



Review of the 2010–11 Flood Warnings & Response

Interim Report by Neil Comrie AO, APM
30 June 2011





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Cover image by Adrian Martins.
*Rochester, 15 January 2011. In the January floods,
approximately 80 per cent of Rochester was
flooded and the Campaspe River peaked around
the 1 in 150 year event.*

The Victorian Floods Review thanks the following
for images appearing in this report: Rapid Impact
Assessment (page 16), Rapid Impact Assessment -
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Review of 2010 - 11 Flood Warnings and Response

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The Honourable Ted Baillieu MP
Premier of Victoria
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Dear Premier

In accordance with the terms of reference I forward herewith my interim report on the Review of the 2010–11 Flood Warnings and Response.

Although this Review has made significant progress, there is still a great deal of work to be undertaken. Consequently, I believe it would be premature to provide preliminary findings or recommendations until all relevant investigations are complete. Therefore, this report records progress made to date, an indication of the future work program and an outline of the key themes and issues that have emerged thus far.

Initially, the Review has focused on conducting community consultations across flood affected areas. The Review has also conducted extensive incident control and emergency management team debrief sessions throughout Victoria, in addition to meeting with representatives of many of the affected municipalities.

There have been a number of significant amendments to Victoria's emergency management arrangements as a consequence of the 2009 Victorian Bushfires Royal Commission. Many of these revised arrangements, including the introduction of the Emergency Alert telephone warning system, have been tested in a large scale event for the first time during the 2010–11 floods. Nevertheless, it is important that Victoria continues to build its capacity to meet the challenges of any emergency event and therefore I am reviewing such arrangements in the context of an "all hazards" approach to emergency management.

A Commission of Inquiry is also being undertaken in Queensland to examine the severe flooding and resultant tragic deaths in that state. I have taken steps to promote ongoing communication and liaison with the Queensland Inquiry.

In addition, I have put in place appropriate information exchange arrangements between the Review and the Victorian Parliament's Environment and Natural Resources Committee "Flood Mitigation Inquiry" to ensure that relevant information is referred to the appropriate Review/Inquiry.

I am confident that my final report on 1 December will address all relevant matters as determined by the terms of reference for this Review.

Yours sincerely

Neil Comrie AO, APM

30 June 2011

Executive Summary

The floods of 2010–11 in Victoria did not directly result in any fatalities but did cause major damage and disruption on a scale not previously recorded in Victoria. While some individuals and communities have made good progress in recovering from the impact of these floods, others are still suffering from the consequences of inundation of their homes, businesses and farmlands. Many are still inconvenienced by the damage caused to roads and other public infrastructure that will take a substantial period of time to repair. Indeed, at the time of writing this report, there are many Victorians who are still in the recovery phase following this natural disaster.

This Review of the 2010–11 Flood Warnings and Response (the Review) has undertaken extensive consultation with communities, local government and other government agencies through “operational debriefs”. Approximately 550 people have attended community consultation meetings in 17 locations in flood affected areas of Victoria and over 150 written submissions have been received by the Review. All relevant government departments and agencies have been provided with a detailed series of questions designed to elicit as much information as possible about the application of Victoria’s emergency management arrangements during these floods. An extensive analysis of the data provided through this consultative process should ensure that all final conclusions and recommendations of the Review are evidence based.

The Review has mapped out a broad range of further activities over the next few months, including flood-related research and the engagement of technical consultants in such critical areas as hydrology.

The fact that these floods followed a protracted drought is of significance for a number of reasons. There is no doubt that many people and organisations who are located in flood prone areas had been totally distracted from the threat of floods by devoting their energies to dealing with the dramatic consequences of drought. There is ample evidence on which to base the conclusion that Victoria was not well prepared for floods of these dimensions.

This Review has provided the unique opportunity to examine the management of these floods by all relevant Victorian authorities in the context of the learnings and outcomes of the 2009 Victorian Bushfires Royal Commission. Indeed, many of

the issues raised by the Royal Commission have been prominent in the extensive consultations undertaken by the Review. Planning, warnings, communication, training, command and control and interoperability of emergency service agencies have been consistent issues raised with the Review.

Despite the commitment and professionalism of those who fulfilled various roles for the Victoria State Emergency Service (VICSES) during these floods, it must be said that there is compelling evidence that the VICSES was simply overwhelmed by the size and protracted nature of the floods. VICSES is a relatively small emergency service agency with a limited number of permanent officers and volunteers spread across Victoria. In the absence of the capacity for VICSES to effectively fulfil its legislated role as control agency for these floods, a range of ad hoc arrangements were put in place around the state. In many instances at the local level, the Country Fire Authority filled the role of response agency in lieu of VICSES.

These ad hoc arrangements ensured that local communities were not left entirely to fend for themselves in the absence of a VICSES presence, but it is an unsatisfactory situation that currently established legislative arrangements and resource constraints lead to ad hoc arrangements in emergency situations. The Review is of the strong view that these shortcomings can only be addressed by an emergency services framework that truly provides for an “all hazards”, “all agencies” approach to emergency management.

In these circumstances, the government may wish to consider the benefit of central coordination of Victoria’s emergency services agencies to allow for maximising capacity and enhanced interoperability, training, resources and an effective multi-agency response to future emergency events facing the state.

This interim report is intended only as a progress report on the status of the Review and does not contain firm recommendations. The final report of this Review will be presented to the Premier on 1 December 2011 in accordance with the terms of reference. The final report will contain findings and recommendations that are practical and evidence based and should ensure that Victoria is better equipped in future to manage major natural disasters such as occurred with the 2010–11 floods.

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Review of the 2010–11 Flood Warnings and Response

On Tuesday 8 February 2011, the Premier, the Honourable Ted Baillieu announced a comprehensive review of flood warnings and emergency response efforts to be undertaken in the wake of severe flooding across Victoria.

The Premier said that this review would be led by Mr Neil Comrie AO, APM, former Chief Commissioner of Victoria Police and current Bushfires Royal Commission Implementation Monitor. Mr Baillieu stated that in this latter role Mr Comrie had gained significant expertise in, and understanding of, Victoria's emergency management arrangements and that there are a number of similarities between the two roles, particularly in terms of the agencies and systems involved.

Terms of reference

The Premier announced the following terms of reference for this review:

The Review of the 2010–11 Flood Warnings and Response will examine:

- the adequacy of flood predictions, including technology and modelling techniques used
- the adequacy, timeliness and effectiveness of flood warnings and public information
- emergency services command and control arrangements utilised to manage the emergency
- the adequacy of evacuations of people at greatest risk including health and aged care facilities
- the adequacy of clean-up and recovery arrangements
- the adequacy of service delivery by State and Federal Government agencies, local governments and volunteer-based organisations; and
- the adequacy of the funding provided by the State and Federal Governments in the form of emergency grants in their various categories.

This review will seek advice from experts in the field of flood management and will involve extensive community consultation, especially with regard to emergency warnings and evacuations.

Mr Comrie is required to make such recommendations arising from his review, as he considers appropriate, including recommendations for governments, emergency services, other entities and the community.

An interim report is to be provided to the Premier for the information of Cabinet by 30 June 2011 and a final report by 1 December 2011, or a later date if agreed by Cabinet.

Introduction

History of floods in Victoria¹

Major regional flooding occurs somewhere in Victoria every 10 to 20 years. In the last century major regional floods occurred in 1909, 1916, 1917, 1934, 1956, 1974, 1990, 1993 and 1998. There are 39 drainage basins across Victoria, with each comprising a number of rivers and streams. These rivers and streams are subject to flooding and travel through and around many towns and communities. These periodical floods sometimes result in significant social and economic consequences for local communities and the state. Many of Victoria's most significant agricultural areas are also located on the floodplains of most major river systems to take advantage of fertile soils.

Riverine flooding² has generally occurred in widespread areas of central Victoria, north eastern Victoria and Gippsland and there is a history of previous flooding along the Murray River and its tributaries. Major flooding has also occurred along the Yarra, Barwon and Maribyrnong Rivers, all of which has caused damage and major disruption. However, whilst less frequent, there is also a history of significant flooding in both north west and south west Victoria catchments. Catchments in the northern plains area of north west Victoria are particularly prone to significant flooding from relatively small rainfall totals once the soil has become saturated. Flash flooding³ has also occurred in regional urban areas like Geelong, Ballarat and Bendigo, and also in metropolitan Melbourne.

