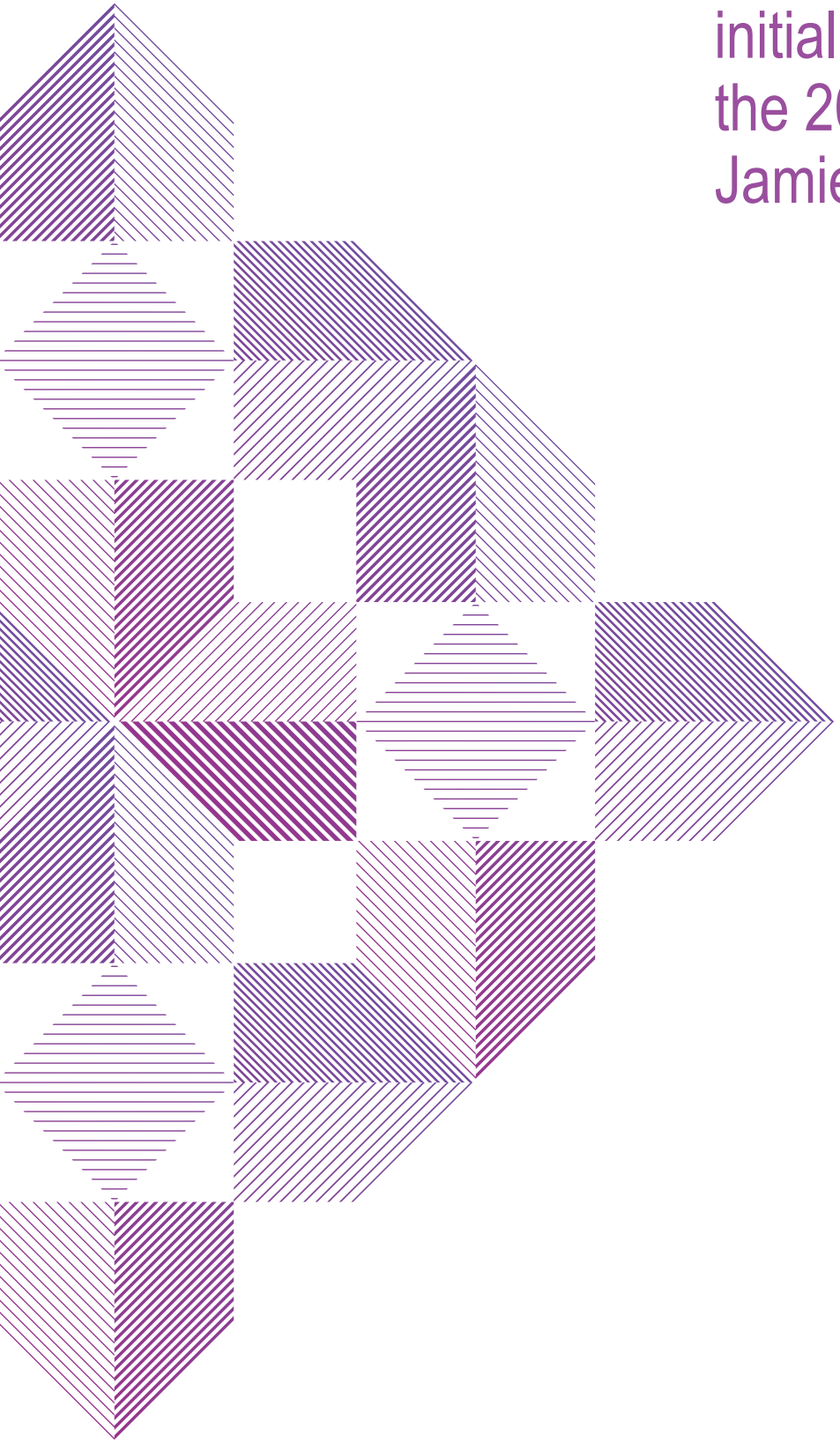
Review of the initial response to the 2015 Wye River – Jamieson Track fire



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Acronyms

AIIMS	Australasian Inter-Service Incident Management System
CFA	Country Fire Authority
DELWP	Department of Environment, Land, Water and Planning
EMC	Emergency Management Commissioner
EMJPIC	Emergency Management Joint Public Information Committee
EMMV	Emergency Management Manual Victoria
EMV	Emergency Management Victoria
IAP	Incident Action Plan
IC	Incident Controller
ICC	Incident Control Centre
ISP	Incident Shift Plan
IGEM	Inspector-General for Emergency Management
IMT	Incident Management Team
JSOP	Joint Standard Operating Procedure
LAT	Large Air Tanker
MEMP	Municipal Emergency Management Plan
OSOM	One Source One Message
SRC	State Response Controller
SCC	State Control Centre
SCT	State Control Team
SOP	Standard Operating Procedure
SOU	Slip On Unit
TMP	Traffic Management Point
VicPol	Victoria Police
VICSES	Victoria State Emergency Service

1. Executive summary

The 2015 Wye River – Jamieson Track fire was located in terrain that was extremely difficult to access, contained high levels of fuel resulting from preceding dry conditions, and was in an area where there had been a long period without fire in the landscape.

The fire ignited on 19 December, a day of extreme fire danger. On this day numerous fires ignited across the state creating high competing demands on local and state resources.

1.1. Observations – Fire control

The Colac Incident Control Centre (ICC) was activated as part of statewide readiness. In the Otway Ranges pre-positioned crews with slip-on units (SOU) were patrolling to respond to fire. A Level 2 Incident Controller (IC) was in the Colac ICC to direct the immediate response to the Wye River – Jamieson Track Fire.

Upon detection of the Wye River – Jamieson Track Fire, firefighters from the Barwon South-West Region were also responding to the detection of the Delaneys Road Fire and resourcing the Scotsburn fire near Ballarat.

The Inspector-General for Emergency Management (IGEM) notes that the control strategy during first attack was to 'contain the fire' through bare earth breaks constructed by hand and dozer, aerial water bombing and patrolling and blacking out.

The resources assigned for first attack of the fire were appropriate given the restrictions of the difficult terrain and forest environs, concerns for firefighter safety and the competing demands of concurrent serious fires.

The Incident Management Team (IMT), ground crews, aerial resources and plant required for direct attack was increased as the fire grew in size and complexity, yet the fire was unable to be contained.

Predictive tools such as PHOENIX RapidFire weather forecasts and fire intensity measurement tools such as infrared mapping indicated a worsening situation.

On 21 December the incident transitioned to Level 3 status and significantly increased engagement between regional and state incident control.

OBSERVATION 1 – INITIAL ATTACK

IGEM considers that the available resources were allocated appropriately (according to the incident Level) to implement this strategy, following due consideration of the fire; safety concerns relating to the extreme danger of the forest environment; steep terrain, thick vegetation; and the weather. It is clear that the safety of firefighters was the foremost consideration from the onset of the fire at all levels of control.

IGEM supports the assertion of incident control personnel that the fire could not have been resourced more during the initial attack without an unacceptable escalation of risk.

OBSERVATION 2 – INCIDENT DOCUMENTATION

IGEM notes that the date and time markers for some incident and planning documentation was inconsistent, or absent.

RECOMMENDATION 1

During the conduct of this review it became apparent that there were discrepancies between the ICC record of the numbers of firefighting resources being applied to the fire at a given time and location versus that of Divisional Commanders (on scene) logs. This situation has the potential to impact both firefighter safety and the effective utilisation of available resources.

IGEM recommends that fire agencies review their resource allocation recording mechanisms and systems to ensure that an accurate reflection of resources deployed to an incident at any given time can be ascertained.

