Evaluation Report

2010-2011

C2.10B Evaluation and Effectiveness Project

Community Safety Directorate
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Acknowledgements

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Executive Summary

Evaluation scope, objectives and design

The Evaluation and Effectiveness project of the Bushfires Program was established to evaluate community education and engagement programs intended to enhance community and householder capacity to deal with the bushfire risk. This evaluation reviewed CFA's overall approach to community education and evaluated a number of Bushfires Program initiatives. The focus of evaluation was on outcomes at the community level.

The evaluation contributes to Recommendation 2.4 of the VBRC Final Report, that: "*The State revises the approach to community bushfire safety education in order to regularly evaluate the effectiveness of community education programs and amend them as necessary.*"[1]

Context

The evaluation included a review of studies undertaken over the past 10 years into various aspects of community response to the bushfire risk in Victoria. In general, repeated studies have found that people are aware of their bushfire risk and that most feel well informed and reasonably well prepared to deal with a bushfire. However, further investigation tends to reveal that actual preparation is often less adequate than people believe. Many people undertake 'easy to do' preparation actions, but more complex but necessary measures are much less likely to be undertaken.

Studies have also consistently found that while many people have thought about what they would do in the event of a bushfire, very few have what would be described by fire agencies as a comprehensive plan. Importantly, a significant proportion of people intend to act in a manner contrary to official advice in the event of a bushfire, with almost one-third of respondents in the most recent survey intending to 'wait and see'.

There have been three community telephone surveys conducted since Black Saturday, and these have generally confirmed the patterns identified in earlier surveys. The two areas in which a notable change has been witnessed over the 10 years of study are an increase in the proportion of the population who intend to leave early on high risk days and a concurrent decline in the proportion planning to stay and defend their property, and an increase in expectations about receiving an official warning of an approaching fire. The first is a change which has been evident since Black Saturday; the second has been developing progressively over the 10 year period.

A cluster analysis of the most recent community survey identified a number of different groups in the community based on their motivation to act in response to the bushfire risk. The cluster analysis shows that people's motivation to act varies

[1] VBRC Final Report (July 2010), Summary p.23.

greatly, and the likelihood that they will engage with and benefit from CFA programs and services varies accordingly. Briefly, the four key groups identified were: the 'active and involved' group, who are motivated to act and are actively involved in dealing with their bushfire risk; the 'ready and interested' group, who are motivated to do something about the risk but are less committed to actually doing it; the 'done it already' group, who are not highly motivated to take action and feel they have done what they need to do; and the 'not into bushfire' group, who are the least motivated to act and are generally significantly less informed about the risk than other groups.

Using the data from the most recent survey of households in high risk locations, an analysis of outcome measures showed that overall there has been no significant improvement in household understanding of bushfire risk, planning or preparation over the past six months. There are however significant differences in the actual levels of understanding, planning and preparation between the different segments.

Findings on Bushfires Program initiatives

Key messages and publications

A review of the suite of publications and advice made available by CFA since February 2009 found that, for the most part, the reviewed publications had incorporated appropriately the expectations and recommendations of the VBRC. However, key bushfire safety messages are produced in multiple formats with slight variations to language and emphasis, and the function of each of these should be clarified. There is a need to ensure that publications and advice are appropriately integrated into and consistent with community education programs.

Fire Ready Victoria community and street meetings

The evaluation found that Fire Ready Victoria (FRV) community and street meetings have successfully engaged a significant proportion of the population over an extended period (47% of households in high risk areas have attended a bushfire safety meeting at some time in the past), and that attendees gain a range of benefits from the meetings. Attendance is largely dependent on motivation and interest in the bushfire issue, and it is clear that a proportion of the population choose not to attend FRV meetings for a range of reasons. There is a lack of evidence of widespread involvement in preparation activities as a result of FRV participation, but meetings can play an important part in a comprehensive community education and engagement strategy. Future enhancements to FRV meetings should focus on providing relevant local content, not trying to incorporate every aspect of bushfire risk, preparation and planning, and referring participants to other initiatives which will address specific needs.

Bushfire Planning Workshops

The evaluation of Bushfire Planning Workshops focused on clarifying the intent of the program and assessing the extent to which current program delivery is consistent with that intent. The evaluation found that this program is poorly developed, lacks a consistent delivery approach and has not been widely

implemented, and as a result has had minimal impact in the community. The concept does exhibit some potential but significant refinements are required.

Home Bushfire Advice Service

The Home Bushfire Advice Service provides site specific advice about the bushfire risk, defendable space and guidance on developing more effective plan. Evidence suggests that this program appeals and is of benefit to those who are already interested in the bushfire issue and motivated to act. An additional means of program delivery in 2010-11, the 'on the spot' visit (door-knocking approach) has broadened the reach of the program but has been less effective in engaging the most motivated and interested residents. The program requires a better-defined service delivery model clarifying what it aims to achieve, for whom, and how it can be consistently implemented for maximum effect.

Household Bushfire Self Assessment Tool

The online Household Bushfire Self Assessment Tool (HBSAT) is a technical and complex tool which also appeals most to people who are actively engaged in thinking about and preparing for bushfire. Only a small proportion of residents in high risk areas have used the tool, and only about half of those who access it will complete the tool. HBSAT appears best positioned as a niche tool for those already interested in active in bushfire preparation to give them a more objective assessment of the defendability or otherwise of their property.

Community Fireguard development project

This aspect of the evaluation focused on a project currently underway to revise and redesign the content and structure of Community Fireguard (CFG). A review of program outcomes identified the need to change various elements of the program to improve effectiveness, with a focus on developing a more comprehensive suite of competencies for CFG participants.

Township Protection Plans – Community Preparedness Guides

The publicly available component of Township Protection Plans – the Community Preparedness Guide – elicited a mixed reaction from residents in high risk areas. Residents reported moderate levels of recall of the Guide and noted some benefits of its local content. There is potential to further enhance use of the Guide as a component of local planning in order to enable people to take account of local circumstances and conditions in their own planning.

Neighbourhood Safer Places

There is a reasonably strong recall of the concept of Neighbourhood Safer Places (NSPs) in high risk areas, with levels of recollection of the term 'Neighbourhood Safer Place' remaining steady since May 2010. The evaluation identified that a majority of people did not know what would be provided at an NSP or had expectations of services more akin to those provided in a relief centre. Understanding of NSPs as an option of last resort was high, but a significant minority

intend to go to an NSP in circumstances other than those recommended by agencies.

Fire Danger Ratings

While there appears to be widespread recall of the term 'Code Red' as the highest bushfire rating on the new national Fire Danger Rating scale, recall of other levels of rating and of the advice given by fire authorities in relation to the various levels is lower. More than half the population still intends to take action which is contrary to the advice of fire authorities on 'Code Red' days, that is, they intend to 'wait and see' or 'stay and defend'. The evaluation found that rather than seeing fire danger forecasts as authoritative advice to be followed, many people regard the forecast as just one factor in their decision making.

Discussion

This evaluation found that CFA's current approach to enhancing community and householder capacity to deal with the bushfire risk has been successful for a proportion of the population who have the motivation to engage, and are generally already active in bushfire preparation and planning.

The current information-based community education approach has been less successful for other people who have been partly engaged by current programs but still lack motivation to take action, and for others who believe that they are informed and prepared, but in reality remain under-prepared and lack comprehensive plans. There remains a group of people living in high risk areas who are not interested in bushfire and generally perceive their risk to be lower than other more interested and engaged groups.

Findings indicate that those who have not been engaged in current programs and who remain under-prepared are not unaware of the bushfire risk. Rather, bushfire is not seen as a salient issue, and in many cases there is a belief that basic efforts towards bushfire preparation will be sufficient in all circumstances.

The current approach, which relies heavily on the provision of information to build awareness and knowledge about bushfire, is effective for some people, but is insufficient to challenge the complacency of others or to lead to a reassessment of thinking. Many initiatives are only likely to be effective for the minority that is responsive to information and already motivated to act. There is evidence that many initiatives, such as the Home Bushfire Advice Service, are not having widespread impact, and others, such as the revised fire danger ratings system are only partly understood and accepted.

The findings from this evaluation point to a need for a revised approach to enhancing community capacity to deal with bushfire in order to more effectively engage a broader cross-section of the community, and to increase the likelihood of achieving outcomes. A more integrated, locally-based approach potentially addressing a broader range of outcomes, including those relating to decision-making capacity and community resilience, is needed. Clarity in defining intended outcomes is paramount. This new approach needs to move beyond the information-based approach to influence the many different factors that influence people's behaviour,

utilising a broader range of strategies and processes to achieve change in how people perceive and respond to risk. A greater emphasis on locally relevant and credible programs will increase the salience of the bushfire issue in people's minds.

The evaluation has reviewed the effectiveness of a number of key projects in the Bushfires Program and identified areas for improvement in these programs, as well as highlighting the need for a revised approach to increase the engagement and preparedness of the majority of residents in high risk areas.

Introduction

Since the bushfires of February 2009, many changes have taken place in the approach to dealing with bushfires in Victoria. An important focus of the Victorian Bushfires Royal Commission (VBRC) considerations was the advice to communities about preparation for and response to bushfires and the means by which CFA and other agencies engage with the community to increase community and householder capacity to deal with the risk of bushfire.

This report presents the findings of and recommendations arising from the evaluation of selected CFA projects and programs intended to increase community and householder capacity to deal with the risk of bushfire. The evaluation project comes under the auspices of the Bushfires Program, and is known as project C2.10B Evaluation and Effectiveness.

Background

The Victorian Bushfires Royal Commission: changes to Victoria's bushfire policy

In July 2010, the VBRC handed down its final report into the causes of, the preparation for, the response to and the impact of the fires in Victoria in late January and February 2009 (including 'Black Saturday', 7 February 2009).

The VBRC made a number of recommendations regarding Victoria's bushfire safety policy which have driven changes to the design and implementation of bushfire safety programs and to the way bushfire safety is communicated to and with Victorian communities.

In response to these recommendations, significant changes have been made to CFA's advice to the community on safe responses to bushfire risk. Prior to 7 February 2009, this advice was reflected in the national position formerly known as 'Prepare, stay and defend or leave early' and in CFA's 'Advice to Communities Before and During Bushfires' policy. In December 2010, the newly appointed Victorian Fire Services Commissioner released the Victorian Bushfire Safety Policy Framework, which now provides the over-arching policy framework within which CFA's bushfire safety programs and initiatives are developed and implemented.

A range of initiatives have been refined and new initiatives developed to provide effective support to the community in response to bushfire risk in light of the new policy. These initiatives have been developed and implemented in order to bring about desired behaviours in preparing and planning for bushfire and changes in the way people respond to the bushfire risk. The initiatives are intended to increase community and householder capacity to deal with the bushfire risk, as well as increase the capacity of CFA to work effectively with communities and to provide effective services to address a broad range of community needs.

A key objective of this evaluation is to meet Recommendation 2.4 of the VBRC Final Report, that: "*The State revises the approach to community bushfire safety education in order to regularly evaluate the effectiveness of community education programs and amend them as necessary.*"[2]

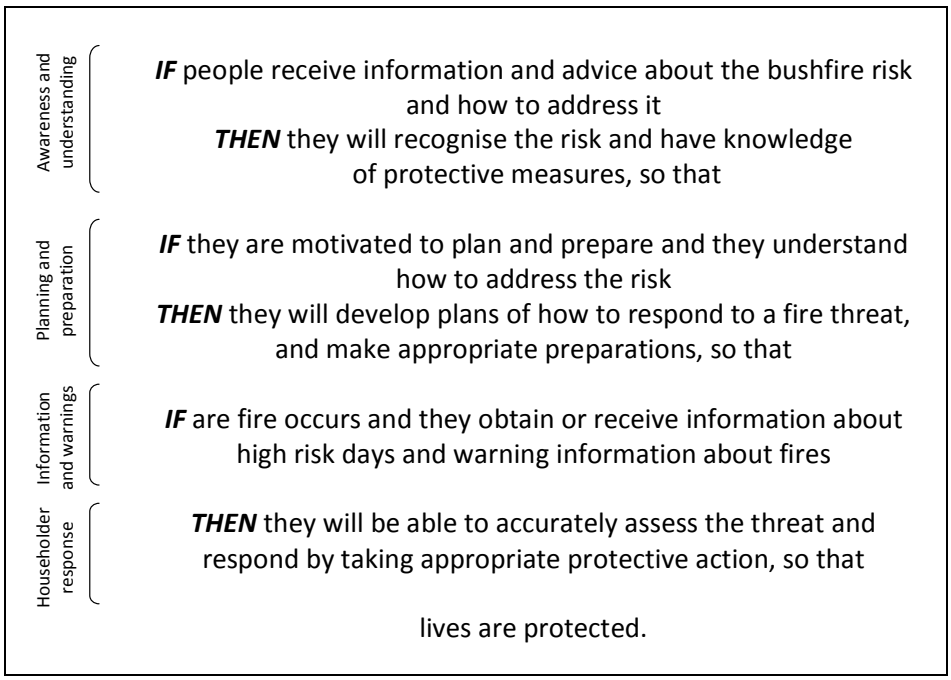
This evaluation is intended to assess the effectiveness of selected community bushfire safety programs and services, identify areas for program improvement, and in some cases may identify a need for new programs.

CFA's approach to bushfire safety

CFA's approach to enhancing community and householder capacity to deal with the bushfire risk has developed over many years and has been revised following the VBRC Final Report. Extensive critique of the approach was published in the 2009-10 evaluation report (see Reference Document R.01). As noted in that report, CFA's approach to community bushfire safety is based around four phases: awareness and understanding; planning and preparation; information and warnings; and householder response.

The logic of the model can be expressed in the form of a sequence of "if… then…" statements:

Figure 1: The logic of CFA's approach to bushfire safety



This approach is underpinned by some general assumptions, such as ''awareness of the risk will motivate people to act', 'that people can understand, interpret and information appropriately', and 'that warnings will enable people to assess the threat and respond appropriately'. These were critiqued in the 2009-10 evaluation report, and are discussed further in the Review of Previous Research section, below.

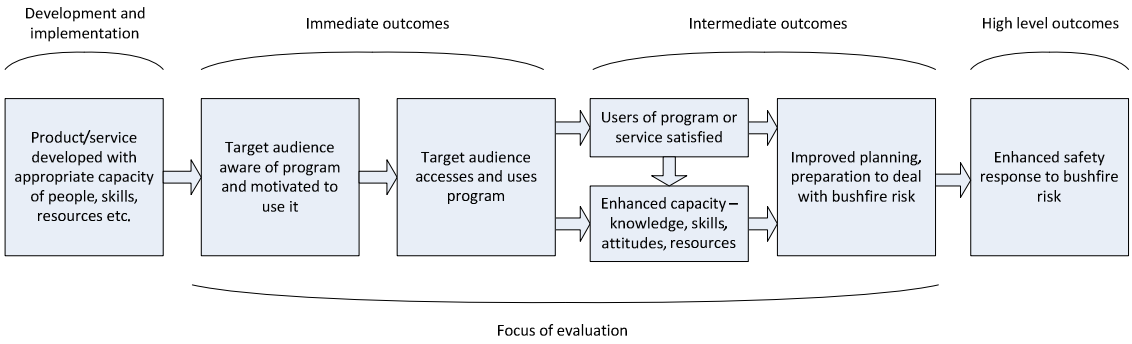
[2] VBRC Final Report (July 2010), Summary p.23.

It is important to question the assumptions underpinning the approach in order to improve CFA's effectiveness in building community capacity to deal with bushfire risk.

The process-outcome model

The initiatives which are the subject of this evaluation comprise various forms of education and engagement programs which intend to influence aspects of behaviour / response to the bushfire threat by providing information and advice to individuals and communities. The initiatives broadly reflect the generic process-outcome model shown below:

Figure 2: Generic process-outcome model of education and advice programs



Reading Figure 2 from right to left, the model emphasises that in order to achieve the high level outcome of improved safe response, people need to have adequate levels of planning and preparation to deal with the bushfire risk, which in turn is underpinned by the development of capacity in the target audience. The model also includes an intermediate outcome of satisfaction with the program, reflecting that for people to adopt the recommended advice, they will have to be satisfied that it has met their needs. In order to achieve these intermediate outcomes, a number of immediate or short term outcomes are required, such as people initially being aware of the program and then accessing and using it. All these outcomes depend on the program being developed and implemented as intended according to the program objectives.

The generic process-outcome model highlights that if lower level outcomes are not achieved, or are achieved only on a limited scale, then the higher level outcomes cannot be attained in a way that is likely to have a significant impact on the problem. For example, if a program is poorly targeted or people do not participate on a sufficient scale, it is impossible for the program to make a broad scale impact on the issues it is intended to address.

The outcomes such as access/participation, development of understanding, knowledge and skills, satisfaction and adoption of new behaviours are essential pre-requisites for longer term more significant outcomes such as safe response by the community during the fire. As such, the model helps to focus evaluation on the critical linkages in the program.

Scope of evaluation

This evaluation project focuses on community education and engagement programs intended to enhance community and householder capacity to deal with the bushfire risk. It includes evaluation of selected initiatives under the Bushfires Program. It is not a comprehensive evaluation of the Bushfires Program; rather, it provides a review of the approach and impact of the following programs and services:

- Fire Ready Victoria (FRV)
- Bushfire Planning Workshops (BPW)
- Home Bushfire Advice Service (formerly the Advice to Property Owners program)
- Household Bushfire Self-Assessment Tool (HBSAT)
- CFA's advice to the community as presented in its suite of published materials

The evaluation also assesses aspects of the following:

- Community Fireguard (CFG)
- Township Protection Plans – Community Preparedness Guides (TPP – CPG)
- Neighbourhood Safer Places (NSPs)
- Fire Danger Ratings (FDRs)

As noted above, this project is not designed to provide a comprehensive evaluation of the Bushfires Program. The project does not assess matters of resourcing, does not monitor the extent of delivery of initiatives, and focuses mainly on Community Safety initiatives. Further, a number of initiatives delivered by Community Safety, including Vegetation Management (Road and Rail) and Fire Safe Kids are out of scope for this evaluation.

