their safety to activate their evacuation plans.
- For people who are evacuating, warnings must be specific about the time frames for this option to be enacted, the recommended routes, the types and locations of community shelters to go to, and any known hazards involved in reaching them.
- In communities where emergency evacuation is included in the local plan and when the fire situation allows evacuation as a safe option, bushfire warnings should provide advice about evacuation.

1.9.2 EMERGENCY EVACUATION

Fire agencies need to play an active role in managing people during fires. This reinvigorated role would mainly involve assessing when evacuation should be recommended, providing timely and specific warnings to communities and enlisting the assistance of Victoria Police to carry out the evacuation.

Once a fire is burning the Incident Controller and the incident management team (if one has been established) will typically have access to more information than residents and will be better placed to determine the best option for a community threatened by fire.²⁸⁴ The Incident Controller must assess whether evacuation should be recommended to communities potentially threatened by fire and provide that advice through every available means as early as possible.

Incident Controllers in Victoria have not previously been required to make these assessments. Chapter 2 discusses this expanded responsibility and the advantages of co-locating a municipal emergency coordination centre with the incident control centre so that municipal and incident managers can readily share information and determine how best to protect the community. This would include understanding local plans that outline whether evacuation is likely to be an option for the community and, if so, possible evacuation routes. Section 1.8.4 outlines the content of and responsibility for these plans.

Associate Professor Cova identified a list of dynamic factors that influence decision making associated with protective action. His research suggests that the most important factors for an Incident Controller are those that influence fire behaviour and fire intensity.²⁸⁵ In Victoria, Incident Controllers and their incident management teams have ready access to detailed weather forecasts. They now also have access to detailed fire prediction maps showing fire spread, flame height and ember spread that can be quickly generated by FireMap once information about the fire comes in from the fireground. These prediction maps can be verified by information from ground and air observers dispatched to the fire. As a result, in most situations incident management teams should have access to the information needed to issue timely warnings to communities.²⁸⁶

Incident Controllers will need guidelines to assess whether evacuation is the safest option for a community. The decision would be informed by:

- forecast and actual weather conditions
- the point of ignition
- predictions of fire spread and intensity
- observations of fire spread and intensity
- topography, vegetation and fire history
- location of communities under threat
- evacuation plans of communities under threat including safety of designated routes
- shelter options
- whether a decision has been made to apply a Black Saturday Upgrade.

The guidelines should also cover arrangements such as communicating to the public a decision to evacuate and enlisting the assistance of police to carry out the evacuation. As discussed, Victoria Police is responsible under the State Emergency Response Plan for facilitating a recommended evacuation. The Commission notes that training and resourcing requirements might need to be considered in view of the likelihood of more frequent evacuations during bushfires.²⁸⁷ As part of its deliberations, the Commission considered some of the experiences of the United States in managing mass evacuations.

Box 1.6 Lessons learned in the 2007 Ramona evacuation

On 21 October 2007 at 12.35 pm the Witch Creek fire started about 10 miles east of Ramona—a town of 40,000 people in San Diego County, California. At 9.14 pm a mandatory evacuation for the entire town was issued on the emergency broadcast system (radio and TV) because winds greater than 70 miles (110 kilometres) an hour were pushing the fire towards the town.

About half the town population lives in the Estates, which had two roads in and out, and one of these was towards the fires. Wildcat Canyon Road was open most of the night but was severely backed up, although many people avoided using it because of deaths that had occurred during a fire four years before. Residents were stuck in traffic for three to five hours. Many people turned around and went home, deciding it was safer at home than sitting in a 'steel coffin'.

There had been mock fire drills in the past, but they did not take account of such fast-moving fires. The visible smoke and flames added to the difficulty of evacuation. The County Supervisor observed that evacuation of the entire town of Ramona was dangerous and slow.

Three main lessons were learnt from the evacuation:

- Warnings spaced out over time and staggered evacuations, as used in the past, might help reduce road congestion.
- Police need to be in position before warnings are issued.
- The roads were too narrow and needed to be widened considerably.

Source: Exhibit 106 – Statement of McCaffrey, Attachment G.²⁸⁸

1.9.3 STAY AND DEFEND

Many people were unable to defend their houses against the fires on Black Saturday, but others were successful. Even people whose houses were destroyed told the Commission they would stay and defend in future, although many said they would improve their fire plans considerably in the light of what they learned on the day.²⁸⁹

The Commission considers that staying to defend a properly prepared and defensible home is a viable option in some circumstances but that Victoria's bushfire policy needs to be revised to make it very clear that people should do this only if they fully understand and accept the risks. Staying to defend should be considered only if the following criteria are met:

- Professional advice (including from the CFA) suggests that the house is defensible, noting both the available defensible space and the location of the house relative to any surrounding forest.
- The house is well constructed, preferably in accordance with the relevant Australian standard. Whether or not the house has been built or retrofitted to comply with the most recent Australian standards, there are a range of voluntary measures that should be taken to increase its chance of protecting people as the firefront passes (see Chapter 6).
- The house is well prepared. This must include robust independent water and power supplies and non-plastic, fire-resistant water systems such as sprinklers, hoses and fittings, as well as firefighting equipment and adequate defensible space.
- There are at least two able-bodied adults to defend the house and they have suitable protective clothing and are aware of the likely and possible conditions they will face and are confident in their physical and emotional ability to cope.
- There are no children or vulnerable people whose presence will interfere with the attention of their carers if those carers are needed to defend the property and secure their survival.

The Commission considers that advice should be strengthened to stress the following:

- Some houses will not be defensible, even in a relatively small bushfire.
- Under extreme fire conditions it might be impossible to defend a normally defensible house—in which case anyone present should evacuate.
- Things do not always go according to plan—even in fires that are not severe—and contingency options such as personal shelters are essential in case active defence fails.

The State needs to give people the right information to understand the risks and make informed decisions. Sections 1.4.1–8 outline particular areas, such as the defensibility of houses, where further information is required.

1.9.4 THE BLACK SATURDAY UPGRADE

One of the Commission's themes is that standard approaches to mitigating bushfire are not applicable on days such as 7 February, and this needs to be acknowledged by fire authorities and clearly communicated to the public. Although much of the proposed bushfire safety policy will be effective for most of the fires that occur in Victoria, the most ferocious fires require a different, more dramatic approach. Essentially, this approach involves encouraging people to remove themselves from the face of danger because the fire cannot readily be controlled. The Commission calls this the Black Saturday Upgrade.

Measures for countering bushfires on lesser days will be largely irrelevant on days like Black Saturday. Fortunately, these days are generally predictable—usually coming at the end of a severe drought and bringing scorching temperatures and gale-like winds. But, infrequent though they might be at present, the Commission notes in the introduction to this volume that they could start to occur more often as climate change further influences our environment. Victorian communities need to be aware of this new survival policy every summer. Our fire authorities must be responsible for reminding us all when we next face the most severe fire weather and must ensure that every effort is made to encourage people to place protection of their lives ahead of protection of their property.

1.10 AFTER A BUSHFIRE

1.10.1 GATHERING INFORMATION AND RESEARCH

The gathering of information since Black Saturday has been comprehensive. Extensive local and national resources were deployed to identify, gather and collate a wide range of information in order to learn about the circumstances of individual deaths and the experiences of people who survived. More research is pending.

Rapid collection of materials after a bushfire is crucial. The Commission commends all involved in the gathering of material and in subsequent research. The approach adopted after Black Saturday is fundamental to identifying what happened and understanding how to further develop policy and practices to reduce the likelihood of a similar event in the future.

The Commission notes that continuing research should be a central element of the emergency management framework—in particular, reviewing the lessons learnt from events such as Black Saturday. It supports the reference to the value of research in the 2004 report of the Council of Australian Governments National Inquiry on Bushfire Mitigation and Management.²⁹⁰ The Commission benefited from extensive research conducted by the Bushfire Cooperative Research Centre, the Australasian Fire and Emergency Service Authorities Council, and numerous other research bodies. In a dynamic policy area such as emergency management, it is essential that research is automatically taken account of in policy development. The role of research and research priorities are discussed in Chapter 11.

1.10.2 MONITORING AND REVIEW

Education and public awareness programs should be continuously reviewed and updated so that new research findings are incorporated in policy and practice and the information and messages remain relevant to the audience. Evaluations should also regularly measure the manner in which the community embraces and responds to messages and communications. The findings of such reviews can then be used to improve policy.

The 2004 Council of Australian Governments report on natural disasters in Australia noted that traditionally this has not been done well in the area of natural hazards such as bushfires. This is because public awareness programs have lacked resources and professional design and delivery, been targeted at limited audiences and have not been evaluated to assess their effectiveness.²⁹¹ The Commission recognises these deficiencies. A well-resourced, professionally designed and delivered community education and engagement program that is evaluated regularly is the platform on which community bushfire safety is built (see Chapter 11).

Apart from technical research and analysis, obtaining feedback from communities is an essential element of effective policy. It allows researchers to determine whether community expectations are being met and to find out why things have and have not occurred. For example, explaining to communities why a warning did not result in a fire event helps to build connection with communities, expands their knowledge of weather and fire, and helps dispel negative attitudes towards agencies.