RECOMMENDATION 2

Throughout this review there were a number of times where important activities were identified as having occurred for which there were either no documented, or inadequately documented records. One such example was the transposing of operationally significant ground points between tactical mapping products, resulting in these points appearing in different locations on subsequent maps. Whilst there was no evidence to suggest that this negatively influenced operational decision making during the response to this fire, the potential exists for it to become an issue in future emergencies.

IGEM recommends that fire agencies review their documentation systems and information recording processes to ensure that all operational activities are captured, and to maintain the accuracy and relevance of all developed products. This includes the need to ensure that all significant points of reference entered into mapping products are geo-coded to facilitate accurate transfer of information from one mapping product to another.

RECOMMENDATION 3

The lightning strike and subsequent fire occurred in an area that was geographically and topographically challenging, carried a heavy and dry fuel load, at a time of worsening weather conditions, and in a location of high tourism visitation where access and egress are significant considerations.

Due to these issues existing from the outset, this fire had potential to become significantly worse.

It is also recognised that degrees of complexity are significant contributors in deciding the level at which to classify an incident

It is evident that the Wye River – Jamieson Track fire met all of the criteria for a Level 2 incident in its early stages, and its eventual re-classification to a Level 3 incident was appropriate.

However it would have been appropriate to have classified the fire as a Level 3 incident from the start on the basis there existed scope for re-classification.

IGEM recommends that fire agencies consider an earlier classification of Level 3 incident for fires that present significant complexity such as was evident in the Wye River – Jamieson Track event.

In making this recommendation, IGEM does not suggest that the outcome in this situation would have been any different, however there may be implications for future such fires.

The IMT commenced planning from 20 December to adjust the strategy to contain the fire.

The planning included a detailed and exhaustive options analysis, including PHOENIX RapidFire predictions.

Documentation examined by IGEM shows the analysis of four options assessed against a range of factors, such as weather, fuel loads and risks to communities, assets and the consequences of failure.

This evidence shows that options were discussed transparently and appropriate risk factors were assessed. This was done with considerable urgency across all tiers of control.

The four options presented to regional and state controllers were to continue with direct attack, consolidate the containment lines and two back-burning options.

As the measures to contain the fire had not proven effective the options favouring back-burning were preferred.

The back-burn strategy was successful in meeting its aim of reducing the fuel loads in the containment lines of the fire.

IGEM supports the intent, rationale, risk mitigation steps, decision process and implementation of the back-burning strategy in order to reduce risk to communities.

Despite this plan, the high temperatures and gusting winds resulted in a the fire breaking containment lines on 25 December.

As a result, the control strategy shifted to one of community and asset protection and the activation of the evacuation and Traffic Management Points (TMP) that were in place.

OBSERVATION 3 – CONTROL STRATEGIES

The Colac IMT adjusted the fire control strategy when good situational awareness identified the failure of the first attack strategy to contain the fire. Using rigorous and extensive process the fire control strategy moved to one of control by fuel removal in strategic areas with back-burning procedures.

IGEM notes that an extensive and exhaustive options analysis was a key part of control strategy planning. The analysis incorporated consideration of potential risk of each option, chance of success, weather conditions, the vegetation and landscape and fire behaviour prediction maps.

IGEM notes the high level of engagement across all levels of control driven by the potential for the fire to escape and the risk it posed to communities.

IGEM recognises the appropriately scaled approach to control and resource allocation throughout this fire. The effectiveness of strategy planning and implementation were highly likely to have contributed to the successful outcome of preserving life and minimising further losses. This achievement of the most important strategic control priority is a successful outcome for the community and the emergency management sector.

Evacuation and traffic management plans were in place to mitigate the potential impact should the back-burning operation result in a larger fire.

IGEM supports the intent, rationale, decision process and implementation of the fire control strategies in order to reduce risk to communities.

Incident planning during the period 19–25 December was documented in the Incident Shift Reports prepared by the Colac IMT.

The standards in relation to incident documentation requires immediate preparation of an Incident Action Plan (IAP), with daily update and review at the end of each shift. The Incident Shift Plan (ISP), to direct the on-ground operations and resources is normally one component of the IAP.

Department of Environment, Land, Water and Planning (DELWP) have traditionally produced an ISP rather than an IAP.

For the Wye River – Jamieson Track fire DELWP guided the operations with regular ISPs, which contained all the relevant information components that would be included in an IAP.

The detailed planning and predictive tool outputs that support decisions were reviewed by IGEM.

1.2. Observations – Community safety

Engagement with the community commenced when the fire started on 19 December. A plan for the broader Barwon South-West Region was in place as well as the fire specific communication activities.

From evidence sighted by IGEM, information and warnings for the Wye River – Jamieson Track Fire during the period 19–25 December were constructed and issued in accordance with protocol.

IGEM also notes that information and warnings were issued through multi-modal media and communication channels to reach as many people as possible. This was a key factor in having well prepared communities who responded and took action that resulted in the preservation of life.

Evacuation and traffic management planning was completed and ready to implement.

The communities affected by the fire were continually informed by the IMT of the risk presented by the fire, the changing control strategy, and the likelihood of an evacuation taking place.

At the time the evacuation was approved by the IC, Victoria Police (VicPol) were immediately able to use the package of documents prepared for the evacuation and the traffic management plans. These included the relevant Joint Standard Operating Procedures (JSOP), maps, housing lists and vulnerable persons register. All houses in the evacuation areas were door-knocked, and most residents chose to safely evacuate.

The evacuation was noted by key contributors as being successful, without incident and

orderly. One contributor observed that 'the community knew what to do'.

Provision was made for persons identified by their local government area as being vulnerable to be considered during evacuation.

Incident management teams had previously engaged with the tourism sector to address issues of visitors without local knowledge or English-language capability.

The role of VicPol, in its successful collaboration with local government and supporting agencies in the evacuation planning and implementation, was noted by many contributors with approval.

OBSERVATION 4 – COMMUNITY ENGAGEMENT, PUBLIC INFORMATION AND WARNINGS

From the evidence sighted by IGEM, information and warnings for the Wye River – Jamieson Track Fire during the period 19–25 December were constructed and issued in accordance with protocol.

IGEM notes that information and warnings were distributed through a range of technologies and communication channels to reach communities that could be affected.

IGEM observed that the linkages between key state, regional and incident management personnel, local government and responding agencies' personnel was integral to successful community engagement.

IGEM notes that provision was made during the evacuation planning for all persons potentially affected by the fire including vulnerable persons and visitors to the areas.

OBSERVATION 5 – EVACUATION AND TRAFFIC MANAGEMENT

The potential for this fire to break containment lines and the risk to communities was identified across all levels of control during the first days following detection. The options analysis risk and consequence work informing fire control strategy strengthened the need for mitigation of the risk to communities, and subsequently planning for evacuation and traffic management commenced on 21 December.

IGEM notes the strong cooperation and collaboration between VicPol, DELWP, Parks Victoria, local government and IMT resources were critical to the planning and successful implementation of the evacuation. The commitment of the agencies is commended.

Evacuation and traffic management planning drew on state policy and guidance as well as pre-prepared local response plans. A risk-based evacuation plan was adopted.

The evacuation plan was implemented effectively due to the multi-agency planning and preparation that had taken place. VicPol led the execution of the plan, supported by Victoria State Emergency Service (VICSES).

IGEM considers the evacuation strategy to be prudent, well planned and executed. It is an example of leading practice for shared learning.

2. Introduction

On 19 December 2015, two bushfires were ignited by lightning strikes in the Barwon Otway area – near Delaneys Road and Jamieson Track.

Between 19 December 2015 and 21 January 2016, the bushfire that became known as the Wye River – Jamieson Track fire burned 2500 ha in the Otway Ranges in the Lorne-Wye River region. By the end of 25 December, the fire had destroyed 98 houses in Wye River and 18 in Separation Creek.

By 7 January 2016, the Delaneys Road fire was contained to 9 ha. However the Wye River – Jamieson Track fire continued to burn for 34 days until being contained on 21 January 2016.

