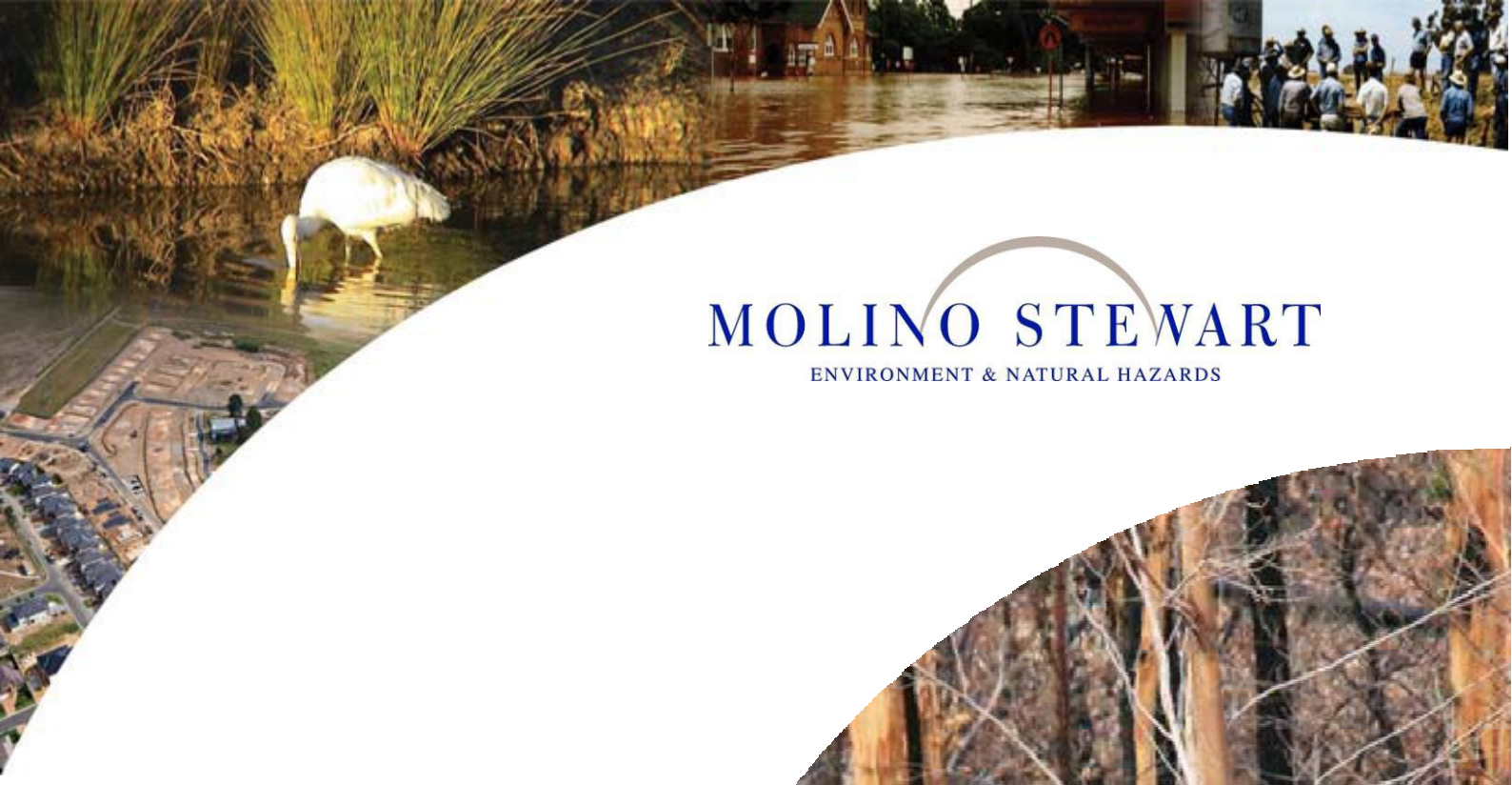

MOLINO STEWART

ENVIRONMENT & NATURAL HAZARDS

Fire Services Commissioner - Victoria

Review of Community Bushfire Warnings

Final Report

MOLINO STEWART
ENVIRONMENT & NATURAL HAZARDS

Review of Community Bushfire Warnings

FINAL REPORT

for

Fire Services Commissioner - Victoria

by

Molino Stewart Pty Ltd
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JULY 2011

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CONTENTS

APPENDICES

EXECUTIVE SUMMARY

The 2009 Victorian Bushfires Royal Commission made several recommendations that refer explicitly or implicitly to improving community bushfire warnings in the State.

In response to these recommendations and resultant actions, the Fire Services Commissioner – Victoria (FSC) believed it was timely to complete a review to gather data and evidence of best practice in order to identify and introduce improvements that ensure the community warnings system delivers the best possible outcome to the community. It engaged consultants Molino Stewart Pty Ltd to conduct the review.

There were four objectives of the review:

1. Assess the timeliness and relevance of warnings the community receives during the bushfire and ensure they lead to appropriate action.
2. Analyse the policies, procedures, practice and systems used by the Incident Management Teams in triggering, developing, distributing and ensuring action by communities during a bushfire.
3. Compare and consider other jurisdictional experience and practice in the delivery of community bushfires and other emergencies to identify areas of improvement.
4. Consider what the community needs are in regards to warnings and delivering this expectation.

In relation to these objectives, a review plan was prepared by Molino Stewart in consultation with representatives from the FSC, the Department of Sustainability and Environment (DSE), the Country Fire Authority (CFA) and the Metropolitan Fire Brigade (MFB). This plan guided the review which obtained data from interviewing key personnel (e.g. Incident Controllers and Information Officers involved in recent fires, other stakeholders) and from plans, reports, protocols and other reports.

It should be stressed that the recent fire season (2010/11) was relatively benign and therefore the review was not able to assess the community warning systems under a high level of fire activity (i.e. days of several fires across the State).

The review found that considerable progress had been made with policies, procedures, practice and systems particularly in response to the Royal Commission recommendations. These policies etc. were generally found to be appropriate and effective during the recent fire season. Some issues were identified through the review analysis including relating to the current 'clunkiness' of the One Source One Message (OSOM) system, the capabilities and capacity of Information Sections in Incident Control Centres (ICCs) and the management of Information Sections by Incident Controllers.

The timeliness of community warnings was found to be an issue in recent fires. It was largely dependent on the speed and accuracy of fire intelligence received by ICCs. The timeliness could be further improved by better OSOM and Emergency Alert ease of use and by bringing together the ICC Information Section as quickly as possible.

From the few fires in the 2010/11 season, it appeared fire-affected communities found messages to be clear and relevant particularly through Emergency Alert. There were a few issues identified in relation to the terminology used including the lack of consistency of fire language between OSOM and FireWeb.

There was little data available on community needs for warnings (Objective 4 in the review) due to the lack of recent fires, although some social research conducted after the Tostaree fire and by the CFA (e.g. preferred ways to receive information) was found to be useful.

The review found that a major gap in the current approach to community bushfire warnings in the State is a robust evaluation framework to assess all aspects of the total warning system on a regular basis and immediately after a major fire event. Molino Stewart referenced the Commonwealth Government's 'Manual 21 – Flood Warning' as a guide to improving this aspect of community bushfire warnings in Victoria.

1 INTRODUCTION

1.1 BACKGROUND

The 2009 Victorian Bushfires Royal Commission made several recommendations that refer explicitly or implicitly to improving community bushfire warnings in the State (see Section 3.1).

In response to these recommendations and resultant actions, the Fire Services Commissioner – Victoria believed that was timely to complete a review to gather data and evidence of best practice in order to identify and introduce improvements in this critical field to ensure the community warnings system delivers the best possible outcome to the community.

The Fire Services Commissioner – Victoria sought to engage a consultant that would objectively review community bushfire warnings and provide learnings from other jurisdictions and emergencies that could contribute to establishing best practices and identify improvements.

Molino Stewart Pty Ltd was engaged to conduct the review and this is its project report.

1.2 PROJECT OBJECTIVES

The objectives of the review are to:

- Assess the timeliness and relevance of warnings the community receives during the bushfire and ensure they lead to appropriate action.
- Analyse the policies, procedures, practice and systems used by the Incident Management Teams in triggering, developing, distributing and ensuring action by communities during a bushfire.
- Compare and consider other jurisdictional experience and practice in the delivery of community warnings for bushfires and other emergencies to identify areas of improvement.
- Consider what the community needs are in regards to warnings and delivering this expectation.

1.3 THIS REPORT

Section 2 of this report is an outline of the methodology used in the review and its limitations.

Section 3 provides context to the findings and discussion in the report and includes details of policies, processes, systems, procedures, roles and accountabilities related to the provision of community bushfire warnings in the State.

Section 4 is an outline of the findings of the review as guided by the review plan (see Section 2.1).

Section 5 is a discussion around possible improvements based on the findings in Section 4 and in relation to learnings from other jurisdictions and emergencies.

Section 6 is a conclusion summarising the findings and suggested improvements.