1.11 THE BIGGER PICTURE

Victoria's bushfire safety policy is a fundamental element of making Victoria safer from bushfire. It relies on the shared responsibility approach discussed in Chapter 9. This approach is at the basis of all other mitigation efforts—for example, land-use planning in bushfire-prone areas; building standards to improve the ability of houses to withstand the passage of a firefront; prescribed burning to reduce fuel loads and better manage forests; and education in schools so that Australian children, regardless of where they live, have some awareness of the dangers of bushfire and the history of their impact on communities. All these elements, discussed throughout this report, need to be reviewed and revised to ensure that the State's bushfire strategy remains relevant, is updated as necessary, and is achievable.

1.11.1 SCHOOL EDUCATION

Inquiries into bushfires in Australia have repeatedly found that teaching school children about fire is fundamental to improving community bushfire safety.²⁹² Each new generation must be properly prepared for living in an environment that is hazardous. The Commission is of the view that educating children about the history of fire in Australia and about safety in the event of a bushfire will probably influence not only the children but also their parents, siblings and extended family and community. Despite this, fire education remains an optional inclusion in most Australian school curricula.²⁹³

The 2004 report of the Council of Australian Governments National Inquiry on Bushfire Mitigation and Management noted that since the Stretton Royal Commission of 1939 school and adult education has been seen as the best means of fire prevention and protection. That inquiry recommended that national and regional bushfire education be delivered to all Australian children as a basic life skill, with an emphasis on preparedness and survival as well as the role of fire in the Australian landscape.²⁹⁴ This Commission notes with regret that this recommendation has never been implemented.

The sheer volume of material to deal with and the time constraints the Commission faced meant that little evidence was presented on fire education in schools. Despite this, the Commission notes that during consultations with fire-affected communities, fire education in the school curriculum was raised. The Australian Curriculum, Assessment and Reporting Authority noted that, beyond reference to the causes of major natural events in the science curriculum fire is likely to receive minimal attention in the K–10 Australian curriculum that is at present under development.²⁹⁵ This is troubling. To fail to educate our children about the history of bushfire, its impact on the environment and how to survive bushfire is to fail to appreciate that each generation must then learn these lessons anew—often the hard way.

The risk of bushfires is likely to increase. More Australian families are living on the fringes of our cities and towns, and many more travel to bushfire-prone coasts during summer. A concerted education program—the need for which has been noted since as early as 1939—remains the most effective approach to instilling the necessary knowledge in Australian families. The Commission strongly supports teaching Australian school students about the history of bushfire in Australia and about bushfire safety within existing curriculum areas such as history, geography, science, environmental studies, civics and citizenship. Engendering in school children an understanding of bushfire and the attendant risks should be seen to be as important as ensuring that all Australian children learn to swim.

1.11.2 REMEMBERING

Remembering an event such as Black Saturday is important, not only for paying tribute to the people who died and those who came to the assistance of others, but also for ensuring that the survival lessons learned as a result of the event are not lost. As history has shown, the risk of complacency—of forgetting the lessons of 7 February and the risks that bushfires present for us all—is real. The Commission heard ample evidence of communities that did not think they would be affected by fire and of communities lulled into a false sense of security by recent experiences with less dangerous fires.²⁹⁶

Educating the community about the risks of fire and the ways people can protect themselves is a long-term project. But it is especially important because communities are subject to rapid and constant change: people move in and out of areas, taking with them their knowledge and experience. New residents might have no experience of bushfire and thus have little understanding of how to prepare and survive. If communities do not understand the risks they face, they are less likely to be open to community education messages. Memorials, museums and monuments can play an important part in creating a community that remembers and recognises the risks bushfires have posed and will continue to pose for all Victorians and thereby make community members more receptive to education and more willing to take action to properly prepare themselves.

Severe bushfires occur relatively infrequently, so most people have limited personal experience of them and their opportunities to gain first-hand experience of the hazard are limited. They are also less able to assess how effective their fire plan is at mitigating the risks of the most ferocious fires.²⁹⁷ This makes it even more important that a memory of the 2009 fires and the lessons therefrom is sustained.

While the fires remain fresh in all our minds it is easy to think they will always remain at the forefront of our thinking. Evidence the Commission heard, however, described how people's motivation to prepare for a bushfire decreases dramatically if they perceive the risk is not likely to arise within 12 months.²⁹⁸ Similarly, once the shock and grief caused by an event such as Black Saturday subside in the months and years that follow, there is a serious risk that the motivation to prepare and plan also subsides.

The Commission heard that the degree to which people regularly discuss bushfire-related subjects with each other is an important predictor of whether people will prepare for bushfires. People must therefore have access to social contexts within which discussion of bushfire-related matters can and does occur. It is important that the content of such 'memorialisation' is carefully developed, so that the general sense is not one of catastrophe in the face of which no human efforts will be effective. Expert witnesses advised the Commission that, if people believe a potential hazard would be too calamitous and complex for their personal actions to be effective if it were to come to pass, they are highly likely to disregard any information about that hazard and to avoid taking precautions.²⁹⁹

Essentially, there are three kinds of changes that can be taken in order to make Victoria safe: changes that would reap immediate benefits, policy and infrastructure changes that will take longer to achieve, and the long-term education and cultural changes that are required to ensure that Victorians can adapt to living with fire. The Commission urges the State to be mindful of these various perspectives when implementing Victoria's revised bushfire safety policy.

Image 1.2



Source: Courtesy of the *Herald & Weekly Times*.

RECOMMENDATION 1

The State revise its bushfire safety policy. While adopting the national Prepare. Act. Survive. framework in Victoria, the policy should do the following:

- enhance the role of warnings—including providing for timely and informative advice about the predicted passage of a fire and the actions to be taken by people in areas potentially in its path
- emphasise that all fires are different in ways that require an awareness of fire conditions, local circumstances and personal capacity
- recognise that the heightened risk on the worst days demands a different response
- retain those elements of the existing bushfire policy that have proved effective
- strengthen the range of options available in the face of fire, including community refuges, bushfire shelters and evacuation
- ensure that local solutions are tailored and known to communities through local bushfire planning
- improve advice on the nature of fire and house defendability, taking account of broader landscape risks.

RECOMMENDATION 2

The State revise the approach to community bushfire safety education in order to:

- ensure that its publications and educational materials reflect the revised bushfire safety policy
- equip all fire agency personnel with the information needed to effectively communicate the policy to the public as required
- ensure that in content and delivery the program is flexible enough to engage individuals, households and communities and to accommodate their needs and circumstances
- regularly evaluate the effectiveness of community education programs and amend them as necessary.

RECOMMENDATION 3

The State establish mechanisms for helping municipal councils to undertake local planning that tailors bushfire safety options to the needs of individual communities. In doing this planning, councils should:

- urgently develop for communities at risk of bushfire local plans that contain contingency options such as evacuation and shelter
- document in municipal emergency management plans and other relevant plans facilities where vulnerable people are likely to be situated—for example, aged care facilities, hospitals, schools and child care centres
- compile and maintain a list of vulnerable residents who need tailored advice of a recommendation to evacuate and provide this list to local police and anyone else with pre-arranged responsibility for helping vulnerable residents evacuate.

RECOMMENDATION 4

The State introduce a comprehensive approach to shelter options that includes the following:

- developing standards for community refuges as a matter of priority and replacing the 2005 Fire Refuges in Victoria: Policy and Practice
- designating community refuges—particularly in areas of very high risk—where other bushfire safety options are limited
- working with municipal councils to ensure that appropriate criteria are used for bushfire shelters, so that people are not discouraged from using a bushfire shelter if there is no better option available
- acknowledging personal shelters around their homes as a fallback option for individuals.

RECOMMENDATION 5

The State introduce a comprehensive approach to evacuation, so that this option is planned, considered and implemented when it is likely to offer a higher level of protection than other contingency options.

The approach should:

- encourage individuals—especially vulnerable people—to relocate early
- include consideration of plans for assisted evacuation of vulnerable people
- recommend ‘emergency evacuation’.

RECOMMENDATION 6

Victoria lead an initiative of the Ministerial Council for Education, Early Childhood Development and Youth Affairs to ensure that the national curriculum incorporates the history of bushfire in Australia and that existing curriculum areas such as geography, science and environmental studies include elements of bushfire education.

RECOMMENDATION 7

The Commonwealth lead an initiative through the Ministerial Council for Police and Emergency Management, facilitated by Emergency Management Australia, to develop a national bushfire awareness campaign.