On 5 January 2016 the Minister for Emergency Services (the minister) requested the Inspector-General for Emergency Management (IGEM) report on the learnings to date from the Wye River – Jamieson Track fire.

The minister requested that IGEM provide a draft report by 21 January and final report in February 2016.

The review was undertaken in accordance with Section 64(1)(c) of the *Emergency Management Act* 2013 (the Act) which provides for IGEM to prepare advice and reports at the request of the minister.

IGEM considered all relevant evidence in an impartial and objective manner and makes observations and findings on basis of merit and without bias.

2.1. Inspector-General for Emergency Management

The IGEM is a legislated appointment established under the Act to:

- provide assurance to the Government and the community in respect of emergency management arrangements in Victoria
- foster continuous improvement of emergency management in Victoria.

Supporting the achievement of these objectives, IGEM undertakes system-wide reviews under the provisions of Section 64(1)(b) of the Act, and prepares advice and reports at the request of the minister under the provisions of Section 64(1)(c) of the Act.

2.2. Objective of the review

The objective of the review is to report on the learnings from the Wye River – Jamieson Track fire of December 2015 with the focus on documenting good practice and fostering continuous improvement.

Annexed to this report is the letter from the minister dated 5 January 2016, requesting IGEM undertake this review (Appendix 1).

2.3. Scope of the review

In accordance with the request of the minister, the review considers and incorporates the good practice and learnings from the management of the Wye River – Jamieson Track fire over the period 19–25 December 2015, in particular the following:

- Detection of the lightning strike and initial attack on the fire on 19 December.
- The Incident Action Plan (IAP) developed and implemented by the Incident Controller (IC).
- The fire control strategy developed and implemented between 19 and 25 December.
- The community information, warnings and engagement between 19 and 25 December.
- The evacuation and traffic management planning developed and undertaken on 25 December.

2.4. Structure of the review

The report's structure identifies the key aspects of learnings from management of the Wye River – Jamieson Track fire:

- Chapter 1: Executive Summary
- Chapter 2: Introduction
- Chapter 3: Background
- Chapter 4: Emergency response
- Chapter 5: Fire control

- Chapter 6: Community safety
- Chapter 7: Good practice and learning the lessons

2.5. Key contributors

IGEM worked with the following bodies and individuals in preparing this report:

- Colac Otway Shire Council
- Country Fire Authority (CFA)
- Department of Environment, Land, Water, and Planning (DELWP)
- Emergency Management Commissioner (EMC)
- Emergency Management Victoria (EMV)
- Incident Controllers (ICs) and members of Incident Management Teams (IMTs) involved in managing the Wye River – Jamieson Track fire
- Members of the state and regional control teams
- Surf Coast Shire Council
- Victoria Police (VicPol).

2.6. Approach

The review is presented as a general analysis of the initial response to the Wye River – Jamieson Track fire with a focus on the period 19 to 25 December 2015.

IGEM reviewed and assessed each aspect of the fire and community engagement as requested by the minister.

IGEM reviewed a series of incident documents to identify what type and numbers of resources were deployed to the Wye River – Jamieson Track fire. These documents included logs from both the Incident Control Centre (ICC) and the State Air Desk, situation reports and weekly state and regional preparedness plans.

IGEM conducted semi-structured interviews with multiple key contributors across state, regional and incident level. Key contributors included personnel from the State Control Team (SCT), Regional Control Team (RCT), IMT, VicPol and local government.

The interviews provided detailed commentary on the initial attack, fire control strategy and community safety strategies for the Wye River – Jamieson Track fire. The interviews were examined using thematic analysis. The analysis has informed the observations and recommendations provided in this report.

IGEM collated and analysed data from the following sources to prepare its overviews and assessments:

- incident management records including situation reports, shift plans, fire management plans, and options analyses
- state and regional strategic and operations plans, situation reports, minutes of briefings and meetings
- VicPol plans and records of traffic management and evacuation
- community engagement plans, community newsletters, records of community meetings, and community warning messages
- interviews with DELWP Chief Fire Officer, senior personnel involved in fire management and community safety including ICs, Regional Controllers (RCs), individuals from VicPol and Colac Otway Shire Council
- IGEM's records of its 26–27 December observation of Wye River – Jamieson Track fire management
- Personal attendance by the IGEM to inspect the Wye River – Jamieson Track fireground from the air and the ground on 21 January 2016.

In gathering this evidence IGEM encountered inconsistencies, including missing dates and times. Where possible IGEM corroborated evidence through multiple sources to ensure the efficacy of the information it received.

Based on this analysis and assessments, IGEM identified good practices and key areas for learning arising from management of the fire.

Before provision of this final report IGEM provided a draft report to the minister on 21 January 2016.

2.7. Acknowledgements

IGEM is grateful for the participation and assistance of all individuals and organisations that were interviewed and provided evidence for this review.

In particular, IGEM thanks those members of the IMT, and emergency services organisations involved in managing the Wye River – Jamieson Track fire who contributed their thoughts and views in discussions with IGEM.

The willingness of representatives from the emergency management sector in providing their insight, information and evidence, affirms the sector's commitment to working as one for continuous improvement in the state's emergency management arrangements.

3. Background

On Saturday 19 December 2015 lightning strikes started two fires in the Lorne region, one near Delaneys Road, and a second near Jamieson Track.

By 26 December the Wye River – Jamieson Track fire had burnt nearly 2500 ha of forest, had destroyed houses in the townships of Wye River and Separation Creek, and led to the evacuation of Separation Creek, Wye River and parts of Lorne. It led to emergency alerts recommending that residents of Kennett River and Grey River evacuate being sent.

The EMC noted on 19 December that the Wye River – Jamieson Track fire had the potential to continue throughout January and February 2016.

By 6 January the immediate danger to the neighbouring communities had passed. The Great Ocean Road was reopened and visitors encouraged to return to the area. Residents of Wye River and Separation Creek were allowed limited access to their properties.

The Wye River – Jamieson Track fire continued to burn deep into January 2016. Risks remained to the Otway Ranges, and critical infrastructure including Mount Cowley Fire Observation Tower; Barwon Water Supply Catchments; and coastal settlements along the Great Ocean Road between Lorne and Apollo Bay.

The IC declared the fire contained on 21 January 2016.