Evaluation objectives

A key aim of the project is to contribute to Recommendation 2.4 of the VBRC Final Report, as noted above. The following objectives were identified for the project:

- To provide evaluation of the effectiveness of a number key projects in the Bushfires Program and their contribution to increasing community capacity to deal with the bushfire risk;
- To contribute to the improvement of future policy and programs by providing insight into circumstances and ways programs work to achieve their outcomes; and
- To identify areas for program improvement and, where appropriate, identify the need for new or expanded programs to achieve the Bushfires Program Target Outcomes.

Assessing whether the current approach is valid and the extent to which the various initiatives contribute to achieving the outcomes is the primary purpose of the evaluation. The evaluation may also identify some unexpected or unintended outcomes which may be either beneficial or negative. Essentially the evaluation will provide insight into circumstances in which the initiatives have 'worked' or 'not worked' and provide opportunity for improvement.

Evaluation design and methods

The evaluation design was developed by CFA employing current best practice approaches to evaluation. Several external contractors were engaged to collect both quantitative and qualitative data using a variety of methods including community surveys, discussion groups with people living in high risk areas, and interviews with CFA program managers and practitioners. Analysis and interpretation was undertaken by CFA in conjunction with the external contractors.

Evaluation approach

The evaluation uses what is sometimes referred to in evaluation literature as a 'theory-based' approach. All policies and programs have an inherent 'theory' or model of how change is expected to come about as a result of the policy or program being implemented and what is to be achieved (outcomes). Often this theory is not explicit, but it is reflected in the type of activities that form the programs and the assumptions that underpin the policy.

The evaluation project team worked with the managers of each initiative to articulate the theory underpinning the program. The evaluation then seeks to assess whether this theory is valid and the extent to which the initiative contributes to achieving its desired outcomes.

This evaluation focuses on the immediate and intermediate outcomes identified in the Process-Outcome model above. The evaluation addresses the higher level or longer term outcomes only to the extent that these are measured in the pre- and post-season community surveys; given the relatively short time since the initiatives were implemented in their revised or new forms, significant impact on high level / long term outcomes would not be expected. Furthermore, the truest measures of the high level outcome of safe response to bushfire risk can only be taken through observation of actual behaviours in the lead-up to and during a fire; the small number of significant fires in the 2010-11 fire season did not present such opportunity for measurement.

Evaluation methods

A range of methods was employed to gather data on each of the initiatives under evaluation, including:

- Desktop review and analysis;
- Interviews with project managers;

- Small discussion groups and workshops with CFA staff;
- Interviews with project implementation staff (District Community Safety staff members, CFA Fire Safety Officers – Wildfire (FSOs-W), FRV and BPW presenters);
- Interviews with residents in high risk communities;
- Observation of FRV and BPW community meetings and Home Bushfire Advice Service site visits;
- Community telephone surveys of 623 households in high risk locations; and
- A telephone survey of 330 Home Bushfire Advice Service program participants.

Data collection was conducted both during and after the fire season and in some cases during development of the initiatives. External contractors were engaged for some data collection tasks, but all analysis was undertaken by CFA staff. The statistical analysis of data from the community survey and the survey of HBAS participants involved frequencies and cross tabulations to identify significant differences between groups. More detailed analysis using , cluster analysis, factor analysis, ANOVA and ANCOVA were undertaken with the assistance of an external contractor. These analyses were used to identify significant differences in relation to the outcome measures. Analysis of qualitative data was undertaken by the project team and external contractors to identify to identify key themes and response patterns from notes and transcripts.

All data collection methods have limitations. However, using multiple methods, both qualitative and quantitative, and using independent contractors to collect data and assist with analysis increases the reliability of findings. The surveys used the largest feasible sample size to reduce sampling error. The estimates in the community survey have an error of approximately ±4% for the whole sample, and higher for some sub-analyses. The sampling for the community survey provided sufficient group size to allow some analysis of responses by location. The locations used are Central Victoria regional (Bendigo and surrounds), Melbourne metro interface (e.g. the Dandenongs and surrounds) and Other Victoria regional.

Evaluation questions

The evaluation addresses the following questions:

Table 1: Evaluation questions

Project	Purpose of evaluation	Evaluation questions
Key messages and publications	The purpose of the evaluation is to assess the extent to which CFA's suite of publications addresses the recommendations of the VBRC with regard to advice to the community	1. What are the (explicit and implied) expectations of the VBRC with regard to Victoria's bushfire safety policy and key messages? 2. To what extent does each publication or piece of advice incorporate the expectations of the VBRC? 3. To what extent does the suite of publications and advice collectively meet the expectations of the VBRC and effectively communicate Victoria's revised bushfire safety policy?
Fire Ready Victoria meetings	The purpose of the evaluation is to examine the impact of the program, with a particular focus on the way in which the program works for people with different bushfire response intentions.	1. To what extent is the program effectively communicating the new safety messages? 2. For whom is this program working and under what conditions?
Fire Ready Victoria Bushfire Planning Workshops	The purpose of the evaluation is to assess the impact of the program and whether delivery of the program is consistent with the program intentions.	1. What is the program trying to achieve and how? 2. Is delivery consistent with the program logic? 3. For whom is this program working and under what conditions?
Home Bushfire Advice Service (formerly Advice to Property Owners program)	The purpose of the evaluation is to clarify whether the program is addressing the needs of the community, and to explore the impact that the program is having on individual/householder planning and preparedness	1. Is there consistent delivery of the program? 2. To what extent do users improve planning and preparedness? 3. In what circumstances is this program likely to be most effective? What are the motivations & needs of users?
Household Bushfire Online Self-Assessment Tool	The purpose of the evaluation is to review the rationale behind the tool and examine its impact.	1. In what ways does HBSAT influence people's planning and preparation?

Project	Purpose of evaluation	Evaluation questions
Community Fireguard Development Project	The purpose of the evaluation is to clarify the intent of the program before the program's content and structure is redesigned.	1. What are the intended outcomes of CFG and how is the program designed to achieve them? 2. What program elements or structures need to be modified to maximise program potential to achieve the intended outcomes?
Township Preparedness Plans – Community Preparedness Guides	The purpose of the evaluation is to assess the extent to which people in high risk areas recall seeing or receiving a Community Preparedness Guide and the perceived benefits of the Guides.	1. To what extent to people in high risk areas recall receiving or reading a Township Protection Plan – Community Preparedness Guide? 2. What are the perceived benefits, if any, of the Community Preparedness Guide?
Neighbourhood Safer Places	The purpose of the evaluation is to assess the extent to which communities in high risk areas understand the concept of NSPs and under what circumstances they might use them.	1. To what extent do people in high risk areas recall and understand the concept of NSPs? 2. How consistent are the community's understanding and expectations of NSPs with the positioning of NSPs as a shelter option of last resort? 3. In what circumstances do residents in high risk areas intend to use an NSP?
Fire Danger Ratings	The purpose of the evaluation is to assess the impact of the introduction of the new Fire Danger Ratings scale on people's understanding of Fire Danger Ratings and their intentions on days of varying fire danger.	1. To what extent do people in high risk areas recall and understand the new Fire Danger Ratings scale? 2. To what extent do people understand and intend to comply with official advice regarding 'Code Red' fire danger forecasts?

Context

Review of previous research

Introduction

CFA has conducted a number of studies over last 10 years investigating various aspects of community response to the bushfire risk in Victoria. Although these studies have been conducted for varying purposes and have a number of limitations, they provide insight into the levels of community awareness and preparation for bushfire. A review of these studies was undertaken (see Reference Document R.02) and provides an overview of the extent to which outcomes of CFA's approach have been achieved in relation to five key areas:

- Awareness and understanding of the bushfire risk;
- Preparation;
- Household planning;
- Intended response; and
- Warnings and shelter.

While the surveys do not provide sufficient evidence to identify trends in community attitudes and behaviour, they do identify various patterns that describe how people respond to the bushfire risk. The discussion below considers studies undertaken in Victoria from 2002 to November 2010.

Awareness and understanding of the bushfire risk

The studies identify that the level of awareness of the bushfire risk has been consistently high in different locations over the 10 year period. Between 70-90% of people in various surveys indicate they recognise they live in a bushfire risk area and 70-85% agree the impact of a fire would be significant. People generally also accept they have a major responsibility, shared with the fire agencies, to deal with the bushfire risk. However, a significant proportion (50-70%) in many of the studies indicate they expect to get assistance from fire agencies to protect their property. Several of the studies also suggest that many people underestimate the level of risk compared with agency ratings of the local risk, believe that others in the area are more at risk, or that the risk is unnecessarily high because others are failing to carry out their responsibilities to manage the risk.

Prior to the 2010-11 fire season the survey identified that about half of all people surveyed (53%) felt a level of concern about the coming season consistent with what they felt the previous year, but about 30% felt more concerned than the previous year, reflecting the likely after effects of Black Saturday fires.

Preparation

People have consistently rated their level of preparation as being 'prepared' with typically more than half rating themselves as at least 'reasonably well' prepared, with significant minorities rating themselves as 'well' or 'very well prepared'. In several more recent studies since Black Saturday, the majority of people in high risk locations also rate themselves as well informed with more than half (57%) indicating they did not require any more safety information, and another 32% indicating they required only a little more information.

Further examination of self reported preparation actions suggest that often the actual level of preparation is less adequate than people believe. Typically, large majorities of 70-90% indicate they have undertaken maintenance actions such as cleaning up leaves and grass around the house, clearing gutters, cutting back bushes and removing combustibles. Many of these actions are likely to have been done for reasons other than fire protection. More complex measures necessary for fire protection such as having an independent water supply, obtaining a pump and hoses, preparing a kit of personal protective clothing, and having protective covers for windows are much less likely to be undertaken. For some of these measures substantial proportions of 30-80% indicate they are unlikely to implement the measure in future.

This pattern of results wherein people report greater likelihood of undertaking the 'easy to do' measures rather than specific fire protection measures is evident in all the studies over the period. Where there is variation it is more likely associated with differences where those living on rural properties are more likely to have undertaken more preparation measures than those living in interface or residential areas abutting fire risk areas.

Household planning

Consistently across many studies large majorities (approximately 90%) indicate they have considered what they will do if a fire occurs. This is often regarded as having a 'bushfire plan'. More detailed examination of what people have actually done in relation to preparing a household plan suggests most have not done what agencies regard as having an effective plan. In broad terms people are more likely to undertake tasks such as gathering information, discussing what to do, and thinking about where they will go, rather than tasks such as making a backup plan, accounting for unexpected events, practising the plan or writing it down. It is difficult to detect any significant change in the overall level of household planning in these studies. There is evidence of an increased level of planning activity over this period, but the change tends to be limited to some actions being undertaken to a greater degree, rather than a greater proportion of people having comprehensive written plans.

Intended response

Various studies including post-fire investigations have provided estimates of the proportions of people intending or taking particular protective actions in a bushfire. The proportions taking or intending to take particular actions vary greatly as shown in Table 2.

Table 2: Changes in intended action pre/post 2009

Intended action	Intention Studies pre 2009 (%)*	Intention Studies post 2009 (%)**
Stay and defend property throughout fire	20-50	13
Wait and see but leave if threatened	30-54	31
Leave as soon as aware of fire that could threaten	12-22	42
Leave early on high risk days	1-2	14

* range based on surveys in different locations between 2002 and 2008
** average based on two surveys in high risk in locations 2010

The large variation in the results suggests that people's intended action is influenced by many factors related to their situation and locality. Nevertheless, prior to 2009 significant proportions identified that they intended to take action contrary to agency advice, that is, waiting and leaving when under threat which is likely to be the least safe course of action. Other options, such staying and defending or leaving as soon as aware of a fire, may be viable strategies but involve making judgements and decisions often in uncertain circumstances. Given the evidence discussed above on the actual levels of preparation and planning these intended protective actions may not be the most appropriate for many people. The studies also indicate that very few intended to take the safest option of leaving on high risk days. Since 2009 there appears to have been a shift towards greater preference for leaving either as soon as people are aware of a fire or leaving early on high risk days, and for far fewer people to indicate they intend to stay and defend. However, approximately one in three continue to indicate they will wait and see what happens but leave if they feel threatened.

Warnings

There appears to have been a substantial increase over the past decade, particularly in more recent years, in public expectations related to warnings. Since Black Saturday approximately 80% indicate they expect to receive an official warning about a fire that could affect them. More than three quarters believe they will get a warning on ABC radio and approximately half indicate they would also get warnings via phone. These results are in stark contrast to 2002 study in Victorian interface communities where only 9% believed the most likely way they would find out about

a fire in their area would be via an official warning and only 25% believed they would get a warning on radio or television. These changes reflect the greater focus on warnings the introduction of new technologies and services over recent years and particularly since 2009.

Other changes such as new fire danger ratings (FDRs) have also been introduced since 2009. In the 12 months since its introduction, the level of awareness of the new FDR system was moderate, with approximately half being able to name the highest level of fire danger rating and 58% recognising that the advice on such days was to leave early or at some time before the fire threatened. However on the only occasions when Code Red conditions were declared (January 2010), very few people actually followed the advice.

The introduction of new shelter options in the form of Neighbourhood Safer Places (NSP) has demonstrated similar variable levels of awareness and understanding. The majority (60%) indicate they have heard of NSPs and only 13% indicated they did not know whether or not one existed in their local area. However significant proportions of people appear to be confused about the sorts of facilities available at an NSP, with many identifying that the type of services commonly available at relief centres would be available at an NSP. Nevertheless, the notion of local places of shelter appears to be widely supported with the majority understanding that they are a place of last resort in a fire.

Current state of householder preparedness

The most recent survey -- of over 600 households in high risk locations conducted in April 2011 (see Reference Document R.03) – investigated the range of areas discussed above. The abnormally wet summer resulted in a curtailed program of activities and as discussed below influenced people's perception of the bushfire risk. Nevertheless the results provide a snapshot of the current state of householder preparedness.

Awareness and understanding of the bushfire risk

The large majority continue to recognise they live in a bushfire risk area despite the wet summer, with 80% indicating a fire is likely or very likely to occur in the area where they live and that, if one did occur, 71% believe it would pose a large or very large threat to life and property in the area. Just less than half (44%) rate the risk to their home or property as 'extreme' or 'major'. These results are consistent with those reported from previous studies.

The majority (60%) indicated they felt less concerned about bushfire this year compared with other years, while about a quarter indicated their concern was 'no different' to other years. The overwhelming explanation (62% of responses) for the reduced concern related to the 'cool', 'wet' weather and the 'green', 'not dry' vegetation. The perceived level of bushfire risk to home and property has remained very similar since Black Saturday with around 44% of residents in high risk locations in each survey since 2009 rating the risk as extreme or major.

Preparation

Very similar proportions to those in the other post-2009 surveys rated themselves as being informed about bushfire safety, with 56% rating themselves as 'very well informed' and 34% as 'moderately well informed'. Just over half (54%) continued to rate their preparedness as 'reasonable' with 25% assessing themselves as 'very well prepared', consistent with the two previous surveys since 2009. People generally also reported no significant change over the last 6 months in relation to the range of preparation activities assessed in the surveys over the past 10 years, and the same pattern of being more likely to undertake the 'easy to do' measures is maintained. The reduced level of concern due to the wet summer is likely to have reduced motivation to undertake preparation actions during this time.

Planning

The pattern of responses in relation planning in the latest survey showed no change from previous surveys. There were no significant changes in the extent to which planning actions had been undertaken. The pattern in which the more complex aspects of planning, such as making a backup plan and taking account of unexpected

events are less likely to have been undertaken than the more straightforward actions such as gathering information, was repeated. In summary, there appears to have been no change in the level of planning in the past six months, possibly exacerbated the lower levels of concern this summer.

Intended response

The pattern of intended response if a fire were to occur remains the same as that in other post-2009 surveys. Only 16% intend to stay and defend, 31% intend to 'wait and see what happens but leave if threatened', 42% intend to 'leave as soon as they are aware of the fire', and 12% intend to leave on high risk days. These results suggest that the shift since 2009 to more people indicating they would leave rather than 'stay and defend' or 'wait and see' has been sustained.

Warnings and shelter

The most recent survey did not collect data on expectations of receiving a warning or where warning information could be obtained. Detailed discussion on particular issues such as understanding of fire danger ratings and neighbourhood safer places is presented in the following section on the evaluation of particular programs and initiatives.

Segmentation – motivation to act

The data from the community survey was used in a cluster analysis to identify different groups in the community. The analysis segmented the survey respondents based on several variables measuring people's motivation to act in response to the bushfire risk. This cluster analysis identified four groups. The analysis then investigated differences in attitudes, behaviours and socio-demographic characteristics of each group.

The groups are primarily differentiated in terms of motivation because this is critical in engaging people in education and awareness activities. If other factors had been used in the analysis a different segmentation would result. Consequently, the segmentation needs to be considered as exploratory and specific to education and engagement rather than definitive or applicable in all circumstances. Further, the segmentation is based on those who responded to the survey. The proportions of each segment may not be representative because those less motivated to think about bushfire are probably less likely to participate in the survey. Furthermore, some people, such as the extremely socially isolated, and people with a physical or psychological disability, may not be represented at all in the survey sample, but comprise a group highly vulnerable to bushfire.