Long-term average flood damage costs in Victoria are estimated at \$350 million per annum.⁴ This includes both direct physical damage to properties and assets, and indirect damage arising from disruption of normal social and economic activities. However, there are many effects which cannot be evaluated in monetary terms, hence, this figure does not include the intangible impacts of flooding, such as loss of life, perceived loss of security of the home, fear of continuing severe flood events, loss of memorabilia and physical and psychological effects on human health and well being. Five years on since this estimation was made, the average damage costs are likely to be considerably higher.

Managing floods in Victoria

The Victorian Flood Management Strategy (1998) provides the strategic policy framework for flood management in Victoria. The strategy also contains a program of actions to collate the available data on floodplains and implement measures to reduce the flood risk to communities. It also importantly outlines the roles and responsibilities for governments, organisations and communities involved in flood management, including flood studies, mapping, mitigation works and flood warning. The Victorian Flood Management Strategy is currently under revision.

It is important to understand that the application of appropriate land use planning controls as part of municipal planning schemes is considered to be an effective means of minimising flood damage. Municipal councils are required to take into account flood risk when considering appropriate development on floodplains.

The management of water in storages is governed by statutory arrangements under the *Water Act 1989*. These place conditions on the use, management and supply of water. Storage managers may operate storages for flood mitigation purposes; however, not at the expense of protecting the reliability and quality of supply water.

Victoria's approach to the management of emergencies, which was developed and agreed to by emergency services and emergency management agencies, is based on the philosophy of "all hazards" and "all agencies". Emergency management in Victoria requires the active participation of the whole of government and whole of the community. The emergency arrangements are regulated through the *Emergency Management Act 1986*, which is intended to ensure an organised structure exists to facilitate planning, preparedness, operational control and coordination as well as community participation in the prevention, response and recovery from an emergency incident.

¹ State Flood Response Plan V1.4 2007, Victoria State Emergency Service, p 5

² Heavy or sustained rainfall resulting in a river or creek exceeding channel capacity resulting in inundation of the adjacent floodplain.

³ Heavy and often localised rainfall, resulting in both artificial and natural drainage systems exceeding capacity, resulting in water flowing along roads and/or land occupied by houses and other buildings.

⁴ State Flood Response Plan V1.4 2007, Victoria State Emergency Service, p 4

Many key agencies involved in emergency management also operate under their own independent Acts, some dating back to the late 1950s. Specific control and coordination arrangements during an emergency, including flood, are outlined in the Emergency Management Manual Victoria (EMMV). This manual contains procedures for dealing with emergencies of all sizes, and includes arrangements that cater for those events requiring multi-jurisdictional action, including those requiring participation from both state and commonwealth agencies.

Major emergencies occur infrequently and initially may be difficult to differentiate from lesser order events. Victoria's emergency management arrangements are intended to enable scalability. The arrangements are intended to apply to both small and large scale events.

In order to protect life, property and the environment it is necessary to have:

- an understanding of hazards that the community faces
- a program for prevention and mitigation of emergency events and their consequences
- an informed, alert and prepared community
- timely and accurate community alerts/broadcasts
- identification of those responsible for controlling and coordinating the use of emergency management resources
- acceptance of support roles and responsibilities
- cooperation between emergency services and others and acceptance of their roles in emergency management
- a coordinated approach to the use of all resources; and
- arrangements to support and enable communities as they recover from emergencies.⁵

The EMMV identifies the VICSES as the agency nominated to control response activities to a flood in Victoria. In 2007, the VICSES published the State Flood Response Plan that provides strategic guidance for effective emergency response to flood events in Victoria. The plan also describes the roles and responsibilities of agencies and organisations in flood management and key activities in responding to flood including minimising the threat and impact to people, property and the environment. A revised draft of the State Flood Response Plan is currently under development.

Consistent with any emergency event in the state, Victoria Police (VicPol) retains the responsibility for emergency services coordination during a flood, which includes ensuring that effective control has been established by the control agency and the effective coordination of resources and services. The EMMV also details the responsibilities of several other agencies involved in flood management such as the Bureau of Meteorology (BoM), municipalities, Catchment Management Authorities (CMAs), the Country Fire Authority (CFA), Department of Health (DH), Department of Human Services (DHS) and Department of Sustainability and Environment (DSE).

Control of the response to a flood broadly involves gaining control over the area impacted by the event and the resources being utilised for the event, understanding the nature and likely consequences of the event and dealing with those consequences.

The future challenge is to not only ensure that Victoria's emergency service organisations are equipped and trained to respond to emergencies but also to minimise the risk to life and property as far as possible.

The adjacent diagram illustrates the relationship between prevention, response and recovery for emergencies including in a flood management context.⁶

The primary aim of flood hazard management is to reduce community vulnerability. In this regard, it is essential that Victorians learn from the recent floods. Therefore, the recommendations in the final report of this Review will reflect the learnings from the 2010–11 flood events.

⁵ State Flood Response Plan V1.4 2007, Victoria State Emergency Service, p 4

⁶ Source: Emergency Management Manual Victoria, Part 1, October 2009, Figure 1.1, p1-6

⁷ Source: Bureau of Meteorology Monthly Weather Reviews and Special Climate Statements.

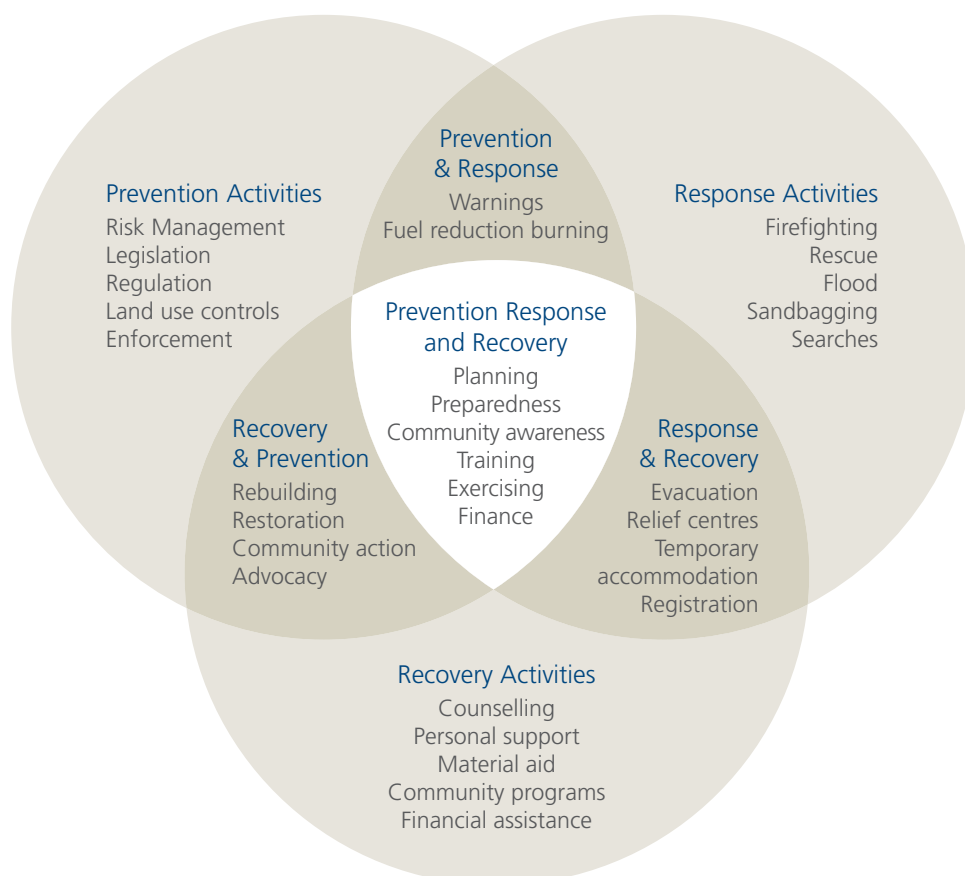
The weather influence on the 2010–11 floods⁷

From September 2010 to February 2011, Victoria experienced some of the worst floods in the state's history. This was on the back of a 14-year drought. Victorians had been focused on securing water for towns, industry and agriculture. Over 400 towns were on water restrictions and nearly 100 towns across northern Victoria on stage three or four restrictions. The drought also had significant impacts on the availability of water for irrigation.

The floods were fuelled by one of the strongest La Niña events ever recorded: ocean temperatures around Australia were near record high levels, and there were more frequent low pressure systems over Australia and more humid conditions than usual. La Niña periods are usually associated with above normal rainfall during the second half of the year across large parts of Australia and this was certainly the Victorian experience.