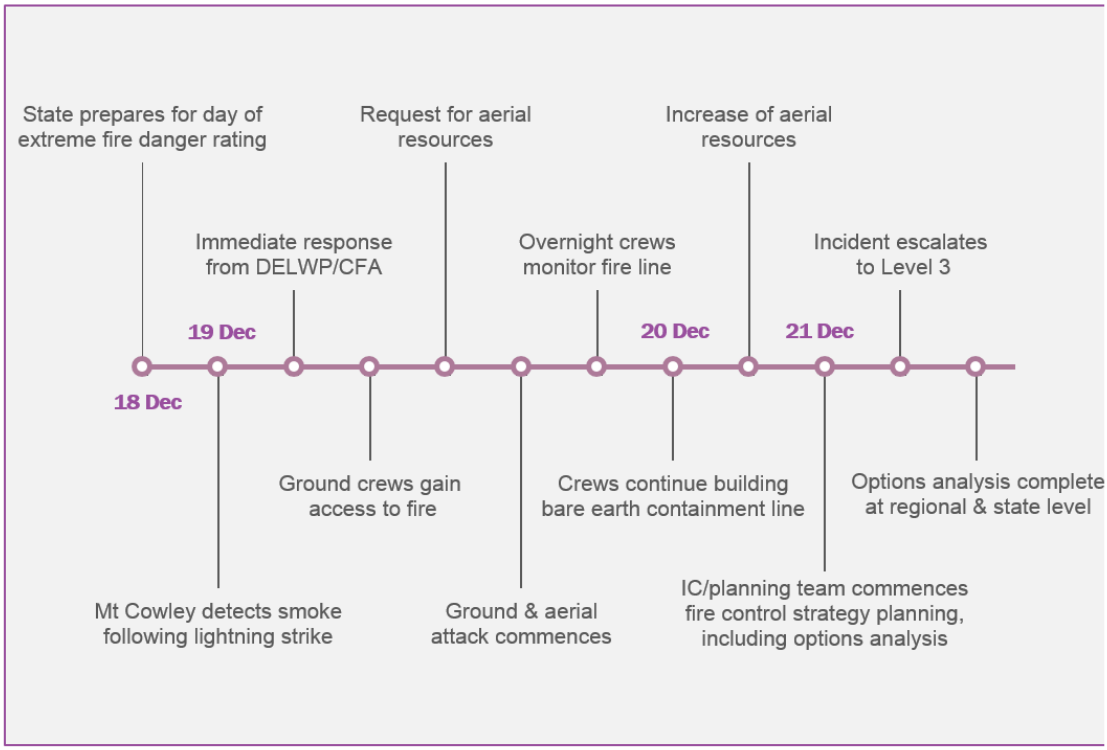
3.1. Bushfire and shared responsibility

Victoria is one of the most fire-prone areas in the world. Almost every year, Victorian communities are affected by fire.

Emergency management is a shared responsibility between governments, business, communities and individuals. Understanding risk and being prepared is key to ensuring individual and community safety.

Despite leading practice systems, processes and efforts of incident management teams in developing and implementing strategies to respond to fires, once fire is in the landscape there is a high degree of likelihood that there will be negative impacts and consequences for communities.

Figure 1: Timeline of selected key events for 2015 Wye River – Jamieson Track fire (18 to 25 December)



Source: Incident shift plans, situation reports & interviews/logs

3.2. The Barwon Otway area

The Barwon Otway area falls within the CFA Barwon South West Region and extends from Geelong in the east, through to Port Campbell in the west and Colac in the north.

Towns and communities

The area comprises the City of Greater Geelong, Surf Coast, Colac Otway, and Corangamite local government areas. Victoria's well known Great Ocean Road and Otway Ranges are significant features of this area.

The Surf Coast Shire extends from Torquay along the south west coast to a point approximately 7.5 km south-west of Lorne. Neighbouring Colac Otway Shire includes the townships of Wye River and Kennett River.

Popular holiday towns extend down the coast 140 km from Queenscliff in the east to Apollo Bay in the south west, and include Ocean Grove, Torquay, Anglesea, Aireys Inlet and Lorne.

Lorne is located 142 km from Melbourne. Further along the Great Ocean Road are the small settlements of Wye River, 17 km from Lorne, and Kennett River, 22 km from Lorne.

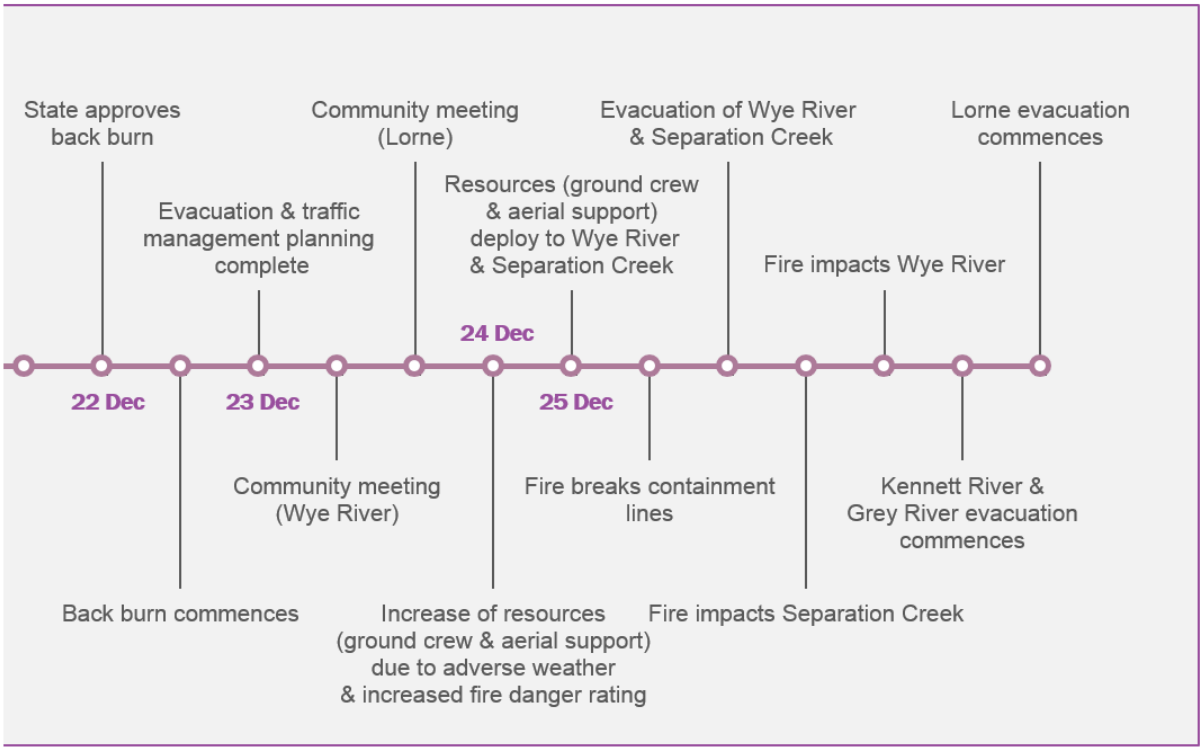
Landscape and fire history

The Great Ocean Road and the Otway Ranges are the main features of this area. The ranges contain Victoria's most westerly tall wet forest and rainforests and has a diverse range of vegetation.

The Otway Ranges are characterised by steep hills and complex gully systems that are topographically and geographically challenging and covered by dense, multi-canopied vegetation. The upper canopy vegetation is dominated by Mountain Ash, Messmate and Mountain Grey Gum. Blackwood Acacia often forms a tall secondary tree layer.

The Wye River – Jamieson Track fire ignited in a complex gully system located between Lorne and Wye River. This landscape is typical of the elevated coastal ranges which dominate this section of the Great Ocean Road. The range is dominated by steep, sharp, narrow ridge lines that run typically east-west or off the coast. These ridgelines can be less than 900 m wide at their base and are interspersed with deep narrow gully systems.

To the north, forest turns to grassland, becoming drier as foothills of the ranges change to open plains. As the ranges drop to



the coast, southern areas are heavily forested, while heathland dominates further north-east towards Anglesea.

The area has had many destructive fires, including those of Ash Wednesday in 1983. DELWP responded to an average of 20 bushfires in each of the subsequent seasons.

The gully system in which the Wye River – Jamieson Track fire ignited had not burned for many years and carried a dry and heavy fuel load.

3.3. Victoria's 2015–16 fire season

During the weeks leading up to the period of 19–25 December, a number of fires placed considerable demands on the Barwon South West region's DEWLP and CFA firefighting resources.

Firefighters from multiple agencies had been deployed to the Mallala fire in South Australia on 26 November. A grain fire on a ship at Portland and peat fire in the Strathdownie area of western Victoria had also drawn heavily on firefighting resources in the lead up to the Wye River – Jamieson Track fire.

In the neighbouring Ballarat region, the Scotsburn – Finns Road fire ignited on 19 December and burned for eight days destroying 12 houses and 4750 ha of land. The fire was contained by 24 December 2015.

There were also fires in other areas of Victoria requiring large ground deployments and aerial fire suppression support including Wonthaggi, Epping, Wandin North, Marysville, Cann River, Mallacoota and Barnawatha. These concurrent incidents placed additional resource pressure on the State.