While the cluster analysis and subsequent investigations identify differences between particular groups and the combined sample of respondents, there are also many areas of similarity and the groups are not distinct from each other in all

respects. Further, not all individuals assigned to a particular segment will reflect all the general attributes of the group. It is important to keep these considerations in mind in order to avoid unwarranted generalization and inappropriate application of the segmentation. The four groups are described below.

Active and involved (31% of respondents)

This group are motivated to act in response to the bushfire risk and are actively involved in dealing with the risk. They consider themselves to have a clear idea of what they need to do to respond to the bushfire risk and a plan of how to go about it. They feel significantly more informed than average and are also more interested in finding out more about bushfire safety. People in this group perceive the risk of bushfire in their area as higher than other groups and are more likely to see bushfire as posing a threat to their safety and to consider it a salient issue in their lives. These people also see themselves as well prepared with 90% rating themselves as reasonably or very well prepared. If a fire occurred in their area they are less likely than other groups to 'wait and see' and are more likely than other groups to 'leave early on high risk days'. This group is most likely to attend CFA meetings with 59% having attended such a meeting in the last 3 years, and on average they have attended 3 meetings in this time. This group is more likely live on a farm or small acreage than in a residential setting but were no different from average in terms of other socio-demographic factors.

Ready and interested (35%)

This group is motivated to do something about the risk but are less committed to actually doing it. They see themselves as average in terms of the level of information they have about bushfire safety but are significantly more interested than average in finding out more. The perception of the bushfire as threat does not differ from that of the combined group, although they consider their level of preparation as lower than that of the previous group with 84% describing their preparation as 'only slightly' or 'reasonably' prepared. About half this group are likely to have attended CFA bushfire safety meetings in the past. This group does not differ from the average on any of the socio-demographic factors.

Done it already (21%)

This group is not highly motivated to take action to increase bushfire safety. They consider they have done what they need to do to deal with the bushfire risk, seeing themselves as well informed about bushfire safety, and they are significantly less interested in finding out more. They regard the likelihood of fire as lower than other groups, see the threat to themselves as minor and tend not to see bushfire as a salient issue. However, they regard themselves as being well prepared with 80% considering themselves as well or reasonably well prepared. Their intended response if a fire occurred does not differ from the responses of all groups combined. This group is less likely to attend CFA meetings with only 36% having attended a meeting in the past. However, those who have attended are likely to

have attended on multiple occasions. In terms of socio-demographic factors, this group is slightly more likely to be elderly and less likely to be aged between 25-44 years but does not differ from average on other factors.

Not into bushfire (13%)

This group is the least motivated to act. They see themselves as significantly less informed but also as lower than average in terms of interest in finding out more about bushfire safety. They see the risk of bushfire as lower, see the threat to themselves as minor and regard it as a less salient issue compared with other groups. They regard their level of preparation as low, with 57% assessing themselves as 'not at all' or 'slightly' prepared. People in this group also consider themselves less responsible for dealing with the bushfire risk and are less likely to recognise the need to be self sufficient in the event of a bushfire. If a fire occurred, people in this group are less likely to opt to 'stay and defend' or to 'leave early on high risk days'. However, they are significantly more likely to than average to 'wait and see'. This group is also the least likely to have attended CFA meetings with only 20% attending a meeting in the past three years. They were also less likely than average to recall receiving any bushfire safety information in the past 6 months. This group is more likely than average to have lived in the current locality for less than 10 years and to live in a residential setting. They are also slightly more likely compared with other groups to be aged between 18-44 and be a couple with dependent children.

Detailed analysis of the outcome measures in the most recent survey of households in high risk locations, indicated that overall there has been no significant increase in understanding of the bushfire risk, planning or preparation over the past six months. However, analysis of the understanding, planning and preparation of each of the segments suggests that the 'active and involved' group are higher on each measure than any of the other groups. The 'done it already' group were rated next on each of the outcome measures. The 'not into bushfire group' was lowest on each of the outcome measures. This analysis suggests that motivation plays a key part in both engaging people in the programs and in achieving the desired outcomes. These results suggest that CFA's current approach is likely to be more effective in achieving the desired outcomes for some in the community, such as the 'active and involved', but has been less effective with the other segments.

Concluding comments

The three surveys conducted in high risk locations since 2009 show no substantial evidence of change over the two year period in terms of awareness, preparation and planning or people's intended response. Although some aspects such as intended response appear to have changed compared with results from pre 2009 surveys, this change appears to have occurred soon after the 2009 fires and has been maintained since that time. Other changes over the past 10 years such as the expectations of warnings appear to have been underway for some time, probably due to actual changes in the provision of warnings, while the events of 2009 have probably

reinforced the critical importance of warnings in people's thinking about bushfire. Finally, the analysis of the most recent survey suggests that CFA's approach has been effective for those who are more highly motivated to act but has been both less effective in engaging others, or in achieving the desired outcomes of better understanding, planning and preparation.

Findings

The findings of the evaluation of each program are presented below. For each program, the findings include a program description which outlines what the program is meant to achieve and how, a brief outline of data collection, a discussion of the program outcomes and impact, and a discussion of issues and implications.

Key messages and publications

Program description

CFA and other agencies develop and issue a range of publications and advice regarding bushfire safety. These can take the form of hardcopy brochures, flyers and booklets, online content, and scripts or tips for use by CFA members and staff when communicating with members of the public. The VBRC made numerous recommendations regarding the content of bushfire safety messages and the means by which these might be communicated to the public.

The number of publications issued by CFA and other agencies regarding bushfire safety is substantial: in addition to major publications for general consumption, such as the Victorian Bushfire Safety Policy Framework and the FireReady Kit, there are numerous shorter quick reference guides and publications targeted to specific interest groups. These are also supplemented by locally produced information, including information developed by CFA Districts and by local councils.

While not explicitly stated, the general intent of developing and disseminating publications is to increase awareness and knowledge of bushfire risk and bushfire safety options, and is based on the assumption that awareness and knowledge drive behaviour.

Data collection

Following the release of the VBRC Final Report in July 2010, a desktop analysis was undertaken of the changes required in the way bushfire safety messages are communicated to the community. The audit was undertaken in three stages:

1. Review of the VBRC Interim and Final Reports to identify required changes to Victoria's bushfire safety policy and key messages;[3]

[3] **Explanatory note:** While the VBRC Interim and Final Reports made explicit a number of recommendations relating to bushfire safety policy and advice, a comprehensive review of these Reports also identifies the context in which these recommendations were made, and in some instances identifies subtleties not captured in the specific wording of the Reports' recommendations. These additional contextual factors are referred to in this analysis as

2. Review of an extensive range of bushfire safety publications and advice released by CFA and other Victorian government agencies since 2009 to identify the key messages contained therein and to determine the extent to which each publication or piece of advice incorporates the required changes identified in Stage 1; and
3. Preparation of a summary of the revised key messages identified in Stage 1 and further review of the publications and advice identified in Stage 2 to determine the extent to which, collectively, the suite of publications and advice meet the recommendations and expectations of the VBRC.

The output of each of these three stages can be found in Reference Documents R.05.1, R.05.2 and R.05.3. Additional data was also obtained from the post-season community telephone survey conducted in April 2011.

Program outcomes

Key messages

While the VBRC's recommendations relating to Victoria's bushfire safety policy and the way in which bushfire safety messages are communicated to the community were extensive, on the whole they related to changes in emphasis rather than substantive changes to content. In particular, the VBRC recommended greater emphasis on messages relating to:

- The paramount importance of the preservation of human life;
- Distinguishing between 'normal' and 'mega' bushfire events;
- The safest option in a bushfire is to be away from the area (leave early);
- Acknowledgement that while the safest option is always to leave early, some people will continue to 'wait and see';
- The need for children and other vulnerable people to always leave early;
- The importance of contingency planning;
- The difficulties inherent in making a property defendable and acknowledgement that some properties will not be defendable even under very mild bushfire conditions;
- The risk of death, serious injury and psychological trauma of staying to defend a property; and
- Important changes to the content and dissemination of warnings.

"implied expectations", and are considered to augment the Reports' explicit recommendations. Full details of the implied expectations drawn from the Interim and Final Reports can be found in Reference Document R.05.3.

Key findings

For the most part, the audit found that the publications reviewed have incorporated appropriately the VBRC recommendations and expectations.

As noted above, Stage 3 of the audit process involved analysis of the extent to which, collectively, the reviewed suite of publications and advice meet the recommendations and expectations of the VBRC. This stage identified some complexities inherent in the VBRC recommendations relating to bushfire safety messages and in the way these have been applied. Key findings from this stage of the audit process are detailed below.

1. **Complexity**

   The VBRC identified the necessary complexity of bushfire safety messages: "Realistic advice is unavoidably more complex [than the 'stay or go' message] and requires subtlety" (Final Report: Summary, p.6). Some conflict exists between acknowledgement of this complexity and a desire to 'simplify' bushfire safety messages. Caution needs to be taken when trying to simplify language (through use of 'plain English' or 'easy English' or in the interests of brevity) to ensure that the message does not become diluted.

2. **Fire behaviour and extreme conditions**

   The VBRC identified the need to distinguish between 'normal' and 'mega' bushfire events and the types of fire behaviour which may be expected under different conditions. The new nationally agreed Fire Danger Rating (FDR) scale adopted in Victoria clearly identifies "Code Red" as the most severe rating and visual representations of the FDR scale depict "Code Red" as quite distinct from lower ratings.

   With increased emphasis on the type of fire behaviour expected on "Code Red" days, there seems to be some reluctance in the reviewed publications to describe fires of lesser intensity.

   The reviewed publications which address key elements of fire behaviour (most notably the 'FireReady Kit') generally do so at a fairly basic level and in bland, technical language. Use of more descriptive language might convey the message to the general public more effectively. Some suggestions for consideration include: descriptions of distances using commonly understood concepts (the length of a football field, etc.); and descriptions of what resulted from the intensity of the Black Saturday fires (metals melting, etc.).

3. **Defendability and 'staying to defend'**

   With increased emphasis on leaving early as the safest option as recommended by the VBRC, there has been a resulting decrease in emphasis on the option of staying to defend a well-prepared property.

The Victorian Bushfire Safety Policy Framework (Victorian Fire Services Commissioner, October 2010) includes "Defending a well-prepared home" as one of several "Shelter options" rather than a primary action in its own right. There may be a risk that this approach downplays the importance of active defence versus passive shelter in a house.

There also appears to be a reluctance in CFA publications and advice to make strong statements about the influence of active defence on house survival, despite acknowledgement by the VBRC of research supporting this position, which is consistent with the general reluctance to emphasise the 'stay and defend' option at all.

4. Warnings

The VBRC placed significant emphasis on the importance of timely and accurate warnings to the community. The systems and infrastructure implications for fire agencies are outside the scope of this evaluation, however all recommendations and comments by the VBRC relating to the provision of warnings assume that information about a fire is available and can be disseminated through upgraded warning systems. This raises the significant issue of intelligence gathering from the fire ground, particularly during fast-moving fires, which, although beyond the scope of this report, is a necessary foundation for any discussion of warnings.

The VBRC examined the issue of pre-event warnings (warnings relating to forthcoming days of high fire danger, as opposed to incident-related warnings after ignition has occurred) and noted that the extensive efforts of fire agencies and the Victorian Government to alert people to the extreme fire danger expected on 7 February 2009 were "not sufficient to alert" people to the threat (Interim Report, p.133). This raises the question of what can be done to create a 'call to action' in days prior to a Code Red day, if statements such as those used prior to 7 February 2009 (e.g. "worst day ever") did not resonate with a significant proportion of the community.

Program impact

The extent to which specific publications and advice were received and consumed by the target audiences was beyond the scope of this analysis. The community telephone survey, however, found that 84% of respondents reported having received or obtained information about bushfire safety in the previous six months, and that, of these, 86% reported receiving that information by mail or in their letterbox. Only 6% received information from a CFA member visiting their home, and 8% from some other source. The extent to which recipients recall the content of publications received is discussed to varying degrees in the sections below.

It is important to note, however, that, in general, it cannot be assumed that the distribution of printed materials equates to the consumption, understanding and adoption of the content by recipients.

Issues and implications

People receive bushfire safety publications and advice through a range of channels, including unsolicited direct mail, distribution of brochures at CFA programs (e.g. Fire Ready Victoria meetings), distribution of brochures at other community events, and a proportion of the population will seek out information from official sources via services such as the Victorian Bushfire Information Line and the CFA website.

Referring to publications distributed by mail, Lancaster and Massingham note that:

> *"The greatest proportion of direct mail is thrown away unopened. Any that is opened is often only partly read, and even less is acted upon."*[4]

The effectiveness of direct mail campaigns can be enhanced by identifying a target audience likely to have greater interest in the publication's content. Some of the reviewed publications that were distributed by mail, such as the Department of Justice direct mail campaign in January 2011, were targeted at people living in high risk areas, who are assumed to have an interest in the topic of bushfire safety. Others, however, including the Premier's mailout in October 2010 were distributed to statewide. The benefits of such broad distribution approaches are more likely to relate to raising general public awareness of bushfire risk and of the roles of various Government agencies rather than motivating people to take action.

Despite living in high risk areas, 13% of respondents to an April 2011 telephone survey reported that they had not received or obtained any information about bushfire safety in the previous 6 months and a further 3% did not know if they had received any; these households would have been sent, at a minimum, the Premier's mailout and the Department of Justice direct mail campaign within this timeframe.

The number of publications issued by CFA and other agencies regarding bushfire safety is substantial – in addition to 'major' publications such as the Victorian Bushfire Safety Policy Framework and the FireReady Kit, there are numerous 'one-page' quick reference guides and publications targeted to specific interest groups (e.g. dairy farmers). The cost of producing these materials varies widely. These are also supplemented by locally produced information, including but not limited to the municipal information included as part of the Department of Justice direct mail campaign in January 2011.

The telephone survey of households in high risk townships undertaken in April 2011 found that 53% of respondents believed that they did not require further information about bushfire safety.

[4] G. Lancaster & L. Massingham (2011), *The Essentials of Marketing Management,* Routledge, New York, p.338.

Implications

It might be assumed that each of the reviewed publications was developed with a specific purpose in mind, but the extent to which each publication meets its desired purpose and adheres to a consistent and coherent strategy for communications is unclear.

Furthermore, the heavy reliance on publications as a primary means of raising awareness, building knowledge and changing attitudes should be questioned on two fronts:

1. The effectiveness of these types of publications in improving awareness and knowledge; and
2. The validity of the assumption that improved knowledge and awareness will lead directly to the adoption of safer behaviours in relation to bushfire.

Further evaluation of the effectiveness of the suite of bushfire safety publications and advice might consider the following:

- To what extent do recipients of the information read and understand the content? In what circumstances are people more likely to read and understand the content?
- Once read and understood, to what extent do recipients act upon the information given?
- Does the development of multiple publications with similar (but not identical) content enhance the likelihood that people will read, understand and act on the information, or does it risk causing confusion and a sense of 'information overload'?

Research currently underway and due for completion in mid-2011 will examine householders' understanding of advice provided by CFA regarding bushfire planning and property and personal protection. This research will provide further insight into how CFA advice in multiple forms, including publications, is understood, interpreted and applied by people living in high bushfire risk areas, and what additional advice or support they feel they need in order to be better prepared for bushfire.

Fire Ready Victoria community and street meetings

Program description

FireReady Victoria (FRV) community and street meetings are approximately one hour presentation style meetings conducted in high risk areas around the State by trained presenters. They are intended to develop people's understanding of bushfire behaviour, the factors affecting bushfire risk, and how to plan and prepare for bushfire. While the extent of delivery has varied from year to year, this type of local meeting, intended to present a broad overview of bushfire safety information, has been an important part of CFA's approach for well over a decade.

Community and street meetings are aimed at residents in high risk areas in order to inform them about bushfire safety and to encourage them to plan and prepare. The potential audience includes anyone in high risk locations who wants information about bushfire safety. The meetings are intended to increase attendees' understanding of the risk and how to prepare on the assumption that they will have the motivation to apply the information by developing survival plans and preparing their properties. While the meetings are seen as the one of the key means to disseminate information to the community, attendees are also provided with copies of publications and referred to other programs where they can obtain more detailed information and advice.

Data collection

Four FRV street meetings and eight community meetings across five CFA Regions were observed during January and February 2011, collecting data primarily related to program content and format. Following the observations, five interviews were conducted with FRV presenters from four CFA Regions, with program structure and implementation the main areas of interest. The community telephone survey undertaken in April 2011 within 52 high fire risk locations included a range of questions relating to FRV meetings. Four community discussion groups were also conducted in high bushfire risk areas in mid March 2011, with both people who had attended FRV meetings and people who had never attended such meetings (see Reference Document R.06).

Program outcomes

Data from the community telephone survey found that 47% of respondents had attended a meeting on bushfire safety at some stage in the past, including during the last fire season. This represents a significant reach of the program in its various forms over the past decade or more. Of those who have attended, about 1 in 4 attended in the past six months indicating that about 12% of households in high risk locations attended some form of community meeting this fire season. This represents a reduction from 18% of respondents in the 2009-10 post-season survey.

The survey also identified that 60% of people felt less concerned about bushfire this season compared with other years, primarily because of the wet summer. This is the most likely explanation for the reduced level of attendance in 2010-11.

Both the survey and the discussion groups revealed that many people have attended FRV meetings on multiple occasions. Approximately 1 in 3 (39%) people who have attended in the last three years have attended only once in that time. Another 25% have attended twice, 15% three times and 18% have attended four or more meetings in that time. The evidence demonstrates attendees are both those attending for the first time, as well as significant numbers who have attended two or more times in the recent past.