Heavy rain, coming from the west, began to fall on Friday 3 September, moving eastwards across the state over the weekend. Victoria was drenched, particularly at higher altitudes in the state's west and north east. Significant riverine flooding occurred over the following days as floodwaters made their way into the river systems. Major flood warnings were issued for many river systems including the Avoca, King, Ovens, Goulburn and Wimmera rivers. While the flooding was widespread and swelled many major rivers, flash flooding also occurred in several large regional towns, including Bendigo, Ballarat and Benalla. At least 200 residents were evacuated from the most severely impacted areas across the state, including Wangaratta, Charlton, Skipton, Creswick and Clunes.

Figure: Prevention, response and recovery for emergencies



From Tuesday 12 October until the weekend, flooding developed in the northern catchments, particularly along the Murray River upstream of Lake Hume. The highest rainfalls were in the north east of the state, with many places recording in excess of 120 millimetres for the four days. At the end of the month, heavy falls were recorded in central and north eastern Victoria, with major flooding occurring of the Campaspe and Loddon Rivers.

In November, heavy rain continued, particularly in the north east of the state, with Mt Hotham recording 94.4 millimetres in 24 hours. This caused further riverine flooding in the north east. The end of the month brought more heavy rainfall across the state and major flooding in the Loddon and Avoca rivers, again flooding Charlton. December brought heavy rainfall in the west of the state and parts of the north. Major flood warnings were issued for a number of rivers in the north east, with many other rivers experiencing moderate flooding.

Persistent low pressure systems and extraordinary tropical moisture led to Victoria recording its wettest January on record. This triggered flood events that were even more severe and widespread than those of September, affecting four times as many properties and over 100 towns, including the major regional centres of Echuca, Kerang, Charlton and Horsham. Between 9 and 15 January, rainfall totals of 100 to 300 millimetres were experienced across two-thirds of the state. The rainfall initially caused flash flooding across western and central parts of the state and subsequent major and moderate flooding spanning north, west and central Victoria

Once the downpour began to subside, the cumulative effects of unprecedented multi-day rainfall totals quickly caused the Avoca, Loddon, Wimmera and Campaspe river systems to swell. Despite clearing conditions, flooding continued to spread during January and into February 2011 as it developed into what was described by the media as an 'inland sea' across agricultural north west Victoria. In early February, heavy rain and thunderstorms again affected much of the state with widespread flash flooding reported around the Melbourne metropolitan area and Mildura recording a daily rainfall total of 147.4 millimetres, most of which fell in just a few hours.

From September 2010 through February 2011, the BoM issued more than 1500 flood watches and warnings. Several communities experienced flooding two and three times in less than four months.

There has been speculation as to whether the extreme weather events which led to the recent floods were caused by human induced climate change. It is not within the terms of reference for this Review to address this issue. Irrespective of the causal factors, this Review is focused on ensuring that Victoria is better able to manage such events in the future.

⁸ Source: Secretaries' Flood Recovery Group – Place Based Recovery Reports (28/4/11), Recovery Stream Report (29/4/11).

The impact of the 2010–11 floods⁸

The impact of the floods from September 2010 to February 2011 was far reaching. Approximately one-third of Victoria experienced some form of flooding or storm damage, resulting in enormous cost and disruption to regional, urban and rural communities.

Along with the substantial impact to residential property and townships, significant loss, damage and isolation to rural properties and farms was experienced. Widespread horticultural damage and loss, crop disease, soil movement and erosion, stranded and lost livestock and fodder loss occurred.

Throughout the floods, a wide variety of damage occurred to local community infrastructure including public buildings, roads, essential services such as water, electricity and telecommunications and environmental/public health issues resulting from septic overflows. Numerous disruptions to public transport and dedicated freight services also occurred.

Assessments in January and February alone indicated some form of damage to nearly 4000 houses. Over 10,000 personal hardship grants, including emergency and major grants were made. Across the agricultural sector, the Department of Primary Industries estimates that the total loss and damage exceeds \$269 million with a significant proportion of this damage in the local government areas of Mildura and Loddon. Agricultural land, particularly around Benjeroop, in the state's north west, have remained inundated for many months.

More than 4000 businesses and primary producers have been affected, either directly or indirectly by the flood events, with over 500 of these applying for clean up and restoration grants. Some of Victoria's key tourism regions, such as the Great Ocean Road, the Grampians, the Murray, the Goldfields, Daylesford and Macedon Ranges were impacted. Lost tourism revenue is estimated at around \$176 million.

Seventy-three parks or reserves suffered from the effects of the floods. For example, in the Grampians National Park there were 192 debris flows, totalling over 74 kilometres and a number of landslips, the longest being 2.38 kilometres. A significant number of bridges, visitor facilities and viewing towers were damaged in addition to over 500 kilometres of roads and 200 kilometres of walking tracks affected.

Many roads were closed during the floods, including around 1500 kilometres of local roads. These closures severely affected people travelling around local communities. Passenger and freight rail services were also disrupted.

Many of the impacts are still being felt, including the ongoing psychological toll on communities and individuals. Some of these communities and individuals may require long-term support as they recover from the impact of these floods.



Approach to the Review

Establishment of the Victorian Floods Review office

A Review team has been established under the leadership of Mr Comrie. This team has been drawn from experienced public sector and emergency management staff from the Department of Justice, VicPol, DSE, Metropolitan Fire Brigade and the Victorian Government Solicitor's Office. The Review office was established in mid-February 2011 and is located at level 2, 121 Exhibition Street, Melbourne.

Establishment of website

Early in the establishment of the Review, a Floods Review website was developed. The website is a central point to obtain information on community consultation meetings, contacting and making submissions to the Review and a means for the community and other interested parties to access information relating to the Review. This website can be accessed at www.floodsreview.vic.gov.au. The community was advised of the establishment of this website by media release on 3 March 2011.

Invitation of submissions

From 3 March 2011, the Review sought written submissions from individuals, businesses, organisations, local government and other interested parties who wished to provide information relating to their flood experience, views or knowledge. A closing date of 27 May 2011 was determined to allow sufficient time for submissions to be prepared and to enable the Review to analyse the issues and information provided. Submissions could be provided by email, post or submitted online via the Floods Review website.

More than 150 written submissions have been received, covering a range of matters relevant to the terms of reference for the Review.

Letters to all relevant government agencies and other interested parties

Formal letters were sent to relevant government and non-government agencies and organisations advising of the establishment of the Review and to detail the terms of reference for the Review. These agencies and organisations were invited to make submissions to the Review.



Review Activities

The thoughts, experiences and views of the community are fundamental to inform this Review and this has been a key focus of the initial work undertaken. Consequently, the process adopted by the Review through community consultation has provided the opportunity for individuals and communities to tell their story. This input is supported by information obtained from consultation by the Review with local government.

It is also important for the Review team to understand what our permanent paid and volunteer emergency service agencies experienced during the flood events at the local, incident control, regional and state management levels. In addition, across Victoria there are a number of organisations involved in flood planning, emergency response and in overseeing recovery. The Review is actively seeking input from these organisations.

A number of the terms of reference for this Review require an assessment of adequacy of certain arrangements or activities. Adequacy in its simplest form can be interpreted as sufficient for its intended purpose. However, these arrangements or activities should now be assessed against the experiences of the 2010–11 floods where they were “stress tested” in a pressured environment. This assessment will provide a more meaningful picture of adequacy. Consequently, the Review will examine relevant legislation, policy, procedures, systems and structures to assess whether these arrangements meet community expectations and provide Victoria with an appropriate framework to effectively manage large scale emergencies.

The Review will continue to consult widely in undertaking its work and where appropriate, the Review will seek the assistance of relevant independent technical experts such as hydrologists.



Community consultations

Community meetings were held as early as possible in the review process to ensure that relevant issues were captured while still fresh in people's minds. However, recognising that some communities were still responding to the floods or in the early phases of recovery, meetings in some areas were deferred to a more appropriate time. These community consultation meetings have now been completed.

These meetings provided an opportunity for individuals from flood-affected communities to discuss their experiences and views about key issues and to identify the best way to manage major flood events in the future.

Community consultation meetings were held in 17 regional locations during March, April, May and early June of 2011 (as shown on the map on the adjacent page). Meeting locations were selected to provide the Review with an opportunity to hear a broad spectrum of community issues, experience and knowledge based on a range of flood events and flood impact across the state. Local councils assisted in identifying appropriate centrally located areas to hold the consultations, in addition to advising on venues and recommended days to avoid clashes with other community activities. Local advertising through newspapers and other media was utilised to promote the community consultations.