3.4. Events of 19–25 December

The significant period of development in the Wye River – Jamieson Track fire was the period 19–25 December 2015 as summarised in Figure 1 (pages 10–11).

19 December was rated as a day of extreme Fire Danger.

The weather forecast for the Barwon Otway area on this date was for temperatures to be above 30 °C and generally dry, hot and gusty conditions.

The Colac ICC was activated at Level 2 from the morning of 19 December in preparation for the forecast weather. Slip-on units (SOU) and strike crews were deployed by DEWLP at strategic locations in the Lorne hinterland.

Detection of the fire 19 December

Lightning strikes ignited fires in steep terrain near Jamieson Track and Delaneys Road on the afternoon of 19 December.

DELWP received the first report of smoke near Jamieson Track in the afternoon of 19 December. The smoke was observed from the Mount Cowley fire observation tower.

The lightning strike that caused the ignition occurred in a complex gully system to which there was no vehicular access. The location of the ignition was approximately 2 km inland of the Great Ocean Road and a further 1.2 km off Jamieson Track.

By 4.48pm a fixed wing reconnaissance aircraft estimated the fire covered 0.5 hectare. This estimation increased to one hectare by 5.46pm. Air observation was unable to determine the height of flames due to the nature of the steep terrain.

The Colac IMT deployed six personnel in SOUs and a dozer with the objective of clearing a track through 1.2 km of forest to gain access to the fire. Work was to commence at 6.15pm.

The IMT subsequently increased resources, with additional personnel (refer to Figure 3, page 28 and Appendix 3), a tanker, and two SOUs, in addition to the dozer.

The need for hazardous tree management increases as more firefighters are deployed. The IC did not deploy further resources due to concern for firefighter safety, and the limitations of the steep and heavily treed terrain.

The IMT requested a helitack to provide aerial water-bombing. Initial water bombing commenced by approximately 6pm on 19 December. Fire crews were still working on the access track.

The initial control strategy was to construct a bare earth containment line around the fire and direct attack with aerial water bombing. During the night the crews patrolled the fire undertaking containment works where possible.

Image: New Zealand crew from Southland cutting a track at Wye River – Jamieson Track fire (image courtesy Rory Renwick).

Resources increased 20 December

On the morning of 20 December the fire was reported to have increased to 20 ha.

Firefighting resources were increased to 14 and 8 personnel (day and swing shift respectively), one tanker, four SOUs, and three dozers. The terrain precluded more resources being deployed.

The IMT adopted a direct attack strategy using a medium helitack and large air tankers (LATs) to suppress the fire. The three dozers continued to work on establishing bare earth containment lines.

The fire was active on three flanks, and continued to spread. During the morning, the fire area was 28 ha. This increased to 65 ha by 3.36pm. Weather conditions eased on the night of 20 December, with light showers.

Milder conditions 21 December

Forecasters predicted cloudy conditions with westerly winds easing during the day for 21 December.

Despite the more favourable weather, the fire increased to 86 ha by 11.03am on the morning of 21 December.

DEWLP now had significant resources devoted to the fire. Fireground personnel numbered 40, and were supported by a further 30 staff in the ICC. Seventeen SOUs were supporting crews working directly on the fires.

Milder conditions allowed firefighters to continue building containment lines. Crews had established 2 km of containment line on the fire's 7 km perimeter.

Fire crews continued with a control strategy combining aerial water bombing, and the

establishment of bare earth containment lines. Crews reported continuing difficulties in accessing the fire in the dense and heavy forest and steep terrain.

Crews detected a spot fire 200 m from the main fire during the morning of 21 December, This fire grew rapidly to cover 3 ha by 3.26pm. Aerial reconnaissance using infrared cameras also identified increased fire activity, with the main fire now 99 ha in area.

On 21 December, the fire was transitioned from a Level 2 to a Level 3 incident.

At this time an options analysis for future control strategies for the fire was being prepared.

During the night the fire burnt to within 10 m of Jamieson Track. The night shift crews continued to patrol and work on the containment line where it was safe to do so.

Back-burning strategy 22–23 December

The fire grew to 141 ha by 2.26pm on the afternoon of the 22 December as shown in Figure 2.

The State Response Controller (SRC) approved the back-burning strategy, based on consideration of the available options for control, and favourable weather. The back-burning strategy was to be monitored with constant aerial surveillance.

The wind direction would carry smoke away from the Great Ocean Road and its townships. Arrangements were established to close the Great Ocean Road should the need arise.

The IC anticipated the favourable conditions would last until the night of 23 December, providing two days for the back-burn operation. The IC was aware that temperatures were expected to increase and winds to strengthen later in the week.

On 22 December, further resources were deployed to support back-burning operations, including three helitacks to assist with suppression if required. At 5.55pm on 22 December resources from various agencies numbered 138 personnel, 17 tankers, 61 SOUs, and eight dozers.

By late 22 December the fire was estimated at 180 ha, although this was revised downwards to 163 ha on 23 December.

Reports from 22 December noted that back-burning operations were progressing well. The depth of the burns varied between 10 and 30 m on the westerly side of the fire front, and 50 m on the easterly front.

Aerial intelligence was collected in the morning and afternoon of 23 December enabling the IC to monitor the fire, and any spot fires or breakouts.

Burning and consolidation of containment lines continued on 23 December. Burns extended from the easterly edge of the fire to a point near the mouth of the Jamieson Creek. Crews worked on blacking out potential spot fires through the night of 23 December into 24 December.

On 21 December, VicPol commenced evacuation and traffic management planning in preparation for the expected worsening weather conditions.

Worsening conditions 24 December

Conditions worsened on 24 December as foreshadowed in Bureau of Meteorology (BoM) forecasts of 22 December,

On the 24 December BoM forecasters expected fire danger to peak on 25 December with strong northerly winds ahead of a late south-westerly change. Strong and erratic winds were expected with the change.

Reflecting the increasing danger, the IC identified the potential for any breach of the containment lines to move rapidly towards Wye River under the influence of strong northerly winds.

The expected south-westerly wind change late on 25 December created the additional risk of the fire breaking towards Lorne.

Traffic management and evacuation plans were completed and were ready to be activated should a breakout occur.

The IC was satisfied that the burns conducted over the previous days had been successful. Crews continued to patrol the fire edge, and black out fire along Jamieson Track.

The area of the fire at this time was 271 ha.

Breach of containment lines 25 December

In the morning of 25 December strong gusty winds led to spot fires. The IC recognised the

risk of the fire potentially breaching containment lines and moving beyond Godfreys Track.

At approximately 11am on 25 December 2015, the fire broke containment lines and expanded rapidly towards Separation Creek and Wye River.

The fire spot over is reported to have been started by a tree falling from an area that had been previously well burnt. As the tree fell it provided additional unburnt fuel which caught fire, and started throwing embers as a result of the hot and extremely windy conditions. These embers resulted in spot overs.

Aerial water bombing slowed the fire's rate of spread as the focus moved to protecting communities and assets at Wye River.

Response included deploying a CFA Strike Team and Divisional Commander to Wye River, closing the Great Ocean Road between Lorne and Skenes Creek.

The IC activated the evacuation plans for Separation Creek and Wye River at 11.50am on the 25 December.

At this stage, the fire was uncontrolled and there were fires spotting ahead of the main fire front.

By 12.45pm the control strategy was the protection of assets in Wye River and Separation Creek, and the safety of firefighters and the community.

Evacuations of Separation Creek, and Wye River were in progress, with multiple emergency warnings and recommendations to evacuate sent from 11.57am. VicPol were doorknocking houses and an observation aircraft was checking for people on the Great Ocean Road.

At 1.30pm a recommendation was issued for people in Kennett River and Grey River to evacuate.

At 2.07pm crews were pulled out from direct attack in the face of significant fire activity. Spot fires were burning close to the community of Separation Creek.