Attendance at local meetings is not uniform across each of the segments identified in the segmentation analysis discussed above. Only 36% of people in the 'done it already' group and only 20% of those in the 'not into bushfire' group have ever attended such a meeting. In comparison, the majority (60%) of the 'active and involved' group have attended these meetings at some stage in the past, and just over half (52%) of the 'ready and interested' group have done so. People in these latter two groups also had higher rates of repeat attendance. These results highlight the critical role of motivation and interest in the bushfire issue in order for people to attend. The likelihood of attendance also varies depending on location. Only about 1 in 3 (32%) of people in Central Victorian regional locations have attended, whereas 46% of people in interface areas and 54% of people in other regional parts of Victoria have attended one or more local meetings in the past three years.

The survey results and the discussion group findings suggest that people attend FRV meetings for various reasons. The discussion group results revealed that the top three reasons for attending meetings were to get information about bushfire risk in their local area, to get information on new developments or issues that they may not be aware of, and to assist in the development of their bushfire survival plan. Survey results also reflect this, with over one quarter of responses (28%) citing the need to update information and further understand bushfire as the main reason for attending the meetings. Respondents also said that they wanted to improve their preparation, planning and bushfire safety (16%), and to see and connect with local community and neighbourhood actions on bushfire (15%). A similar number of responses (13%) suggested that the main reason for attending is because of the recognition of their bushfire risk and the need to do something about it.

The discussion groups with people who had attended FRV meetings also considered the benefits of such meetings. These included that the meetings:

- Provided useful information and updates about changes and initiatives;
- Provided motivation to undertake preparation and planning actions;
- Assisted with decision making and development of bushfire plan; and
- Created a basis for cooperation with neighbours.

Survey respondents were also asked to identify the main benefits of the meetings they attended. More than one quarter (28%) of responses identified the information and understanding generated through the meeting as a main benefit of attending. Over one in seven responses (15%) cited insights into how to prepare their property and households to improve their safety as a major benefit, and 12% suggested that the meeting prompted better planning including decisions about protective actions and evacuation.

There were differences identified between some of the segments in terms of how they viewed the meetings. The 'active and involved' group were much stronger in the view that they are looking for information updates whereas the other groups' responses were more evenly spread across the other benefits. The 'done it already' group were more likely to say that there were no benefits in attending, reflecting their general belief that they were well informed about bushfire safety and that the threat from bushfire was minor.

Although FRV meetings have long been seen as a means of delivering information to the community, these results clearly demonstrate that the meetings are providing substantial but varied benefits to different groups in the community, and that receiving information is only one of the beneficial outcomes.

The evaluation also identified that the effectiveness of these meetings is likely to be influenced by the way the meeting is delivered. Observations of a number of meetings revealed that there are various formats and styles of delivering the program, including town hall style meetings with little opportunity for interaction, casual and interactive presentations delivered with the aide of props, and in some cases meetings that primarily served to answer questions attendees may have had in relation to bushfire.

Both the town hall style meetings and casual interactive meetings delivered most or all of the prescribed content. In order to address the changes and new information following the recommendations of the VBRC, the content of the meeting script has expanded significantly. In some meetings the amount of information and the time taken to deliver it was clearly too great for many participants to manage. Information overload is a potential problem for some participants, particularly those with little prior knowledge. The observations of meetings also highlighted that where interaction was encouraged, issues of local relevance were raised and discussed. This approach enabled the general information to be made locally relevant although in some cases it required some information to be left out of the presentation. Local relevance was further enhanced when members of the local brigade were present and involved in the meeting. In the town hall style meetings such opportunities were often not possible and information delivered was more general. Brigade members were also less likely to be in attendance at these meetings or, if present, less likely to be actively involved in the meeting.

Previous surveys have consistently identified that those who attend FRV meetings have a high level of satisfaction with the meetings and value the opportunity to attend. Few people suggest changes to the meetings although the most common

suggestions tend to refer to emerging issues and new developments such as Neighbourhood Safer Places and warnings. The discussion groups also highlighted that people are seeking local information that they see as relevant to them. Presenters who are identified as knowing the local area and issues have more credibility than someone who is seen as 'an outsider'. The presence and active involvement of the local brigade is generally seen as a positive, provided the presenter and brigade are seen as presenting a consistent message.

Specific discussion groups were also conducted with people who have never attended FRV meetings to gain an insight into why they do not attend. People provided a range of reasons such as:

- Meetings and information provided are not useful;
- Information is not relevant because they have decided to leave if threatened;
- Attendance is not necessary because information can be gleaned from other sources;
- Meetings are too time consuming for busy people (or are held at inconvenient times)
- Meetings are unpleasant to be involved in - too crowded, emotional; and
- Meetings are not adequately advertised or promoted.

Some of these explanations reveal prior experience of the meetings and reflect decisions not to attend again because of lack of relevance, or because of personal reactions to the meeting. Other explanations relate to practical matters of timing and promotion that could be readily addressed. However some people also have chosen not to participate because they believe they either have the information or can get it elsewhere. These responses suggest that some changes to the nature and format of FRV meetings may be required if they are to attract those who have not previously attended or have not returned.

Program impact

The results of the evaluation show that FRV meetings have successfully engaged a significant proportion of the population over an extended period and are seen as a worthwhile activity that provide benefits to those who attend. As noted the benefits are broader than just the receipt of information. The meetings also serve to update people's knowledge about the latest developments, motivate and prompt people to take action, and provide an opportunity for people to come together in their community and hear and share views and experiences about how to deal with the bushfire risk.

The evaluation also highlights that attendance depends on people having a degree of motivation and interest in the issue. While much can be done to ensure meetings are conducted as effectively as possible, there needs to be a recognition that the meetings cannot be expected to provide all things to all people and that some people will choose not to participate.

The evidence clearly identifies substantial achievements of this program but there are also ways the meetings could be improved to better cater for diverse needs.

Issues and implications

At various times over the past decade of FRV and its various predecessors, concerns have been raised about the effectiveness of such programs. These concerns tend to highlight the fact that some people attend multiple times, while others never attend, and that regardless of attendance, many people remain 'unprepared'.

It should be noted that the program has evolved significantly over its lifetime and has at various times made changes to address these concerns. However, the evaluation has identified that these 'issues' – non-attendance/repeat attendance, and the lack of preparedness of some people – remain. Observing that some people attend multiple times is not a matter of concern but rather reflects that the program is addressing diverse needs of different segments of the community. The fact that some people choose not to attend is not necessarily a failure of the program, rather an acknowledgement that no program will suit or engage everyone. The evidence from the review of community preparedness over the past decade also highlights that a significant proportion of the community is under-prepared. No single program can achieve all the desired outcomes on an issue as complex as bushfire preparedness. Instead the approach should incorporate a suite of programs, one of which is FRV in some form, that collectively seek to achieve the range of safety outcomes. These concerns highlight important issues for the program, and CFA's approach generally, but do not invalidate the logic of the program or what has been achieved so far.

While the meetings are generally seen in a positive light by the attendees and the evaluation indicates they achieve a range of outcomes and benefits, there is scope for improvement. Several key areas have been identified through the evaluation.

People want meetings to be relevant to their locality, with presenters who are seen as 'locals' and have an understanding of their community and issues. Effective meetings need to translate the generic information into meetings that are relevant, addressing the local situation and issues. The more interactive the meeting the more likely it is to engage participants and to meet their needs. The participation of the local brigade is likely to increase the credibility of the meeting.

The requirement to present a large amount of information in the meetings, covering both the traditional 'core' information about the risk and how to plan and prepare, as well as information about changes and new initiatives, risks overloading the meetings and reducing their effectiveness. A single meeting cannot achieve the benefits people are seeking *and* communicate all the information that is now considered necessary. A new model of program delivery needs to ensure the benefits people identify, such as engaging them in the issue locally, updating them on new developments, and providing an opportunity to interact with fellow community members, continue to be delivered. Such a meeting/event could also

refer people to other local activities that will address specific needs such as local street meetings, Community Fireguard, as well as new initiatives, where the more detailed information is presented in locally relevant and interactive sessions.

The evaluation identified a range of reasons people give as to why they do not attend. A new model of delivery and format could address some of these matters and re-engage these people, as well as creating opportunities to engage people who have not previously attended. In particular, the 'ready and interested' group are the most likely to respond positively to a new format and style and are potentially the group most likely to make significant improvement in their planning and preparation. Ultimately though, some people will choose not to participate and to not adopt advice, and some are unlikely to ever be engaged by such activities. Despite these qualifications, the evaluation has identified potential for further gains in engagement and preparedness.

Bushfire Planning Workshops

Program description

Bushfire Planning Workshops (BPWs) are designed with the intention of providing participants with an interactive information session on how to develop an effective bushfire survival plan. By sharing personal stories and ideas in groups of around 15-20 people, guided by a trained facilitator, the program aims to expand on participants' knowledge and deepen understanding of bushfire behaviour, personal survival, house survival, decision making and important elements of a good plan, so that participants can apply this knowledge to their own situation and develop a bushfire survival plan appropriate to their needs. Bushfire Planning Workshops are targeted towards, but not restricted to, the 52 identified high fire risk localities in Victoria.

Data collection

Interviews with three BPW facilitators, who were identified by their respective Regional Community Education Coordinators as being experienced presenters, were conducted one-on-one in three separate CFA Regions. Observation of one BPW also took place in one CFA Region. Originally, observation of three BPWs was scheduled, however, due to cancellations this was not possible within the timeframe of the evaluation. Additional information used to assist in the evaluation was obtained through documents pertaining to BPW program theories and models.

Program outcomes

BPWs are intended to build upon participants' existing knowledge of bushfire. The program theory relies on participants having a prerequisite basic level of knowledge and understanding of bushfire, which is then expanded on with assistance from facilitators, so participants can apply this knowledge to their own situations and from there develop a comprehensive bushfire survival plan.

In circumstances where participants have such pre-existing knowledge, through having previously participated in FireReady Victoria meetings or through some other avenue, BPWs can provide people with the opportunity to build on and update that knowledge, start developing new bushfire survival plans, or re-evaluate and update existing bushfire survival plans. For this program to achieve such outcomes, participants must have at least a basic level of bushfire knowledge and a reasonable idea prior to attending the workshop of their intention and personal capacity to 'stay and defend' or 'leave early'.

Evidence from interviews and observation indicates that the intended outcomes of the program are often not being achieved. Evidence from interviews suggests that in most cases participants had not recently attended a FireReady Victoria meeting

prior to participating in a BPW and/or lacked the assumed basic bushfire knowledge required for intended outcomes to be achieved. As a result, BPWs are being used as a source of general information about bushfire and local risk and participants are then using this limited information to inform their decision making about whether to 'leave early' or 'stay and defend', rather than undertaking comprehensive planning. In this common application of BPWs, intended outcomes are not being achieved.

Evidence from observation and interviews indicates that facilitators take different approaches in delivering the program. Divergence in delivery techniques and program models has further contributed to the program being less likely to achieve intended outcomes, although other unintended outcomes, such as raising general awareness of bushfire, may be achieved.

Program impact

The current structure of the program favours smaller groups of 15-20 people over larger 'town hall' sized groups. This inherently places restrictions on the potential scale and reach of the program, with only a small number of residents from communities offered the program actually attending. Aside from the small numbers required for the program to run at optimal efficiency, there is also a lack of demand for the program in many areas. In some cases ongoing demand has been so low that the program has been dropped at a District level and resources redistributed into other programs.

Dashboard data from Period 23 (Monday 2 – Sunday 15 May 2011) indicates that since the start of the last season 67 BPWs have been conducted with a total attendance of 453. Low participation can be partially explained by the unseasonably wet season experienced, however evidence collected from this evaluation suggests low attendance is an ongoing issue for the program.

Participants lacking assumed bushfire knowledge, absence of a clear program theory or model and variance of delivery techniques have contributed to the program not operating as intended, and thus not achieving the intended outcomes. This, coupled with the limited reach of the program, has lead to the program having minimal impact overall.

Issues and implications

This evaluation has identified a number of flaws in the current BPW model and its implementation. Delivery of the program around the State is inconsistent, seemingly due to the lack of a clear, agreed program theory, and the results being achieved vary accordingly. This, combined with limited reach, low attendance rates, and a high number of Workshop cancellations, means the program has had minimal impact.

Evidence from this evaluation suggests that it is not realistic to expect that all participants will walk out of the Workshop with a written bushfire survival plan. As

this is one of the core intended outcomes of the BPW program, and is the feature which distinguishes BPWs from other information-based meetings such as FRV, it is necessary to reconsider the role of the BPW program. Consideration should be given to what may realistically be achieved by participants in a BPW, and to whether the program is addressing a genuine 'problem' or need in the community.

If the program is to be effective, a clear and agreed program theory, which articulates what the program is intended to achieve and for whom, needs to be developed, along with a model for delivery that makes it feasible to conduct this activity. These should be supported with consistent training for facilitators and the provision of appropriate resources to aide and enhance delivery of the program.

Unless the purpose of this program is clarified and a delivery model developed which would enable more extensive, cost-effective implementation, it will continue as a marginalised activity with little impact on community preparedness.

Home Bushfire Advice Service

Program description

The Home Bushfire Advice Service (HBAS), formerly known as the 'Advice to Property Owners' program, was developed in response to VBRC Interim Report Recommendation 7.2, that: *"CFA consider the means of providing individual advice to residents in bushfire prone areas, as to the defendability of their homes."*[5] It was primarily developed to provide detailed advice to people living in bushfire prone areas about the risk at their specific site, defendable space requirements, and to provide guidance on developing more effective plans. This was seen as a gap in the suite of education and awareness initiatives run by CFA.

The program seeks to contribute to people in high risk areas having improved understanding of the bushfire risk and better planning and preparation. It follows a typical process-outcome model whereby the attainment of each outcome is dependent on the success of the preceding outcome. The following sequence provides a summary of the intended processes and outcomes:

1. Site visits are promoted to the public through a variety of sources.
2. Residents become aware of the site visits and register for the service.
3. Requests are prioritised by risk level and assigned to a Fire Safety Officer-Wildfire (FSO-W).
4. The FSO-W visits the resident to conduct a property assessment.
5. The FSO-W provides information and advice to the resident on leaving early or defending the property based on the availability of defendable space.
6. The FSO-W also provides information/advice on general preparation and planning and answers any questions the residents have.
7. Residents who are building or renovating are also provided with advice on planning and building legislation requirements.
8. After the site visit a Bushfire Defendability Advice Report is completed by the FSO-W and sent to the resident.
9. Residents are able to assess/reassess their preparation and planning for bushfire based on the assessment of defendable space and their increased understanding of the bushfire risk in their local context.

Data collection

A mixed method approach was used for this evaluation. It comprised of desktop review and analysis, group interviews with the FSOs-W, and seven days of site observations in a variety of locations across the State (with both Regional and

[5] VBRC Interim Report (2009, p.203)

centralised FSO-W teams). General questions about awareness of the advice service were included in the post-season community survey. In addition, a telephone survey was undertaken in March 2011 of 341 households who had received site visits (see Reference Document R.07). A variety of statistical methods were used to examine the HBAS survey results. An external consultant was engaged to assist with more detailed analyses of self-reported changes in a range of outcome measures between now and six months ago.

Program outcomes

Two distinct approaches to HBAS have emerged this year. Firstly, the requested site visit approach (described above) which is largely based on the 2009-10 version of the program and is mainly used by the Regional FSOs-W. This approach places a greater emphasis than last year on promoting the service and prioritisation of site requests based on risk level. The process for undertaking the site assessment has also been overhauled, providing a more structured approach for the FSOs-W to follow. The second approach is the 'one the spot' visit, which has emerged as an alternative delivery method this year for the centralised team of FSOs-W. This model involves the identification of high risk locations for systematic door-knocking by the centralised team. The 'on the spot' approach to HBAS has been used in a number of areas, including the Mount Helen and Mount Clear areas close to Ballarat.

Whereas the requested site visit approach relies on people finding out about the service and then feeling motivated to make a booking request, the 'on the spot' approach brings an ad hoc delivery approach where residents are asked to spontaneously engage with the issue. Those who agree to an 'on the spot' site visit go through a similar process to the requested site visit but there are some important differences. The introduction of the 'on the spot' approach signifies a shift in the program's focus from targeting active and interested residents who have already engaged with bushfire issues to some extent, to targeting a broader cross-section of the community living in high risk areas who may have limited knowledge and understanding of the issues. Door-knocking may also lead to requests for site visits at a later date. While this third way into the program is an off-shoot of the 'on the spot' approach, it feeds the resident back into the requested site visit model. This picks up on some residents who have not responded or seen promotional material about HBAS but when engaged are motivated to make use of the service.

Over half the program participants (54%) heard of the service through one of three sources: a letter from their local council (19%), a Community Fireguard meeting (18%), or a local newspaper (17%). This highlights the importance of local sources of information as a way to promote the service to the community. The survey results suggest a moderate level of awareness of HBAS amongst communities in high risk locations. However, this has not necessarily translated into large numbers of people requesting site visits by registering for the service. While in the community telephone survey in April 2011 (the post-season survey), 54% were aware of HBAS, only 17% of respondents had already had the service. Overall awareness of HBAS

has remained fairly constant between the pre and post-season community surveys (see Reference Documents R.04 and R.03).

Motivations for residents to have the site visit were many and varied reflecting the diversity of the target audience in terms of their perception of what the service provides. The HBAS survey found that the primary reasons were as follows: checking, reviewing, confirming and validating existing preparation and plans (16%); recognition of living in a bushfire prone area (15%); and to get information and advice from CFA (37%). The importance of confirmation of plans and preparation was reinforced by the Regional FSOs-W who identified this as a key motivation. Concerns over vulnerability and dependent household members, as well as needing answers to specific concerns were also mentioned as primary motivations reported by residents. Other motivations that were frequently mentioned in interviews with the FSOs-W included problems with neighbours and local council disputes. The prominence of these reasons among the FSOs-W comments reflect the difficulty in dealing with residents with specific agendas that often fall outside the auspices of the program, or indeed the responsibility of CFA.