The community meetings were of approximately two hours duration and led by independent facilitators on behalf of the Review. These facilitators were very experienced in this role as they had previously facilitated the Victorian Bushfires Royal Commission community consultations. The Review posed three simple, yet wide-ranging questions of participants:

- What worked well?
- What didn't work well?
- What should we do differently in the future?

Whilst the community consultations focused on the Review terms of reference, community members were neither prevented or discouraged from raising any issue related to the mitigation and management of floods. The information gathered during the community consultation meetings will be of considerable assistance in informing future avenues of inquiry for the Review.

Local government consultations

Local government has a range of responsibilities within Victoria's emergency management arrangements which are described in legislation such as the *Emergency Management Act 1986*, the *Country Fire Authority Act 1958*, the *Metropolitan Fire Brigades Act 1958*, the *Water Act 1989* and the *Health Act 1958* while other responsibilities are designated through the EMMV. The EMMV outlines the role of municipalities in prevention, mitigation and risk reduction, response and recovery.

While local government is not the lead agency to respond to any emergency, it has a support role for a range of emergencies including bushfires, flood, earthquakes and dam safety. Councils also play a significant role in the recovery from any emergency.

The Review has undertaken meetings with relevant local government representatives, including staff and councillors, to learn first hand the experiences of municipalities through the flood events. In most cases, the full gamut of flood and emergency management issues, including relief and recovery, were canvassed in these discussions. A number of local governments have made formal written submissions to the Review.

Municipalities consulted included:

- Benalla Rural City Council
- Buloke Shire Council
- Shire of Campaspe
- Cardinia Shire
- Central Goldfields Shire Council
- Corangamite Shire
- Gannawarra Shire Council
- Hepburn Shire Council
- Horsham Rural City Council
- Loddon Shire Council
- Mildura Rural City Council
- Northern Grampians Shire Council
- Pyrenees Shire
- Swan Hill Rural City Council
- Rural City of Wangaratta

Multi-agency operational debriefs

Between February and May, 13 multi-agency incident control centre (ICC) and emergency management team (EMT) debrief sessions were held across regional Victoria by the Review team.

ICC and EMT Debriefs Undertaken

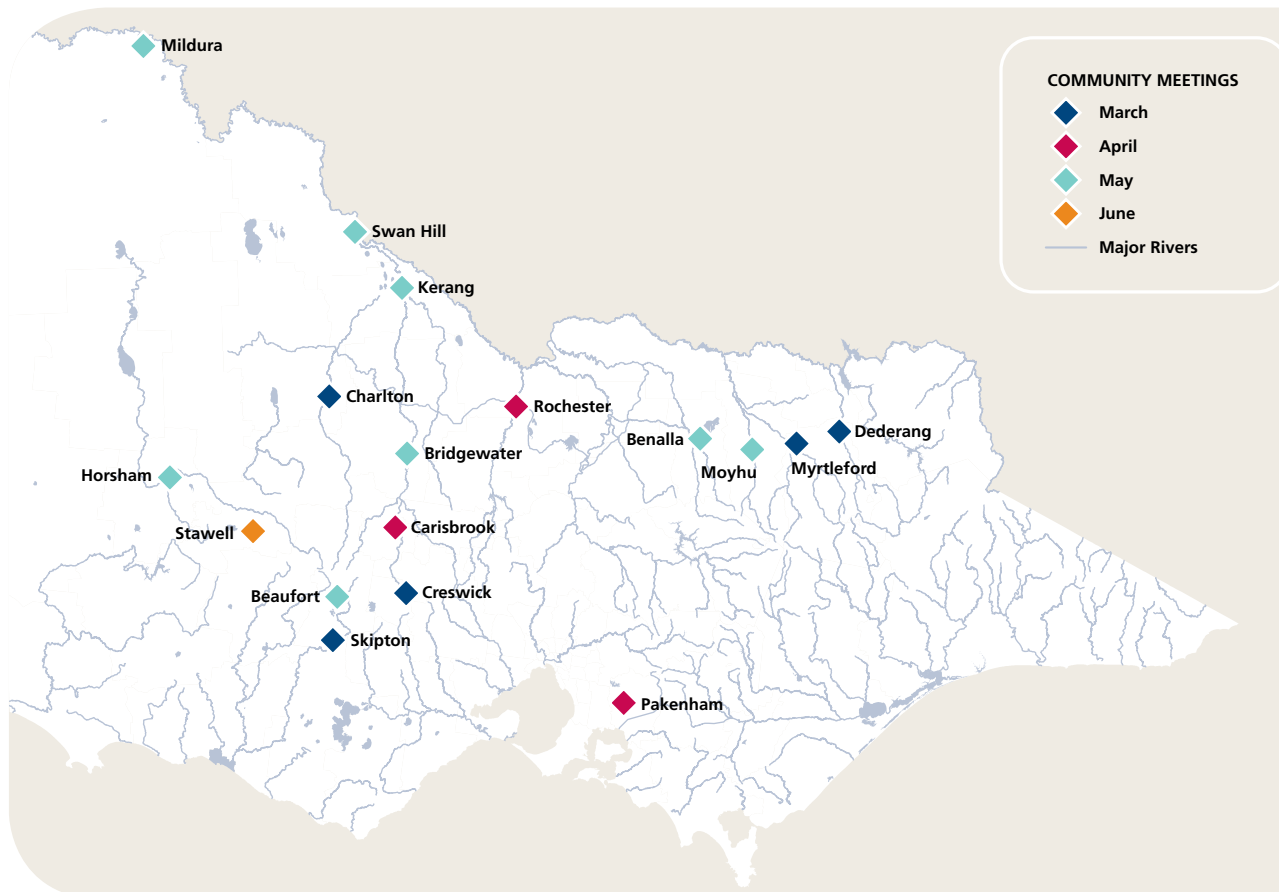
| | |
|----------------|---------------------------------|
| Ballarat ICC | Stawell EMT |
| Horsham ICC | Southern Metro (Mulgrave) EMT |
| Bendigo ICC | Bendigo EMT |
| Swan Hill ICC | Geelong EMT |
| Geelong ICC | Wangaratta EMT |
| Wangaratta ICC | Traralgon EMT |
| | Mildura Divisional Command/MECC |

At the state level, a combined State Control Centre (SCC), State Emergency Management Team and agency senior management debrief was conducted. In addition, debriefs of the individual SCC functional cells (Logistics, Resources, Intelligence, Information) were held, as well as specific debrief sessions on rapid impact assessment, management support and SCC facilities.

An independent facilitator, sourced from the Australian Emergency Management Institute, managed the ICC, regional and state level debriefs. The Review team managed and facilitated the SCC functional cell debrief sessions.

Approximately 300 emergency management organisation or agency staff attended the debrief sessions. Non-government organisations, such as the Australian Red Cross, were represented at debriefs.

Figure: Map of Victoria showing locations of community consultation meetings



Attendees were required to focus on operational matters and frank discussion was encouraged. The stated aim and objectives of the debrief sessions were:

Aim

- To improve the state's capacity to manage floods

Objectives:

- To understand the issues and pressures on staff during the floods
- To identify what worked well
- To identify what could be better
- To identify areas that could be improved.

Debriefs sought information on preparedness, response and incident management and recovery. Significantly more information was provided in relation to the response phase of the flood events due to many attendees being from emergency management organisations (e.g. VICES, CFA, VicPol) and because recovery in many regions was still in its early phases and hence difficult to evaluate.

Inspection of flood affected locations

In conjunction with the meetings with municipalities, community consultations and regional multi-agency debriefs, the Review has taken the opportunity to inspect flood affected areas across Victoria. This has enabled the Review to gain considerable insight and understanding of the impact, extent and effects of the floods on communities, agriculture, infrastructure and the landscape.

Consultation with the Environment and Natural Resources Committee Inquiry

The Victorian Government has also requested the Environment and Natural Resources Committee (ENRC) of Parliament to undertake a separate inquiry into flood mitigation. The Committee has been tasked to identify best practice and technology for flood mitigation, monitoring infrastructure and levees across Victoria. The Review has met with the ENRC secretariat, and the ENRC Chair and the Review Chair have had a preliminary discussion about information exchange. It is important that matters raised by community members or agency staff relevant to either the Review or the ENRC Inquiry, including technical information, are shared between the parties. Arrangements are being established to ensure this information sharing and exchange occurs in an efficient manner.