An Executive Summary is provided at the front of the report and a list of references is provided at the end of the report.

2 METHODOLOGY

2.1 THE REVIEW PLAN

The Australasian Evaluation Society is the peak evaluation and review professional body in Australia and New Zealand (see www.aes.asn.au). This review was conducted following the Society's 'Guidelines for the Ethical Conduct of Evaluations'. These guidelines cover:

1. Commissioning and preparing for an evaluation
2. Conducting an evaluation
3. Reporting the results of an evaluation.

The guidelines promote negotiation between client and evaluator to develop an agreed evaluation or review plan. The guidelines identify the following four areas about which negotiation can take place within an evaluative activity:

1. Overarching principles of the evaluation or review
2. Key player/stakeholder involvement within the evaluation and the role of the evaluator
3. Details of design and methodology
4. Recommendations, findings and utilisation.

A project meeting was held to discuss and negotiate the four areas listed above. The meeting was held on 8 April 2011 between the Project Steering Team/Project Team and Molino Stewart. The Project Steering Team/Project Team consists of representatives from the Fire Services Commissioner – Victoria (FSC), the Department of Sustainability and Environment (DSE), the Country Fire Authority (CFA) and the Metropolitan Fire and Emergency Services Board.

As Owen (2006, p.67) stresses, 'a major milestone that needs to be reached through negotiation is an evaluation plan. While there may be differences in emphasis in the degree of planning, effective use of evaluation findings is heavily dependent, in all arrangements and settings, on the degree to which the evaluator and clients agree on a plan for the evaluation. This is the up-front agreement that determines the directions the evaluation will take'.

A review plan was drafted by Molino Stewart for negotiation with the Project Steering Team/Project Team at the project inception meeting. After this meeting, the draft review plan was amended by Molino Stewart based on comments and the final plan was then endorsed by the Project Steering Team/Project Team.

The final review plan is provided in Appendix A.

Based on the broad project objectives (Section 1.2), more specific review objectives were identified in the review plan. These review objectives were to assess:

1. The appropriateness and effectiveness of policies, processes, systems, procedures, roles and accountabilities in triggering, developing and distributing warnings.
2. The timeliness and accuracy of community bushfire warnings.
3. Clarity and meaningfulness of community bushfire warnings.
4. Effectiveness of bushfire warnings in leading to appropriate community warnings.
5. The key findings from 1-4 above in comparison with experience and practices from other jurisdictions and emergencies.

The Project Steering Team/Project Team decided that the focus of the review would be on 'recent bushfires' (i.e. bushfires since February 2009 and particularly in the 2010/11 fire season) which would enable assessment of changes made as a result of the Royal Commission into the 2009 Victorian Bushfires.

2.2 INTERVIEWS

This review is largely qualitative based on the opinions of fire agencies and, where possible,

community members impacted by recent bushfires. The review plan identifies the two ways that data was collected for the review:

1. Primary or 'first-hand' data. This was obtained through telephone interviews with key stakeholders.
2. Secondary data. This was obtained from relevant documents such as reports, plans, presentations and manuals.

The telephone interviews were conducted with the following personnel involved in triggering, developing and distributing warnings:

- Five Incident Controllers from DSE, CFA and Parks Victoria
- Six Information Officers from DSE, CFA and Parks Victoria
- Four other agency staff including members of the Project Steering Team/Project Team
- Staff from other jurisdictions.

The interview questions for each group were designed based on the review plan and are provided in Appendix B.

2.3 OTHER DATA

Data was obtained from a range of secondary sources, particularly in relation to:

- The findings and recommendations of the Royal Commission into the 2009 Victorian Bushfires
- Current policies, processes, systems and procedures that trigger, develop and distribute warnings
- Current roles and accountabilities used in triggering, developing and distributing warnings
- Community responses to warnings issued in recent bushfires.

The data sources are listed in the references section (Section 7).

2.4 ANALYSIS

Guided by the review plan, the data collected from the primary and secondary sources was analysed particularly in relation to:

- Any relevant benchmarks or indicators
- The recommendations of the Royal Commission
- Any gaps identified in the review process
- Any trends or changes identified in the review process.

The findings of this analysis are provided in Section 4.

2.5 COMPARISON WITH OTHER JURISDICTIONS AND EMERGENCIES

The last step in the analysis outlined in the review plan is to compare and contrast the findings in Section 4 with learnings from other fire jurisdictions and emergencies such as flood, tsunami, earthquake and cyclone. This is reported in Section 5 prior to providing a list of suggested improvements.

2.6 LIMITATIONS

There are several limitations to this review that influence the findings and suggested improvements in this report. They are:

1. Due to the relatively wet conditions throughout Victoria (including floods in September 2010 and January/February 2011), there were few recent bushfires that could be used to gauge the efficacy of methods to warn communities. Therefore, the review depends on the perceived (untested) situation as well as that tested during a fire.
2. The data collection for the review was conducted over an agreed relatively short period of time (May 2011). Therefore, it should only be viewed as a 'snapshot' into ongoing change.

3. Only a small number of those Incident Controllers and Information Officers from throughout Victoria were sampled. This was due to agreed project time constraints and the fact that only those interviewed had experience in the few recent bushfires.

4. Molino Stewart did not conduct the social research into community responses to the recent bushfires. It therefore has no ability to verify responses provided by respondents and thus the accuracy of the social research reports used in the review. It also has to accept the social research methodologies used by these other parties.

3 CONTEXT

3.1 THE ROYAL COMMISSION RECOMMENDATIONS

There are several recommendations of the 2009 Victorian Bushfires Royal Commission that relate directly to community bushfire warnings and this review. They include:

- Recommendation 1. The State revise its bushfire safety policy. While adopting the national Prepare. Act. Survive. framework in Victoria, the policy should do the following: enhance the role of warnings – including providing for timely and informative advice about the predicted passage of a fire and the actions to be taken by people in areas potentially in its path…
- Recommendation 14. The Victorian fire agencies amend the AIIMS framework before the 2010-11 fire season in order to do the following: designate the Information Unit as a separate section reporting directly to the Incident Controller and require the Information Unit contain a dedicated Public Information Officer whenever a full incident management team is required…
- Recommendation 15. The CFA and the DSE: …Provide regular training to IMT staff, highlighting the importance of information and reinforcing the support available from specialists within the State Control Centre.

Other recommendations that relate more implicitly to this review include recommendations 2 (community education), 5 (evacuation), 18 (appointment of the Incident Controller), 22 (standardised systems, information and communications technologies), and 24 (investigating safety incidents and reporting them back to communities).

3.2 THE FIRE SERVICES COMMISSIONER

Recommendation 63 of the 2009 Victorian Bushfires Royal Commission requires that the State 'appoint a Fire Commissioner as an independent statutory officer responsible to the Minister of Police and Emergency Services and as the senior operational fire fighter in Victoria'.

In recognition of this recommendation, the Fire Services Commissioner Act 2010 was passed to 'establish the position of Fire Services Commissioner and provide for the functions and powers of the Fire Services Commissioner'. The Act also allowed for the amendments of other legislation to enable these functions and powers.

Under Section 24 of the Act, 'The Fire Services Commissioner must issue warnings and provide information to the community in relation to fires in Victoria for the purposes of protecting life and property'. Under Section 25 of the Act, 'The Fire Service Commissioner may issue guidelines, procedures and operating protocols for the purposes of Section 24'. Before issuing any guidelines, procedures or protocols, 'the Fire Services Commissioner must consult with the fire services agencies, the State Co-ordinator and the Emergency Services Commissioner'.

'The Fire Services Commissioner, by instrument, may delegate his or her duty under Section 24 to:

a. the Chief Officer of the Metropolitan Fire and Emergency Services;

b. the Chief Officer of the Country Fire Authority;

c. the Secretary to the Department of Sustainability and Environment;

d. The Chief Fire Officer of the Department of Sustainability and Environment;

e. Any other prescribed person.' (Section 26)

In March 2011, the Fire Services Commissioner issued Strategic Control

Priorities (Fire Services Commissioner, 2011) which provide guidance to Incident Controllers, Regional Controllers and the State Controller. These will often be referred as the 'State Controller's Intent' and will inform the development of the Incident Strategy and Incident Action Plan. The Priorities include 'issuing of community information and community warnings detailing incident information that is timely, relevant and tailored to help community members make informed decisions about their safety'.

3.3 POLICIES

Much of the current policy relating specifically to community bushfire warnings is driven by the recommendations from the final report of the 2009 Victorian Bushfires Royal Commission (see Section 3.1) and from the Fire Services Commissioner (see Section 3.2).