More than half (60%) of program participants had site visits of between half an hour to an hour, while a further 18% had sessions that lasted for more than one hour. The remaining 22% reported that their site visits lasted for less than half an hour. The site observations and the experiences of the FSOs-W reflect this variety. Often the requested site visits lasted considerably longer than 'on the spot' visits as the residents who had booked a visit were aware that they needed to set aside about an hour for the service. 'On the spot' visits were liable to be curtailed if the resident did not have sufficient time or did not realise that they were agreeing to a lengthy session. The length of the site visit often corresponded to the level of discussion generated by the site visit, the amount of pre-planning that had been undertaken, the number of questions that the resident wanted to ask, the size of the property and complexity of the bushfire risk at the property.

Level of engagement also varied in the site visits. Engagement was most successful when the FSO-W provided information in a manner that was interesting and motivating and encouraged the resident to think through the issues and discuss them. Often this was more apparent in requested site visits than 'on the spot' visits as the resident was more inclined to actively participate in the session. In some cases the 'on the spot' sessions were much more of a one way conversation with the FSO-W providing a large amount of information in a short space of time, without much input from the resident. This highlights that there is a level of preparation required from the resident before the site visit to be familiar with the purpose of the visit and to have considered their existing plans. The level of engagement was also enhanced by multiple members of a household being present. This often led to more questions and discussion of the issues as the multiple perspectives and needs of the household were considered.

Participants reported on a wide range of topics that were discussed during the site visit. Topics that were discussed a great deal by the majority of respondents were defendable space around the property (72%), ways to maintain the house and make

improvements (71%), maintenance activities to prepare the property (68%), and intended actions if a fire threatens the property (67%). The determination of defendable space is a key aspect of the site visit and is reflected in the majority of people indicating that this was comprehensively covered. Practical suggestions about improving house and property maintenance are also a major part of the structure of the site visit, especially when the FSO-W conducts a site walk with the resident. Intended action is also a major focus as this will often focus the discussion in certain areas.

The structure of the visit varied considerably between the requested visits and the 'on the spot' visits. It was much easier for the FSO-W to follow the intended process when the resident was clear about what was going to be covered. There was a tendency for the FSOs-W to vary the structure to accommodate the needs of the residents. Level of interest also played a part in the way the site visit proceeded. The success of the site visit appears to be a two-way process: the FSO-W needs to be credible, well informed, and have a good local knowledge; and the resident needs to be engaged, ask questions, and give some thought to their situation. Consideration of this before the site visit often leads to a better outcome. In this context it is possible for the FSO-W to challenge, support and encourage the resident. In doing so this helps to enhance the capacity and decision making of the resident.

The intentions of respondents to the HBAS survey have changed in the past six months. There are fewer people intending to stay and defend their house now (12%) than six months ago (18%). The percentage of people planning to leave as soon as they are aware that there is a fire that could threaten them has increased from 32% to 36%. Those who say they won't be at home because they plan to leave on days of high fire danger have also increased (17% to 26%). The only group for whom there has not been significant change was those who were intending to 'wait and see'. This suggests that the advice service may have encouraged more people to leave and to leave earlier although it appears to have had little impact on changing the decision making of those who intend to 'wait and see'.

Respondents to the HBAS survey were generally satisfied with the service they received. The vast majority agreed that the information provided was clear and understandable (97%), they would recommend it to others (96%), the FSO-W was knowledgeable (96%), and the information was what they wanted (95%). These results correspond with the observed findings that the general response from those participating in the program has been positive. The presence of CFA in the local community providing advice to residents is well received by many and the effect can be magnified when there is a belief that they are supporting their local brigade. There appears to be a reassurance factor from having a CFA site visit that is then reflected in the reporting of satisfaction with the service.

The vast majority of respondents reported that they had received a Bushfire Defendability Advice report from CFA after the site visit (93%). Most (92%) believed it was an accurate reflection of the information discussed in the site visit. In about half the cases (46%) the report indicated they had adequate defendable space, while 37% said that it indicated there was insufficient defendable space. However almost

one in five (18%) did not know what the report indicated. Overall, there does appear to be value in the report as indicated by 87% of respondents agreeing that it is a useful checklist they would refer to in future. In interviews with the FSOs-W it was apparent that the content and style of the reports was constantly evolving as they completed more of them. There was recognition that it is beneficial to provide as much personalised information as possible, rather than simply relying on the generic statements in the template.

Respondents to the March 2011 survey of HBAS users were asked to rate their levels of understanding, planning and preparation at the time of the survey and at a point six months prior to the survey. The results of the self-reported outcome measures showed increases in the average ratings across understanding, planning and preparation between six months ago and now. Comparisons between the HBAS survey and the post-season community survey help to put the findings in context. The changes at the broader outcome level (composite scales for each of planning, preparation and understanding) were much smaller in the post-season community survey than the HBAS survey. The level of change in planning is especially strong in the HBAS survey, which suggests that HBAS is having a positive effect in this area. However, further analysis of the HBAS findings at the individual item level demonstrated meaningful change for nine of the twenty four outcome measures. Of these nine, five related to understanding, three to planning and only one to preparation.

Based on the observations and interviews there was evidence to suggest that the program was having varying degrees of success depending on a number of factors. Three major factors identified in the analysis were type of contact, duration of site visit and previous involvement with CFA programs. Additional analyses of the outcome measures were undertaken to explore the significance of the three factors on the extent of the change in outcomes. The approach accounted for some of the additional variables that might confound the results such as age and intention. This helps to increase the likelihood that the change can be attributed to particular factors. The key findings from these analyses are:

- The change between now and six months ago is significant for eight outcome measures according to the contact type category the respondents are in. The pattern for each item is that the requested visit group improved more than the other two groups (‘on the spot’ and ‘requested later’). The eight outcome measures predominantly relate to understanding, with a couple that relate to planning.
- The change between now and six months ago is significant for eleven outcome measures according to the category of duration the respondents are in. The pattern for each item is that the ‘half hour to an hour’ group and ‘one hour plus’ group improved more than the ‘less than half an hour’ group. The eleven outcome measures predominantly relate to understanding and planning in equal measure, plus one item relates to preparation.

- Analysis at the broader outcome levels (composite scales for each of planning, preparation and understanding) provides an overall summary of the change. While there has been positive change across understanding, planning and preparation, meaningful change has been found to be associated with duration of visit and type of contact. For contact type, significant results were found for planning and understanding – requested visits were associated with the greatest change. While for duration, a significant result was found for planning – site visits of more than half an hour were more effective.

Program impact

Current levels of delivery of the advice service give an indication of the scale of the program. 1523 property inspections have been completed, comprising 883 Regional FSO-W site visits and 640 centralised team site visits.[6] There is considerable variety in delivery across the eight Regions with some Regional FSOs-W finding it difficult to reach their target. This has prompted the introduction of mitigation strategies to help meet Regional targets. Several reasons have emerged for why demand for the service has not met expectations to date. The main explanation is that the limited number of high risk days and wet conditions across the State resulted in a lack of interest in planning and preparing for bushfires this summer. Evidence from the general community survey does lend credence to this explanation. Several other reasons for difficulties in reaching targets emerged from discussions with the FSOs-W. These included the travel times between requested site visits; the amount of time spent completing the reports; and managing the workload for NSP assessments. There were also some general concerns about the focus on meeting targets coming at the expense of delivering a quality and consistent product.

The efforts of the centralised team have mainly focused on specific targeted locations. This has influenced the overall reach of the program. Some of the targeted areas such as Mount Helen were chosen because they were high risk areas that had not previously been the focus of CFA education and awareness activities. Therefore, part of the focus has been on broadening the reach of the service. However, as previously discussed this does not necessarily correlate with those who are interested and sufficiently motivated to make best use of the service. The success of 'on the spot' visits in purely numbers terms (door-knocks turning into site visits) has varied considerably. The best estimate from the centralised team was that about one in four door knocks resulted in a site visit but that these varied in length and comprehensiveness.

The program has had a moderate impact to date. While there is clear evidence to demonstrate it is achieving results for particular groups, the overall level of use is below expectations and there is considerable variety in the outcomes being achieved. The impact varies quite considerably across the State depending on which

[6] Figures taken from All Regions YTD Performance Dashboard (Period 23: 2 – 15 May 2011)

high risk areas have been the major focus of service promotion. HBAS is clearly effective for some but less effective for others. Based on the findings of the evaluation, the following broad distinctions can be drawn between residents who request site visits and those who have 'on the spot' site visits:

- People who request site visits are significantly more likely to be involved in other CFA programs (more likely to be CFG members, or to have attended an FRV meeting) and make use of other tools such as HBSAT. They are more likely to live on hobby farms, small acreages or large farms. Requested site are more likely to be of a longer duration and the residents are more likely to report discussing defendable space around their property and ways to maintain their house and make improvements a great deal. They are also more likely to strongly agree that the information/advice they receive is clear and understandable, the FSO-W was knowledgeable and that they got answers to all their questions.
- People who had 'on the spot' site visits are significantly less likely to be involved in other CFA programs (less likely to be involved in CFG or have attended an FRV meeting). They are more likely to live on a residential block, reflecting the fact that a lot of the door-knocking has been targeted at residential areas. The site visits are more likely to be of less than thirty minutes in duration. They are less likely to report they discussed defendable space a great deal or ways to maintain their house and make improvements. They are less likely to strongly agree that the information/advice is clear and understandable, or that the person was knowledgeable and they got answers to all their questions. They were also less likely to strongly agree that they were given information they could not get elsewhere and that the report is a useful checklist.

Results from the April 2011 HBAS survey help to reinforce the importance of targeting HBAS at the most responsive groups in high risk communities. Awareness of the advice service was greatest amongst the 'active and involved' group, while interest in participating in the service was highest amongst the 'ready and interested' group.

Issues and implications

Awareness raising for HBAS has been most effective at the local level – through local media, promotion at Community Fireguard and door-knocking to promote the service. This suggests there is an opportunity to extend this aspect of the program, with greater emphasis on raising awareness of the advice service at the local level perhaps through greater local brigade involvement. General promotion of the program may increase awareness of the service but this is not necessarily sufficient to prompt people to request a visit. Localising the promotion and developing a sense that the service is occurring in the area at a particular time is more likely to generate interest and prompt people to participate.

The evidence suggests that HBAS is most effective when targeted at those who are motivated to use the service. Typically these residents are in need of locally specific and relevant advice, an opportunity to ask questions and get answers from a credible expert, and are seeking to enhance their capacity and decision making.

The broadening of the approach to include both requested and 'on the spot' site visits has widened the target population for the program from the 'active and involved' and some of the 'ready and interested' (those who are most likely to request the service) to a much wider section of the population of high risk areas. This includes some of the 'ready and interested' but also includes other groups (e.g. 'done it already' and 'not into bushfire') who will be unwilling to participate. This builds a level of inefficiency into the delivery of the program and raises the question about long term sustainability of the approach.

The detailed analysis of the outcomes identified that the program was most effective in achieving increased understanding of the bushfire risk, and improvements in developing and refining bushfire survival plans. The results suggest that the self-reported levels of change are most significant for people who request site visits and/or for site visits of more than thirty minutes to one hour or longer. The implication of these findings is that the most effective outcomes are achieved when the person is motivated to book a visit and receives a visit of at least thirty minutes duration. The results also highlight that while the 'on the spot' approach increases the number of contacts, this approach has several disadvantages. The approach is inefficient because not only is significant time used in randomly visiting properties, in only a minority of cases is there someone at home and willing to participate. Further the results indicate such 'on the spot' visits do not achieve the intended outcomes to the same extent as the requested visit approach.

The evaluation highlights that HBAS is an effective program that is meeting a need in the community and that participants are highly satisfied with the service. However, in summary there are several issues related to the delivery of the program that need to be addressed.

- Demand for the program is lower than anticipated, and although there are moderate levels of awareness, this awareness does not translate into requesting the program.
- The adaptation of the program to include 'on the spot' visits is a less effective strategy and is inefficient.
- The program works more effectively for those who are active and motivated about the bushfire issue and those that are interested and ready to act but are less active. The program needs to be targeted at those for whom it works best.
- In two years the program has reached a relatively small number of households in high risk areas (less than 2000). Reaching a large proportion of the households in high risk areas is not viable without a very large increase in resources. The most viable strategy is for the program to be

targeted at those who are most likely to take up the program in particular high risk areas.

- The evaluation findings suggest an alternative service delivery model for the program. This model could involve targeting the delivery in particular high risk locations over a concentrated time period as part of locality based planning, local promotion of the program, if possible involving local brigades door-knocking to promote the service, coordination of requested visits at the Regional/District level, and then concentrated delivery of the service to those households that request the service.

Household Bushfire Self Assessment Tool

Program description

The Household Bushfire Self Assessment Tool (HBSAT) is an online tool which steps participants through a process to determine their property's defendable space requirements. The tool was developed as part of the response to Recommendation 6.2 of the VBRC Interim Report[7] and Recommendation 1.7 of the VBRC Final Report[8], and is designed to provide more detailed advice to people living in bushfire prone areas about the risk at their specific site, their defendable space requirements, and to provide guidance on developing more effective plans.

HBSAT works on the assumption that by working through the tool, users will better understand the concept of defendable space and their own property's defendable space requirements, and that this knowledge will lead to more informed and appropriate planning and decision-making, and ultimately to safer response in a bushfire.

Data collection

Data on HBSAT was collected through the post-season telephone survey conducted in April 2011 (see Reference Document R.03) of 623 households within 52 high fire risk townships in Victoria. Respondents were asked whether they had used the online tool, and those that had (n=72) were asked a number of further questions about when they had used the tool, their reasons for using it, the benefits they derived from it, the extent to which they used it and the results they received.

Limited information on use of HBSAT online was also made available through Google Analytics.

[7] VBRC Interim Report Recommendation 6.2: The CFA amend its policy *Advice to the Community Before and During Wildfire* to enable trained CFA personnel to recommend to particular households, communities or locations that they plan to leave early, based on an assessment of defendability, the vulnerabilities of the people there, and the degree of ease with which people are able to leave the area in relative safety. (p.185)

[8] VBRC Final Report Recommendation 1.7: The State revise its bushfire safety policy. While adopting the national Prepare. Act. Survive. framework in Victoria, the policy should… improve advice on the nature of fire and house defendability, taking account of broader landscape risks. (Summary, p.23)

Program outcomes

In the community survey of residents in high bushfire risk areas, only 15% of all respondents indicated that they had used the online tool, and just over half of those (51%) had done so in the preceding 12 months.

Of those who used the tool, almost half (49%) had worked through the whole tool. This is down slightly from previous figures: in a similar survey conducted in early 2010, nearly two thirds of users completed the tool. Based on figures from the 2011 survey, only 7% of all people in high risk areas used HBSAT to get a final result about the defendability of their property.

One-quarter (25%) of users could not recall if they had completed the tool, and of those who reported not completing the tool, almost three in four (74%) had completed only some or very little of the tool. Reasons for not completing the tool varied, and included 'too complicated / not user friendly', 'got distracted' and 'found approach obvious'. Approximately one in five (21%) of those who hadn't completed the tool reported that they 'got what I needed out of it anyway'.

Respondents reported a number of reasons for using the tool, including wanting to assess their risk or determine whether their property was defendable, to prepare their bushfire plan, and to confirm that their current plans were 'on the right track'. Almost one in five (18%) users of the tool reported curiosity or interest in the tool in response to it being publicly promoted. From these responses it can be inferred that a proportion of users of the tool had completed some degree of planning and preparation for bushfire before completing the tool; it is unclear how many (if any) used HBSAT as a first step in preparing their bushfire plans.

Respondents identified the main benefits of using the tool as advice on what needs to be done to make a property defendable (15%), new ideas or things that hadn't previously considered (15%) and informing a decision on whether to stay and defend (11%). One in four (26%) users reported no benefits of the tool.

In 2010, more than half of HBSAT users reported that the tool's results confirmed their expectations of defendable space requirements at their property. In the 2011 community survey, however, while almost three-quarters of users (74%) thought they had defendable space prior to completing the tool, only one-third (35%) received a result confirming that their property had met the required defendable space requirements. The fact that a significant proportion of users had their expectations of defendable space challenged by their results may be seen as a positive result in terms of the potential for the tool to correct problematic perceptions of defendability.

Of those who had completed the tool, 24% reported that they did not know or were unsure what result the tool gave them about defendable space on their property. This response indicates that for almost one-quarter of users, HBSAT did not provide results which would inform better planning and decision-making.

Information from Google Analytics provides some indications of the useability and appeal of the HBSAT website. Reports for the period 1 July 2010 to 7 February 2011 show a site average 'bounce rate' of 57%. The 'bounce rate', according to Google Analytics, "is the percentage of single-page visits or visits in which the person left your site from the entrance (landing) page",[9] and is used to understand how often a visitor to a website views only a single page before leaving the site. An average 'bounce rate' of 57% suggests that more than half of visitors to the HBSAT site immediately leave the site without viewing additional pages.

Program impact

As noted above, only half of all users completed the tool, and one-quarter could not recall if they had completed the tool. People who fail to complete the whole process can only derive limited benefit from the tool, even if they report otherwise. In his report of March 2010, the VBRC Implementation Monitor noted concerns about "the likelihood that early indications in the tool that a home may not be defendable may cause some users not to complete the tools and thereby miss out on important information on general bushfire preparedness issues".[10]

To date HBSAT has had limited reach. As a tool specifically for assessing the question of defendable space, HBSAT appears to be targeted at people planning to stay and defend their property, and to those who are undecided about staying to defend or leaving early. People who have made clear plans to leave early may also use the tool to confirm their initial plans. It should not be considered, therefore, that all households within high risk areas would need to use HBSAT online. Nevertheless, a usage rate of 15% and a completion rate of just 7% of the population in high risk areas remain low.