Input to State Coordination and Management Council – Bushfire Sub-Committee

It is appropriate that if shortcomings of substance or ongoing risks are identified in the course of the Review that immediate action is undertaken to address such issues outside of scheduled formal reports and subsequent recommendations. In the absence of any other high level emergency management focused forum, it is considered that, due to the cross-departmental, multi-agency senior representation of the State Coordination and Management Council (SC&MC) – Bushfires Sub-Committee, chaired by the Secretary of the Department of Justice, this is the most appropriate forum, at this stage, to raise matters of significance.

The 2009 Victorian Bushfires Royal Commission (VBRC) found that bushfires exposed a series of systemic shortcomings that impeded incident and emergency management in Victoria. The VBRC identified a number of primary concerns relating to command and control, information flow, community warnings, training, exercising, coordination and agency integration. In its Final Report, the VBRC made a number of recommendations including establishment of uniform incident controller accreditation, appointment of competent incident controllers regardless of control agency, appropriate location of coordination functions and standardised operation and communication technologies to achieve greater efficiency and interoperability.

Early in the work of this Review, through the agency debriefs, discussions with local government and the community consultations, it became apparent that the extent to which the state can sustain incident management capacity and capability, either in terms of significant rapid onset or sustained large-scale ongoing events, is of serious concern.

In many regions across the state, water storage levels are at or near capacity, with a low level of demand. It is envisaged that storage levels will remain high, therefore providing limited flood mitigation capacity. When coupled with saturated catchment areas the risks of further flooding cannot be ignored, nor can the possibilities of other large-scale emergencies affecting Victoria.

Despite significant work across government and emergency service organisations in developing a strategy for integrated emergency services, this work is as yet incomplete. Victoria remains without an overarching, appropriately endorsed strategy or framework to integrate preparedness, mitigation, response and recovery across Victoria's emergency services and departments to effectively manage emergencies in a truly "all hazards", "all agencies" manner, irrespective of scale and time.

There is a pressing need for an immediate improvement of Victoria's incident management capacity and capability within the context of a state emergency management strategy. The Chair of the Review recommended to the SC&MC Bushfires Sub-Committee at its meeting on 5 April 2011 that, as a matter of urgency, the sub-committee initiate appropriate action to ensure that an all hazard incident management capacity and capability is available statewide. This action should include a primary focus on the most effective means of managing the event rather than on the agency with current statutory responsibility for control of the hazard in question.

The SC&MC Bushfires Sub-Committee accepted this recommendation and convened a high-level workshop of key departmental and agency representatives at which the Review Chair outlined his concerns.

The Review understands arrangements are underway to progress the outcomes of the workshop through the SC&MC Bushfires Sub-Committee, however, the government may prefer that this crucial work is progressed through an alternative forum or means.

Detailed information requests to emergency management and stakeholder agencies

The community and local government consultations and multi-agency debriefing afforded the Review a broad overview of the flood events. They also elicited a variety of suggestions as to how the state's capacity to respond to large scale and or protracted emergency events might be enhanced in the future. Suggested enhancements spanned a diverse array of topics from specific local issues, to structural, systemic and emergency planning related matters, including training exercises and governance arrangements.

To enable the Review to further explore the merits of suggested enhancements, detailed requests for information have been provided to the various stakeholder agencies seeking views as to the operation and functionality of current state level and specific agency emergency management arrangements to contend with floods.

Detailed requests for information have been provided to stakeholders including:

- Victoria Police
- Victoria State Emergency Service
- Country Fire Authority
- Office of the Emergency Services Commissioner
- Department of Sustainability and Environment
- Department of Human Services
- Department of Treasury and Finance
- Ambulance Victoria
- Department of Primary Industries
- VicRoads
- Bureau of Meteorology
- Metropolitan Fire Brigade
- Victorian Managed Insurance Authority.

Media briefings

Media support for the Review is being provided by the Department of Justice's Strategic Communication Branch. The Review issued media releases to announce the dates of community consultation meetings and call for submissions. Local media has been used extensively to promote the community consultation meetings.

The Review Chair has undertaken a number of radio and television interviews to discuss community consultation meetings and the ongoing work of the Review, as well as being available for and giving a number of interviews following community consultation meetings.

Queensland floods

Significant flooding occurred in many areas of Queensland during late December 2010 and early January 2011, with three-quarters of the state declared a disaster zone. Tragically, a number of lives were lost in these floods. An independent Commission of Inquiry has been established by the Queensland Government to examine the unprecedented flood disaster. The Commission of Inquiry will deliver an interim report in August 2011, covering matters associated with flood preparedness to enable early recommendations to be implemented before next summer's wet season. The final report of the Commission of Inquiry will be delivered by January 2012.

There are a number of issues being addressed by the Queensland Inquiry that are of common interest to the Review and ENRC Inquiry. Consequently, the Review has met with the Commission of Inquiry to discuss these areas of mutual interest, to share knowledge and explore the potential for further research.

The Review has also met with representatives of the Queensland Police Service, Department of Community Safety, Brisbane City Council and the Queensland Reconstruction Authority to discuss relevant aspects of flood and emergency management in order to capitalise on their experiences and learnings.

Major Issues and Themes Identified

Community consultation themes

Approximately 550 people attended the community consultation meetings across the state. Whilst specific local issues were raised at each meeting, consistent themes emerged and were expressed in the majority of meetings. These included:

- general acceptance that communities had worked well to deal with the flood impact and in the recovery phase and that community spirit was a positive factor
- recognition of the value and efforts of volunteers from the emergency services and other organisations
- generally positive feedback about the establishment and operations of relief centres
- emergency funding available to individuals was appropriate and well managed
- concern expressed about the restrictive criteria applied to business/farming related grants and the delays in being able to access these grants
- confusion about where individuals could seek authoritative advice regarding their eligibility for grants
- the importance of local knowledge in the planning, preparation and management of flood events was stressed
- difficulty in providing or ignoring local knowledge by those thought to be “in control”
- lack of locally relevant, informative flood advice and information
- general desire for flood gauges/monitoring systems
- need for flood studies
- general confusion regarding the various descriptive terms used in flood and flood information
- a strong desire to understand what a flood and the consequences of flood means to individuals
- inadequate planning and preparation in some municipalities
- the timeliness and sufficiency of warnings to some residents
- late or, in many locations, no Emergency Alert warning, particularly to those residing outside towns
- confusion about who was “in charge” of managing the flood response at different locations
- no clear understanding about where responsibilities lay before, during and after a flood
- poor road closure information
- the lack of capacity and capability of VICSES to manage and undertake flood response in many locations
- maintenance and ability of drains to cope with flood waters
- the use of reservoirs and dams for flood mitigation purposes
- drought leading to general complacency around the potential for floods
- insurance related issues and the impact that these problems had on the ability of many people to recover from the impact of the floods
- inadequate access to sandbags and lack of knowledge about the filling and use of these bags in some locations.

Local government consultation themes

Many councils undertook or participated in meetings with community members during and after the floods. Depending on the type, duration and timing of the floods, the experience of individual councils differed slightly and particular localised issues existed. Similar to the community consultations, consistent themes were raised by councils. The themes included:

- limited council capacity to undertake roles during large scale and protracted events
- concern over the capacity and capability of VICSES to manage the response to large events
- limited agency resources to undertake the required incident management and support roles
- apparent lack of coordination between agencies
- availability, timeliness and accuracy of road closure information
- lack of flood studies
- disconnect between ICCs and Municipal Emergency Coordination Centres (MECCs)
- funding assurance to undertake immediate recovery works, such as clean up
- incident control apparently ignoring, discounting or not using local knowledge
- limited experience or training in emergency management of staff
- acknowledged lack of municipal flood plans
- lack of appropriate river gauges
- concern over confusing terminology used in floods to describe the dimension (height/volume) of floods
- differences in the way river heights are expressed
- communication difficulties between agencies and centres
- lack of clarity of roles and responsibilities
- difficulties in information exchange, data collection and availability
- apparent widespread indiscriminate use of Emergency Alert
- reconsideration of local planning schemes
- inadequate protection of critical community infrastructure such as power sub-stations
- criteria and processes for emergency and other individual grants to affected households and individuals
- difficulty identifying those community members, particularly farmers, who required psychosocial and other support services
- coordination of spontaneous volunteers during the flood event
- requirements to use contractors for restoration works
- understanding, applicability and practicality of the 'betterment' component in claiming reimbursement for asset repairs
- general availability of information on the range of grants and funding assistance available following an emergency.