The Victorian Government has also responded to the Royal Commission Interim Report (State Government of Victoria 2010) which has driven policy. The following recommendations from the Interim Report relate directly to community bushfire warnings:

- Recommendation 4.1. The State ensure that bushfire warnings issued in Victoria: are founded on the principle of maximising the potential to save lives; embody the principles encapsulated in Recommendation 8.5 of the Council of Australian Governments report, the 'National Inquiry on Bushfire Mitigation and Management' (2004); embody the principles endorsed in the Australasian Fire and Emergency Service Authorities Council Draft Discussion Paper, 'A National Systems Approach to Community Warning' (May 2009); and incorporate the use of the Common Alerting Protocol as adapted for the Australian context.
- Recommendation 4.2. The State ensure that the content of bushfire warnings issued in Victoria reflects the principles set out in the commonwealth policy paper "Emergency Warnings – Choosing Your Words' (2008). In particular, all bushfire warnings issued in Victoria must use clear language, avoid euphemisms, and contain explicit information in relation to: the severity, location, predicted direction and likely time of impact of bushfires on specific communities and locations; and the predicted severity of impact of the bushfire and whether a specific fire poses a threat to human life.
- Recommendation 4.4. The State ensure bushfire warnings in Victoria are confined to two categories or stages: 1. Bushfire Information – a message providing information to the community on a bushfire that is 'going' and has potential to threaten public safety; and 2. Bushfire Warning – a warning to the community about any dangerous or extremely dangerous bushfire, particularly one that is burning out of control and poses a threat to human life.
- Recommendation 4.5. The State ensure that the Standard Emergency Warning System (SEWS) be used in Victoria to precede each bushfire or group of warnings for bushfires that are dangerous or extremely dangerous, particularly for a fire that is out of control and poses a threat to human life, subject to appropriate limits on the maximum frequency of use.
- Recommendation 4.6. The State invite commercial operators to enter into a Memorandum of Understanding (MOU), similar to its MOU with the ABC, on the dissemination of bushfire warning messages and the use of SEWS by those operators.
- Recommendation 4.8. The Australian Government, Council of Australia Governments and the State determine whether it is technically possible to implement the second phase of the national telephony-based warning system (that is, the delivery of warning messages to mobile phones based on the physical location of a handset at the time of the emergency) with a view to implementation for the 2009-10 bushfire season.
- Recommendation 5.1. The Australasian Fire and Emergency Services Council and the Bureau of Meteorology (BoM) collaborate with researchers to explore options for the fire danger ratings including: an additional fire danger rating beyond 'Extreme'; adjusting the 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.

- Recommendation 5.4. The State ensure that the single multi-agency portal for bushfire information be designed to allow Incident Control Centres to directly post information and warnings.
- Recommendation 5.5. The State ensure the Victorian Bushfire Information Line is funded to enable it to provide a greater surge capacity during extreme events and to improve the efficiency of its internal information function.
- Recommendation 9.3. The CFA and DSE ensure that where a Level 3 Incident Controller or officer of equivalent ranking is satisfied that a bushfire warning is required, then such an Incident Controller is authorised to release a warning where the designated Incident Controller is temporarily unavailable.
- Recommendation 10.1. The State amend the State Emergency Response Plan: so that the control agency for a fire is responsible for issuing warnings; and to remove from emergency response coordinators the responsibility of ensuring the control agency gives consideration to alerting the public to dangers and potential dangers arising from an emergency.

The State Government provided support to these recommendations (State Government of Victoria 2010) with, in some cases, provisos e.g. Recommendation 4.8 where research will be undertaken to determine the feasibility of the technology to send a message based on the location of mobile telephones.

It should also be noted that the 'Code Red' category was added as a fire danger rating above 'Extreme' (in response to Recommendation 5.1).

3.4 PROCESSES

After being alerted to a bushfire, crews arrive at an incident. They then radio initial fire intelligence to the Incident Controller at a local level. The Incident Controller or other authorised role may request assistance from the relevant Information function personnel at District, Area/Regional or State level. (SOP J4.01 1.7)

There are currently six processes available for fire agencies to communicate bushfire warnings and information to Victorian communities.

1. Direct warnings. Direct warnings (i.e. warnings delivered in person to those potentially in danger) can be carried out by fire agencies doorknocking landholders and others e.g. tourists. They can also be carried out by the use of Emergency Alert (EA) and SEWS through public address systems (see Section 3.5 for details).
2. Websites. Both DSE and the CFA have warning information and incident summaries on their respective websites. This information will be the same
3. Media. The fire agencies use the radio and television media to issue community bushfire warnings through MOUs (see Recommendation 4.6 in Section 3.3). SEWS can also be activated via radio and television.
4. The Victorian Bushfire Information Line (VBIL). VBIL provides information during and after bushfire incidents. It also offers up-to-date information and advice to help householders, landowners and small businesses reduce bushfire risk.

   Lines are open Monday to Friday between 8.00am and 6.00pm. VBIL is activated outside of normal operational hours during major incidents with the capacity to operate 24/7.

   Recorded information on specific topics can be accessed 24 hours a day. People can also email VBIL on vbil.info@dse.vic.gov.au.
5. Community liaison. Fire agencies can disseminate community warnings, advice and provide incident support and information through engagement methods such as facilitating community meetings and writing community newsletters.
6. Social media. In the Government's submission to the 2009 Victorian

Bushfire Royal Commission Interim Report, it was stated that: 'The CFA, Office of the Emergency Services Commissioner (OESC) and DSE will examine the use of alternative 'unofficial' mechanisms such as Facebook and Twitter to alert the community to the 'official' sources of information.' Activity is currently underway to enable the use of social media as a process in issuing community warnings and incident information.

There are three types of community warnings and advice messages that can be issued to Victorian communities.

1. Advice. Designed to keep people informed and up-to-date with developments
2. Watch and Act. Designed to raise situational awareness and encourage action.
3. Emergency Warning. Designed to alert people to the highest level of risk.

The choice of warning level is determined by a Fire Danger Rating (FDR) Trigger Matrix. The Matrix enables the appropriate warning level to be identified based on the Fire Danger Rating, which is either the Grassland Fire Danger Index or the Forest Fire Danger Index depending upon the location of the incident (refer to JSOP 2.03 IMT Readiness Arrangements in Section 1.6), and Time to Impact.

The Metropolitan Fire Brigade (MFB) has designed its fire warning processes, systems and protocols in line with the Royal Commission recommendations. The MFB manages approximately 70 percent of metropolitan Melbourne and within that area has some areas of bushland e.g. Plenty Gorge and parkland that are prone to bushfires. It issues four types of warnings:

1. Bushfire warnings
2. Warnings for fire and other incidents e.g. chemical leaks
3. Warning updates
4. All clear/safe.

The MFB has warning and incident summaries on its website. When this information pertains to bushfire, it will also appear on the CFA and DSE websites, and be consistent across the three sites.

3.5 SYSTEMS

The Victorian Warning Protocol (2009) 'provides emergency response agencies with coordinated and consistent direction on advice and/or warnings to inform the Victorian community of a potential or actual emergency event. The Protocol was developed under the auspices of the national warning principles'.

CFA, DSE and the MFB integrate the Victorian Warning Protocol into their agency specific emergency management practices.

The Protocol 'adopts a systems approach to timely and appropriate warnings to communities. The systems approach recognises that the intrinsically linked components of warnings rely on and build upon each other to ensure the timely and effective dissemination of advice and warnings to the community. The following seven elements are applied to ensure an effective warning system:

1. Community preparedness
2. Situational awareness and analysis
3. Decision-making and authorisation
4. Message construction and dissemination
5. Management and warning consequences
6. Real-time monitoring
7. Real-time closure.'

A Victorian Warning Notification Process is provided as an appendix in the Protocol.

There are three main technological systems that feed into the warning communication processes listed in Section 3.4.

1. One Source One Message (OSOM).

The OSOM capability supports the need to provide communities with more timely and

accurate fire information. It is a system for creating and sending messages using standard incident message templates that have been designed using the National Framework for Scaled Advice and Warnings.

Guided by the FDR Trigger Matrix, an appropriate template (13 available) is chosen by the Public Information Officer to communicate the appropriate bushfire warning at that time. The Incident Controller reviews and authorises the warning which is then sent electronically by the Public Information Officer.

OSOM enables the standard warnings to be sent simultaneously to the CFA and DSE websites, VBIL, as well as to approved email distribution lists including the ABC, commercial radio, designated community radio and Sky News. Work is currently being carried out to also have automated links with some social media sites including Facebook and Twitter.

The MFB does not have direct access to OSOM. A template has been developed to enable the MFB in the event of a bushfire to post warnings using OSOM via the State Duty Officer. In addition, the MFB utilises a number of templates to issue warnings through the MFB Website and Emergency Alert.

2. Emergency Alert.

Emergency Alert is a telephone warning system that emergency services can use to send alerts to communities via landline and mobiles based on the billing address only. Telstra is working towards a location-based system.

The current version of Emergency Alert has the following attributes:

- Up to 1,000 voice messages per minute
- Up to 500 SMS' per second
- Campaigns can run simultaneously across jurisdictions
- Operates 24/7
- Operates across all carriers and networks
- It is a fully automated campaign process
- Enables real-time display of the Interactive Voice Response (IVR) and SMS (Text Message)
- It produces campaign summary reports.