The low rate of use and high drop-out rate of users of the tool will limit its effectiveness in informing better planning and decision-making. The extent to which users of the tool altered their plans in response to the results received was not measured in this evaluation. Previous evaluation in 2010 found that, in general, the tool was relatively successful in improving people's self-reported understanding of the bushfire risk and how to address it. In that evaluation about half (54%) reported that using HBSAT helped them to revise their bushfire survival plan, and about one-third (33%) changed their plan following the use of HBSAT.

Issues and implications

The evidence suggests that, for many users, HBSAT is one resource among many which informs their decision-making and that it is rarely a decisive factor. One in

[9] Google Analytics Help, http://www.google.com/support/analytics/bin/answer.py?hl=en&answer=81986, accessed 9 May 2011

[10] BRCIM Delivery Report, March 2010, p.45

four users could not name any benefits from the tool; approximately one in two did not complete the tool or were unsure if they had completed it; and almost one in four of those who did complete the tool were unsure about the results it provided – a figure which equates to just 6% of the population that used the tool and got a result that they can recall, which might or might not influence their decision-making.

The issue of house defendability is a complex one, and HBSAT is by necessity a complex process to complete. Any expectation that HBSAT will ever achieve extensive penetration into the population should be questioned; as an online tool HBSAT will not appeal to everyone, its complexity is likely to be overwhelming for many, and its relevance is greatest for those who choose to stay and defend, which is a small proportion of the population (16% according to the current survey).

The complexity of the issue and the tool also mean that a certain drop out rate (users who commence but do not complete the tool) is to be expected. However, the decline in the proportion of users completing the whole tool is of some concern.

In its current form, HBSAT is unlikely to address the needs of a large proportion of the population in high risk areas. Improving its useability may increase its effectiveness, but given the skills required to use any such tool, the complexity of interpreting and applying the information, and the fact that defendable space is only one aspect of bushfire preparedness, it is likely to be at best a resource for a small niche or sub-set of those already interested and active in bushfire preparation, rather than a tool for widespread use.

Community Fireguard development project

Program description

Community Fireguard (CFG) is a community development program designed to help reduce the loss of lives and homes in bushfires. It assists community groups to develop bushfire survival strategies that suit their level of risk, lifestyle, environment and values.

The Community Fireguard development project is currently revising and redesigning CFG content and structure. The purpose of the evaluation undertaken was to clarify the intent of the program to inform the program redesign.

Data collection

The Research and Evaluation team was engaged by the CFG program team to plan and conduct a workshop to inform the redesign of the CFG program content and structure. Participants in the workshop, held in February 2011, included CFG and other Community Development program staff, regional staff involved in the delivery of CFG, and Research and Evaluation team members. The outcomes of the workshop were documented by CFG program staff.

Program outcomes

The CFG development workshop identified a number of competencies that CFA would like people to develop through their participation in the CFG program. These were grouped into nine key competencies in four categories:

- Attitudes:
  - Ownership of and responsibility for personal safety
  - Self efficacy
- Understanding:
  - Understanding of property and personal preparation
- Skills and Action:
  - Decision-making skills for preparedness and response
  - Practical (doing) skills to prepare
- Connectedness:
  - Supportive network
  - Realistic plans for preparing, responding to and recovering from bushfire
  - Sustainable CFG group
  - A good relationship with CFA.

It was agreed that, in order to be effective, each of these key competencies needed to be interlinked throughout the CFG program.

The workshop then examined the extent to which the current CFG program delivers on each of the key competencies, what does and doesn't work in the current program, and actions to address any identified deficiencies in delivering these key competencies through the program. The workshop found that the current CFG program was delivering well in terms of building a supportive network and developing participants' understanding of property and personal preparation, but was delivering less effectively or not at all in terms of the remaining competencies.

The outcomes of the CFG development workshop have been used to inform a further workshop with CFA Community Education Coordinators (CECs), conducted by CFG program staff. The outcomes of both workshops are now being used together to inform the program redesign.

Program impact

The impact of the CFG program was beyond the scope of this evaluation.

Issues and implications

As noted above, the outcomes of the CFG development workshop and subsequent CEC workshop are being used to inform redesign of the CFG program. Evaluation of the redesigned program should be undertaken to ensure that the redesign effectively delivers the enhanced competencies identified throughout this process.

Township Protection Plans – Community Preparedness Guides

Program description

The Community Preparedness Guide (herein referred to as the Guide) is one of three constituent parts of a Township Protection Plan (TPP). It is the only publicly accessible part of a TPP; Part B (Township Planning Factors) and Part C (Fire Prevention) are not made available to the public. The Guide is a four page document that provides the community with a map of their area and key local information. The aim of the Guide is to enhance residents' local knowledge and assist their planning before and during fires to enable them to make informed decisions. The Guide is also designed to assist people who are visiting high risk areas.

TPPs have been developed for the 52 identified high risk locations in Victoria and are now being developed for other high risk locations. At present Guides are available for 114 high risk locations on CFA's website.[11]

Data collection

Data on the Guide was collected through the community telephone survey conducted in April 2011 within 52 high fire risk townships in Victoria. Additional qualitative data was collected at four community discussion groups conducted in high risk locations during the same time period.

Program outcomes

Residents in the 52 identified high risk locations were sent a copy of the Guide in the mail as part of the Fire Services Commissioner's information kit mail-out. In the community survey of residents from the 52 high bushfire risk areas, 61% recalled receiving the Guide, while 31% said they had not received it and 8% did not know. This was reflected in the discussion groups as well where a similar proportion said they had received the guide while others were not aware of the product.

These figures show an improvement on last year's survey findings that found 35% of respondents had received the Community Information Map (last year's version of the Guide), while 54% said they had not received it and 19% did not know. The increased recall of the Guide is expected given the greater prominence it has received. The large volume of information that residents of the 52 high risk locations did receive this summer may have made it harder for some to distinguish the Guide from other information sources. Elsewhere in the survey 84% reported receiving information about bushfire safety, and for the vast majority of these (86%)

[11] http://cfaonline.cfa.vic.gov.au/mycfa/Show?pageId=publicTownshipProtectionPlans, accessed 16/05/2011.

this was information they had received in the mail. It is therefore quite probable that some people who reported receiving some form of bushfire safety information in the mail received the Guide but were not able to differentiate it from other sources.

Four in ten respondents (43%) who had received the Guide believed there were benefits of it compared to other bushfire information they have received. The main benefits cited were: informative and easy to understand (25%), local focus and relevant to the local area (18%), shows Neighbourhood Safer Places (14%), and the maps have local information and some new information (14%). Participants in the discussion groups made very similar comments in regards to the benefits of the Guide. Interestingly, while the discussion groups mentioned one of the positive aspects being the concise nature of the Guide, this was not reflected in the survey results.

However, the other 57% of respondents who had received the Guide did not feel that it provided any particular benefits compared to other bushfire information they had received. Whilst this doesn't necessarily indicate dissatisfaction with the product, it does highlight that there is potential to increase the localised content that helps to distinguish the Guide from other bushfire safety publications.

There are some reservations about whether the Guide provides information that is not available elsewhere. However, 91% of respondents agreed that the Guide provided useful information. Over three quarters of respondents also agreed that the map was useful (82%) and that they would refer to the Guide when planning (75%). A wide range of suggestions about what other local information could be included in the Guide emerged from the survey and discussion groups. One third of respondents said they want the Guide to include the location of Neighbourhood Safer Places. In some cases this possibly reflected a protest that in fact there were no NSPs within their locality.

Program impact

Regional reporting indicates that 130 Guides have now been produced, which is 81% of the yearly target of 161.[12] While the reach of the Guide continues to grow as additional communities are provided with the product, there is a significant proportion of the community who are not aware of it. Those who are aware are generally satisfied because of the local nature of the information and map. The general perception to the Guide is positive amongst those who recalled receiving it. It should also be noted that those in the discussion groups who were only seeing the Guide for the first time were also positive about the product. The general consensus was that the Guide is factual, relevant and worthwhile.

There is no evidence to suggest that residents in high risk areas are using the guide but nearly 75% do say they will retain if for future use. The evaluation did not

[12] Figures taken from All Regions YTD Performance Dashboard (Period 23: 2 - 15 May 2011)

collect information on whether visitors to high risk areas are accessing and making use of the Guide.

Issues and implications

The Guide has had a limited impact because of its moderate reach and the challenges of differentiating itself from the range of other bushfire safety publications. The major benefit does appear to be the local nature of the Guide and the value that residents place on locally relevant and specific information about their area. Therefore, there is potential for it to be a very useful source for residents in high risk areas. This suggests that the Guide could include:

- More information about local risk;
- More information on the maps; and
- More detailed information about fire behaviour and fire management in the area, e.g. local warnings, evacuation, emergency response plans.

The Guide should provide the local context in which people make decisions about how to respond to the risk of fire.

Neighbourhood Safer Places

Program description

Neighbourhood Safer Places (NSP) were introduced following the 2009 fires to provide options for people to shelter during bushfires. The VBRC identified that on Black Saturday many people were unable to shelter in their homes, changed their mind as the fire approached, or were unable to leave the area to escape the fires. The VBRC Interim Report made a number of recommendations relating to shelter and in particular the introduction of NSPs. [13,14,15,16]

NSPs were developed to provide places where people could seek shelter as a last resort. The criteria for designating a location as an NSP are intended to provide sufficient separation from the fire to enable people to survive but not guarantee protection, nor do they provide the types of facilities and services available at relief centres. NSPs are intended to be one of a range of shelter options for people during a bushfire.

The introduction of NSPs recognises that for various reasons people may need to seek shelter within their local area. As in previous major fires, many people who leave their homes go to locations they believe will be safe within the local area. NSPs are intended to identify such locations in advance. Information about NSPs is provided at the local level through municipalities and fire agencies, particularly in Township Protection Plans and related Community Preparedness Guides. This information is intended to enable people to consider shelter options in their bushfire survival plan which should include a back up plan which takes account of unexpected events and the need seek a place of shelter as a last resort.

Data collection

Data on NSPs was collected in the post-season telephone survey conducted in April 2011 of households within 52 high fire risk locations in Victoria. Respondents were

[13] VBRC Interim Report Recommendation 8.5: The State promulgate criteria for the identification and operation of neighbourhood safer places, and involve councils and local communities in their development and implementation as appropriate. (p.225)

[14] VBRC Interim Report Recommendation 8.6: The State to have commenced progressively identifying, establishing and advertising … neighbourhood safer places, giving priority to areas where bushfire risk is identified as high. (p.225)

[15] VBRC Interim Report Recommendation 8.9: The CFA maintain an up to date, state-wide list showing the precise location of all … neighbourhood safer places, and provide the list to [relevant agencies]. (p.225)

[16] VBRC Interim Report Recommendation 8.10: The State report to the Commission on the results of the implementation and effectiveness of its … neighbourhood safer places program. (p.225)

asked about their understanding of NSPs and under what circumstances they might use them. The survey also investigated a range of issues related to respondents' bushfire survival plans. Similar data was collected in the previous surveys in May and December 2010. In-depth qualitative data was also obtained from a number of discussion groups held in 2010 and 2011 with people in high risk locations. These discussions also focussed on people's understanding of and attitudes towards NSPs.

Program outcomes

NSPs are being implemented in a staged process as localities are identified and validated as being suitable. Consequently, the length of time a given NSP has been established and promoted in different localities is likely to vary significantly. In some communities where no NSP has been identified there has been considerable local debate about the issue, highlighting the non-existence of such a facility. In other communities an NSP was identified early in the process, and in some locations, people have assumed, sometimes incorrectly, that a location that has been informally regarded as a place to go to in an emergency has in fact been officially designated. The net result is that awareness of NSPs is likely to vary greatly by location.

The community survey of high risk locations identified that overall 62% of respondents indicated they had heard of the term Neighbourhood Safer Place. This result shows no change from the May and December 2010 surveys. Those living on farms or small acreages were somewhat more likely (74%) than those in high risk residential settings to have heard of the term (58%). The 'active and involved' segment were more likely than average to have heard of the term (71%).

Awareness of the term NSP does not necessarily translate to understanding what an NSP actually is. Only 31% indicated without prompting that nothing or very little would be provided at an NSP, 16% did not know what would be provided, and 54% believed that one or more sorts of facilities or services would be provided. The common expectation was that an NSP would provide a shelter or refuge, although it was not always clear whether people expected it to be a building. Other common responses included that water, tea/coffee and food would be available. Less frequent expectations related to the availability of information and advice from emergency services, and a range of facilities including accommodation, showers and medical facilities. Many of these expectations suggest that people consider an NSP as more akin to a relief centre, rather than a place of last resort. These results show little change from the May 2010 survey although in the earlier survey a larger proportion (45%) were aware that no services would be provided at an NSP.

People's responses to questions about the circumstances under which they would go to an NSP revealed that there is considerable confusion about when it would be appropriate to go to such a location. The large majority (78%) indicated they would not go to an NSP on a high risk day, but 22% indicated that they would do so. These people do not appear to be considering such action because of a belief they are going to a well equipped facility because they were no more likely to expect facilities

to be provided than those who would not go. Regardless, the fact that nearly 1 in 4 people may go to an NSP on a high risk day even in the absence of a fire means that these locations may need to be monitored on high risk days to advise people of more appropriate action.

If a fire were to occur that might eventually threaten the area where people live, a larger proportion (55%) indicate they would go to an NSP. The May 2010 survey identified that just over half of those who intend to leave their property during a bushfire intend to go to a place within the local area and that this is most likely to be a public place rather than to friends and neighbours in the area. The results from the most recent survey suggest that people seeking a local public place may in fact go to the NSP although whether this would be the most appropriate response if a fire only 'might' threaten the area would depend on the particular circumstances. Nevertheless if a significant number of people intend to assemble at an NSP when a fire is some distance away, the unavailability of facilities and information is likely to pose a significant problem, and may mean people will assemble at a location in the area under threat rather than leave the area altogether even though there may be time to do so safely.

In circumstances for which an NSP is intended, such as when the house was under immediate threat or roads out of the area were blocked, 67% indicated they would go to an NSP, whereas 33% indicated they would not go there even in such circumstances.

There were significant differences in the circumstances in which people would go to an NSP related to their intended action if a fire occurred. Those least likely to intend to go to an NSP in any of the scenarios were not surprisingly those who intend to stay and defend their property, and even if their house was under immediate threat only 1 in 3 of these people indicated they would go an NSP. Those who intend to wait and see what happens if a fire occurs suggest they are unlikely to go to an NSP on a high risk day, with only 19% suggesting they would take such action. However, they would be much more likely to go to an NSP if there was a fire in the area (59%), or if one threatened their house (76%). Approximately 1 in 4 of those who intend to leave as soon as they are aware of a fire in the general area would go there on a high risk day but the proportion that would go there if there was a fire in the area increases significantly to 69% and 78% if their house was under threat. Over 1 in 4 of those who intend to leave on a high risk day would go to an NSP on such a high risk day but only 48% would go if a fire threatened the area and 58% would go if the house was under immediate threat. Presumably the lower proportions of this group intending to use an NSP is due to the fact that many intend to leave the area altogether on a high risk day and would not need to use an NSP.

The variations in the circumstances in which people intend to go to an NSP suggest that at present there is a lack of common understanding of the role of NSPs. Instead, people are making their own interpretation of the role and purpose of NSPs rather than in accordance with their stated purpose as a place of last resort.

Program impact

There appears to be only a moderate level of awareness of NSPs although this may reflect the fact that in some areas there is no NSP and has been little local focus on the issue. Nevertheless the survey was conducted in the high risk locations that have been the priority for establishing NSPs, which suggests that there needs to be greater awareness raising in these locations.

More significantly there is considerable misunderstanding about what an NSP is and what is likely to be provided, which may to lead people to consider going there when it is not likely to meet their expectations. Most importantly there appears to be significant variation in people's ideas about the circumstances in which they would consider going to an NSP. Further, as noted in several sections of this report, many people do not have comprehensive fire survival plans, and in particular they often do not take account of the unexpected by developing backup plans which ought to include consideration of the use of an NSP as a last resort shelter option.

In order for NSPs to contribute to the safety of the community they obviously need to be established in local communities and it is a significant achievement that they are now in place in the large majority of high risk locations. However, to be effective people need to be aware of them, understand their purpose and to have considered the circumstances in which they would need to use an NSP.

The evidence suggests that the communication to date about NSPs does not appear to have achieved a high level of awareness and understanding of what they offer. Significant numbers of people are not aware of NSPs, do not understand their purpose and have yet to develop appropriate plans to use them.

Issues and implications

The limited understanding of NSPs will limit their effective use in a fire and potentially create problems that will need to be managed during an incident if, for example, people go to an NSP on high risk days or when they may be better advised to leave the area altogether. The evidence suggests that people are interpreting what an NSP is, based on their intentions, rather than there being a common understanding of their intended purpose.

The evidence suggests that many people do not have comprehensive plans that take account of unexpected events, nor have they developed alternatives about what to do if they cannot enact their primary plan. The need to consider places to shelter is an essential part of such backup plans and this needs to be a priority in future general bushfire safety communications and reinforced in local programs. It is important to note in relation to household plans that getting people to prepare written plans might be less important than getting them to consider what they would do if things go wrong.

Whether an NSP exists and when it is appropriate to use it primarily depends on the local situation and hence communication about NSPs needs to be developed and delivered locally. Improving public awareness of the existence or otherwise of shelter options in their local community needs to be a high priority for the coming fire season, as does improving understanding of what an NSP is and when it is appropriate to use one.