- 1 Exhibit 9 – Living in the Bush (TEN.001.001.0004) at 0012, 0032; Exhibit 9 – 2005 AFAC Community Safety Paper (TEN.001.001.0077) at 0080–0082
- 2 Exhibit 9 – National Approach to Prepare Stay and Defend or Go Early (TEN.001.001.0100) at 0101
- 3 Exhibit 9 – 2005 AFAC Community Safety Paper (TEN.001.001.0077)
- 4 Exhibit 11 – Statement of Esplin (WIT.005.001.0001) [81], [84]; Exhibit 6 – Supplementary Statement of Waller, Annexure 4 (WIT.002.001.0137)
- 5 Exhibit 9 – 2005 AFAC Community Safety Paper (TEN.001.001.0077) at 0080–0081
- 6 For example: Exhibit 9 – Make a Bushfire Plan (TEN.001.001.0055)
- 7 Exhibit 9 – Living in the Bush (TEN.001.001.0004) at 0032
- 8 Exhibit 9 – 2005 AFAC Community Safety Paper (TEN.001.001.0077) at 0082–0083
- 9 Exhibit 175 – Leonard Report (TEN.066.001.0001) at 0011–0015, 0019
- 10 Exhibit 175 – Leonard Report (TEN.066.001.0001) at 0011–0015, 0028
- 11 In Mount Macedon, where the fires had destroyed 234 of 455 houses and killed 6 people, 89 per cent of attended houses survived whereas only 44 per cent of unattended houses survived (of which one third were assisted by neighbours, brigades or returning occupants): Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.003.0147) at 0147, 0149. The Otway Ranges study also concluded that the presence of occupants and their firefighting activities (extinguishing small ignitions before fires became uncontrollable) significantly reduced the relative risk of house destruction: Exhibit 9 – Building in a Fire-Prone Environment: Research on Building Survival in Two Major Bushfires (TEN.001.001.0102) at 0106, 0108; Exhibit 126 – Bushfire CRC Interim Report (CRC.300.001.0001_R) at 0137_R
- 12 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.003.0147) at 0149–0151
- 13 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.003.0147) at 0152
- 14 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.003.0154) at 0160, 0166
- 15 Exhibit 126 – Bushfire CRC Interim Report (CRC.300.001.0001_R) at 0136_R
- 16 Exhibit 16 – Statement of Haynes (WIT.001.001.0001_R) [20], [25]
- 17 Exhibit 16 – Statement of Haynes (WIT.001.001.0001_R) [25]
- 18 Exhibit 16 – Statement of Haynes (WIT.001.001.0001_R) [25]
- 19 Exhibit 101 – Statement of Rhodes (WIT.3004.002.0001) [81], [143]–[145], [227]
- 20 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.002.0796) at 0853–0859
- 21 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.003.0275) at 0277
- 22 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.003.0275) at 0278–0280
- 23 Exhibit 679 – Statement of Gilmore, Attachment 89 (WIT.3018.001.1559) at 1563
- 24 Exhibit 11 – Statement of Esplin, Attachment 28 (WIT.005.001.1949) at 1956
- 25 Exhibit 11 – Statement of Esplin, Attachment 28 (WIT.005.001.1949) at 1953–1954
- 26 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [4.12]
- 27 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [7.72]
- 28 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.003.0098) at 0123–0124
- 29 Exhibit 101 – Statement of Rhodes (WIT.3004.002.0001) [67], [75], [185]–[211], Annexure C (WIT.3004.003.0243) at 0266–0267; Exhibit 9 – Prepare, Stay and Defend or Leave Early – Evidence for the Australian Approach (TEN.001.001.0151) at 0160–0161

- 30 Exhibit 126 – Bushfire CRC Interim Report (CRC.300.001.0001_R) at 0413_R; Exhibit 214 – Statement of Hollowood (WIT.3010.001.0338) [63], [65]; Exhibit 980 – Correspondence – Houses Destroyed – Breakdown by Fire (CORR.1003.0048_R); Handmer T18619:1–T18619:8
- 31 Handmer T18603:13–T18603:19, T18619:05, T18630:8–T18630:11
- 32 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001)
- 33 Exhibit 935 – Use of Informal Places of Shelter and Last Resort on 7 February 2009 (CFA.600.005.0317)
- 34 Exhibit 935 – Where Are They Going? – People Movement During Bushfires (RESP.3001.014.0117)
- 35 Exhibit 894 – Review of fatalities in the February 7, 2009, Bushfires – Final Report (Amended version without mark up) (EXP.029.003.0001)
- 36 Exhibit 902 – Review of Key Bushfire Research Findings (WIT.3007.001.0041)
- 37 Exhibit 902 – Review of Key Bushfire Research Findings (WIT.3007.001.0041) at 0044–0047
- 38 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0034
- 39 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0034
- 40 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0008
- 41 Exhibit 902 – Review of Key Bushfire Research Findings (WIT.3007.001.0041) at 0044–0045, 0080–0083
- 42 Exhibit 902 – Review of Key Bushfire Research Findings (WIT.3007.001.0041) at 0045
- 43 Exhibit 11 – Statement of Esplin, Attachment 22 (WIT.005.001.1816) at 1824
- 44 Exhibit 9 – Living in the Bush (TEN.001.001.0004) at 0032
- 45 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0034–0035
- 46 Exhibit 362 – Statement of Glenn (WIT.066.001.0001_R) [7]
- 47 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0034
- 48 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0035
- 49 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0035
- 50 Exhibit 10 – Statement of Odgers (WIT.008.001.0001_R) [8]; Exhibit 586 – Statement of Buntine (WIT.127.001.0001_R) [12]
- 51 Exhibit 10 – Statement of Odgers (WIT.008.001.0001_R) [6], [11]–[12]
- 52 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0034–0035, 0043
- 53 Exhibit 902 – Review of Key Bushfire Research Findings (WIT.3007.001.0041) at 0092–0093
- 54 Exhibit 87 – Statement of Ananiev (WIT.040.001.0001_R) [14]–[25]; Exhibit 212 – Statement of Edmonds (WIT.063.001.0001_R) [23], [25], [27]; Exhibit 91 – Statement of Scott (WIT.045.001.0001_R) [15]–[28]; Exhibit 323 – Statement of Kenealy (WIT.101.001.0001_R) [21]–[45]; Exhibit 459 – Statement of Siddle (WIT.115.001.0001_R) [1], [17]–[19]; Ananiev T2776:21–T2780:8; Edmonds T6572:9–T6574:29; Scott T2919:4–T2926:7; Kenealy T8123:4–T8132:6; Siddle T10290:18–T10295:11
- 55 Exhibit 750 – Statement of Petreis (WIT.142.001.0001_R) [15]
- 56 Exhibit 772 – Interactive Presentation – INTMEN 001826 (EXH.772.0001); Exhibit 771 – Statement of Richings (WIT.143.001.0001_R) [1]; Exhibit 134 – Statement of Hainsworth (WIT.059.001.0001_R) [20]–[21], [24]; Exhibit 680 – Statement of Cook (WIT.131.001.0001_R) [17]–[19]; Exhibit 103 – Statement of Barber (WIT.046.001.0001_R) [22]–[24]; Exhibit 823 – Statement of Bida (WIT.3026.001.0181) [28]; Exhibit 768 – Interactive Presentation – INTMEN 001824 (EXH.768.0001); Hainsworth T4536:11–T4536:31, T4538:3–T4538:13; Cook T13913:8–T13915:24; Barber T3340:11–T3344:28; Bida T16931:30–T16932:31, T16934:3–T16935:30
- 57 Exhibit 351 – Statement of Hamill (WIT.3010.006.0194) [11]–[20]; Exhibit 39 – Statement of Hull (WIT.030.001.0001_R) [14]–[15]; Collyer T8843:18–T8844:14; Hamill T8598:6–T8598:23, T8599:14–T8599:23, T8600:24–T8601:11; Dwight T2068:18–T2069:9
- 58 Exhibit 16 – Statement of Haynes (WIT.001.001.0001_R) [25(ii)]
- 59 Exhibit 804 – Interactive Presentation – INTMEN 001852 (EXH.804.0001)
- 60 Exhibit 298 – Interactive Presentation – INTMEN 001841 (EXH.298.0001)
- 61 Exhibit 894 – Review of fatalities in the February 7, 2009, Bushfires – Final Report (Amended version without mark up) (EXP.029.003.0001) at 0024; Hanscombe T20479:4–T20479:7
- 62 Exhibit 10 – Statement of Odgers (WIT.008.001.0001_R) [13]; Exhibit 586 – Statement of Buntine (WIT.127.001.0001_R) [19]; Exhibit 686 – Statement of Collins (WIT.129.001.0001_R) [13]
- 63 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0007
- 64 For further detail, see Chapter 21 in Volume I
- 65 Hollowood T20213:26–T20213:31
- 66 Exhibit 935 – Where Are They Going? – People Movement During Bushfires (RESP.3001.014.0117) at 0124, 0127; Exhibit 95 – Statement of Fraser (WIT.048.001.0001_R) [7]–[18]; Edmonds T6565:10–T6565:15; Fraser T3051:18–T3051:21, T3052:1–T3052:4; Collins T14063:24–T14063:27, T14064:14–T14064:15; Gobbett T1493:11–T1493:26; Barber T3338:30–T3339:2; O'Halloran T3681:23–T3682:10
- 67 Rogers T605:8–T605:12
- 68 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0034
- 69 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0009, 0039; Exhibit 97 – Statement of O'Neill (WIT.047.001.0001_R) [36]; Exhibit 61 – Statement of Olorenshaw (WIT.034.001.0001_R) [117]; Exhibit 182 – Statement of Moore (WIT.076.001.0001_R) [19]–[20], [23]; Exhibit 785 – Statement of Enden (WIT.147.001.0001_R) [18]; Exhibit 898 – Statement of Nowak (WIT.159.001.0001_R) [10]; Brown T3547:29–T3548:4, T3501:1–T3501:19; Ferguson T955:9–T955:21; Olorenshaw T1901:16–T1901:27