Multi-agency operational debrief themes

A range of common themes emerged from the multi-agency debriefs that were undertaken by the Review, including:

- not all municipalities have flood emergency plans despite being located on flood plains or having a known flood risk
- flood plan development not involving all relevant agencies
- community awareness programs not linked to Municipal Emergency Management Plans (MEMPs)
- circulation of Incident Action Plans across agencies being difficult due to incompatible systems
- an inability to sustain staffing at level three incident control centres beyond a single shift
- inconsistent staffing levels and lack of experienced staff in key roles within some incident control centres
- de-escalation occurring in some incident control teams due to fatigue
- some Emergency Management Teams (EMTs) finding it difficult to remain strategic and therefore became focused on incident management
- identification of appropriate representatives to attend regional EMT meetings
- senior regional staff being utilised at incident operational level rather than the EMT strategic level
- some MECCs operating as pseudo incident control centres and being operationally focused
- control centres being established based upon staff availability rather than consideration of the nature and extent of the event
- a lack of emergency management liaison officers
- flood updates and information from the ICCs and relevant authorities was difficult to obtain
- a lack of qualified, experienced staff and poor understanding of the role of MECCs
- IT systems within ICCs not supporting multi-agency response
- some level three ICCs utilised during the floods were set up for fire with only separate DSE and CFA systems
- no common operational platform on which to operate to facilitate interagency communication
- a belief that the Emergency Alert system was overused
- differing understanding regarding the authorisation and releasing of information and warnings through the Emergency Alert system
- warnings not matching what was happening on the ground
- acceptance of the importance of the rapid impact assessment process but lack of clarity about where it sits in the incident management structure
- concern about access to information to assist in developing strategies and tactics
- transition from response to recovery did not always work well
- specific roles in the evacuation process and the mechanism for identifying those at greatest risk.

⁹ National Disaster Resilience Strategy. Commonwealth of Australia. February 2011. p iv

National Strategy for Disaster Resilience

The themes and issues that have emerged from the community and local government consultations, in addition to the multi-agency debriefs indicate that much work is still required to build resilience across the state.

On 7 December 2009, the Council of Australian Governments (COAG) agreed to adopt a whole-of-nation resilience based approach to disaster management. The National Emergency Management Council (NEMC) was tasked by COAG to develop a National Strategy for Disaster Resilience. The National Strategy for Disaster Resilience was released in February 2011 in the wake of the 2010–11 floods and other natural disasters across Australia.

The National Strategy for Disaster Resilience recognises and acknowledges that disaster resilience is a collective responsibility of all sectors of society. The National Strategy outlines the role of individuals, business, non-government organisations and volunteers. Significantly, it highlights the role of government at all levels in strengthening resilience by:

- developing and implementing effective, risk-based land management and planning arrangements and other mitigation activities
- having effective arrangements in place to inform people about how to assess risks and reduce their exposure and vulnerability to hazards
- having clear and effective education systems so people understand what options are available and what the best course of action is in responding to a hazard as it approaches
- supporting individuals and communities to prepare for extreme events
- ensuring the most effective, well-coordinated response from our emergency services and volunteers when disaster hits; and
- working in a swift, compassionate and pragmatic way to help communities recover from devastation and to learn, innovate and adapt in the aftermath of disastrous events.⁹

In developing a policy framework for the management of emergencies across all levels of government and agencies, there is a need to embrace fully the principles of the National Strategy for Disaster Resilience and support its implementation through the NEMC.



Future Work Program of the Review

Analysis of information from consultations

The broad range of issues raised during community and local government consultations and multi-agency debriefs require further analysis to inform the final conclusions and recommendations of the Review.

Analysis of written submissions

Over 150 submissions have been made to the Review by individuals, private and public sector bodies, local councils, community recovery committees, peak bodies, water and catchment management authorities and non-government organisations.

The submissions address the range of issues within the scope of the Review's terms of reference, in addition to a range of associated matters considered relevant to the broader issue of flood management.

The Review is conducting a comprehensive and detailed analysis of the submissions to identify all matters that should be considered in conjunction with the themes and issues arising from community and local government consultations and multi-agency debriefs. This will also include consideration of suggestions contained in submissions that address the Review's terms of reference.

Analysis of responses to detailed information requests

As previously discussed, detailed requests for information have been sent by the Review to key stakeholders. On receipt of this information it will be analysed and will assist in informing the final conclusions and recommendations of the Review.

Household and business telephone survey

Household and business telephone surveys are being conducted to elicit specific aspects of people's experiences of the flood events and gain an understanding of community attitudes, values and expectations of current emergency management information, processes and response services specifically related to the Victorian floods. The surveys will support and add to the information already gathered through community consultations and submissions.

One thousand households and 500 businesses are being surveyed which will enable statistical confidence in the data and outcomes. The surveys are focused on those flood affected areas where a community consultation meeting was not held. This will broaden the extent of community contribution to the Review.

A number of other surveys are also being undertaken by other agencies. For example, a survey under the auspice of the National Emergency Management Council examining the 'Emergency Alert' system has been undertaken. The Review has taken steps to liaise and share relevant results from these surveys. Significantly, this liaison will ensure that householders are not contacted multiple times for ostensibly similar information.



Review of the total flood warning system in Victoria

Academics, professionals and experts in the field of flood management, planning and response consider that best practice in flood warning is based around the integrating concept of the ‘total flood warning system’. The total flood warning system recognises that there is a range of elements and agencies involved in bringing together an effective end-to-end flood warning system. The components of the total flood warning system are:

- Monitoring of rainfall and river flows that may lead to flooding
- Prediction of flood severity and the time of onset of particular levels of flooding
- Interpretation of the prediction to determine the likely flood impacts on the community
- Construction of warning messages describing what is happening and will happen, the expected impact and what actions should be taken
- Dissemination of warning messages
- Response to the warnings by the agencies involved and community members
- Review of the warning system after flood events.

The components of the total flood warning system are interdependent and linked. To be fully effective all components must be present and operating appropriately. In addition, the system must integrate the lessons learned from episodes of flooding back into the system.

The Review is undertaking a detailed study, through expert flood consultants, to determine the status of the total flood warning system concept within Victoria and to understand what is required to achieve a total flood warning system in this state.

Examination of the 2005 Flood Warning Service Development Plan for Victoria

The Victorian Flood Warning Consultative Committee’s (VFWCC) role is to identify requirements and to coordinate the development and operation of flood forecast and warning services in Victoria. It is an advisory body to the BoM and participating state government agencies. The VFWCC reports to the Victoria Emergency Management Council (VEMC) and also provides advice on flood warning policy to the State Flood Policy Committee (SFPC).

In 2005, the VFWCC released the Flood Warning Service Development Plan for Victoria to determine flood warning service development priorities. Release of the plan followed an evaluation and review of the components of the warning service based on a consideration of economic, social and related factors. The development plan contained 22 recommendations that collectively identified improvements to flood warning.

The Review is aware of action having been taken on a number of the recommendations, however, it is appropriate that an examination is undertaken of the status and efficacy of the recommendations in light of the recent flood events. This examination will be undertaken through expert consultants on behalf of the Review.

Analysis of grants and budget commitments for flood related activity

Following the floods, both the federal and state governments provided a range of grants and funding to various agencies and local councils to undertake flood studies, collect flood information and address gaps in the warning systems.

The 2011–12 Victorian Budget also provided \$19 million to VICSES for command and control and operational capability. A \$12.1 million allocation has also been made to develop Floodzoom, a web-based tool providing flood behaviour prediction designed to improve the effectiveness of warnings and flood response.

The Review will assess the extent to which these allocations and their expected outcomes will contribute to flood warnings and response.

Media monitoring and analysis

The Review will analyse media coverage of the floods to capture any issues not raised in the consultations.

The Review undertakes daily media monitoring related to flood management and recovery to ensure ongoing awareness

Consultation with stakeholders

The Review will continue to consult with stakeholders across government, emergency services and other related organisations. It is appropriate that input from stakeholders is sought as the Review progresses and that those stakeholders who may be affected by recommendations of the Review are consulted to ensure that their views and perspectives are taken into account in any subsequent findings.

Engaging technical expertise

Understanding flood and flood management involves highly technical relationships between weather, rainfall, topography, water movement and associated data. Where it is considered necessary, the Review will engage technical expertise in the form of hydrologists, meteorologists, flood intelligence practitioners and others to ensure that expert knowledge and best practice informs the work of the Review.