To activate an Emergency Alert, based on intelligence from the IMT the Public Information Officer creates a 'campaign' then selects the message area (geographical shapes can be imported from other mapping tools) and enters message details (35 seconds maximum for telephone messages, 160 characters maximum for mobile telephone text messages). The messages are checked for pronunciation and variables (location, action, time) prior to approving and submitting the message.

As CFA and DSE will post information (OSOM) in support of Emergency Alert, the MFB will do likewise on MFB Web Warning.

3. Standard Emergency Warning Signal (SEWS).

The signal to be used for the SEWS is the existing BoM tropical cyclone warning signal. It should be noted that SEWS is an 'attention-grabber' and a precursor to a warning message. In Victoria, it can be activated for major fires, major floods, major severe storms, earthquakes, chemical hazards and other significant emergencies.

SEWS is designed to:

- Alert the public via a media announcement that an official emergency announcement is about to be made concerning an actual or potential emergency which has the potential to affect them
- Alert the community at large, via a public address system, that an important official emergency announcement is about to be broadcast.

SEWS should only be used for the Emergency Warning category of warning. The decision to use SEWS rests with the Incident Controller.

The operational application requires information to be compiled and supplied by the Incident Controller, for compilation of the appropriate notice. The Incident Controller will then arrange for the notice to be forwarded to the relevant media outlets.

The duration of the SEWS sound should be no more than 10 seconds. The Incident Controller can vary the duration of this signal depending on the circumstances of the emergency and

the method by which the emergency warning message is to be delivered.

3.6 PROCEDURES

There are several joint CFA/DSE Standard Operating Procedures (SOPs) that relate to community bushfire warnings. These SOPs provide detailed procedures that aim to put into practice the policies, processes and systems described above.

Relevant SOPs include:

- J4.01 Incident Information and Warnings
- J2.03 IMT Readiness Arrangements
- J3.06 Briefings
- J3.02 Incident Naming
- J3.12 Evacuation during Bushfires

J4.01 is the most relevant of the SOPs to community bushfire warnings. Its objective is 'to provide guidance to CFA and DSE members, and those supporting CFA and DSE during the response to emergencies, in relation to the timely, accurate, relevant, consistent and authorised information and warnings to communities, agencies and other stakeholders for the primary purpose of protecting life'.

SOP J4.01 details procedures for the following:

1. Providing Community Warnings and Advice. Covers responsibilities including authorisations and delegations
2. Levels of Community Information and Warnings. Covers the three levels of warnings, the all clear (when fire activity in the area has subsided) plus the recommendation to evacuate (refer to Joint SOP J3.12 – Evacuation during Bushfires)
3. Information Section. Covers establishment, composition and responsibilities of the Information Section at the incident/regional and/or state level.
4. Public Information. Responsible for the preparation, coordination and dissemination of community warnings and advice messages to communities and internal and external stakeholders during an incident. At the SCC level, liaison occurs with the VBIL Team Leader.
5. Media Management. Responsible for liaising with media outlets (including spokesperson responsibilities), writing of media releases and organising media events.
6. Community Liaison. Covers decisions and guidelines to facilitate community meetings, write newsletters and the roles of Community Liaison Officers and Community Presenters.

The fire agencies have developed detailed guidelines for Information Sections both at the State Control Centre and the Incident Control Centre that outline protocols derived from the policies, processes, systems and SOPs described above.

3.7 ROLES AND ACCOUNTABILITIES

Formerly under the Australasian Inter-Service Incident Management System (AIIMS), the Information Unit was part of the Planning Section within the State Control Centre (SCC) and the Incident Control Centre (ICC). The 2009 Victorian Bushfires Royal Commission Final Report (see Section 3.1) proposed the Information Unit operate as a separate function within an IMT, sitting directly under the Incident Controller. The title of Information Unit has been replaced by Information Section to align with the titles used by the Planning, Logistics and Operations Sections.

According to SOP J4.01, the Incident Controller must authorise all information and warning messages for the community. To facilitate the rapid communication of information and warnings, the Incident Controller may authorise a Deputy Incident Controller or Information Officer to authorise the release of information and warnings to the community.

The Information Section has three functions:

1. Public - providing authorised information to information to the general public
2. Media – providing escort and liaison services to the media as directed
3. Community – presenting authorised information sessions and liaising with communities.

The public function of the Information Section involves the following responsibilities:

- Issuing warnings through OSOM
- Issuing SEWS
- Issuing Emergency Alert warnings
- Disseminating all emergency incident information to internal and external stakeholders.

Based on SOP J2.03 IMT Readiness Arrangements, at a minimum the following ICC staffing levels should be used:

- Tertiary IMT (Level 1 fire) – Information Officer
- Secondary IMT (Level 2 fire) – Information Officer
- Primary IMT (Level 3 fire) – Information Officer (Level 3), Public Information Officer and further Information Section support

The Information Section at the SCC provides the following functions in relation to community bushfire warnings:

- Providing remote assistance for the ICC Information Section with general Information Section functions for more complex incidents
- Publishing information to the web if an ICC Information Section cannot
- Assisting VBIL with difficult questions and providing them with authorised information to update their FAQ list
- Monitoring incident and escalating/scaling down roles/functions within the section in discussion with the State Duty Officer
- Monitoring information requirements, content and dissemination, and
- Monitoring information published state-wide via the web from ICCs

For Level 3 incidents, the SCC Information Section consists of at a minimum:

- Information Officer (requires the Chief Officer's endorsement
- Public Information Officer
- Media Officer
- Spokesperson

There are role statements for the following Information Section positions:

- SCC Information Section Leader (including State Information Duty Officer role)
- SCC Public Information Officer
- SCC Media Officer
- SCC Spokesperson
- IMT Information Officer (Level 3)
- IMT Media Officer
- IMT Media Escort
- IMT Media Liaison Officer
- IMT Spokesperson
- IMT Community Liaison Officer
- IMT Community Meeting Presenter
- OSOM/EA User Support Officer.

Under its system, the MFB can activate an Emergency Control Centre with an Information Unit or have the Incident Controller issue warnings through the system from the field, either directly or through an appointed Information Officer.

4 FINDINGS

4.1 APPROPRIATENESS OF POLICIES ETC

One way of gauging the appropriateness of policies, processes, systems and procedures in triggering, developing, distributing and ensuring action by communities during a bushfire is to analyse the transference of legislation and strategic planning into practice during a fire incident.

From a desktop analysis of policies etc. that is summarised in Section 3 of this report, there appears to be an appropriate strategic 'cascading down' of the Royal Commission recommendations and legislation to policies, processes, systems and procedures. All Royal Commission warnings recommendations (see Sections 3.1 and 3.3) appear to have been supported by the Victorian Government where possible (State Government of Victoria 2010) and translated into policies, processes, systems and procedures.

There appears to be an incongruity in the translation of strategies to practice in relation to the goals of community bushfire warnings in Victoria. The Fire Services Commissioner (see Section 3.2) believes community warnings should be 'timely, relevant and tailored' whereas SOP J4.01 states they should be 'timely, accurate, relevant, consistent and authorised information and warnings'. It appears that the Fire Services Commissioner's strategy has removed the goal of 'accuracy' from the intent of the SOP and added the term 'tailored'.

A further potential strategic incongruity is that the MFB does not at this stage have full access to OSOM, although that agency has generally embraced the recommendations of the Royal Commission and is a delegated authority under section 26 of the Fire Services Commissioner Act 2010. However, it has 'committed to be consistent with the Common Alerting Protocol (CAP) when a bushfire is occurring in an area within the Metropolitan Fire District (MFD). In conjunction with the CFA, an interim protocol has been developed to enable MFB Incident Controllers to ensure that a community warning for a bushfire within the MFD is posted on the CFA and DSE websites, in line with OSOM protocols.' (Metropolitan Fire Brigade, 2010)

Another way of gauging the appropriateness of the policies, processes, systems and procedures is to consider whether the warning services are available in total (or in part) to all Victorian residents. As noted in Section 3.4, there are six main ways for warnings and other information to be received by landholders. From those interviewed for this report, it appears that warnings can be obtained across all communities. Interviewees stressed the use of different warning processes in different parts of Victoria. For example, in some regional areas, most residents use radio to access warnings whereas in metropolitan areas use of the internet appears to be more prevalent. The use of Emergency Alert to directly communicate warnings via mobile and landline phones was seen by interviewees as being highly advantageous in reaching potentially fire-affected residents.

From the few recent fires (2010/11), it appears the warning processes for tourists were also appropriate. For example, in addition to the use of OSOM and Emergency Alert, community liaison techniques such as meetings and doorknocking were used to warn campers in national parks and tourists at resort towns such as Mallacoota.

The 2009 Victorian Bushfires Royal Commission (Final Report Summary, page 5) found 'it particularly worrying that nearly half of the people who died were classed as 'vulnerable' because they were aged less than 12 years or more than 70 years or because they were suffering from an acute or chronic illness or disability'. Using the broader and more sophisticated range of community warning techniques now on offer, there appears to be less chance that the vulnerable are not warned. There is also a state-wide policy for vulnerable communities and individuals. However, there is still a need for communities to share responsibility for response and especially support these people where possible.