- 70 Exhibit 492 – Interactive Presentation – INTMEN 001843 (EXH.492.0001); Exhibit 567 – Interactive Presentation – INTMEN 001887 (EXH.567.0001); Exhibit 489 – Interactive Presentation – INTMEN 001797 (EXH.489.0001); Exhibit 808 – Interactive Presentation – INTMEN 001792 (EXH.808.0001); Exhibit 877 – Interactive Presentation – INTMEN 001837 (EXH.877.0001); Exhibit 770 – Interactive Presentation – INTMEN 001877 (EXH.770.0001); Exhibit 380 – Statement of Lynch (WIT.094.001.0001_R) at 0003_R; Exhibit 519 – Statement of Zealley (WIT.117.001.0001_R) at 0002_R-0003_R; Hollowood T10690:2–T10690:22, T10693:9–T10693:17, T12331:21–T12332:8, T12429:29–T12430:3, T16098:30–T16099:4, T16669:20–T16669:23; Richards T20309:26–T20310:2
- 71 Exhibit 901 – Protective Actions in Wildfires: Evacuate or Shelter-in-Place? (TEN.268.001.0022) at 0028
- 72 Exhibit 680 – Statement of Cook (WIT.131.001.0001_R) at 0004_R-0005_R
- 73 Exhibit 894 – Review of fatalities in the February 7, 2009, Bushfires – Final Report (Amended version without mark up) (EXP.029.003.0001) at 0006
- 74 For further detail, see Chapter 6 in this volume. Exhibit 108 – Statement of Brown (WIT.053.001.0001_R) [4]–[44]; Exhibit 195 – Statement of Berry (WIT.071.001.0001_R) [2], [6]–[18], [49]–[77]; Exhibit 390 – Statement of Wiggington (WIT.100.001.0001_R) [8]–[20]; Exhibit 775 – Interactive Presentation – INTMEN 001891 (EXH.775.0001); Exhibit 769 – Interactive Presentation – INTMEN 001876 (EXH.769.0001)
- 75 Exhibit 678 – Pine Ridge Road – Post Fire Aerial Photography (TEN.196.001.0008); Exhibit 680 – Statement of Cook (WIT.131.001.0001_R) [27], [32]–[34]; Hainsworth T4545:6–T4545:13; Cook T13902:25–T13902:27, T13920:5–T13921:13. For further detail, see Chapter 6 in this volume and Chapter 21 in Volume I
- 76 Exhibit 108 – Statement of Brown (WIT.053.001.0001_R) [25]–[26]; Exhibit 61 – Statement of Olorenshaw (WIT.034.001.0001_R) [57]–[68]; Exhibit 348 – Statement of Rice (WIT.3004.016.0091) [89]; Exhibit 498 – Statement of Liesfield (WIT.7528.001.0001) at 0003; Exhibit 361 – Statement of Anderson (WIT.3032.001.0001) [33(a)], [38], [58]–[63], Annexure 8 (WIT.3032.001.0034) at 0042, Annexure 11 (WIT.3032.001.0048); Exhibit 563 – Interactive Presentation – INTMEN 001884 (EXH.563.0001); Hollowood T10769:20–T10769:23, T20136:22–T20136:24, T20139:5–T20139:20; Rice T8533:15–T8534:15; Jones T8640:13–T8641:8; Anderson T8795:5–T8796:26, T8798:11–T8800:3
- 77 Exhibit 894 – Review of fatalities in the February 7, 2009, Bushfires – Final Report (Amended version without mark up) (EXP.029.003.0001) at 0027
- 78 Exhibit 297 – Interactive Presentation – INTMEN 001788 (EXH.297.0001); Exhibit 173 – Statement of Wiltshire (WIT.075.001.0001_R) [19]–[22]; Exhibit 170 – Statement of Frazer-Jans (WIT.074.001.0001_R) [42]; Exhibit 46 – Statement of Gobbett (WIT.026.001.0001_R) [6]–[8]; Exhibit 880 – Interactive Presentation – INTMEN 001849 (EXH.880.0001)
- 79 Hollowood T20064:16–T20064:18, T16677:27–T16678:8, T16003:5–T16003:9, T20169:26–T20170:4
- 80 Ferguson T944:18–T944:28, T950:17–T950:19
- 81 Exhibit 877 – Interactive Presentation – INTMEN 001837 (EXH.877.0001); Exhibit 294 – Interactive Presentation – INTMEN 001827 (EXH.294.0001); Exhibit 785 – Statement of Enden (WIT.147.001.0001_R) [24]; Exhibit 208 – Statement of Hughes (WIT.080.001.0001_R) [14]; Exhibit 522 – Statement of Mortimer (WIT.118.001.0001_R) [49]
- 82 Exhibit 244 – Statement of Easterbrook (WIT.085.001.0001_R) [52]
- 83 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0018
- 84 Exhibit 894 – Review of fatalities in the February 7, 2009, Bushfires – Final Report (Amended version without mark up) (EXP.029.003.0001) at 0027–0029
- 85 Exhibit 596 – Statement of Hoff (WIT.125.001.0001_R) [22]–[30], [37]–[48], [70], [76], [79], Annexure 3 (DSE.HDD.0005.0942); Exhibit 597 – Statement of Halligan (WIT.3010.009.0371) [3], [16]; Exhibit 591 – Statement of Teer (WIT.3010.005.0143) [31], Attachment 13 (WIT.3010.005.0250) at 0251; Exhibit 598 – Statement of Wright (WIT.3002.001.0001) [21], [25]; Hoff T12958:2–T12958:28, T12960:10–T12960:21, T12964:28–T12974:13, T12979:19–T12979:21, T12980:2–T12980:4, T12981:10–T12981:13, T12999:2–T12999:7, T12999:18–T12999:26; Smith T12872:17–T12873:15; Halligan T13000:1–T13000:7, T13001:28–T13001:31, T13002:1–T13002:3, T13003:4–T13003:23, T13003:28–T13003:30; Wright T13014:29–T13015:1, T13021:7–T13021:21
- 86 Exhibit 367 – Statement of Hunter (WIT.3009.001.0001) [13], [16]–[22]; Exhibit 323 – Statement of Kenealy (WIT.101.001.0001_R) [29], [31]; Hunter T8953:13–T8953:25, T8955:2–T8955:15, T8956:4–T8956:23, T8957:11–T8958:7, T8958:23–T8959:3; Kenealy T8126:14–T8127:2
- 87 Exhibit 367 – Statement of Hunter (WIT.3009.001.0001) [13]; Hunter T8952:27–T8954:7
- 88 Exhibit 377 – Statement of Ellett, Attachment 2 (WIT.4006.001.0021) at 0050; Exhibit 377 – 2009 Victorian Bushfires Royal Commission (CORR.0910.0081)
- 89 Exhibit 894 – Review of fatalities in the February 7, 2009, Bushfires – Final Report (Amended version without mark up) (EXP.029.003.0001) at 0015–0016
- 90 Exhibit 894 – Review of fatalities in the February 7, 2009, Bushfires – Final Report (Amended version without mark up) (EXP.029.003.0001) at 0018
- 91 Exhibit 296 – Interactive Presentation – INTMEN 001828 (EXH.296.0001); Hollowood T7747:7–T7747:16
- 92 These figures are drawn from an analysis of the evidence of the fire related deaths
- 93 For example: Exhibit 10 – Statement of Odgers (WIT.008.001.0001_R) [6], [10]; Exhibit 586 – Statement of Buntine (WIT.127.001.0001_R) [12]
- 94 Exhibit 170 – Statement of Frazer-Jans (WIT.074.001.0001_R) [7]–[22], [25]–[28], [33]–[38]; Exhibit 13 – Statement of Newman (WIT.009.001.0001_R) [2], [5]–[6], [13], [22]; Exhibit 864 – Statement of Sorraghan (WIT.156.001.0001_R) [4]–[11], [37]–[38]
- 95 Exhibit 537 – Statement of Whitford (WIT.120.001.0001_R) [1], [9]–[17]; Exhibit 170 – Statement of Frazer-Jans (WIT.074.001.0001_R) [25]–[29], [58]; Exhibit 13 – Statement of Newman (WIT.009.001.0001_R) [5]–[8], [22]; Exhibit 244 – Statement of Easterbrook (WIT.085.001.0001_R) [6]–[18], [69]; Exhibit 200 – Statement of Bennett (WIT.078.001.0001_R) [1], [3]–[5]; Exhibit 690 – Statement of Wainscott (WIT.130.001.0001_R) [3], [40]–[60]
- 96 For example: Exhibit 29 – Statement of Ferguson (WIT.022.001.0001_R) [6]; Exhibit 864 – Statement of Sorraghan (WIT.156.001.0001_R) [9]–[11]; Exhibit 244 – Statement of Easterbrook (WIT.085.001.0001_R) [10], [12]–[14]; Exhibit 785 – Statement of Enden (WIT.147.001.0001_R) [12]–[13], [15]; Exhibit 898 – Statement of Nowak (WIT.159.001.0001_R) [9]–[13]; Exhibit 170 – Statement of Frazer-Jans (WIT.074.001.0001_R) [8]–[22], [25]–[28]; Exhibit 43 – Statement of Glassford (WIT.028.001.0001_R) [9]; Exhibit 13 – Statement of Newman (WIT.009.001.0001_R) [4], [6]