The evacuations of Separation Creek and Wye River were complete by around 2pm, and the Great Ocean Road was closed further north at Anglesea. Evacuees were directed to an emergency relief centre at Apollo Bay.

Incident control strategies continued to protect assets, with aerial bombers focused on the townships.

However, the fire continued to spread, destroying 98 houses in Wye River and 18 houses in Separation Creek. By 10.26pm the fire area was 2080 ha.

Late on 25 December, the IC commenced planning for a change in wind direction with the south-west change expected in the evening. Forecasters expected the wind change late in the evening with rain over the fireground during the night. However, at 11.20pm northerly winds were still driving the fires around Wye River south towards Kennett River.

To the north-west, fire had spotted from Jamieson Creek and run as far north as Cumberland Track. While aerial intelligence at 9.30pm did not show fire north of Cumberland Track, the anticipated south-westerly change was expected to push fire towards Lorne.

The evacuation of Allenvale, at the southern end of Lorne, had commenced earlier in the day, with messages to residents commencing at 4.11pm, and continuing through the night.

Figure 2: Wye River – Jamieson Track fire area 19–26 December

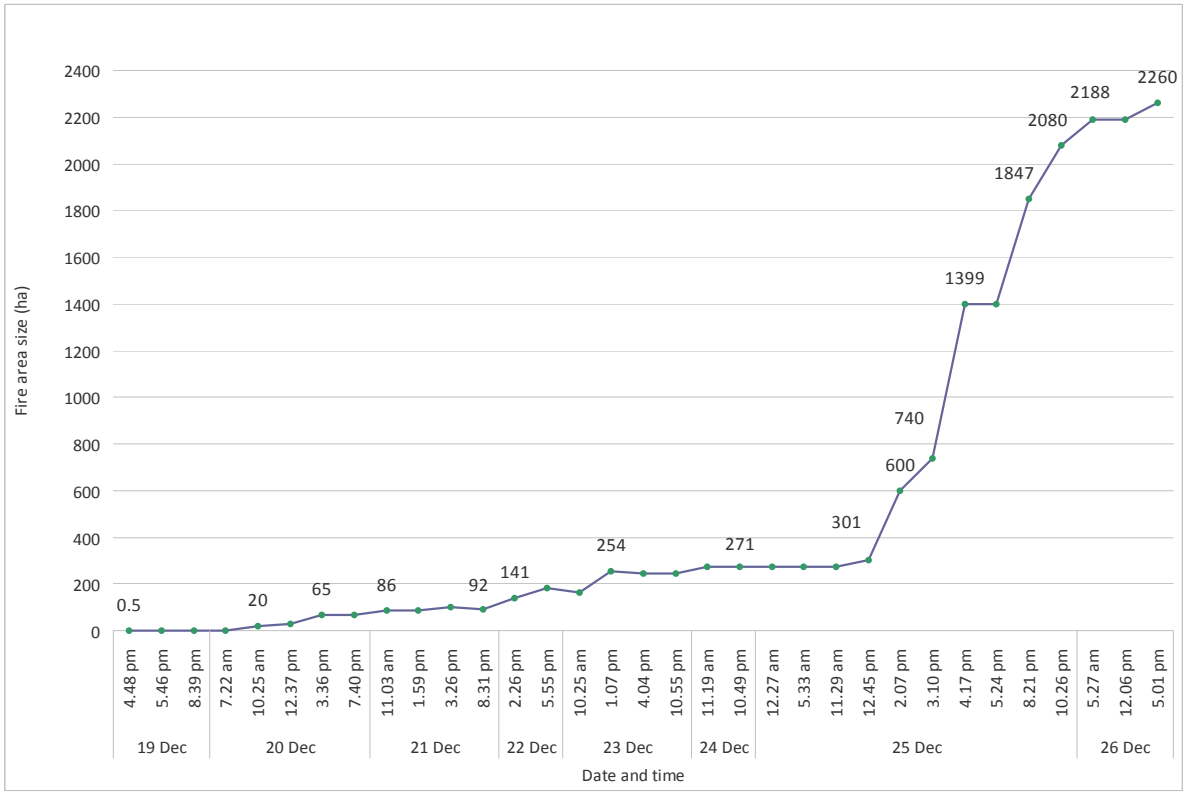


Image of Great Ocean Road courtesy Wayne Rigg, CFA

4. Emergency response

Response to incidents such as the Wye River – Jamieson Track fire involves a range of agencies in different roles. Effective response and maintaining the safety of communities relies on agencies and organisations at state, regional and incident level working collaboratively within the State's emergency management arrangements.

Command, control and coordination are key aspects of emergency management arrangements that provide for an effective all-agencies approach to incident management where:

- Command is the internal direction of personnel and resources within each contributing agency.
- Control is the overall direction of response activities. Control is assumed by the agency primarily responsible for responding to the emergency.
- Coordination is the bringing together of agencies and resources, and sharing of information, to ensure effective response.

These roles apply to both response to the emergency incident, and to maintaining community safety.

4.1. State Strategic Control Priorities

Managing and mitigating risk occurs within the context of strategic control priorities and the focus on the primacy of life by all responders and community members.

The State Strategic Control Priorities underpin the planning and operational decisions made when managing the response to emergencies. The priorities provide clear direction on the factors that must be considered and actioned during the response to an emergency and are critical to understanding the principles underlying operational decision-making.

The State's operating policy framework for emergency response, the *State Emergency Response Plan* (SERP), is set out in the *Emergency Management Manual Victoria* (EMMV) Part 3. The SERP defines the priorities and set out the organisational arrangements for managing response to emergencies.

The intent of the priorities is to minimise the impact of emergencies and enable affected communities to focus on recovery as early as practicable.

The priorities are:

- Protection and preservation of life is paramount. This includes:
  - safety of emergency services personnel
  - safety of community members, including vulnerable community members and visitors/tourists located within the incident area.
- Issuing of community information and community warnings detailing incident information that is timely, relevant and tailored to assist community members make informed decisions about their safety
- Protection of critical infrastructure and community assets that support community resilience
- Protection of residential property as a place of primary residence
- Protection of assets supporting individual livelihoods and economic production that supports individual and community financial sustainability
- Protection of environmental and conservation assets that considers the cultural, biodiversity and social values of the environment.

4.2. Statewide preparedness for extreme fire danger day

The government establishes a state of readiness for each fire season through statewide pre-season briefings, training and exercising, planning and the allocation of resources such as the state aircraft fleet and the State Control Centre (SCC). The standards for levels of readiness are described in joint or agency Standard Operating Procedures (SOP).

In addition to the default readiness, the emergency management sector (the sector) will make additional readiness preparations based on, but not limited to considerations such as:

- forecast fire danger index (based on the Forest or Grassland Fire Danger Index for the resource location or operational area)
- forecast lightning activity levels
- recent weather patterns
- current fuel conditions
- the extent of existing fire in the landscape
- the potential for harm to life and loss of property due to fire in the area of responsibility
- resource commitments.

4.3. Agencies and organisations contributing to the Wye River – Jamieson Track fire response

As the Wye River – Jamieson Track fire first ignited on public land, DELWP was the control agency in accordance with the EMMV.

Upon first response, DELWP, as the control agency appointed the IC. The IC works through commanders of supporting agencies to control firefighting resources. For the escalation from Level 2 to a Level 3 incident the Regional Controller (RC) appointed an IC endorsed by the EMC.

The Aviation Services Unit, a joint initiative between DELWP and the CFA, supports response to fires. VicPol liaise with emergency management personnel at state and regional levels, providing a range of advice and support as necessary for management of an incident.

State level bodies ensure coordination across agencies, the availability of state-managed resources, most notably firefighting aircraft, and the provision of information to the public.