Although interviewees generally believed that the policies, processes, systems and procedures were appropriate to trigger, develop, distribute and ensure action by communities, they identified some gaps and problems in their provision.

Several interviewees believed that there was a need for more training of Incident Controllers in better understanding the use of the community warning systems (e.g. OSOM, Emergency Alert). Although there were training courses in place for Information Section staff, it was believed further practice was required by these staff in using OSOM and Emergency Alert – it appeared that the SCC staff were better practiced in using the systems in comparison to ICC staff due to their permanency.

It was also noted that on one occasion, a training exercise in the use of OSOM resulted in a warning being posted "live" on the web for some time before it was noticed and taken down.

There was also a feeling from some interviewees that OSOM was 'clunky'. They felt it could be improved by having the Trigger Matrix as part of the computer interface e.g. as drop-down boxes (and not as a separate card). Another improvement would be to have the ability to update warning content rather than have to re-type the entire message using the templates when minor updates were needed (e.g. for road closures). It was also noted that it was difficult to communicate local knowledge through the OSOM templates and that OSOM needed to be tailored to the mediums e.g. websites, VBIL, media. According to some interviewees, it is difficult using OSOM to monitor or track where messages were sent, who they were sent to and when they are due for review.

The use of mirrored CFA and DSE websites for warning information was viewed as advantageous as it enables one to be operational if the other crashes.

The MFB provides information to the CFA and DSE websites through its interim system. It can also post fire warnings on its own website plus use Emergency Alert, SEWS, media and direct doorknocks.

One Information Officer believed that when doing planned burns, the SCC should be adequately staffed to handle community information and warnings in readiness for an escalation.

Most of the Incident Controllers mentioned their nervousness regarding SOP J3.12 Evacuation during Bushfires and wanted more training and support in relation to decision-making for it.

4.2 EFFECTIVENESS OF POLICIES ETC

There were few recent fires (e.g. Tostaree, Mount Richmond, Murgatroyd) to gauge the effectiveness of policies, processes, systems and procedures to trigger, develop, distribute and ensure action by communities. One of the few days in the past two years that there were several fires occurring concurrently was 1 February 2011.

All of the other community bushfire warning processes (see Section 3.4) have been used in at least one of the recent fires.

In a community survey related to the Tostaree fire (Quantum Market Research 2011), 61 percent of respondents claimed to have received an Emergency Alert message. Eighty three percent of those that did not receive a message were aware of Emergency Alert. One-third of Tostaree survey respondents felt the Emergency Alert system was 'great/fantastic – lives will be saved'.'

According to the Tostaree fire community survey report, 'whilst mass media information sources are more useful prior to fires, more local sources (e.g. local community meetings, ABC local radio, emergency services personnel and friends/family/neighbours) are relied upon during a fire situation'.

Incident Controllers and Information Section staff involved in these recent fires generally believed that the policies, processes, systems and procedures were effective. The use of multiple warning processes was seen as important in effectively communicating warning messages to those impacted. All stressed the need for local knowledge, local flavour and local language to be used in the community bushfire warnings.

The main issue identified from these recent fires was the need to allow local knowledge to be used to review the templates derived from the Trigger Matrix. According to some of the interviewees, in two fires if the Trigger Matrix had been solely used, incorrect warnings would have been distributed.

Another issue identified by interviewees is the need to have contingencies if OSOM fails. In a recent fire it was reported that OSOM failed for a short period and warnings had to be distributed manually.

DSE and CFA (2011) identified the following specific issues in relation to community warnings issued for the 1 February 2011 fires:

- Same fire title but different level of warning, 'This could be confusing to the public as there is not enough information regarding locations displayed in the title'. (New ways of presenting location and fire name in the title of the message are being worked on)
- Incorrect time on message. 'An Advice message was published at 5.30 PM at the earliest and time stamped with 5PM. This raises the question of delay in advice on the website.' (Actions taken to resolve this issue include a memo to Incident Controllers on warnings and the Incident Controller responsibility and an FAQ on signing warnings in a timely manner)
- Expired message on website. 'The Information Officer has not taken down the message on time'. (To ensure the message automatically is removed when the message is changed, work is proceeding on looking into a link between the relevant messages so they can be updated and taken down automatically)
- Refresh takes you to the wrong fire. "To make sure you have the latest information, you need to hit the F5 key on your keyboard. When you do you are presented with information on a different fire.' (being resolved by IT)
- Incorrect RSS feed titles affecting RSS feeds and mobile device applications. 'Mobile Applications (e.g. iPhone, iPad, Blackberry) take their information from the RSS feed so they were incorrectly displaying three Emergency Warnings and no Watch and Acts for the Hunterston Fire.' (problem resolved by IT)
- CFA website and mobile website discrepancies. 'At 11.05 PM Emergency Warning was still displaying on the main website. On the mobile site the Emergency Warning was gone. Suggests a delay in information update vs mobile site.' (problem resolved by IT)
- Delay in updating warnings summary page. 'The new Emergency Warning was issued at 7.45 PM but the time on the warnings summary page still said 6.30 PM'. (being resolved)

Regarding the Tostaree fire on 1 February, the Incident Controller said he wished that he had dispatched more engagement staff to the Orbost side of the fire to further warn communities directly in that area.

There was an Emergency Alert problem at the Murgatroyd fire with some people receiving a mobile warning, some a landline warning, some mobile & landline, and some no warning within a polygon.

The MFB has found that its system of warnings (Emergency Alert, MFB Web Warning, SEWS, direct contact and the 'interim' OSOM system) has worked well for over 20 incidents in which it has been used including two bushfires. For metropolitan fires and other emergencies it only issues emergency warnings that are either related to 'shelter-in-place' or 'evacuation'. However, the MFB continues to provide community advice via a number of mediums for incidents where no immediate action by the community is required.

4.3 APPROPRIATENESS OF ROLES AND ACCOUNTABILITIES

The structure of the Information Section at SCC, regional and ICC levels (see Section 3.7) was viewed by interviewees as appropriate, as long as staff were trained in using at least OSOM and Emergency Alert.

The elevation of the Information Section directly under the Incident Controller was viewed by almost all interviewees as an improvement as it recognised the importance of community warnings under AIIMS. The challenge was to ensure that the Information

Section is fully informed by the Incident Controller in a timely manner.

One Incident Controller preferred the 'old' structure as he felt under the new arrangements he would have to liaise with Information and Planning Sections individually which may take more time in decision-making. Other Incident Controllers reported they used their Deputy Incident Controller to assist in this process.

Three main areas for improvement regarding roles and accountabilities were identified by interviewees:

1. Training of Information Section staff particularly in ICCs. Suggested ways to improve this include mentoring of Level 3 Information Officers, more pre-season drilling and training.
2. Use of local knowledge. The need to have at least one ICC Information Section staff with local knowledge was viewed as a requirement.
3. Availability of the Information Section. This was seen as a problem particularly for ICCs. The current arrangement involves the Information Section in ICCs being brought together from DSE, CFA and Parks Victoria staff that are trained and accredited to work on different level fires. These staff have 'normal' substantive positions in the agencies. It was felt by some interviewees that at least some of these staff should be 'seconded' into Information Section roles during fire season along the lines of the seasonal Project Fire Fighters model.

Some Incident Controllers wished to have the composition of the Information Section staff better clarified to them.

A few Information Officers expressed a desire to have 'tighter' support provided by the SCC to ICCs.

Another concern was that the 'centralised' SCC approach may not work on a 'bad' day if the SCC was overwhelmed by requests for support from several ICCs.

There was also a comment that a 're-education' process is still required to show Incident Controllers how to work with more regimented warnings.

The MFB has the flexibility to establish an Information Section within a Control Centre or have its Incident Controller issue warnings from the fire.

4.4 EFFECTIVENESS OF ROLES AND ACCOUNTABILITIES

Incident Controllers and Information Officers involved in recent fires felt that although the roles and accountabilities were generally appropriate, it did take 'a while' for the ICC Information Section with local knowledge to be established and to perform in a few fires. For example, during the Boolite fire in the North West of the State it took at least two hours to bring together the Information Section at Horsham. The two officers at that fire found it difficult to cope with OSOM and all the other information functions of the Information Section.

At Tostaree, the Incident Controller believed the Information Section 'struggled initially due to lower resourcing but provided reasonable outputs based on numbers. With upsizing, the team output could have been markedly better'.

In relation to the Mount Richmond fire, the initial warnings were viewed as 'very poor' but when a skilled Public Information Officer was bought into the ICC these improved markedly.

4.5 TIMELINESS OF WARNINGS

On 1 February 2011, there were timing issues (see Section 4.2) with some warnings not being reviewed and updated in accordance with review timelines. There were issues at both ICCs on that day regarding not being able to get warnings authorised in a timely manner.

According to the Incident Controller at the Tostaree fire, the BOM had made a 'wrong' forecast for weather conditions and therefore

'the fire preparedness was not as good as it might have been'.