- 97 For example: Exhibit 29 – Statement of Ferguson (WIT.022.001.0001_R) [14]–[21]; Exhibit 898 – Statement of Nowak (WIT.159.001.0001_R) [9]–[10]; Exhibit 170 – Statement of Frazer-Jans (WIT.074.001.0001_R) [29]–[33]; Exhibit 743 – Statement of Szepe (WIT.140.001.0001_R) [27]–[31]; Exhibit 173 – Statement of Wiltshire (WIT.075.001.0001_R) [6]
- 98 For example: Exhibit 29 – Statement of Ferguson (WIT.022.001.0001_R) [19]–[30], [39]–[44]; Exhibit 43 – Statement of Glassford (WIT.028.001.0001_R) [15]–[19], [23]; Exhibit 864 – Statement of Sorraghan (WIT.156.001.0001_R) [12]–[21]; Exhibit 13 – Statement of Newman (WIT.009.001.0001_R) [10]–[17], [22]; Exhibit 898 – Statement of Nowak (WIT.159.001.0001_R) [18]–[33]; Exhibit 170 – Statement of Frazer-Jans (WIT.074.001.0001_R) [30]–[55], [61]–[64]; Exhibit 221 – Statement of Dixon (WIT.067.001.0001_R) [8]–[49]; Exhibit 173 – Statement of Wiltshire (WIT.075.001.0001_R) [29]
- 99 Exhibit 181 – Statement of Wasley (WIT.073.001.0001_R) [59]; Easterbrook T7176:7–T7176:16
- 100 Exhibit 894 – Review of fatalities in the February 7, 2009, Bushfires – Final Report (Amended version without mark up) (EXP.029.003.0001) at 0016–0019
- 101 Hollowood T20170:12–T20170:24
- 102 Exhibit 672 – Building and Land-use Planning Research After the 7th February 2009 Victorian Bushfires Preliminary Findings (CRC.300.007.0135) at 0185–0189; Exhibit 602 – Bushfire CRC Supplementary Report (CRC.301.001.0001) at 0039–0040, 0077
- 103 Exhibit 9 – Living in the Bush (TEN.001.001.0004) at 0012
- 104 Exhibit 114 – Statement of O'Halloran (WIT.058.001.0001_R) [49]–[50]; Exhibit 108 – Statement of Brown (WIT.053.001.0001_R); Exhibit 429 – Statement of Weir (WIT.111.001.0001_R); Exhibit 39 – Statement of Hull (WIT.030.001.0001_R); Exhibit 379 – Statement of Jowett (WIT.109.001.0001_R) [45]–[46]; Exhibit 935 – Use of Informal Places of Shelter and Last Resort on 7 February 2009 (CFA.600.005.0317) at 0320, 0325–0355; Exhibit 46 – Statement of Gobbett (WIT.026.001.0001_R) [7]–[10], [12]–[13], Attachment 2 (WIT.026.001.0009); Exhibit 195 – Statement of Berry (WIT.071.001.0001_R) [23]–[45], [70]–[77], [87]; Exhibit 189 – Statement of Baruta (WIT.070.001.0001_R) [6]–[8], [23]–[28], [63]; Gobbett T1494:21–T1495:7, T1498:26–T1499:14; Baruta T5973:1–T5976:3, T5979:14–T5979:23, T5984:3–T5985:27, T5995:2–T5996:3; Berry T6114:4–T6117:18, T6120:1–T6120:19, T6122:8–T6123:29
- 105 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0036, 0043
- 106 Exhibit 935 – Victorian 2009 Bushfire Research Response Household Mail Survey (CRC.001.001.0001) at 0036, 0043
- 107 Exhibit 935 – Use of Informal Places of Shelter and Last Resort on 7 February 2009 (CFA.600.005.0317) at 0325–0355; Exhibit 822 – Supplementary Statement of Fitzgerald (WIT.3026.001.0176) [11]; Brida T16936:15–T16936:24
- 108 Exhibit 545 – Statement of Ruhr (WIT.122.001.0001_R) [60]–[63]
- 109 Exhibit 935 – Use of Informal Places of Shelter and Last Resort on 7 February 2009 (CFA.600.005.0317) at 0321
- 110 Exhibit 46 – Statement of Gobbett (WIT.026.001.0001_R) [7]–[10], [12]–[13], Attachment 2 (WIT.026.001.0009); Exhibit 189 – Statement of Baruta (WIT.070.001.0001_R) [6]–[8], [23]–[28], [63]; Exhibit 195 – Statement of Berry (WIT.071.001.0001_R) [23]–[45], [70]–[77], [87]; Exhibit 61 – Statement of Olorenshaw (WIT.034.001.0001_R) [61], [64], [89]; Gobbett T1494:21–T1495:7, T1498:26–T1499:14; Baruta T5973:1–T5976:3, T5979:14–T5979:23, T5984:3–T5985:27, T5995:2–T5996:3; Berry T6114:4–T6117:18, T6120:1–T6120:19, T6122:8–T6123:29
- 111 Exhibit 39 – Statement of Hull (WIT.030.001.0001_R) [14]–[19]; Hull T1171:1–T1178:6
- 112 Exhibit 108 – Statement of Brown (WIT.053.001.0001_R) [11], [26]–[33]; Brown T3516:16–T3517:30
- 113 Exhibit 422 – Statement of Gissara (WIT.112.001.0001_R) [22]–[29]; Exhibit 429 – Statement of Weir (WIT.111.001.0001_R) [17]–[29]; Exhibit 763 – Interactive Presentation – INTMEN 001873 (EXH.763.0001); Exhibit 955 – Interactive Presentation – INTMEN 001875 (EXH.955.0001); Gissara T9700:12–T9704:22
- 114 Exhibit 764 – Interactive Presentation – INTMEN 001785 and INTMEN 001979 (EXH.764.0001)
- 115 Exhibit 805 – Interactive Presentation – INTMEN 001854 (EXH.805.0001)
- 116 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report 2*, Parliament of Victoria, Melbourne, November 2009 [15]
- 117 Exhibit 811 – Statement of Edgar (WIT.3024.005.0353) [106], [111]; Exhibit 335 – Statement of Lauder (SUMM.044.002.2177_R) at 2179_R; Edgar T16756:6–T16756:31; Lauder T8249:10–T8249:28
- 118 Exhibit 444 – Statement of Elder (WIT.114.001.0001_R) [29]–[43]; Exhibit 362 – Statement of Glenn (WIT.066.001.0001_R) [22]–[25]; Exhibit 181 – Statement of Wasley (WIT.073.001.0001_R) [44]–[48]; Exhibit 173 – Statement of Wiltshire (WIT.075.001.0001_R) [22]–[25]; Exhibit 880 – Interactive Presentation – INTMEN 001849 (EXH.880.0001); Exhibit 208 – Statement of Hughes (WIT.080.001.0001_R) [37]–[42]; Exhibit 342 – Statement of Coltery (SUMM.044.003.0706_R) at 0709_R–0710_R; Glenn T8818:19–T8818:25
- 119 Exhibit 20 – Statement of Rogers (WIT.015.001.0001_R) [7]
- 120 Exhibit 894 – Review of fatalities in the February 7, 2009, Bushfires – Final Report (Amended version without mark up) (EXP.029.003.0001) at 0024; Handmer T18566:13–T18568:21
- 121 Exhibit 535 – McFarlane Report (EXP.007.002.0005) [3]–[4], Attachment 3 (EXP.007.001.0060), (EXP.007.001.0115), (EXP.007.001.0139)
- 122 Exhibit 536 – Valent Report (EXP.009.001.0001); Exhibit 895 – Statement of Toikka (WIT.160.001.0001_R) [28], [61], [71]; Exhibit 224 – Statement of Cowdrey (WIT.081.001.0001_R) [31]; Exhibit 545 – Statement of Ruhr (WIT.122.001.0001_R) [96]; Toikka T18643:21–T18644:31, T18649:26–T18650:2
- 123 Exhibit 459 – Statement of Siddle (WIT.115.001.0001_R) [31]; Exhibit 780 – Statement of Morrow (WIT.150.001.0001_R) [35]–[36]; Exhibit 46 – Statement of Gobbett (WIT.026.001.0001_R) [14]; Exhibit 545 – Statement of Ruhr (WIT.122.001.0001_R) [86]; Exhibit 906 – Statement of Kenney (WIT.161.001.0001_R) [35]–[37]; Kenney T19099:26–T19100:19
- 124 Exhibit 545 – Statement of Ruhr (WIT.122.001.0001_R) [96]
- 125 Exhibit 535 – McFarlane Report (EXP.007.002.0005) [3]–[5]
- 126 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009, Recommendation 7.1–7.5