Review of flood related reports and literature

A wealth of information exists relating to flood. A comprehensive array of reports have been prepared by governments, academics and professionals relevant to flood, nationally and internationally, such as the 2008 Pitt Review of the Summer of 2007 Flood in the United Kingdom. The Review will examine these and other publications to inform conclusions and recommendations.



Conclusion

There remains a considerable amount of work for the Review to undertake, including research and input from technical experts. A large amount of material drawn from community, local government and key stakeholder consultation will now be analysed. The extensive future work program of the Review will ensure that all available relevant material is considered by the Review in the next few months. This process will elicit the necessary evidence to inform practical recommendations and conclusions designed to deliver an enhanced capability and capacity for Victoria to manage major emergencies such as the 2010–11 floods. In these circumstances, it would be inappropriate for the Review to make any firm findings or recommendations in this interim report.

Nevertheless, the Review team is of the strong view that despite the best endeavours of the state's paid and volunteer emergency management personnel, the current legislation, policy and structures that constitute the emergency management framework in Victoria is of major concern. This framework does not effectively support an "all hazards" approach to emergency management.

Although it can be stated with confidence that the emergency service organisations in Victoria respond very well to lower and moderate level emergencies, they have been severely tested by the Black Saturday bushfires in 2009 and the 2010–11 floods.

Although a great deal of work has been undertaken already to address the recommendations of the VBRC, most of this work has been focused on the hazard of fire. This Review has examined emergency management in Victoria from another perspective – floods.

Based on my experience as the Bushfires Royal Commission Implementation Monitor and on the evidence already to hand at the Review, I have concluded that there are fundamental flaws in the Victorian emergency management framework.

Although the clear intent of the *Emergency Management Act*, the State Emergency Response Plan and the EMMV is to provide for an "all hazards", "all agencies" approach to emergency management, this has not occurred in reality. In the absence of an effective enabling policy framework to "drive" this philosophy, the emergency services agencies in Victoria operate in a siloed structure with each agency focused on legislated obligations to address specific hazards.

Given the very real potential for future floods, fires and other major emergencies, it is imperative that these fundamental flaws are addressed as a matter of urgency. Immediate action is required to reconstruct the relevant legislation, policy, procedures and structures to deliver an effective "all hazards", "all agencies" approach to emergency management in Victoria.

List of acronyms

| | |
|------------------|---|
| BoM | Bureau of Meteorology |
| CFA | Country Fire Authority |
| CMA | Catchment Management Authority |
| DHS | Department of Human Services |
| DH | Department of Health |
| DSE | Department of Sustainability and Environment |
| EMT | Emergency Management Team |
| EMMV | Emergency Management Manual Victoria |
| ENRC | Environment and Natural Resource Committee |
| ICC | Incident Control Centre |
| MECC | Municipal Emergency Coordination Centre |
| MEMP | Municipal Emergency Management Plan |
| SCC | State Control Centre |
| SC&MC | State Coordination and Management Council – Bushfires Sub-Committee |
| VBRC | Victorian Bushfires Royal Commission |
| VICSES | Victorian State Emergency Service |
| VicPol | Victoria Police |

Glossary of terms¹⁰

This glossary defines or explains terms which have a restricted or technical meaning in the context of the emergency management arrangements in Victoria. Where an entry is marked [Act], the definition is the same as or is similar to the meaning given in the *Emergency Management Act 1986*.

Within each entry, a word or phrase expressed in *italics* indicates a separate entry exists for that word.

Agency

An agency means a government agency or a non-government agency. [Act] (See also *Emergency Services / Emergency Services Agency*)

Command

Command refers to the direction of personnel and resources of an agency in the performance of that organisation's role and tasks. Authority to command is established in legislation or by agreement within an agency. Command relates to agencies and operates vertically within an agency.

Control

The overall direction of response activities in an emergency. Authority for control is established in legislation or in an emergency response plan, and carries with it the responsibility for tasking other agencies in accordance with the needs of the situation. Control relates to situations and operates horizontally across agencies.

Control Agency

An agency nominated to control the response activities for a specified type of emergency.

Control Centre/Command Centre (e.g. ICC)

Facilities from which site, region/area of operations, and state level functions can be carried out.

Accordingly, response agencies should provide appropriate physical and technical infrastructure to support those personnel appointed as Incident Controllers, Agency Commanders, and representatives of the organisations that support them. Any centre established for this purpose shall be named based on the function it supports, e.g. control centre, command centre, operation centre.

Co-ordinate/Co-ordination

Co-ordination involves the bringing together of agencies and resources to ensure effective response to and recovery from emergencies. The main functions of co-ordination are:

- in relation to response, ensuring that effective control has been established and maintained, and
- the systematic acquisition and allocation of resources in accordance with the requirements imposed by emergencies.

Co-ordination operates throughout the management of response and recovery activities. Victoria Police is the co-ordination agency for response and the Department of Human Services is the co-ordination agency for recovery.

¹⁰ Emergency Management Manual Victoria. Part 8 November 2010.

Co-ordination Centre

A co-ordination centre is a facility that may be utilised during a complex or protracted emergency, primarily to co-ordinate the provision of resources.

Co-ordination centres may operate at municipal, regional and state levels. (See also *Municipal Emergency Co-ordination Centre*)

Disaster

A term not in general usage within Victoria's arrangements, where it would be taken to mean the same as emergency. Under the Act, an emergency is termed a disaster only if a state of disaster has been declared.

Emergency

An emergency due to the actual or imminent occurrence of an event which in any way endangers or threatens to endanger the safety or health of any person in Victoria or which destroys or damages, or threatens to destroy or damage, any property in Victoria, or endangers or threatens to endanger the environment or an element of the environment in Victoria including, without limiting the generality of the foregoing:

- (a) an earthquake, flood, wind-storm or other natural event; and
- (b) a fire; and
- (c) an explosion; and
- (d) a road accident or any other accident; and
- (e) a plague or an epidemic; and
- (f) a warlike act, whether directed at Victoria or part of Victoria or at any other State or Territory of the Commonwealth; and
- (g) a hi-jack, siege or riot; and
- (h) a disruption to an essential service. [Act]

Emergency Management

The organisation and management of resources for dealing with all aspects of emergencies. [Act] Emergency management involves the plans, structures and arrangements which are established to bring together the normal endeavours of government, voluntary and private agencies in a comprehensive and co-ordinated way to deal with the whole spectrum of emergency needs including prevention, response and recovery.

Emergency Management Liaison Officer (EMLO)

An emergency management liaison officer is a person appointed by an agency, who:

- represents his/her agency in
 - another agency's facility utilised to manage an emergency response; or
 - a coordination centre; or
 - an emergency management team; and
- is empowered to commit, or to arrange the commitment, of resources of the agency to the response to an emergency; and

- represents the interests of the agency and provides advice in relation to impacts and consequence management.

The EMLO may be named Emergency Services Liaison Officer (ESLO) by some agencies.

Emergency Management Team (EMT)

An emergency management team is the team which assists a controller in formulating a response strategy and in its execution by all agencies, and which assists the Emergency Response Coordinator in determining resource acquisition needs and in ensuring a coordinated response to the emergency. (See also *State Emergency Management Team*)

Emergency Recovery

Has the same meaning as *recovery*.

Emergency Relief

The provision of life support and essential needs to persons affected by an emergency. (See also *Emergency Relief Centre*)

Emergency Relief Centre

An Emergency Relief Centre is a building or place established to provide life support and essential needs to persons affected by an emergency (including evacuees). Emergency relief centres are established on a temporary basis to cope with the immediate needs of those affected during the initial response to the emergency. They do not imply any longer-term use of facilities as a location for recovery services.

Emergency Response

Has the same meaning as *response*.

Emergency Response Co-ordinator

A member of the Victoria Police appointed as state, regional, municipal or field emergency response co-ordinator, whose role is to *co-ordinate* the response to an emergency.