Apart from those issues related to accuracy mentioned in Section 4.2, the Timeliness Report for the Tostaree fire shows two inconsistencies between warnings issued through OSOM in comparison with those issued through Emergency Alert. At 14:04 a Watch & Act was issued on Emergency Alert whilst an Advice was issued on OSOM. Also, at 18:53 a Watch & Act was issued on Emergency Alert, whilst an Emergency Warning was issued on OSOM.

The Office of the Emergency Services Commissioner (OESC) conducted community consultation meetings after the Tostaree fire. From these meetings, it found that the timing of warnings was the main criticism of local residents. Apparently, some warnings issued on ABC radio - the preferred medium for receipt of warnings in this community – were up to four hours behind what was occurring at the fire. This meant that residents were receiving dated information that also impacted upon the relevance and local tailoring of warnings.

From further research conducted by the OESC after the community meetings, it appeared that the speed of information received by the IMT from the fire, the efficiency of the warning systems (technical and non-technical) and the authorising environment were major determinants in the poor timing of warning messages during the Tostaree fire.

Several of the interviewees also remarked that the timeliness was partly dependent on the speed of useful intelligence from the fire to the IMT and prior predictive modelling. They generally believed that there was a 'trade-off between timeliness and accuracy'. Some of the Incident Controllers interviewed verified that this dilemma had been an issue for them in recent fires where they had to either wait and 'err on the side of caution' or make hastier decisions with '80 percent of the intelligence available'.

Some interviewees thought that there was a strong (or even 'unrealistic') community expectation that warnings should be received almost immediately after a fire was reported. There was pressure felt by agency staff to achieve these community 'goals' for warning timeliness.

According to a few interviewees, an added impact on the timelines was the time taken to deal with the 'clunkiness' of OSOM (see Section 4.1). Time was also required to locate appropriate polygons in Emergency Alert, to check phonetics for landlines (the typed message is translated to an audio message and words, particularly place names, get mistranslated) and for calls to have priority over the general network.

One interviewee believed that 'there was still a way to go' with Incident Controllers concentrating on operations, rather than authorising community warnings in a timely manner.

The MFB warning system was seen to be working in a timely manner with the ability to issue warnings to the internet and Emergency Alert within five minutes.

4.6 ACCURACY OF WARNINGS

Interviewees generally believed the Trigger Matrix was an excellent initial guide to decision-making for community warnings. However, according to several it needed to be reviewed against local knowledge to identify the appropriate warning templates. For example, 'there can be fast running fires in low vegetation that are not high fire danger'.

It was reported that in a recent fire an ICC Information Section staff member had confused wind direction with fire direction and issued the wrong warning.

4.7 CLARITY AND MEANINGFULNESS

In a community survey related to the Tostaree fire (Quantum Market Research 2011), of those respondents that received an Emergency Alert warning 89 percent claimed they had received the 'whole message', with just three percent saying they had not. Ninety seven percent believed that the message content was clear and easy to understand.

The overarching message in the Emergency Alert warning according to the Tostaree survey respondents was 'bushfire warning/bushfire in the area'.

There was a general feeling from the interviewees that the Trigger Matrix templates had improved consistency and quality of language.

There was concern about the term 'out of control' in the templates for some fires which may convey the idea that the fire agencies were doing little whereas 'being controlled' was thought to be a more accurate terminology.

Some interviewees also noted that there is inconsistency between the terms used in the OSOM messages ('out of control' and 'being controlled') and Fire Web ('going, contained, under control, safe').

A few interviewees thought the OSOM templates were excessive in content and one believed there were too many templates.

Some interviewees believed there could be an issue with having too many 'Code Red' days ('Cry Wolf Syndrome') and people believing that they do not need to respond to a lower FDR. Several interviewees felt that this and other language used should be stressed in community education programs.

Some interviewees felt the community also needs to be aware of how a fire is named. They thought SOP J3.02 should be communicated (e.g. in websites) so that the community is aware of the use of the 'Widely Known Location' coupled with the 'Local Reference'.

The MFB believes its free text emergency warning messages are working well. It is mindful of naming incidents consistently.

4.8 COMMUNITY RESPONSES

In a community survey related to the Tostaree fire (Quantum Market Research 2011), half of the respondents that received an Emergency Alert said it told them to 'be prepared/get ready to put their emergency plan into action'. Twenty six percent said the message suggested that 'no action was required, whilst just over 20 percent could not recall the main message of the alert'.

After receiving their Emergency Alert message, 37 percent said they started to enact their emergency response plan. A further 24 percent talked to others in their household, whilst 13 percent said they evacuated. Only 18 percent said they 'did nothing'.

When asked to indicate how they would potentially respond to an Emergency Alert message on their landline or mobile in the future, 95 percent said they would 'turn on the radio'. Other popular actions included 'contacting friends/family/neighbours (92 percent), whilst three-quarters would 'follow instructions in the message'. As the survey report notes, 'importantly, just eight percent say that they would "do nothing" after receiving such an alert, suggesting the system in general encourages a behavioural response and isn't regarded as unhelpful'.

At the Tostaree fire, according to the Incident Controller a problem occurred when the main power line was cut by fire thus limiting the opportunities for community warning to mobile phones, landlines with 'traditional' handsets (i.e. not plugged into mains power) and community engagement. However, generally the communities responded appropriately he thought.

At the Mount Richmond fire, according to the Incident Controller, some people left early based on local knowledge, fire awareness and the warnings. There was apparently some community outrage directed at DSE and Parks Victoria for the hazard reduction burn getting out of control.

Several interviewees mentioned the need for shared responsibility: warnings can be well-communicated but unless community members understand what to do and are willing to act appropriately, including go early, their lives could still be in danger.

One Incident Controller believes there can be difficulties asking transient populations (e.g. campers) to leave in some circumstances because they have not received community fire education and lack situational awareness.

One Incident Controller noted an expectation from emergency broadcasters that under the

MOUs the Incident Controller will go on each radio/TV station. The possibility of sharing interview footage should be explored he felt.

The MFB reports that it generally has little opposition to its requests for people to either 'shelter-in-place' or 'evacuate'.

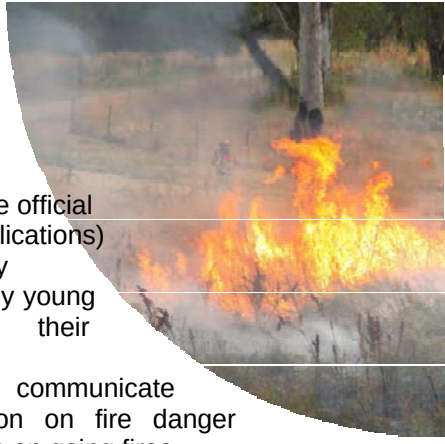
4.9 OTHER

A few of the interviewees made comments on other aspects of community bushfire warnings.

One interviewee suggested that there was a need for a better cross-hazard and cross-agency coordinated approach to community hazard warnings in Victoria.

Another interviewee believed the main community warning areas for improvement were ensuring useability of the warning systems by a range of people and having 'some flexibility in the wording of templates without going back to the bygone era of using unhelpful language'.

Several of the interviewees felt that social media such as Facebook and Twitter offer opportunities to further extend the range of community warning processes. They also offer opportunities for people to locate fires and assist in building fire intelligence through 'crowdsourcing' (e.g. when community report and map the location of a fire using mechanisms such as smart phones).



5 DISCUSSION

5.1 PROGRESS

Based on information in several reports (see Section 7 References) and the interviews conducted for this review, there has been significant progress for community bushfire warnings made by the Victorian Government in response to the recommendations in the Interim Report and Final Report of the 2009 Victorian Bushfires Royal Commission (see Sections 3.1 and 3.3).

In its report 'Making Victoria Fire Ready: Implementing the Government's Response to the 2009 Victorian Bushfires Royal Commission', the Victorian Government outlined its response to the recommendations of the Royal Commission Final Report. The report highlights achievements to date (October, 2010) in relation to the recommendations. For example, it lists the following achievements in community warnings related to Recommendation 1 in the Commission's Final Report:

- Using the national Fire Danger Rating system and three tier bushfire advice and alert system.
- Investing an additional $28.5 million to upgrade and improve bushfire warnings, intelligence gathering and alerting capability (including the development of Stage One of Emergency Alert).
- Leading the national development of the national emergency warning system, Emergency Alert which enables warnings to be sent to fixed line phones and mobile phones by billing address in a selected geographic area.
- Completing a feasibility study on behalf of all Australian Governments which confirmed that Emergency Alert could be extended to send messages to mobile phones based on their location.
- Developing the OSOM software tool to enable IMTs and the State Control Centre to send warnings simultaneously to a variety of outlets – the media, fire agency websites and VBIL.
- Developing the use of social media technology (including customised Facebook and free official iPhone applications) to assist community members, particularly young people, to gauge their level of fire readiness and to communicate important information on fire danger ratings and warnings on going fires.
- Significantly expanding the range of official emergency broadcasters in Victoria by entering into a revised MOU with the ABC and a series of new MOUs with all commercial radio broadcasters, designated local radio and Sky News.
- Providing other radio broadcasters with advice on how they can access the OSOM feed to broadcast emergency information and warnings.