- 127 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0010, 0046, 0051–0055, 0058–0060
- 128 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0060–0064, 0066
- 129 Exhibit 988 – Schedule One – MAV Initiatives (DOC.MAV.003.0001) at 0003; Exhibit 988 – Schedule Two – Council Initiatives (DOC.MAV.003.0005) at 0008–0009, 0011, 0014, 0016
- 130 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0064–0067
- 131 Exhibit 831 – Summer Fire Campaign Wave 2 Research (RESP.3001.025.0328) at 0336
- 132 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0053
- 133 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.003.0439) at 0440
- 134 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.003.0439) at 0440–0441, (WIT.3004.003.0448) at 0462
- 135 Exhibit 984 – Country Fire Authority Post-Fire Qualitative Research – Final Report (CFA.600.006.0046) at 0052; Exhibit 983 – A Review of the Role of Community Fireguard in the 2009 Victorian Bushfires – Final Report – May 2010 (CFA.600.006.0021) at 0026, 0042–0044
- 136 Exhibit 984 – Country Fire Authority Post-Fire Qualitative Research – Final Report (CFA.600.006.0046) at 0066
- 137 Exhibit 984 – Country Fire Authority Post-Fire Qualitative Research – Final Report (CFA.600.006.0046) at 0053, 0064, 0066
- 138 Exhibit 984 – Country Fire Authority Post-Fire Qualitative Research – Final Report (CFA.600.006.0046) at 0068
- 139 Exhibit 984 – Country Fire Authority Post-Fire Qualitative Research – Final Report (CFA.600.006.0046) at 0052–0053
- 140 Exhibit 983 – A Review of the Role of Community Fireguard in the 2009 Victorian Bushfires – Final Report – May 2010 (CFA.600.006.0021) at 0026
- 141 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009, Recommendations 4.1–4.8, 5.1–5.5, 9.3–9.5
- 142 Exhibit 865 – Australia's Revised Arrangements for Bushfire Advice and Alerts (RESP.7500.002.0001) [4.2]
- 143 Exhibit 865 – Australia's Revised Arrangements for Bushfire Advice and Alerts (RESP.7500.002.0001) [1]
- 144 Exhibit 865 – Australia's Revised Arrangements for Bushfire Advice and Alerts (RESP.7500.002.0001) [4.1]–[4.2]
- 145 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0055–0056; Exhibit 831 – Prepare. Act. Survive. Use this Kit to Help You Prepare for Bushfire (RESP.3001.001.0034); Exhibit 831 – Understanding Your Environment – What is My Bushfire Risk? (RESP.3001.001.0035); Exhibit 831 – Preparing Your Property – Make Your Home Bushfire Ready (RESP.3001.001.0047); Exhibit 831 – Leaving Early – Prepare and Act Early to Survive (RESP.3001.001.0063); Exhibit 831 – Bushfire Survival Plan – Your Leaving Early Planning Template (RESP.3001.001.0075); Exhibit 831 – Defending Your Property – Prepare and Act Early to Survive (RESP.3001.001.0083); Exhibit 831 – Your Bushfire Survival Plan – Defending Your Property Planning Template (RESP.3001.001.0111)
- 146 Exhibit 831 – Prepare. Act. Survive. Use this Kit to Help You Prepare for Bushfire (RESP.3001.001.0034); Exhibit 831 – Leaving Early – Prepare and Act Early to Survive (RESP.3001.001.0063) at 0064; Exhibit 831 – Defending Your Property – Prepare and Act Early to Survive (RESP.3001.001.0083) at 0086
- 147 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0102; *Country Fire Authority Act 1958*, s. 50D
- 148 Exhibit 828 – Statement of Duckmanton (WIT.3004.041.0056) [19]–[44]
- 149 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0021–0023, 0039–0041
- 150 Exhibit 828 – Statement of Duckmanton (WIT.3004.041.0056) [14.9]–[14.12]
- 151 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0032–0033
- 152 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0029
- 153 Exhibit 327 – Australia's Revised Arrangements for Bushfire Advice and Alerts – 2009/10 Fire Season (RESP.7500.001.0001); Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0021–0023, 0040
- 154 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0026–0029
- 155 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0029–0032
- 156 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0033–0039
- 157 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0033–0039
- 158 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0023–0025
- 159 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0041–0043, 0102
- 160 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0032–0033
- 161 Comrie T17435:30–T17436:31
- 162 Comrie T17446:15–T17446:30
- 163 Comrie T17444:25–T17444:31; Esplin T18908:29–T18909:11
- 164 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009, Recommendation 12.2
- 165 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0120–0122
- 166 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009, Recommendations 6.1–6.4, 8.1–8.13, 9.1–9.5
- 167 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009, Recommendation 6.1

- 168 Exhibit 443 – Statement of Overland, Annexure 1 (WIT.3010.009.0244) at 0271–0273; Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0044
- 169 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [8.19]–[8.133], Recommendation 8.4–8.10
- 170 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0074–0077; Exhibit 831 – Statewide NSP Locations Spreadsheet (RESP.3001.014.0158)
- 171 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [8.105]
- 172 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0073; Exhibit 902 – Supplementary Statement of Esplin (WIT.3007.001.0001) [84]; Submissions of the State of Victoria – Revising the Prepare Stay and Defend or Leave Early Policy (RESP.3000.006.0349) [145]–[156]
- 173 Exhibit 902 – Supplementary Statement of Esplin (WIT.3007.001.0001) [15]
- 174 Exhibit 902 – Supplementary Statement of Esplin (WIT.3007.001.0001) [65]
- 175 Exhibit 902 – Supplementary Statement of Esplin (WIT.3007.001.0001) [22.11]–[22.12]; Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0091–0094, 0126; Exhibit 843 – Statement of Robertson (WIT.3003.001.0001) [28]–[29]
- 176 Exhibit 831 – Bushfire Response – Clients and Service Policy 2009–10 October 2009 (RESP.3001.014.0333) at 0336–0340
- 177 Exhibit 896 – Statement of Streblow (WIT.158.001.0001) [1], [70]–[78], [94]–[97], [109]–[110], Attachment 9 (RSCH.029.001.1700); Exhibit 106 – Statement of McCaffrey (WIT.038.001.0001) [10], [15]–[19], [29], Attachment D (WIT.038.001.0024); Streblow T18715:14–T18716:20, T18718:20–T18719:3, T18720:1–T18720:27, T18723:26–T18726:10, T18733:11–T18733:17, T18744:2–T18744:18; McCaffrey T3454:1–T3454:17
- 178 Exhibit 896 – Statement of Streblow (WIT.158.001.0001) [80]–[81], [86]
- 179 Exhibit 896 – Statement of Streblow (WIT.158.001.0001) [102]–[108]; Streblow T18728:23–T18728:30
- 180 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0087–0090
- 181 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0091–0093; Exhibit 148 – Statement of Cook (WIT.3029.001.0001) [64]–[76]; Cook T4751:15–T4751:24, T4752:16–T4752:28
- 182 Exhibit 796 – Statement of Appleford (WIT.3024.005.0295) [18]–[21], Annexure 3 (DSE.HDD.0144.0004), Annexure 4 (DSE.HDD.0144.0007), (DSE.HDD.0002.8072), Annexure 5 (DSE.0017.0115.0180)
- 183 Exhibit 796 – Statement of Appleford (WIT.3024.005.0295) [23], Annexure 6 (DSE.HDD.0144.0069)
- 184 Exhibit 796 – Statement of Appleford (WIT.3024.005.0295) [23], [25.2], [28], Annexure 7 (DSE.HDD.0144.0012)
- 185 Exhibit 796 – Statement of Appleford (WIT.3024.005.0295) [12], [25]–[26], [30], [36]–[39], Annexure 3 (DSE.HDD.0144.0004) at 0005, Annexure 6 (DSE.HDD.0144.0069) at 0070–0071, Annexure 8 (DSE.HDD.0144.0017) at 0018, 0028–0030, Annexure 12 (DSE.HDD.0144.0062)
- 186 Exhibit 810 – Statement of Esnouf, Annexure 48 (WIT.3004.040.0002) at 0023–0031
- 187 Handmer T18546:14–T18547:17
- 188 Esplin T18917:4–T18917:9
- 189 Exhibit 865 – Australia's Revised Arrangements for Bushfire Advice and Alerts (RESP.7500.002.0001) at 0006–0007
- 190 Exhibit 935 – Where Are They Going? – People Movement During Bushfires (RESP.3001.014.0117) at 0125
- 191 Submissions of the State of Victoria – Interim Report (SUBM.100.005.0001) [72]–[73]
- 192 Exhibit 101 – Statement of Rhodes (WIT.3004.002.0001) [88]
- 193 Exhibit 935 – A Qualitative Report on CFA Community Engagement – Reference No.18670 – September 2009 (TEN.280.001.0001) at 0007, 0009, 0011; Exhibit 935 – Exploring the Bushfire Experience from a Domestic Perspective (TEN.272.001.0027) at 0029; Exhibit 1000 – Understanding Social Complexity Within the Wildland-Urban Interface: A New Species of Human Habitation? (IAWF.001.001.0208) at 0217
- 194 Exhibit 101 – Statement of Rhodes (WIT.3004.002.0001) [123]–[124]
- 195 Exhibit 1000 – Understanding Social Complexity Within the Wildland-Urban Interface: A New Species of Human Habitation? (IAWF.001.001.0208)
- 196 Exhibit 101 – Statement of Rhodes (WIT.3004.002.0001) [6], [122]–[240]; Exhibit 931 – Statement of Armytage (WIT.3003.002.0001) [29]–[32], Attachment 3 (WIT.3003.002.0076)
- 197 Submissions of Counsel Assisting – A New Bushfire Safety Policy – Replacing the Stay or Go Policy (SUBM.1100.001.0001) [2.32]
- 198 Exhibit 101 – Statement of Rhodes, Annexure C (WIT.3004.002.0796) at 0801
- 199 Exhibit 935 – A Qualitative Report On CFA Community Engagement – Reference No.18670 – September 2009 (TEN.280.001.0001) at 0016, 0019, 0023
- 200 Exhibit 269 – Statement of Russell, Annexure 1 (WIT.3004.013.0021) at 0046; Exhibit 3 – Statement of Rees (WIT.004.001.0001) [234.3]
- 201 Exhibit 831 – Prepare. Act. Survive. Use this Kit to Help You Prepare for Bushfire (RESP.3001.001.0034); Exhibit 831 – Understanding your Environment – What Is My Bushfire Risk? (RESP.3001.001.0035); Exhibit 831 – Preparing Your Property – Make Your Home Bushfire Ready (RESP.3001.001.0047); Exhibit 831 – Leaving Early – Prepare and Act Early to Survive (RESP.3001.001.0063); Exhibit 831 – Bushfire Survival Plan – Your Leaving Early Planning Template (RESP.3001.001.0075); Exhibit 831 – Defending Your Property – Prepare and Act Early to Survive (RESP.3001.001.0083); Exhibit 831 – Your Bushfire Survival Plan – Defending Your Property Planning Template (RESP.3001.001.0111)
- 202 For example: Exhibit 806 – Interactive Presentation – INTMEN 001847 (EXH.806.0001); Exhibit 294 – Interactive Presentation – INTMEN 001827 (EXH.294.0001); Exhibit 785 – Statement of Enden (WIT.047.001.0001_R) [24]; Exhibit 208 – Statement of Hughes (WIT.080.001.0001_R) [14]; Exhibit 522 – Statement of Mortimer (WIT.118.001.0001_R) [49]; Exhibit 244 – Statement of Easterbrook (WIT.085.001.0001_R) [52]