In part the confusion about NSPs stems from what some participants in the discussion groups observed were problems with the approach for establishing local places of shelter. Some participants noted a contradiction in that the NSP criteria are designed to provide, if not a guarantee of safety, at least a level of protection under very severe fire conditions, but the communications emphasise that an NSP is a place of last resort. Further, the criteria for establishing an NSP are quite strict and limit the number of locations that can be designated as an NSP. In some high risk locations no site can be identified that meets the criteria. However, sometimes people believe they are able to identify locations that would be safe under many conditions, and historically have proved to be effective. These perceptions need to be addressed at the local level in forums where different perspectives can be shared and people can engage with the issue and develop appropriate local solutions.

Fire Danger Ratings

Program description

The fire danger ratings system was introduced in 2009 as a national initiative in response to recommendations of the VBRC Interim report .[17] The VBRC's considerations highlighted that on Black Saturday many people did not appreciate the severity of the conditions and took inappropriate action, in particular staying to defend properties that under the conditions were not able to be defended. The VBRC identified the need for a system to communicate the risk and related advice to the public, particularly in regard to days such as 7 February. Since 2009 the number of days of serious fire danger has been below average but there has been extensive dissemination of information to the public on the new ratings system and the related messages.

Fire danger ratings are intended to inform people of the likely severity and impact of fires according to forecast conditions, and to prompt them to take appropriate action in response to days of increased risk. In particular, the highest level, Code Red, is intended to alert people that a fire on such a day will be of the utmost danger to life and that they should not travel to or remain in areas of high fire risk but should 'leave the night before or early on the day'. Messages for days of 'extreme' and 'severe' fire danger also stress the risks associated with being in a fire affected area on such days and encourage people to leave or be very well prepared. The fire danger ratings are intended to enable to people make more informed decisions, adapting their response based on the likely conditions and thereby reduce the risk to life.

Data collection

Data on the fire danger ratings was collected in the post-season telephone survey conducted in April 2011 in high fire risk locations in Victoria. Respondents were asked about their recall of the new system, their understanding of the key warning messages, and their intended response on days of different fire danger. More in-depth qualitative data was obtained from a number of discussion groups with people in high risk locations. These discussions also focussed on people's understanding of the system, their reaction to it, and their intended actions on days of different fire danger.

[17] VBRC Interim Report Recommendation 5.1: The Australasian Fire and Emergency Service Authorities Council and the Bureau of Meteorology collaborate with researchers to explore options for the fire danger indices and fire danger ratings including:

- an additional fire danger rating beyond 'Extreme';
- adjusting the existing fire danger ratings to correspond to higher Fire Danger Index values; and
- developing a revised fire severity scale for use in bushfire warnings based on new fire danger ratings. (p.158)

Program outcomes

In the post season survey, a very large proportion of respondents (96%) indicated when prompted that they had heard of term 'Code Red' in relation to bushfire danger. This is consistent with the result of the community survey in May 2010 when 97% indicated they recalled the term. However, it should be noted that in the December 2010 survey, when not prompted with the name, only 62% indicated they knew the highest level of fire danger, and of these people only 54% could actually recall the correct name. Further, the discussion groups highlighted that people are confused about the next two levels of fire danger, 'extreme' and 'severe', with many admitting they cannot recall which is the higher level. These results suggest that although people may have basic knowledge of the new system, they are not confident or particularly well informed overall about the terminology.

In the discussion groups, participants were readily able to recall the advice to leave early on Code Red days. However they differed significantly in what 'leave early' meant, particularly in terms of when to leave. These responses were evident in the community survey also. When asked unprompted what advice fire authorities give about what people should do if there is a Code Red forecast, only 20% of responses accurately reflected the advice. A further 40% of responses referred to leaving but were less specific about when to leave. Another 26% of responses referred to other actions, such as waiting to see what happens or getting ready to take preparation action. A small number of responses (7%) indicated the message was to go to a safe place or to wait for further advice, and a further 7% could not recall any message related to Code Red. These results are very similar to those obtained in the previous two community surveys in May and December 2010, although in May a significantly higher proportion of responses (36%) accurately stated the message. These findings suggest that the level of recall of the idea of leaving is quite widespread but people do not necessarily recall the detail of the messages.

When asked what they would most likely do if there was a Code Red forecast, 46% indicated they would comply with the advice to leave. However 39% suggested they would wait to see if a fire actually occurred and whether it was a threat. A further 14% would not leave at all but would implement their plan to stay and defend. These results are very similar to those in previous December and May 2010 surveys.

Awareness of Code Red by the different segments discussed above is high across all groups and the level of accurate recall of the messages was quite consistent across all segments. However, more detailed analysis of people's likely action on a Code Red day suggests that it strongly reflects their general intention about what they would do if a fire occurred in the area, and also shows differences between outer metropolitan interface area such as the Dandenongs and regional locations in the rest of Victoria.

Table 3 shows the relationship between intended action and likely action on Code Red day.

Table 3: Intended actions on a Code Red day

	Intended action if a fire occurred in the area (%)			
Intended action if Code Red forecast	Stay and defend	Wait but leave if threatened	Leave as soon as aware of fire	Leave on high risk day
Leave night before/early on Code Red day	12	27	62	87
Wait see if fire occurs and is a threat	14	67	35	9
Get ready to defend	73	6	2	2
Other	1	1	2	3
Total	100	100	100	100

Those most likely to comply with the advice are as expected those who intend to leave on days of high risk, with 87% indicating they would leave on a Code Red forecast. The majority (62%) of those whose general intention is to leave as soon as aware of a fire in the general area, intend to leave early if there was a Code Red forecast, but 35% of these people would not change and would wait to see if there was actually a fire threat. Of those whose general intention if a fire occurred is to wait and see what happens, most (67%) would still take this action even on a Code Red forecast, with only 27% indicating they would change their intention and leave early. Most dramatically, nearly 3 in 4 of those who generally intend to stay to defend would still take this action even if there was a Code Red forecast. Only 12% of these people would change their intention and leave early while a further 14% would wait to see if a fire occurred.

Approximately half (53%) suggest they will not change their intention on a Code Red forecast and would either wait and see if there is a fire, or prepare to defend if they are threatened by a fire. Of the 46% who indicate they would comply with the Code Red advice, approximately 10% indicated they would have left early on a high risk day anyway, and the remainder, 36% are those who would change their intended action because of a Code Red forecast.

The survey also asked people about what they would do on a day that was not Code Red but still 'extreme' or 'severe' fire danger. In such circumstances only 21% indicated they would leave early, while the remainder would either wait to see if a fire occurred or get ready to defend. The results suggest that on days of serious fire danger, but not Code Red, people are even less likely to change what they intend to do, with only 10% indicating they would change their mind and decide to leave early on such days. In reality, the messages for different levels of fire danger are not clearly differentiated.

Intentions in relation to Code Red forecast also seem to differ significantly between those who live in outer Melbourne interface areas such as the Dandenongs, and high risk locations in the rest of Victoria as shown in Table 4.

Table 4: Intended actions on a Code Red day, by location

	Location (%)		
Intended action if Code Red forecast	Outer metro interface	Central Victoria regional	Other Victoria regional
Leave night before/early on Code Red day	50	33	45
Wait see if fire occurs and is a threat	34	59	37
Get ready to defend	15	7	16
Other	2	1	1
Total	100	100	100

Those in the outer metro interface areas are significantly more likely to plan to leave early on a Code Red forecast, whereas only 1 in 3 in cental Victorian regional areas intend to comply with the Code Red advice. A significant proportion (59%) in the central Victorian locations intend to wait and see if there is a threat before leaving on a Code Red forecast. On other days of serious fire danger, a similar pattern is evident although with 23% of people in interface areas and only 13% of Central Victorian regional areas intending to leave early. These differences in intention in relation to Code Red in particular suggest different response scenarios in different communities, with implications for fire management strategies in various locations.

Program impact

The purpose of the revised fire danger ratings system was to enable people to make more informed decisions based on information about the severity of the forecast weather conditions and advice about what to do. The advice was intended to encourage people to leave early on days of high risk, particularly Code Red. While the awareness and education activities appear to have reached a vary large proportion of the population in high risk locations, and the recall of the term 'Code Red' is very high, people are less certain about the terms 'severe' and 'extreme'. More importantly, many people in high risk locations are unable to accurately restate the advice for Code Red days, although the majority understand the advice involves leaving at some stage. Most significantly, a large proportion of people in high risk locations appear not to have accepted the advice that they should leave. The survey results indicate that on a Code Red forecast, only about 1 in 3 people think they would change what they otherwise intend to do if a fire occurred, and leave early. Even fewer would change what they intend to do and leave early on

days of severe or extreme fire danger. This suggests only modest impact of the fire danger rating system and messages on people's intentions, although the findings suggest that the extent of adoption is likely to vary in different locations.

The qualitative data from community discussion groups in 2010 and 2011 suggests that, rather than seeing the fire danger forecasts as authoritative advice to be followed, many people regard the forecast as just another piece of information to factor in to their decision making about what to do. There are many factors that lead people to ignore or discount the forecasts and associated advice. Some do not recall or understand what they are being advised to do. Others are uncertain about whether it applies to them – is everybody in the fire danger rating district meant to leave or just those in 'high risk locations'? Some people also believe the forecasts are too broad and may not apply uniformly across the district, suggesting they are better able to judge local conditions. Many people simply do not want to leave their home or change their plans for the day based on the *possible* occurrence of a fire. Others feel it is too difficult to leave, or have nowhere to go. Among those who intend to stay and defend, many feel that they do not need to leave because they are at lower risk because of their situation and level of preparation. Participants in discussion groups were also clear that if they followed advice to leave and 'nothing happened' they would be more reluctant to follow the advice in future. The danger of warning fatigue poses a major challenge given that, even on days of heightened risk, most localities are unlikely to be affected by fire.

Both the discussion groups and the survey highlight that for most people a forecast of serious fire danger, even Code Red, is insufficient to make them feel the threat is real and prompt them to leave early. For many the fire danger forecast is more likely to alert them to increased risk, but only the occurrence of a fire in the area will be regarded as a threat prompting action.

Issues and implications

Since 2009 there have been very few days of serious fire danger so people's actual response to the advice is largely untested. The limited evidence from the only days in Victoria of Code Red in January 2010 revealed that very few people complied with the advice, a response consistent with the data reviewed above.

The data from the evaluation suggests there are a range of factors influencing people's response to bushfire. The majority of people in high risk locations indicate do not intend to adopt the advice on what to do on days of serious fire danger. In part the lack of willingness to follow the advice may be because people in fact do not clearly recall the actual advice, but more significantly, many people regard it as impractical, unnecessary or not relevant to them. At best many people intend to treat fire danger forecasts as an alert, to monitor the situation, see if a real threat occurs, and then use their own judgement to decide what to do. These differences in intended response to fire danger forecasts appear to reflect people's general intention of what they would do if a fire occurred and appear to vary in different

locations, with significantly higher levels of compliance in outer metro interface areas.

To address the modest level of adoption apparent to date several key issues need to be addressed.

Some aspects of the current advice are very generic and it is unclear who it applies to and what people should do. It is not clear whether the advice to leave applies to everyone in the fire district or only those in 'high risk locations'. If the latter, there is no guidance on identifying these locations other than that through the limited implementation of Township Protection Plans. If people are expected to leave, many require advice about where to go and whether they will receive assistance with travel and what will be available in locations to which they relocate. These matters are even less clear in relation to days of severe or extreme fire danger. Overall, the messages for the different levels of fire danger are poorly differentiated which is likely to confuse or dissuade people from varying their response according to the conditions.

The evidence from the evaluation highlights how people are likely to interpret fire danger advice in the light of what they intend to do. The advice needs to be clearer about who it applies to and provide more specific advice about what to do. The information needs to be as locally relevant as possible, highlighting how threats on days of heightened risk are likely to eventuate in particular localities. The information should be provided to local media outlets so that people hear the advice coming from local, trusted sources of communication.

The tendency of some people to rely on their own judgement means that the fire danger forecast can be disregarded if it is seen as too broad-based and irrelevant to their situation, particularly if the local conditions suggest otherwise. If the risk on a particular day applies across an entire district this should me made clear and advice should include reference to factors that might lead people to ignore the advice in their location. If the heightened risk is more locality specific then localities should be clearly identified so there is no ambiguity about its relevance. In all cases forecasts should be provided through both broad based mainstream media and more local sources.

The forecast fire danger is a warning and the principles of effective warnings should be applied. Further, there should be feedback to the community about what eventuates on days of heightened fire danger. People need to know that even if they did not experience a fire, the conditions did increase the risk elsewhere. Further, if no significant fires occur on a Code Red day, the community should be given an explanation and possibly congratulated for responding appropriately to the conditions.

Even if fire danger messages are clarified and delivered as consistent, effective warnings, some people are likely to disregard them, while others will use it as an alert but not take the recommended action. If a fire occurs, it cannot be assumed that people have heard and responded to fire danger messages, and the priority for prompting appropriate community response for many people will be the incident warning process.

Discussion

CFA's current approach

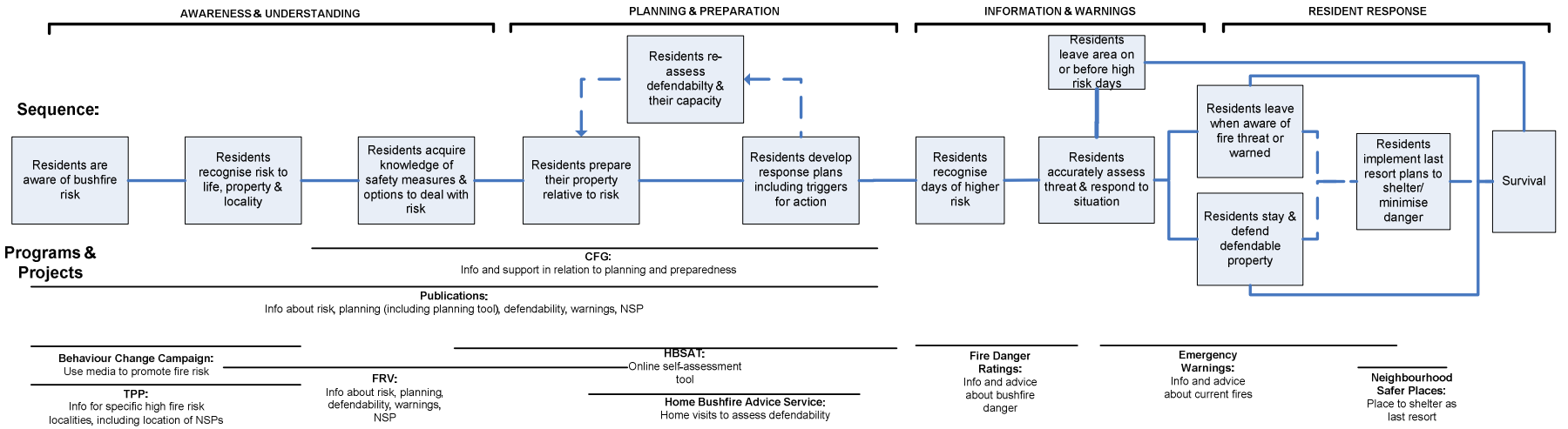
All the programs and initiatives reviewed in this report seek to enhance the ability of people to respond safely to bushfire. Whether it is by increasing understanding of the risk, providing information about how to prepare a property, encouraging people to develop a survival plan or to modify their actions on days of 'Code Red' fire danger, or providing shelter options as a last resort, each initiative is intended to contribute to the ultimate goal of safety and survival. Each is intended to contribute differently and at various stages in the process of building capacity, as represented in the logic map in Figure 3 below that was developed as part of the 2009/10 evaluation (see Reference Document R.01).

The outcomes depicted in the logic map represent the sequence of outcomes of the programs and initiatives that make up CFA's approach to working with the community. However they do not necessarily reflect all the attitudes, skills, behaviours and capacities which people may need in order to respond safely to the risk of fire. In the Community Fireguard Development Project discussed above, a broader range of outcomes was identified as necessary to be achieved if that program was to adequately equip people to deal with fire. These included individual attitudes, knowledge and capacities, practical and decision making skills, connectedness with others in the local community, and so on. A number of these outcomes are only partially or not at all reflected in the logic map representing CFA's approach.

The model is underpinned by a series of assumptions that reflect a particular view of how people respond to communication about risk – that of the *rational choice* model. The rational choice model holds that people will make rational choices when presented with credible information and respond in the most 'cost effective' manner. It is an approach that places great emphasis on providing people with information in order to promote the development of attitudes, knowledge and the desired behaviour. This represents a common approach used by policy makers to influence behaviour however it is an approach that often fails to achieve the desired outcomes. Detailed discussion of the limitations of this approach and consideration of various alternative models are contained in Reference Document R.08.

The logic map identifies that the approach is underpinned by a range of general assumptions and more specific assumptions embedded in particular programs and initiatives. These assumptions reflect beliefs about how people will respond to communication about risk. The extent to which the assumptions such as 'awareness of the risk will motivate people to act', 'that people can understand, interpret and information appropriately', and 'that warnings will enable people to assess the threat and respond appropriately', are actually valid will determine the effectiveness of the approach.

Figure 3: Logic Map of community education programs



General assumptions:

Residents will recognise risk, accept responsibility and be motivated to take action in response to risk.	Residents can interpret information about the fire risk, understand their options, apply information to their situation to plan & prepare appropriately.	Residents monitor sources of information and environment, receive information / warnings, are able to interpret information, accurately assess situation & respond appropriately.	Leavers able to leave safely in circumstances. Level of preparation & capacity to defend sufficient to deal with conditions & threat level relative to threat.	People have skills to assess situation & risks and change response to increase chance of survival / choose appropriate strategy.