- The SCT, working from the SCC, maintains oversight and control of major incidents and emergency management resources including aircraft deployment, information flows from state to regional levels and quality of public messaging.
- Emergency Management Joint Public Information Committee (EMJPIC) coordinates proactive communications and media across government departments and agencies during the fire season.
- The EMC has overall responsibility for coordination before, during and after major emergencies including management of consequences of an emergency.
- EMV manages the VicEmergency website.

A wide range of other agencies and organisations play key roles, particularly in preparing and maintaining community safety such as:

- VicPol: the planning and managing of evacuation and TMPs
- local government: managing community meetings, planning for safety of vulnerable community members, arranging relief centres, and managing recovery
- Department of Health and Human Services: state and regional coordination of relief and recovery services
- media organisations: broadcast of emergency information and warnings.

For the Wye River-Jamieson Track fire the SCC appointed a senior fire controller to augment the prescribed control structure. The position provided strategic oversight of the operation and an extra layer of support. The officer spent considerable time at the ICC, and was able to review strategies and report back to the State Emergency Management Team.

4.4. Incident classifications

The Wye River – Jamieson Track fire was a major fire that fell within the legislative definition of a Class 1 emergency.

The Act defines a major fire as a large or complex fire (however caused) that:

- has the potential to cause, or is causing, loss of life and extensive damage to property, infrastructure or the environment; or
- has the potential to have, or is having, significant adverse consequences for the Victorian community or a part of the Victorian community, or

- requires the involvement of two or more fire services agencies to respond to the emergency; or
- will, if not suppressed, burn for more than one day.

The Act contains specific arrangements for management of a Class 1 Emergency, including appointment of a SRC by the EMC.

In Victoria all incidents are managed according to the Australasian Inter-Service Incident Management System (AIIMS). AIIMS provides flexibility in the functions and structure of the IMT depending on the scale and complexity of the incident.

Fires are classified in terms of their complexity and the resources and incident control arrangements required for their management.

A Level 2 fire is one that is unlikely to be contained by the first attack, and may become more complex. A Level 2 fire is characterised by the need for resources beyond the initial response, division of the fire into sectors, or establishment of functional sections.

A Level 3 fire is larger and more complex, requiring resources from a number of locations, and more than one agency. Response activities to a Level 3 fire is normally expected to exceed 24 hours in duration.

The Wye River – Jamieson Track fire was initially managed as a Level 2 fire, and was escalated to Level 3 on 21 December 2015.

4.5. Incident management and planning

For Level 3 incidents, ICs generally delegate all functions, with IMT groups formed to undertake these functions in support of the IC. Level 3 IMTs generally include separate planning, intelligence, public information, operations and logistics functions.

Incident planning was an important aspect of managing the Wye River – Jamieson Track fire.

When undertaking incident planning, the IC sets the objective, which establishes the desired outcomes and the timeframe in which they should be achieved. Incident objectives may change as circumstances change.

Throughout an incident, the IC, supported by the IMT will undertake a range of planning activities such as:

- Incident shift plans (ISPs) to provide a framework for daily activities, in the context of anticipated circumstances.
- Options analyses to help consider and decide upon major alternate approaches and control strategies to manage an incident. Options analyses identify alternative approaches, resources required, estimated probability of success, estimated consequences of failure, and impacts.
- Preparedness plans for actions to limit the potential negative consequences of an incident. Preparedness plans may include back-burning to limit the rate of fire spread, slashing long grass in at-risk areas, and the closure of minor roads and camping grounds.
- Contingency plans to ensure that operating plans, inter-agency arrangements, and resources are ready for activation upon occurrence of a pre-defined trigger event. Contingency plans may include arrangements for escalation of fire suppression measures, placement of strike teams, traffic control, and evacuation.
- Intelligence used to inform such planning includes weather forecasts, reports from ground crews or observers, aerial intelligence and infrared images, predictive modelling of fire or smoke behaviour (such as PHOENIX RapidFire), resource availability including crews, vehicles and aircraft, and geographic and population information.

Operational planning

The operational standards and procedures for emergency management incident action planning are based on AIIMS, the *Victoria Bushfire Handbook 2015* and Joint Standard Operating Procedures (JSOPs).

The *Victorian Bushfire Handbook 2015* provides additional operational guidance around management structures and systems used by fire agencies for bushfire, preparedness, readiness and response in Victoria.

AIIMS provides a common incident management system for all responding agencies to allow integration of activities and resources for emergency management.

In accordance with section 50 of the Act, EMV has developed the JSOPs with emergency management agencies. JSOPs are the standard operating procedures for agencies in the management of responses to emergencies within Victoria. These three resources provide guidance for incident management in Victoria.

IAPs document both the overarching objectives for incident management, and the day-to-day operational activity.

The IAP describes the objectives, strategies, structures, resources and other information relevant to the control of the incident. The IC is responsible for developing and implementing an IAP. IAPs are to be developed in accordance JSOP 3.03 (Incident Action Planning).

An IAP must be prepared for all incidents.

The level of detail required in an IAP will be dependent on the stage and complexity of the incident. The IAP should address safety of personnel and the community, incident objectives and strategies, communication strategies and an IMT structure. The IAP is reviewed during each shift.

The Incident Shift Plan (ISP) is the component of the IAP relevant to fire-ground operations. ISPs are prepared by the conclusion of day and night shifts for the following shift. An IC may also use handover notes to document key incident issues for the incoming IC.

Contingency planning

Planning for contingencies is a key responsibility of an IC. Its purpose is to maintain the safety of personnel and the community in the face of potential adverse events.

Contingencies are developed for risks that, if realised, would have consequences that must be avoided. Such consequences may include destruction of natural landscape, property or threats to life.

Contingency planning ensures that operating plans, inter-agency arrangements, and resources are ready for activation. In general, the triggers for activation will be pre-defined and agreed, to ensure common understanding of intended action.

Contingency plans for a major fire may include plans for escalation of suppression measures, personnel safety, protection of assets, road closures and evacuations. Triggers for such action might include a fire breaching containment lines, fire danger rating exceeding certain levels, or a decision by an IC or an RC.

Situation reporting

Incident Situation Reports provide concise detail of current fire situation, resources, control strategy, critical control factors, and critical community issues. Incident Situation Reports can be frequently updated.

Incident Situation Reports should ensure there is updated information on the incident available at regional and state level. Incident Situation Reports are prepared within the ICC, and lodged on FireWeb, DELWP's online incident information management system, ensuring continuous visibility of incidents at regional and state level.

4.6. Response strategies used in managing the 2015 Wye River – Jamieson Track fire

Introducing fire for bushfire control

Back-burning is a long-standing and accepted firefighting strategy in Victorian emergency management. This strategy is also widely used nationally and internationally. The conduct of, and process steps for back-burning are detailed in DELWP's *Bushfire Management Manual 5 Response*, SOP-5.5.3.

Back-burning was a key strategy used in controlling the Wye River – Jamieson Track fire. The practice of introducing fire into the environment for purposes of fire control is known as back-burning or burning out. These are distinct practices, and differ from planned or prescribed burning, which is the practice of introducing fire into the environment as preventive fuel reduction. For the purposes of this report we will refer to this practice as back-burning.

The objective of introducing fire into the environment is to speed up, or strengthen fire suppression of wildfires. DELWP's *Fire*

Management – Glossary of Fire Terminology defines the practice as:

- Back-burning – an indirect attack tactic where a controllable fire is ignited along the inner edge of a fire containment line to consume the fuel in the path of a wildfire, producing a burnt area to expand the depth of the fire containment line.
- Burning-out – a control tactic where fire is ignited to consume unburnt fuel inside a fire containment line to prevent further ignition or to minimise the potential of fire crossing the fire containment line.

The key features of back-burning are that a fire is lit within the boundary of the main fire, having an established constructed or natural fire line, and having considered factors including weather, slope and firefighter safety.