- 203 Submissions of Counsel Assisting – A New Bushfire Safety Policy – Replacing the Stay or Go Policy, Appendix 1 (SUBM.1100.001.0168)
- 204 Exhibit 687 – Bushfire Penetration Into Urban Areas in Australia: A Spatial Analysis (CRC.304.001.0001) at 0021
- 205 Exhibit 701 – Hansen Report (EXP.021.001.0001) [3.13]–[3.14]
- 206 Exhibit 871 – CFA – DSE – Pre-Season Update – Issues 2 of 2 (DSE.HDD.0157.0056) at 0059; Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0060
- 207 *Country Fire Authority Act 1958*, ss. 50P, 92
- 208 Esplin T18908:29–T18909:21, T18913:3–T18913:26, T18920:14–T18921:17, T18930:30–T18932:13, T18935:17–T18936:22
- 209 Exhibit 901 – Protective Actions in Wildfires: Evacuate or Shelter-in-Place? (TEN.268.001.0022) at 0031; Cova T18856:18–T18857:21
- 210 Exhibit 896 – Statement of Streblow (WIT.158.001.0001) [80], [97]
- 211 Streblow T18716:13–T18716:20
- 212 *Emergency Management Act 1986*, ss. 20, 21
- 213 *Country Fire Authority Act 1958*, s. 55A(1)
- 214 Exhibit 832 – Statement of Thompson (WIT.3004.040.0263) [34]–[35], Annexure 5 (WIT.3004.040.0306_R)
- 215 Exhibit 996 – Township Protection Plans – Neighbourhood Safer Places – Places of Last Resort – Development, Implementation and Evaluation CFA Progress Report (RESP.3001.026.0012) at 0019; Exhibit 324 – Further Material of the State of Victoria (RESP.3000.001.0001) [7]
- 216 Submissions of the State of Victoria – Interim Report (SUBM.100.005.0001) [85]–[87]
- 217 Exhibit 996 – Township Protection Plans – Neighbourhood Safer Places – Places of Last Resort – Development, Implementation and Evaluation CFA Progress Report (RESP.3001.026.0012) at 0015, 0020, 0024; Exhibit 831 – Bendigo Township Protection Plan (Bushfire) (RESP.3001.005.0223); Exhibit 833 – Bright/Wandiligong Township Protection Plan (Bushfire) (ASC.001.001.0040_R)
- 218 Exhibit 832 – Statement of Thompson (WIT.3004.040.0263) [58], [66], Annexure 8 (WIT.3004.040.0366) at 0437–0438
- 219 Exhibit 92 – Statement of Free (WIT.049.001.0001) [24]
- 220 Exhibit 92 – Statement of Free (WIT.049.001.0001) [56]; Exhibit 92 – The Integrated Fire Management Planning Framework (TEN.029.001.0002) at 0007
- 221 Exhibit 92 – The Integrated Fire Management Planning Framework (TEN.029.001.0002) at 0005, 0008
- 222 Exhibit 92 – The Integrated Fire Management Planning Framework (TEN.029.001.0002) at 0008
- 223 Farmer T17203:9–T17203:17
- 224 Exhibit 92 – Statement of Free (WIT.049.001.0001) [68], [75]–[80], [84], [86], [92]; Exhibit 832 – Statement of Thompson (WIT.3004.040.0263) [32]; Free T2982:15–T2983:2, T3007:22–T3007:27; Thompson T17168:9–T17168:17
- 225 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [8.14]–[8.18]; Exhibit 831 – Victorian Fire Risk Register Progress as at 3 February 2010 (RESP.3001.018.0268); Exhibit 831 – Victorian Fire Risk Register Implementation – 1st 22 Municipalities (RESP.3001.017.0076)
- 226 Exhibit 834 – Statement of Kittel (WIT.4026.001.0001_R) [92]–[93]; Kittel T17219:19–T17220:27, T17224:11–T17224:15
- 227 Exhibit 831 – Emergency Management Manual of Victoria (RESP.3001.003.0001_R)
- 228 Exhibit 377 – Statement of Ellett (WIT.4006.001.0001) [27], [33], Attachment 2 (WIT.4006.001.0021) at 0037, Attachment 4 (WIT.4006.001.0259), Attachment 5 (WIT.4006.001.0262); Submissions of Counsel Assisting – Murrindindi Fire (SUBM.202.009.0001) [7.13], [9.5]
- 229 Exhibit 834 – Statement of Kittel (WIT.4026.001.0001_R) [89]–[91]; Kittel T17223:3–T17223:6
- 230 Exhibit 92 – The Integrated Fire Management Planning Framework (TEN.029.001.0002) at 0008; Submissions of the State of Victoria – Revising the Prepare Stay and Defend or Leave Early Policy (RESP.3000.006.0349) [211]
- 231 Exhibit 904 – Leonard Report (EXP.3031.001.0018) at 0031; Exhibit 905 – ‘t Hart Report (EXP.3031.001.0001) at 0007; ‘t Hart T19048:6–T19049:11
- 232 McCaffrey T3412:11–T3412:19
- 233 Paulet T9456:29–T9457:4
- 234 For example: Exhibit 903 – Statement of Clements (WIT.162.001.0001_R) [8], [20]; Exhibit 785 – Statement of Enden (WIT.147.001.0001_R) [21]; Exhibit 898 – Statement of Nowak (WIT.159.001.0001_R) [5], [18], [21], [33]; Exhibit 809 – Interactive Presentation – INTMEN 001818 (EXH.809.0001)
- 235 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [8.98]–[8.113], [8.133]
- 236 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [8.28]–[8.72]
- 237 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0072; B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [8.58]–[8.61]
- 238 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [8.74]–[8.80]
- 239 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009, Recommendation 8.3, [8.109]–[8.110]
- 240 Exhibit 831 – Fire Refuges Discussion Paper – June 2010 (RESP.3001.026.0042) [113]–[114]