The Making Victoria Fire Ready report highlights future actions (i.e. after October 2010) for community bushfire warnings in relation to Recommendation 1 in the Commission's Final Report. These include:

- Emergency Alert Phase 2. The second phase will enable warnings to be sent to mobile phones based on their physical location. The report notes that 'it is unlikely that this capability will be fully available for the 2010-11 fire season'. The report also states that 'the Victorian Government is working with the Government to determine how mobile telecommunications black spots can be addressed. The Government will also stress to the community the importance of seeking multiple sources of information on high bushfire risk days'.
- OSOM. 'The Victorian Government has provided a further $5.96 million to extend the capability and strengthen the infrastructure of the OSOM tool to cover all emergency hazards and all emergency organisations'.
- National Framework. 'The CFA and DSE have adopted the outcome of the Commonwealth Attorney-General's Department's review of the National Framework for Bushfire Advice and Alerts. These changes will enhance the timeliness and accuracy of bushfire warnings and information to the community for the 2010-11 fire season'.
- Sirens. 'The Victorian Government has provided $1 million to the CFA to facilitate

the use of sirens as a bushfire alerting mechanism where it is identified as a priority for a particular community through the development of its Township Protection Plan'.

- Official Emergency Broadcasters. 'OESC is continuing discussions with commercial and community broadcasters to increase the number of Official Emergency Broadcasters available to broadcast emergency information and warnings'.

There is also demonstration that the fire agencies have improved aspects of community bushfire warnings through specific projects. For example, commencing in the 2009/10 financial year the CFA led a project on 'Community Information and Warnings – Timeliness, Content and Form'. The project objectives included reviewing and enhancing the quality, accuracy and timeliness of warnings to communities during incidents, reviewing outlets for the dissemination of warnings, identifying 'new media' options and their use and recruiting, developing and delivering training for new and returning IMT and Information Unit personnel.

The interviews conducted and other investigations carried out in the most part validate the achievements and activities outlined above. As described throughout Section 4 of this report, there was a general belief from interviewees that there had been strong progress made particularly in relation to the recommendations in the Royal Commission reports.

5.2 ISSUES

Although there has been significant progress in relation to the recommendations of the Royal Commission and other initiatives (e.g. National Framework for Bushfire Advice and Alerts), this review has identified the following main issues for further attention.

5.2.1 Goal for community warnings

The goal of 'timely, relevant and tailored' for community bushfire warnings as issued by the Fire Services Commissioner is currently incongruous with that stated in SOP J4.01 of 'timely, accurate, relevant, consistent and authorised information and warnings'. It was reported that the Fire Services Commissioner strategy removed the goal of 'accuracy' as the IMT could be waiting for warnings until it received all fire information, thus possibly slowing the issuing of warnings to communities. The intent of the SOP needs to be changed in line with the Fire Services Commissioner's new goal for community bushfire warnings.

5.2.2 Inclusion of all agencies

Although the MFB has in most cases the same warning processes and systems (e.g. Emergency Alert, SEWS, website, community liaison) as CFA and DSE, it does not have current access to OSOM, even though the Victorian Government has in its Make Victoria Fire Ready report stated that 'The Victorian Government has provided a further $5.96 million to extend the capability and strengthen the infrastructure of the OSOM tool to cover all emergency hazards and all emergency organisations'. It is critical that the MFB and the SES is allowed access to the OSOM system to have a consistent approach to community warnings across emergency agencies in Victoria.

5.2.3 Fire intelligence

Several of the interviewees for this review raised the issue of fire intelligence radioed from the fire to the IMT as being a major determinant in the provision of timely and accurate community bushfire warnings. They also mentioned the need for robust predictive modelling as a first stage in the total bushfire warning system. Some Incident Controllers interviewed stressed that if there are issues in relation to this intelligence being received and updated, community warnings may be compromised. However, apart from the Tostaree fire, there did not appear to be any problems relating to this issue in recent fires.

5.2.4 Training

Recommendation 15 from the Royal Commission Final Report states that 'The CFA

and the DSE: …. Provide regular training to IMT staff, highlighting the importance of information and reinforcing the support available from specialists within the State Control Centre'.

Although, there are training courses in place to improve the capabilities of the Information Sections at SCC and ICC level, it appears that particularly under critical capacity the ICCs require more training and pre-season drilling. There were some errors made by Information Section staff in ICCs during recent fires (see Section 4.2 and 4.6) which may highlight the need for more training and/or better designed training.

Several interviewers also commented on the need for Incident Controllers to be further trained in understanding the functions of their Information Sections and authorising community warnings in a timely manner.

The Incident Controller's concern regarding decision-making for SOP J3.12 Evacuation during Bushfires is also an issue that should be addressed through training and discussion in other forums.

5.2.5 Staffing of the Information Section

There appears to be an issue with the staffing of Information Sections in some ICCs. In one case (Mount Richmond fire) this led to personnel at lower than a Level 3 Information Officer initially communicating warnings that apparently impacted on the quality of those warnings. At the Boolite and Tostaree fires, the initial availability of suitably trained Information Section staff at the ICC affected the time taken to commence the dissemination of community warnings.

This issue appears to be a reflection of a broader problem relating to the recruitment of trained Information Section staff for ICCs. The current recruitment arrangement involves the Information Section in ICCs being brought together from DSE, CFA and Parks Victoria staff that are trained and accredited to work on different level fires. These staff members have 'normal' substantive positions in their agencies and are not always available to take up an Information Section position in an ICC. Furthermore, particularly in the more rural areas of the State it may take considerable travel time for suitably trained Information Section staff to reach an ICC in another town (e.g. for the Boolite fire).

This also raises the question as to whether there would be enough trained information officers in ICCs and the SCC to manage the demands from multiple, significant, simultaneous fires. The past two fire seasons have been comparatively mild and the new warning arrangements and resourcing have not been tested under more severe conditions.

If, as planned, the MFB and the SES obtain access to OSOM, overall capacities for all-hazard community warnings should be increased across the State.

5.2.6 OSOM

Although there has been considerable progress with OSOM (see Section 5.1), there appears to be some problems still with its 'clunkiness' which impacts on the provision of timely community warnings. Some of these problems from the 1 February 2011 fires (see Section 4.2) have been resolved with IT sections of the agencies. However, there were still ease-of-use issues with the Trigger Matrix being external to the OSOM system, and difficulty in monitoring and tracking where messages were sent, who it was sent to and when it is due for review. There were also no contact details for messages sent to the media or internally.

The issue of local knowledge 'overriding' the templates emanating from the Trigger Matrix was also raised by several interviewees. It appears that in at least two recent fires if local knowledge was not used to override the appropriate template from the Trigger Matrix then wrong community warnings would have been issued.

It is critical for local knowledge, local flavour and local language to be used in the development of all community bushfire warnings.

The inability to tailor the content to the medium is also a current problem. Wording for a message on a website is not necessarily the

appropriate wording for a radio announcement. The customisation of warning messages to each medium can also impact on timeliness.

5.2.7 Emergency Alert

From the social research conducted for the Tostaree fire (Quantum Market Research 2011), there appears to be a reasonably high degree of satisfaction with the use of Emergency Alert. Over 60 percent of survey respondents received either a landline or mobile message through Emergency Alert. This figure is comparable with the recipient levels estimated for the Euroa floods of September 2010 (Quantum Market Research 2010).

Some interviewees mentioned that there were still some mechanical issues with Emergency Alert such as the time required to locate appropriate polygons in Emergency Alert and to check phonetics for landlines. Some Information Officers noted that the Emergency Alert officer in the Information Section should be a specialised position that requires a detailed understanding of the system (this has implications for regular training and recruitment of these positions).

5.2.8 Terminology

There was a high level of satisfaction relating to the clarity and meaningfulness of Emergency Alert messages received by Tostaree residents (Quantum Market Research 2011).

However, some review interviewees were concerned about the term 'out of control' in the templates for some fires which may convey the idea that the fire agencies were doing little whereas 'being controlled' was thought to be a more accurate terminology.

Some interviewees also noted that there is inconsistency between the terms used in the OSOM messages ('out of control' and 'being controlled') and Fire Web ('going, contained, under control, safe'). There appears to be a broader issue of consistency with the warnings between 'fire agency language' and 'public fire language'. This could be assisted by having explanation of terms used for communities e.g. on the websites.

5.2.9 Social media

As noted in Section 5.1, the fire agencies are carrying out actions to better link community warnings with social media such as Twitter and Facebook. Several interviewees raised use of social media for community bushfire warnings as a future issue. There was ample evidence (see reports in Section 7 References) that this issue is being investigated by the fire agencies. Agencies should also investigate how they will manage relationships with 'crowdsourcing' sites such as Bushfire Connect (www.bushfireconnect.org).

5.2.10 Community expectations

Most interviewees mentioned 'high' or 'unreal' community expectations for community bushfire warnings as an issue. They also believed that there was a need for the community to share responsibility for preparedness and warning response actions. Education was seen as critical in improving community understanding of bushfire warnings.