Program assumptions & conditions:

• Residents aware of meetings, willing to participate and able to attend. • Residents understand key messages and relate to their own situation. • Messages provide sufficient & coherent information to correct misunderstanding & enable action. • Residents have capacity (resources, skills, etc.) to address risk & plan appropriate response.	• Residents accurately assess risks relevant to their situation & plan and prepare appropriately. • Residents aware of HBSAT & A2PO, access services and understand & apply the advice received. • Services provide accurate assessment of defendable space (FDR = 120). • Residents' plans include alternative plans to account for contingencies and have resources to implement plans.	• People accept they might not get an official warning & monitor and understand environmental cues. • People monitor warnings & other indications of threat. • FDR & warnings are clear, accurate, relevant & delivered in a timely manner. • People understand warnings & willing to act on warning in a timely manner.	• People may be unable to defend change mind or are unable to leave area safely so need place of last resort to shelter. • Residents have access to NSP in their area. • Residents aware of NSP and understand purpose. • NSP provides protection for duration of threat.

This evaluation of programs and initiatives has identified a range of issues that relate both to the general approach and to the way particular programs and initiatives are designed and implemented. Findings and suggested program improvements are presented in the sections above relating to each program. It should be noted that there is evidence of each of the programs achieving worthwhile outcomes and benefits, and overall the findings suggest that a substantial group of people appear to be prepared and able to respond appropriately. However, the evaluation has also identified that a large proportion of people in high risk locations are probably less well prepared and less able to respond safely to a bushfire than they believe. The evaluation suggests that, although each of the programs could be improved, further significant improvement in the preparedness of households in high risk areas may be difficult to achieve unless the current approach is enhanced.

Focussing on what currently works and for whom

The segmentation analysis referred to in the Context section, above, identified four groups based on motivation and interest in the bushfire issue, and some of the associated attitudes and characteristics of these groups. The analysis demonstrated how this motivation affects participation in programs such as FRV, with approximately 60% of the 'active and involved' group, but only 20% of the 'not into bushfire' group, having participated in the program. The effect of these motivational factors was also evident in the response to the HBAS program, where the 'active and involved' group was most likely to request the service. These programs, which are targetted generally at people in high risk areas, in fact appeal to, and work best for a particular group: in both cases those who are already actively involved in addressing bushfire safety.

Similarly, Community Fireguard has been a long running program that several evaluations and studies have shown achieves significant outcomes and benefits for participants. This program has worked effectively because it was developed to address particular needs and utilised appropriate best practice methods in its approach. The current review has become necessary in part because the program lost some of its original focus and approach in attempts to broaden its reach.

These examples illustrate the importance of programs being developed to address clearly defined 'problems' or needs, with specific intended outcomes that address these needs. No single program can achieve the complex range of outcomes involved in preparedness for bushfire, or do so for all those at risk. Individual programs should address specific needs, but they need to form part of an overarching strategy and integrated approach that involves a suite of programs all contributing to better equip people to respond safely to bushfire. Currently there is a lack of any such strategy. Further, few if any of the programs considered in this evaluation have a well-developed and explicit 'theory' that identifies the problem being addressed, the needs of target groups, the intended outcomes, or how the program is expected to achieve these outcomes.

Further, the evaluation highlights that several key programs have varied from their original intent but without evidence that the variations have achieved improved results. This is not to suggest that adaptation is always inappropriate, but often the variation has no clear rationale and appears to occur based on what are identified as 'local conditions', new priorities, or even the preferences of individual presenters. If, as is suggested above, programs are developed based on an assessment of needs and how the program is intended to work, it is still probable that new or additional priorities will emerge and require adaptation of programs. However, such adaptation should only be made with consideration of the broader strategic direction, and following an analysis of the implications of the changes drawing on available evidence. Many of the programs reviewed in this evaluation showed signs of ever-expanding expectations about what they can and should achieve, leading to pressure to adapt programs in an ad hoc manner but without evidence to warrant the change. The assumption that the 'success' of a particular initiative can be replicated to a broader audience is often false due to the critical importance of the context in which a program operates. The risk is that unrealistic expectations can lead to the loss of what these programs are achieving in an elusive hunt for a 'silver bullet' that will solve all problems for all people. This highlights the potential pitfall of focusing strategies on numerical goals rather than clearly defined outcomes for the target groups.

Limitations of the current approach

As noted, the current approach relies heavily on disseminating information about the risk and how to address it, and assumes that people will receive, understand, and apply the information as intended, leading them to make rational and appropriate choices about preparation, planning and how to respond if a fire occurs. As the evaluation has highlighted, many people do not take up the information and advice.

People do not progress systematically through the sequence of outcomes as shown in figure 3 on a 'journey' from being unprepared to 'prepared'. People are not 'blank slates' needing to be filled in progressively with information from authorities. Almost everyone already has an existing 'mental model' of themselves in relation to the bushfire risk which makes sense to them, whether or not it is consistent with advice from authorities. This mental model, shaped by the diverse range of factors at the individual and social levels, guides how they deal with the risk. To change their response to the risk, we have to find ways to get them to question, re-assess and modify their thinking or mental model. Information, particularly generic information provided through one way communication is often insufficient to challenge people's thinking because it is filtered out as inconsistent or rejected as irrelevant. Often it is only those who are rethinking their mental model and are therefore motivated to access the information and use it effectively. This is why the 'active and involved' segment have higher levels of participation and preparedness. The current programs are less effective for other segments because nothing triggers a reassessment of their current mental model.

At each stage depicted in the logic map, outcomes are not being achieved for significant proportions because of shortcomings in the information-based rational choice approach. Several examples from the evaluation illustrate how the limitations of the current approach mean that outcomes are not being achieved.

Defendable space. Making an assessment of 'defendable space' is seen as an important element of being prepared. The notion was considered extensively by the VBRC, which put forward recommendations on the need to help people assess the defendability of their property. Several initiatives such as the Household Bushfire Self Assessment Tool and the Home Bushfire Advice Service have been implemented to address these recommendations. However, assessing defendability is a difficult and technical process, even with expert assistance, and the notion of defendable space raises more questions than it answers. Defendable by whom and under what circumstances? Is property defendability the same as survivability of people at the property? What does defendable space mean when the house was constructed before regulations on building in bushfire prone areas existed? How does the concept of defendability apply to people on the peri-urban fringe who live on properties which, because of their size, will never meet the technical definition of defendability?

The promotion of the concept of defendability and the provision of support for assessments of defendability is intended to lead people to make more informed, rational decisions about what to do if a fire occurs. While this may be the result in some cases, most people are affected by a much broader range of influences when thinking about the risk and how to respond, and many of these are subjective and emotional factors. While HBSAT and HBAS have attempted to incorporate some consideration of these subjective elements, the programs' focus is primarily on providing 'objective' risk-based information, and they do not really address how people make decisions in response to risk. The training provided to FSOs-W also reflects this focus on technical information. While some people appear to have reconsidered their plans as a result of participation in these programs, many have not because the focus on information and technical assessment of defendability was insufficient to lead most through a reassessment of their decisions.

Bushfire survival plans. Many of the programs and initiatives in CFA's approach, such as media campaigns, FRV meetings and various publications, focus on the importance of people developing a written bushfire survival plan. These programs assume that by providing information about the importance of having a plan and providing guides on how to go about it, people will be able to interpret and apply the information and produce a written a plan. Although having a written plan seems like a sound idea, only around 10% of people indicate they have one. When questioned, most people consider that they have a plan, but the evaluation has identified that most do not have what agencies regard as a comprehensive plan, written or not.

The concept of a written plan, while a worthwhile ideal, is unlikely to be widely adopted because it does not reflect the way most people think about or decide what they will do if a fire occurs. Having a written plan is also less important as an outcome than reaching household agreement about what people will do, or considering what to do if unexpected events occur. Making a plan of how a household will respond in a range of bushfire scenarios is a very complex activity requiring many difficult decisions accounting for contingencies and uncertainties. Most people are likely to avoid the challenge posed by such a task, or selectively use the information to reinforce what they intend to do anyway. Telling people they need to have a plan is largely irrelevant because over 90% believe they have one already. Further, while the information provided in publications and meetings attempts to identify the issues and take people through the process, these one-way forms of communication rely on people interpreting the information appropriately and are unable question or prompt people to reconsider their decisions.

Fire Danger Ratings. A final example illustrates the increased complexity of the outcomes to be achieved following the VBRC recommendations, and the challenges involved in achieving such outcomes using CFA's current approach. The new fire danger ratings system is intended to make people aware of different levels of threat so that they may modify their actions accordingly, with specific focus on leaving early on days forecast as Code Red.

The evaluation revealed a limited understanding of the fire danger rating system, and adoption of the advice. In addition to the limited recall of authorities' advice, the results suggest that a Code Red forecast would result in only 36% of people changing their mind about what they would do, and prompt them to actually leave early. This limited intent to adhere to the advice was also evident on the one occasion of a Code Red forecast in 2010 when an even lower level of actual compliance (leaving early) occurred.

While the new fire danger rating messages appear to have contributed to a minority reconsidering their plans, for the majority they have not been sufficient to bring about a change. People give many different explanations of why they are unlikely to comply with official advice. Essentially they reflect the vagaries of the decision-making process influenced by a range of subjective and affective factors, shaped by biases and mental short cuts. For most people, advice about increased fire danger and what to do is just another piece of information they may use in making their own judgment of the situation, but will be insufficient in itself to prompt them to change their intention and leave early.

In each of these examples, the evaluation has shown that the desired outcomes are being achieved for some people. It is not that the current information-based approach never works, but it does not work for everyone. Further, there are some outcomes that are unlikely to be achieved using an information-based approach. Information to increase awareness and knowledge is insufficient to counter the other more subjective factors that influence people's decisions and behaviour. Continued reliance on this approach will mean further significant change is unlikely to be achieved.

A revised approach – making it challenging and local

The examples above illustrate both the complexity of the outcomes to be achieved in order for people to be prepared and respond safely, and the challenges of influencing people's response to the fire risk. The evaluation suggests that the current approach has engaged a proportion of the community, been successful in achieving some outcomes, and has delivered a range of benefits to sections of the community.

A revised approach should include other outcomes beyond awareness and understanding, preparation and planning, and safe response options. These additional outcomes are in many respects enabling outcomes that will develop people's capacity to respond to the risk, support effective decision making, and build the resilience of local communities. Approaches based on models of behaviour change only partly reflect what is required to respond safely to the bushfire risk. This expanded approach needs to build on the strengths of current programs and initiatives, particularly programs such as a revamped Community Fireguard.

Other outcomes need to be better defined. Over the past two years there have been significant changes to the advice to the community, new systems and arrangements established, and many new programs and initiatives implemented. Further research is currently being undertaken by CFA to gauge the extent to which people recognise and accept the various changes. However, in this evaluation it is evident that there is a lack of clarity about what people are advised to do in particular circumstances such as days of heightened fire danger, and some uncertainty in the community about how new systems, such as Neighbourhood Safer Places, will operate. Other outcomes require clarification, for example: what constitutes 'being prepared'; what is an appropriate plan; and what shelter options are available in particular locations. In order for the community to adopt advice, there needs to be a clear view by authorities about what is to be achieved. At present the intended outcomes are, by and large, generic and as such are often likely not to fit particular circumstances or locations. Local fire management planning such as Township Protection Plans could provide a process for translating generic outcomes into more meaningful and specific outcomes to suit particular situations.

As discussed above, the current reliance on disseminating information to increase awareness and knowledge based on the assumption people will then adopt the required behaviour has limitations. The Behaviour Change Background Paper (Reference Document R.08) identifies a range of models of behaviour change that are used in other fields, social marketing approaches, as well recent research on social cognitive models of change in relation to disaster preparedness. The review of these different models and approaches highlights that there are many different factors that influence behaviour change. These factors, at both individual and social levels, influence how people think about situations and risks, and the actions they take in response. Policies and programs are interventions in this decision-making space, intended to change the context in which people make decisions. Information,

as has been discussed, is a relatively weak form of intervention because, for many people, it is insufficient to overcome the influence of existing factors that sustain the behaviour that policy makers seek to change.

A revised approach also needs to adopt a broader range of strategies and processes to achieving change that reflect how people think about and respond to risk. There are many processes or levers, other than information, that can trigger change. These include increasing people's confidence, emotional and affective cues, recognition and positive reinforcement at the individual level, and others at the broader social level such as incentives, peer pressure, trust and credibility, salience of the issue, and community expectations. Many of these require more active forms of engagement and interaction between CFA and the public. Face to face, interactive events that challenge people's thinking and lead them to question their pre-existing ideas and to re-assess their decisions, are more likely to be effective than one-way dissemination of information.

Programs intended to achieve change need to have an explicit 'theory' about how such change will be achieved, that is, what levers or triggers will the program activate to initiate change for particular groups in order to achieve particular outcomes. For example, activities that generate 'peer pressure' at local FRV meetings could be more effective in motivating the 'ready and interested' group than merely giving them information. Programs also need to ensure the context in which people make decisions is conducive to making the most effective decisions; barriers to action need to be removed or minimised, the infrastructure to support change needs to be in place, good models of change should be highlighted, policy and programs need to be consistent, agencies and organisations need to be seen to be working together, and appropriate forms of engagement utilised. These strategies can foster a context that is conducive to people thinking differently about their options and changing behaviour. However, such an approach needs an integrated plan that is tailored to address the specific local context, needs and issues.

The discussion on various aspects of bushfire safety highlighted that people are more likely to respond to ideas and information they see as addressing their specific needs and which are locally relevant. When safety information is seen as generic it is easily dismissed as not relevant and poses little challenge to existing ideas and 'plans' about how to deal with the risk, or even how to respond if a fire occurs. Further, generic information cannot take account of local conditions and so it often does not provide the detail that people are seeking. A revised approach needs to be built around local activities that translate general information to the particular local context, uses credible locals to engage the community, and addresses local issues that are relevant to that community. Brigades are generally seen to have high credibility in their community and with more active support and training may be able to deliver these activities, or at least to have a role in supporting a 'local' CFA person. Currently, much of the activity incorporates aspects that are locality based, but does not amount to an integrated localised approach.

An example can illustrate how such an approach might work. Establishing a Neighbourhood Safer Place as a viable and widely understood shelter option requires a local strategy that addresses the current attitudes and expectations. The strategy also needs measures that reduce barriers to its implementation, and through a process of community engagement creates a facility that makes sense in a particular locality. The strategy needs to use a variety of processes to influence people's thinking about shelter options – making its establishment a salient local event, highlighting in local communication the impact of fire in the area, involving the local brigade in establishing credibility and a means of informing people, focusing on the consequences of not having a backup plan of shelter options, and familiarising people with the location and intent/purpose of the NSP. All local stakeholders need to deliver the same message, be responsive to issues identified by the community, and models of good practice ought to be promoted. While some of these ideas are currently practiced, it is the underlying principles of the approach that could form the basis for an enhanced approach. The model would involve a local, multi-agency effort, focused on specific outcomes and recognise the different needs in the community. It would use a broad range of activities that would trigger a variety of processes and levers, rather than rely on information, to influence decisions and behaviour. The approach would also involve measures to change the context in which people think about the issue, encouraging and facilitating decisions that lead to change.

Table of reference documents

Copies of the following documents can be obtained by contacting the CFA Community Safety Research and Evaluation team.

Reference number	Document title	Author	Publication date	Description
R.01	Enhancing Householder Preparedness for and Response to Bushfire: An Evaluation of Bushfire Preparedness Initiatives 2009-2010	Alan Rhodes & John Gilbert Community Safety Research and Evaluation	August 2010	Report of 2009-10 evaluation of Community Safety programs and services.
R.02	Review of Community Surveys on Preparation and Planning for Bushfire in Victoria 2002 - 2010	Alan Rhodes Manager, Community Safety Research and Evaluation	April 2011	Review of data and findings from relevant studies over approximately the past decade in Victoria to assess the extent of awareness of, preparation for and response to bushfires and whether there is evidence of change over time.
R.03	Attitudes and Preparedness of Households in High Bushfire Risk Areas: A report for the Country Fire Authority ('post-season survey')	Strahan Research	April 2011	Report of post-2010-11 fire season community survey undertaken in March / April 2011 of 623 households within 52 high fire risk townships in Victoria.
R.04	Attitudes and Preparedness of Households in High Bushfire Risk Areas: A Report for the Country Fire Authority ('pre-season survey')	Strahan Research	December 2010	Report of pre-2010-11 fire season community survey undertaken in November / December 2010 of 610 households within 52 high fire risk townships in Victoria.

Reference number	Document title	Author	Publication date	Description
R.05.1	Analysis of Key Messages and Publications Part One – Review of VBRC Findings	Emily Preece Community Safety Research and Evaluation	December 2010	Findings of analysis into VBRC recommendations regarding bushfire safety policy and key messages, and the extent to which CFA publications reflect those recommendations.
R.05.2	Analysis of Key Messages and Publications Part Two – Analysis of new bushfire safety publications for consistency with VBRC findings		February 2011	
R.05.3	Analysis of Key Messages and Publications Part Three – Representation of Key Messages in Bushfire Safety Publications and Advice		January 2011	
R.06	Perceptions of the Fire Ready Victoria Program: A Qualitative Report for the Country Fire Authority	Strahan Research	April 2011	Report of focus groups conducted in March 2011 regarding perceptions of the Fire Ready Victoria program.
R.07	Advice to Property Owners Program Survey: A Report for the Country Fire Authority	Strahan Research	April 2011	Report of telephone survey undertaken in March 2011 of 341 households that have received the Home Bushfire Advice Service (Advice to Property Owners Program).
R.08	Behaviour Change and Risk Communication: A Background Paper	Emily Preece Community Safety Research and Evaluation	March 2011	Background paper on theories and models of behaviour change as drawn from relevant literature. A Discussion Paper on the applicability of these theories to the Community Safety context is also available.