- 241 *Country Fire Authority Act 1958*, Part IIIA, Divisions 3 and 4
- 242 Exhibit 142 – 2004 COAG Report (TEN.049.001.0001) at 0169
- 243 Exhibit 902 – Supplementary Statement of Esplin (WIT.3007.001.0001) [84]–[85]
- 244 Exhibit 614 – Statement of Hayes (WIT.3004.032.0147) [12], Annexure 1 (WIT.3004.032.0164), Annexure 3 (RESP.3001.001.0127); Hayes T13274:12–T13275:24
- 245 Submissions of the State of Victoria – Revising the Prepare Stay and Defend or Leave Early Policy (RESP.3000.006.0349) [162.5], [163]; Submissions of the Municipal Association of Victoria – A New Bushfire Safety Policy – Replacing the Stay or Go Policy (RESP.4000.011.0001) [68]; Exhibit 1003 – Update from the Municipal Association of Victoria and 77 Municipal Councils on the Designation of Neighbourhood Safer Places (DOC.MAV.004.0001) [3]
- 246 Submissions of the Municipal Association of Victoria – A New Bushfire Safety Policy – Replacing the Stay or Go Policy (RESP.4000.011.0001) [79]–[80]; Submissions of the State of Victoria – Revising the Prepare Stay and Defend or Leave Early Policy (RESP.3000.006.0349) [169]–[170]
- 247 Exhibit 902 – Supplementary Statement of Esplin (WIT.3007.001.0001) [89]; Esplin T18910:18–T18910:29
- 248 Exhibit 324 – Further Material of the State of Victoria (RESP.3000.001.0001) [16]
- 249 Exhibit 615 – Letter from M Bourke (CFA) to R Spence (MAV) Dated 10 December 2009 (EXH.615.0001)
- 250 Exhibit 324 – Further Material of the State of Victoria (RESP.3000.001.0001) [16]; Exhibit 620 – Bushfire Neighbourhood Safer Place (DOC.MAV.002.0001); Exhibit 831 – Neighbourhood Safer Places, Only a Last Resort (RESP.3001.018.0438); Submissions of the Municipal Association of Victoria – A New Bushfire Safety Policy – Replacing the Stay or Go Policy (RESP.4000.011.0001) [50], [57], [62]; Comrie T17484:18–T17484:30
- 251 Submissions of the Municipal Association of Victoria – A New Bushfire Safety Policy – Replacing the Stay or Go Policy (RESP.4000.011.0001) [57], [59]
- 252 Submissions of the State of Victoria – Revising the Prepare Stay and Defend or Leave Early Policy (RESP.3000.006.0349) [182]
- 253 Submissions of the Municipal Association of Victoria – A New Bushfire Safety Policy – Replacing the Stay or Go Policy (RESP.4000.011.0001) [50]–[56]; Spence T13394:13–T13395:19
- 254 Exhibit 840 – Statement of Comrie, Annexure 1 (WIT.3031.001.0004) at 0083–0084
- 255 Exhibit 614 – Statement of Hayes, Annexure 1 (WIT.3004.032.0164) at 0166–0168; Exhibit 831 – Emergency Services Legislation Amendment Bill 2009 – Explanatory Memorandum (RESP.3001.002.0001) at 0007; Hayes T13274:12–T13275:24
- 256 Exhibit 614 – Statement of Hayes, Annexure 1 (WIT.3004.032.0164) at 0169–0170
- 257 Exhibit 614 – Statement of Hayes, Annexure 1 (WIT.3004.032.0164) at 0168; Submissions of the Municipal Association of Victoria – Interim Report (SUBM.100.006.0001) [116]; Hayes T13275:4–T13275:9; Spence T13401:23–T13401:27; Lyon T5083:21–T5084:26
- 258 Exhibit 614 – Statement of Hayes, Annexure 1 (WIT.3004.032.0164) at 0167, 0171–0172; see discussion at Hayes T13276:28–T13277:17; Spence T13374:14–T13374:27, T13375:14–T13375:31
- 259 Exhibit 614 – Statement of Hayes (WIT.3004.032.0147) [12], Annexure 3 (RESP.3001.001.0127)
- 260 Exhibit 614 – Statement of Hayes, Annexure 3 (RESP.3001.001.0127) at 0130
- 261 Exhibit 614 – Statement of Hayes (WIT.3004.032.0147) [20]; Hayes T13242:9–T13249:31
- 262 Exhibit 614 – Statement of Hayes (WIT.3004.032.0147) [24], Annexure 9 (WIT.3004.032.0430); Spence T13377:21–T13377:27, T13318:30–T13319:7; Hayes T13262:20–T13262:25
- 263 Exhibit 614 – Statement of Hayes (WIT.3004.032.0147) [11]
- 264 Exhibit 614 – Statement of Hayes (WIT.3004.032.0147) [10.5]; Exhibit 620 – Municipal Council Neighbourhood Safer Places Plan – Place of Last Resort During a Bushfire (TEN.168.001.0001) at 0011–0016; Hayes T13279:2–T13280:3
- 265 Exhibit 614 – Statement of Hayes, Annexure 1 (WIT.3004.032.0164) at 0168; Dunn T13356:15–T13356:20; Spence T13383:7–T13383:15
- 266 Exhibit 620 – Municipal Council Neighbourhood Safer Places Plan – Place of Last Resort During a Bushfire (TEN.168.001.0001) at 0011–0012; Spence T13383:22–T13384:29, T13396:29–T13397:2
- 267 Exhibit 908 – Extract from CFA Website as at 27 April 2010 – Neighbourhood Safer Places (TEN.275.001.0001) at 0001–0005
- 268 Submissions of Counsel Assisting – A New Bushfire Safety Policy – Replacing The Stay or Go Policy (SUBM.1100.001.0001) [9.53]–[9.55]; Exhibit 1003 – Update from the Municipal Association of Victoria and 77 Municipal Councils on the Designation of Neighbourhood Safer Places (DOC.MAV.004.0001) [11]–[12]
- 269 Submissions of the Municipal Association of Victoria – A New Bushfire Safety Policy – Replacing the Stay or Go Policy (RESP.4000.011.0001) [94]–[98]
- 270 Exhibit 902 – Supplementary Statement of Esplin (WIT.3007.001.0001) [60]
- 271 Spence T13398:27–T13398:30
- 272 Exhibit 902 – Supplementary Statement of Esplin (WIT.3007.001.0001) [15.4], [22.10]
- 273 Submissions of the Municipal Association of Victoria – A New Bushfire Safety Policy – Replacing the Stay or Go Policy (RESP.4000.011.0001) [94]–[99]
- 274 B Teague, R McLeod, S Pascoe, 2009 *Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [6.8]–[6.22]
- 275 Exhibit 9 – 2005 AFAC Community Safety Paper (TEN.001.001.0077) at 0083–0084

- 276 Submissions of Counsel Assisting – Bunyip Fire (SUBM.202.002.0001) [8.1]–[8.40]; Submissions of Counsel Assisting – Murrindindi Fire (SUBM.202.009.0001) [9.10]–[9.12]; Exhibit 19 – Revised Statement of Walshe (WIT.003.002.0001) [131]–[132]; Walshe T657:25–T658:5
- 277 Exhibit 16 – Statement of Haynes (WIT.001.001.0001_R) [25(ii)]; B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [6.1]–[6.22]
- 278 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [6.30]
- 279 Exhibit 831 – Bushfire Response – Clients and Service Policy 2009–10 – October 2009 (RESP.3001.014.0333) at 0338
- 280 Exhibit 902 – Supplementary Statement of Esplin (WIT.3007.001.0001) [78]; Esplin T18921:2–T18921:5
- 281 Exhibit 831 – Bushfire Response – Clients and Service Policy 2009–10 October 2009 (RESP.3001.014.0333) at 0342
- 282 Exhibit 831 – Bushfire Response – Clients and Service Policy 2009–10 October 2009 (RESP.3001.014.0333) at 0342
- 283 Submissions of Counsel Assisting – Murrindindi Fire (SUBM.202.009.0001) [9.10]–[9.12]
- 284 Cova T18860:8–T18860:30
- 285 Exhibit 901 – Statement of Cova, Attachment 2 (TEN.268.001.0022) at 0026; Cova T18853:9–T18853:29
- 286 Exhibit 24 – Statement of Griffiths (WIT.018.001.0001) [33]–[41]; Exhibit 820 – Statement of Garvey (WIT.3004.034.0153) [33]–[68]; Exhibit 874 – Statement of Corbett (WIT.3004.043.0298) [10]–[29]
- 287 B Teague, R McLeod, S Pascoe, *2009 Victorian Bushfires Royal Commission: Interim Report*, Parliament of Victoria, Melbourne, August 2009 [6.68]–[6.70]
- 288 Exhibit 106 – Statement of McCaffrey, Attachment G (WIT.038.001.0137) at 0138–0141
- 289 Cherry T9167:28–T9168:2; Frazer-Jans T5254:1–T5254:7; Glassford T1334:27–T1335:3; Sorraghan T18071:16–T18071:25
- 290 Exhibit 142 – 2004 COAG Report (TEN.049.001.0001) at 0087
- 291 Exhibit 45 – Natural Disasters in Australia (TEN.004.002.0037) at 0173–0174
- 292 Exhibit 171 – Statement of Tucker, Attachment 102 (WIT.7501.005.0285) at 0294
- 293 Exhibit 961 – Letter from Robert Randall (ACARA) to Val Gostencnik (CORR.1004.0197) at 0197
- 294 Exhibit 171 – Statement of Tucker, Attachment 102 (WIT.7501.005.0285) at 0294; Exhibit 142 – 2004 COAG Report (TEN.049.001.0001) at 0021
- 295 Exhibit 961 – Letter from Robert Randall (ACARA) to Val Gostencnik (CORR.1004.0197) at 0197
- 296 For further detail, see Chapters 5, 10, 12 in Volume I
- 297 Exhibit 69 – Statement of Paton (WIT.031.001.0001) [8]–[9]
- 298 Exhibit 69 – Statement of Paton (WIT.031.001.0001) [14.10]
- 299 Exhibit 69 – Statement of Paton (WIT.031.001.0001) [14.2]–[14.6]