From a few recent examples, it appeared that tourists were particularly isolated from community education about bushfire warnings. Many seemed to lack situational awareness and may not be able to access or understand warnings as easily as local residents.

5.2.11 Evaluation

There was evidence of some evaluation methods that could be used to assess performance and to improve aspects of community bushfire warnings. This included a review of the timing and issues around community warnings issued for the 1 February 2011 fires using a spreadsheet and table. Community responses in relation to the Tostaree fire were obtained through social research pertaining to Emergency Alert (Quantum Market Research 2011), written feedback to the OESC and two community consultation meetings.

However, there are issues with the timing and coverage of the community response evaluations. The community consultation meetings for Tostaree were held on 27 April and 28 April (arguably far too late for people to remember specific details of fires occurring on 1 February). There was no report written on this community consultation at the time of writing this report (June 2011). Also, the community survey only covered Emergency Alert and did not investigate the performance of other warning mechanisms such as websites, media, VBIL and use of social media.

There was also evidence of an ongoing social research and evaluation program being conducted by the CFA. This research provided some indication of the way in which community members wished to obtain community warnings. For example, 'The CFA Quantitative Research Report - A Community Engagement Plan for the Country Fire Authority' undertaken by Sweeney Research in 2009 indicates that the use of emergency information lines like the Victorian Bushfire Information Line (VBIL) is less preferable than websites and radio. The research, using a sample group of 450 individuals, identified that radio was the most common medium used to find out what was happening during an emergency. Much of this research is designed to inform community education and engagement conducted by the fire agencies (Rhodes, 2011)

Although there were the abovementioned evaluations of some parts of the community bushfire warning 'system', there was no evidence found in this review of a robust evaluation framework covering all aspects of community bushfire warnings to gauge performance in a major fire event and to guide the improvement of policies, processes, systems and procedures. This also appears to be a gap in broader strategic documents such as the Victorian Warning Protocol.

5.3 LEARNINGS FROM OTHER JURISDICTIONS AND EMERGENCIES

Some other fire jurisdictions such as the NSW Rural Fire Service were contacted regarding their progress particularly with the issues discussed in Section 5.2 of this report. These agencies confirmed that they were also grappling with similar issues and in most cases were at a same stage as or 'taking the lead from' Victoria with community bushfire warnings as per the Royal Commission recommendations.

It should be noted that a system (StateAlert) similar to Emergency Alert was used in the 2011 bushfires in Western Australia which were more significant than those in the last two bushfire seasons in Victoria. This community phone warning system was reported in the media to have failed in some locations. Although specific details of these problems were unable to be obtained for this review, follow up discussion should take place with the Fire and Emergency Services Authority of Western Australia (FESA) to identify learnings which may be relevant to the use of Emergency Alert in Victoria.

There are potential learnings from the other frequent major natural disaster in Australia – floods. Some comparisons can be made between the timing of community warnings for flash floods with short duration/high intensity fires, and riverine floods with 'campaign' fires. However, there is far more certainty about flood behaviour than with bushfires.

Emergency flood agencies in Australia are guided for community warnings by Manual 21 Flood Warning (Attorney-General's Department, 2009). Manual 21 has six components in its total flood warning system. The components are:

1. Monitoring and Prediction
2. Interpretation
3. Message Construction
4. Communication
5. Protective Behaviour
6. Review

The elements of community bushfire warnings (as part of total warning system) in Victoria currently aligns well with the six components listed above. However, the main weakness in Victorian community bushfire warnings appears to be the lack of a robust review or evaluation framework (see Section 5.2.11).

In relation to the review of the flood warning system, the Manual states (pages 67-68) that 'Flood warning systems need regular attention to ensure they will function as intended and to continue to improve their performance. System review should occur at different levels and, where possible, performance indicators should be devised so system effectiveness can be assessed objectively.

'There are two levels at which review should be undertaken. These are:

- the strategic level, where the relevant Flood Warning Consultative Committee or its equivalent should be involved, along with local government; and
- the operational level, at which individual agencies examine the performance of their own functions (including performance in terms of the reactions of community members to warning messages) and their interaction with other stakeholder agencies.

'A key point about the review process is that all relevant agencies should be involved to ensure organisational changes can be implemented. Similarly, the process must be open to input from the flood-affected community, members of which are likely to have ideas about how warning systems and services can be more effectively implemented. The views of community members are essential to improving warning systems, and people should be actively encouraged to put forward their opinions on system performance and ways to improve it'.

In relation to the last point in the above quote, it has been found by this author in completing post-flood community warning reviews for NSW SES and VICSES that the following guidelines should be used:

- Complete any post-event social research (e.g. surveys, focus groups) and community meetings within four weeks of the event to enable detailed knowledge to be obtained (e.g. precise timing of receipt of community warnings) prior to it being lost from memory
- Use a multi-pronged approach to social research (e.g. both focus groups and hardcopy/online surveys) to obtain 'depth' and 'breadth' of community feedback on aspects of community flood warnings
- Cover all aspects of community flood warnings as part of the total flood warning system
- Use an experienced independent (non-government) facilitator for the focus groups and community meetings as the community can be suspicious of government controlling the meeting and reporting its own outcomes.

An example of the output from a post-event review process using these guidelines is Molino Stewart (2010) which can be found at http://www.ses.nsw.gov.au/multiversions/16561/FileName/2010%2007%20Sep%20MNC%20Community%20Survey%20Report%20with%20Cover.pdf.

5.4 SUGGESTED IMPROVEMENTS

Based on interviewee responses and the discussion in this section, the following improvements for community bushfire warnings in Victoria are suggested:

- Amend SOP J4.01and other strategic and procedural documents to reflect the goal of 'timely, relevant and tailored' for community bushfire warnings.
- Explain the meaning of 'timely, relevant and tailored' community bushfire warnings through training and meetings particularly of Information Section staff and Incident Controllers.
- Allow the MFB and SES access to using OSOM.
- Increase the regularity of training for ICC Information Section staff and encourage pre-season drilling and trials in the use of OSOM and Emergency Alert particularly under critical capacity conditions.
- Further train Incident Controllers in the management of the Information Section and its roles.
- Ensure that local knowledge, local flavour and local language is used where possible in the development of all community bushfire warnings.
- Consider the 'secondment' of staff into Information Section roles during the fire season along the lines of the seasonal Project Fire Fighters model

- Review the use of the terms in the templates e.g. ‘out of control’ so that community misconceptions are minimised.
- Ensure that warning terminology used in the templates and FireWeb is consistent.
- Encourage ICCs to use local knowledge to review templates prior to release.
- Review Emergency Alert and OSOM systems to improve ease of use.
- Improve links and interactions between the communication systems e.g. customise OSOM messages to each of the communication mechanisms, link OSOM with Emergency Alert.
- Review OSOM to enable monitoring or tracking of where messages were sent, who they were sent to and when they are due for review.
- Integrate social media into the OSOM system.
- Review the potential use of ‘crowdsourcing’ sites such as Bushfire Connect in community bushfire warnings.
- Educate and engage with fire-affected landholders about the types of warnings, what they might expect from the warnings and their responsibility for response to prevent loss of life.
- Develop a robust evaluation framework to review community bushfire warning policies, processes, systems and procedures both internally and with communities at regular intervals and immediately after a major bushfire event.
- Review the suite of community bushfire warning systems available to tourists across the State.

6 CONCLUSION

The objectives of the review were to:

- Assess the timeliness and relevance of warnings the community receives during the bushfire and ensure they lead to appropriate action.
- Analyse the policies, procedures, practice and systems used by the Incident Management Teams in triggering, developing, distributing and ensuring action by communities during a bushfire.
- Compare and consider other jurisdictional experience and practice in the delivery of community bushfires and other emergencies to identify areas of improvement.
- Consider what the community needs are in regards to warnings and delivering this expectation.

Using a review plan based on these objectives, Molino Stewart obtained relevant primary source data (from interviewing Incident Controllers, Information Officers and other key stakeholders) and secondary source data (e.g. internal reports, plans, protocols, social research reports). This data was analysed and the findings reported in Section 4 of the report.

Evidence of progress in relation to the objectives above was reported in Section 5.1. Some issues pertaining to the findings were further discussed in Section 5.2. Some learnings from other jurisdictions and emergencies were provided in Section 5.3. A list of suggested improvements from the review in relation to the objectives is provided in Section 5.4.

Little data was found related to the last objective listed above as there have been few recent fires to gauge community needs and there is no robust evaluation framework for community bushfire warnings that would trigger the access of community needs data.

It also should be noted that this review was conducted immediately after a relatively benign fire season (2010/11) and thus there was little opportunity to assess aspects of the community meetings when it is truly tested during several days of multiple fires across the State.

7 REFERENCES

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Standard Operating Procedures:

- J4.01 Incident Information and Warnings
- J2.03 IMT Readiness Arrangements
- J3.06 Briefings
- J3.02 Incident Naming
- J3.12 Evacuation during Bushfires

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APPENDIX A – REVIEW PLAN

APPENDIX B – INTERVIEW QUESTIONS