Emergency Response Plan

A plan which sets out the roles and responsibilities of agencies in emergency response and the control and co-ordination arrangements which are to be utilised. [Act]

Emergency Services / Emergency Services Agency

There is no general purpose definition for either of these terms. The range of agencies covered by the terms varies according to their specific administrative, operational or legislative context. Victorian legislation includes the following examples. The definition of 'emergency services agency' in the *Emergency Management Act 1986* refers to agencies such as VICSES and any other prescribed agencies such as ESTA. (S. 4) This definition is used in Part 4A of the Act to identify agencies whose standards and performance are monitored by the Emergency Services Commissioner. In the *Emergency Services Telecommunications Authority Act 2004* 'emergency services and other related services organisation' is defined as any of the following, AV, CFA, MFESB, VicPol, VICSES, any government agency, and other related agencies including organisations that provide services related to the agencies specified above and prescribed persons or bodies. (S. 3) In section 87C of the *Sentencing Act 1991*, the term 'emergency services agency' is included in relation to court orders for recovery of costs incurred by emergency services in responding to certain crimes. The definition covers: VicPol, MFESB, CFA, VICSES, Ambulance Service, a hospital or any other body that employs or engages an emergency service worker, such as a protective services

officer or a *volunteer emergency worker*. In the *Terrorism (Community Protection) Act 2003*, the term 'emergency services agency' is used in relation to decontamination procedures conducted under police direction. The definition covers the CFA, MFESB, other state territory or commonwealth fire services, or any other prescribed agency. (S. 15)

Essential Service

Defined as: transport; fuel (including gas); light; power; water; sewerage; or a service (whether or not of a type similar to the foregoing) declared to be an essential service by the Governor in Council. [Act]

Evacuation

The planned relocation of persons from dangerous or potentially dangerous areas to safer areas and eventual return. The purpose of an evacuation is to use distance to separate the people from the danger created by the emergency.

Evacuation Centre

See *Relief Centre*

Incident

The word incident has the same meaning as *emergency*. In this Manual, the term incident management and related terms, such as *incident controller*, are used in response management to clearly differentiate between the activities involved in incident management and the activities of *emergency management* as a whole.

Incident Controller

The Incident Controller is a member of the control agency whose role is to provide leadership and management to resolve the emergency at the incident site. This is the agency's forward controller and operates in close proximity to the incident. (See also *Regional Controller* and *State Controller*)

Incident Management System (IMS)

A system used by agencies undertaking their management responsibilities in response to an emergency. An Incident Management System is not a fixed set of rules, but rather a flexible and dynamic methodology which can cater for an escalation or change in the severity of any emergency. The system is established by a *response agency* and will involve use of personnel for the various functions which may need to be individually managed. Incident management functions might include, but are not limited to: control, planning, operations, logistics, intelligence, information, investigation, finance or administration.

Incident Management Team (IMT)

An incident management team comprises the *incident controller* and the personnel responsible for the other functions (principally planning, operations and logistics) forming the *incident management system*.

Lead Agency

Lead agency refers to an agency that has responsibility for co-ordinating the development of strategies in respect to one of the functional areas of *recovery*. Lead agencies will be required to undertake this role at a state and regional level.

Mitigation

Measures taken in advance of, or after, a *disaster* (emergency) aimed at decreasing or eliminating its impact on society and the environment.

Municipal Council (or Council)

The local government body for a municipal district.

Municipal District

The district under the local government of a council.

Municipal Emergency Coordination Centre (MECC)

A Municipal Emergency Coordination Centre (MECC) is a facility which brings together key agencies, to coordinate the provision of council and community resources during an emergency for the response and recovery effort. The MECC facilitates activities of key personnel from local and state government agencies, emergency services and others as required to assist.

Municipal Emergency Resource Officer (MERO)

A municipal appointee responsible to the municipal council for ensuring the co-ordination of municipal resources to be used in *emergency response*. [Act]

Municipal Emergency Response Coordinator (MERC)

A member of Victoria Police appointed to a municipal district as municipal emergency response coordinator. [Act s. 13(1)]

Municipal Recovery Manager (MRM)

A municipal appointee responsible to the municipal council for ensuring the co-ordination of municipal resources to be used in *recovery*.

National Emergency Management Committee (NEMC)

The Committee, chaired by the Secretary of the Attorney-General's Department, comprising representatives of State and Territory peak emergency management committees, including the Victoria Emergency Management Council, which addresses emergency management issues at a national level, and is the senior officials group to the Ministerial Council for Police and Emergency Management – Emergency Management.

Natural Disaster Financial Arrangements

The arrangement maintained and administered by the Department of Treasury and Finance under which local authorities such as municipal councils and catchment management authorities are reimbursed some of the expenditure they incur in emergency response and recovery for *natural disasters*.

Natural Disaster Relief and Recovery Arrangements (NDRRA)

The arrangements under which the Commonwealth Government financially assists the State Government to incur eligible expenditure for persons and organisations following *natural disasters*.

Natural Disasters

Those emergencies defined by the Commonwealth for the purposes of the *Natural Disaster Relief and Recovery Arrangements*. A natural disaster is a serious disruption to a community or region caused by the impact of a naturally occurring rapid onset event that threatens or causes death, injury or damage to property or the environment and which requires significant and coordinated multi-agency and community response. Such serious disruption can be caused by any one, or a combination, of the following natural hazards: bushfire; earthquake; flood; storm, including hailstorm; cyclone; storm surge; landslide; tsunami; meteorite strike or tornado. (*NDRRA Determination 2007 Clause 2.1*)

Prevention

The elimination or reduction of the incidence or severity of emergencies and the mitigation of their effects. [Act]

Recovery

The assisting of persons and communities affected by emergencies to achieve a proper and effective level of functioning. [Act]

Recovery Agency

Means an agency having a role or responsibility under the State Emergency Recovery Plan or in the recovery arrangements.

Recovery Centre

A Recovery centre is a building in which a coordinated process of support to affected communities in the restoration of their emotional, social, economic and physical wellbeing is provided.

Regional Controller

The role of the Regional Controller is to provide leadership and management across a series of emergency sites within a Victorian Government region. The Regional Controller operates regionally and may be appointed by the *State Controller* or self-initiated prior to State Control being established.

Regional Emergency Response Coordinator

A commissioned officer of Victoria Police appointed for a Victorian Government region as Regional Emergency Response Coordinator. [Act s. 13(1)]

Regional Recovery Co-ordinator

The person appointed by the State Emergency Recovery Co-ordinator to carry out regional recovery planning and management functions.

Regional Recovery Plan

The emergency recovery plan prepared and maintained for each recovery region.

Regional Response Plan

The emergency response plan prepared and maintained for each response region.

Relief

See *emergency relief*

Relief Centre

See *emergency relief centre*

Resource Supplementation

The provision of resources in emergencies to response agencies by other than their internal resource acquisition systems.

Response

The combating of emergencies and the provision of rescue and immediate relief services. [Act]

Response Agency

An agency having a role or responsibility under the State Emergency Response Plan or the response arrangements. Response agencies can be control or support agencies for different emergencies.

Response Co-ordinator

See *Emergency Response Co-ordinator*

State Controller

The role of the State Controller is to provide strategic leadership for the response to emergency(s) across Victoria. This role is performed by a senior operational person from the control agency.

State Emergency Response Co-ordinator

The State Emergency Response Co-ordinator is the Chief Commissioner of Police. The role of the State Emergency Response Co-ordinator is responsible under the State Emergency Response Plan for the co-ordination of activities of agencies having roles or responsibilities in relation to the response to emergencies. [Act] (See also *Emergency Response Co-ordinator*)

State Control Centre

See *control centre/command centre*

State Emergency Management Team (SEMT)

The State Emergency Management Team (SEMT) may be formed in the event of a significant emergency involving a multi-agency response, by the State Controller (or representative) or the State Emergency Response Co-ordinator (or delegate / representative). The SEMT comprises senior representatives from response, recovery and other agencies. The function of the SEMT is to:

- facilitate a discussion to enable agencies to develop a consistent situational awareness regarding the emergency(s)
- identify and manage strategic risks and consequences, and
- develop a plan outlining high level actions of all agencies.

State Recovery Co-ordinator

A Senior Officer of the Department of Human Services, (appointed by the Co-ordinator in Chief as the co-ordinating agency for recovery) appointed by the Department as State Recovery Co-ordinator, to ensure the overall coordination of recovery in Victoria.

Support Agency

An agency which provides services, personnel, or material to support or assist a *control agency* or affected persons.

Victoria Emergency Management Council (VEMC)

The Council comprising representatives of government and non government agencies, chaired by the Coordinator in Chief, which is set up to advise on all emergency management matters, including the coordination of the activities of government and non-government agencies. [Act]

Victoria Emergency Management Council Co-ordination Group

The VEMC Co-ordination Group is chaired by the Co-ordinator in Chief, and comprises the State Co-ordinator of Response/Deputy Co-ordinator in Chief, the State Recovery Co-ordinator, the Emergency Services Commissioner (as Executive Officer) and CEO or chief operating officers of emergency service agencies, plus DSE and DHS.