Use of aircraft

Aircraft were used extensively in managing the Wye River – Jamieson Track fire, performing aerial observation, water and retardant bombing, transport, and aerial incendiary functions

The State of Victoria has a carefully considered and constructed fleet of aerial firefighting resources. These are managed through the Aviation Services Unit that resides in the Office of the Chief Fire Officer of DEWLP.

DEWLP maintains aviation capability on behalf of the state and provides specialist aviation advice. Aircraft are strategically deployed across the state in accordance with the Fire and Emergency Aviation Capability Management Framework.

Aircraft readiness and deployments are managed through the State Air Desk, a unit within the SCC. Readiness requirements for bushfire aviation resources and governed by operating procedure JSOP 2.06 (Readiness Arrangements – Aviation Resources (Bushfire) and State Aircraft Unit Procedure AM1.08.

Regional level readiness is the responsibility of the RC in adherence with the arrangements of JSOP 2.06.

The types of aircraft and the roles and terrains for which they are best suited are:

- Small light helicopters and fixed wing aircraft (Firebird, Birddog, Firespotter) used for reconnaissance, intelligence collection and Air Attack Supervision.
- Bombers, used in suppression (retardant) or direct attack (foam, water) roles can be smaller single engine fixed wing aircraft (Single Engine Air Tankers) or larger 4 engine aircraft (Large Air Tankers). Bombers can carry between 3,000 and 17,000 litres of water/foam or retardant. They are the aircraft of choice for laying long, unbroken lines of retardant. The Bombers are faster and have a longer range than helicopters; their range making them valuable in remote parts of the state. They are best suited to open, flat or sparsely forested country.
- Helitacks are medium to large helicopters used to carry and drop water from a belly tank (1,400 – 7,000 litres) or from a long line and bucket (1,400 – 3,000 litres).

Helitacks are suited to the Otways terrain because they can manoeuvre into position slowly, get a better pilot view of the drop location, and get close to the canopy. The long line and bucket capability give helitacks greater chance of success of dropping the water through the canopy and extinguishing or suppressing fire and hot spots.

Helitacks can refuel locally from fuel trucks, and collect water locally from dams, rivers and the ocean.

Over the period 19–25 December regional arrangements had caused aircraft to be pre-positioned at Colac, Hamilton and Casterton. Readiness arrangements also included the rostering of specialised personnel to undertake the roles associated with aircraft operation.

4.7. Firefighter safety

Employers and employees must meet the statutory obligations detailed in the *Occupational Health and Safety Act 2004* (Vic). This act applies to all persons – volunteers, contractors and full-time paid employees. No employer has the discretion to change or make exceptions. Breaches of the legislation may result in criminal prosecution with significant penalties.

The legislation is implemented within organisations through practice and policy documents such as the *DELWP Code of Practice for Fire Management on Public Land*.

These legislative obligations, and the overriding regard for firefighter safety, are also reflected in the State Strategic Control Priorities.

The Victorian Coroner recently released its findings on two firefighter deaths that occurred during the 2013 Harrietville fire. These deaths occurred as a result of unsafe trees. The Coroner noted that "Conducting firefighting operations in forests exposes firefighters to the particular risk of falling tree limbs and falling trees." Further, the Coroner noted that "The inherent danger is well known and is reflected in relevant policies and procedures as well as being incorporated into firefighting training modules".

The planning and operational processes that were undertaken during the course of the response to the Wye River – Jamieson Track fire demonstrated an awareness of, and commitment to firefighter safety.

4.8. Community safety

As Victoria's second State Control Priority, community information and warnings are a key component in managing emergencies. Victoria has governance structures, formal agreements, established processes, technical capability and local plans, to support the issue of information and warnings.

A key responsibility of an IC is the planning and management of arrangements that ensure the safety of communities during an incident.

Community safety strategies involve a range of functions including provision of community information and warnings, community engagement, traffic control and evacuation.

These functions are managed and supported at both state, regional and incident level, in collaboration with a range of agencies.

The IC authorises warnings and other information to the community as they are closest to the emergency and informed by local knowledge.

Community information channels

Victoria's primary emergency website *VicEmergency* (emergency.vic.gov.au), provides information and warnings for fires, hazardous material incidents, storms, floods, earthquakes, tsunamis and traffic hazards.

The site aggregates emergency incident information and warnings data from agencies including CFA, Metropolitan Fire Brigade, Victoria State Emergency Service (VICSES) and DELWP, to display emergency incidents in real time, on a Google map display. Social media channels such as Facebook and Twitter are used to publish additional communication such as the EMC's weekly video updates.

On 25 December, the VicEmergency website recorded in excess of 2,090,000 visits related to information and warnings issued for the Wye River – Jamieson Track fire.

Information for communities during emergencies is also available from a number of other websites and information lines including:

- Victorian Bushfire Information Line (VBIL) (1800 240 667 or the National Relay Service on 1800 555 677 for deaf, hard of hearing or speech impaired persons) – provides information during and after major bushfire incidents
- CFA website (http://www.cfa.vic.gov.au/) – provides situational information tailored for local conditions where appropriate
- Better Health Channel (www.betterhealth.vic.gov.au) – DHHS managed website that provides heat health, and smoke and health information
- Relief and Recovery communications (www.recovery.vic.gov.au) and the Recovery Information Line – provides information on financial assistance, relief centres, bushfire smoke safety, and safety when returning to bushfire-affected areas
- VicPol website (www.police.vic.gov.au) – provides information around TMPs.

Warnings

Arrangements for the release of information and warnings are set out in the *Victorian Warning Protocol*.

The control agency has the responsibility to issue warnings to the potentially affected community and to other agencies. The JSOP 4.01 (Incident Public Information for Fire) gives officers and response personnel the delegated responsibility to issue information and warnings.

Warnings and the release of other public information should be authorised by the IC prior to dissemination. Where an extreme and imminent threat to life exists and authorisation from the IC is not practicable in the circumstances, warnings may be issued by any response agency personnel.

Under the protocol, a multi-faceted warning approach is recommended and delivered through a number of warning platforms such as:

- the FireReady smartphone application
- voice and SMS phone messaging issued by the Emergency Alert system
- agency websites
- VBIL
- emergency broadcasters in accordance with relevant Memorandums of Understanding
- community alert sirens and roadside signage
- agency Facebook and Twitter channels
- person to person, such as door knocking.

During the period 19–25 December 2015 – more than 500 posts on both VicEmergency and CFA Facebook accounts (proactive and automated warnings) and more than 700 tweets through both VicEmergency and CFA Twitter accounts (proactive and automated warnings) were issued. In the same period, in excess of 7250 calls were made to the VBIL.

Bushfire warnings are constructed according to three tiers of alert, these being: advice, watch and act, and emergency warning.

Messages have a standardised format, these being: type of warning; location(s) of area affected by emergency; predicted time of impact and severity; how people should respond; and the name of the agency issuing the warning.

Public Information Officers may be appointed at the state, regional and incident tiers to manage the provision of public information and warnings on behalf of the IC and all responding agencies.

Incident advice and warnings are issued through Victoria's web-based messaging system, One Source One Message (OSOM) to authorised outlets such as VicEmergency, agency websites and social media channels, emergency broadcasters, FireReady App and the VBIL.

In 2014, EMV partnered with VicDeaf and Conexu to deliver fire updates to Victorians who are hard of hearing and deaf through OSOM.

Community alert sirens are used as part of Victoria's warning system for all hazards, including fire. Sirens are located in a number of locations around the state, including Lorne and Wye River. Arrangements for the use of sirens to alert communities are set out in the *Use of Sirens for Brigade and Community Alerting* published in May 2012.

The duration of the siren alert indicates:

- A CFA Brigade has responded to an emergency incident nearby. Stay Informed.
- A current emergency has been identified in the local area and people should seek further information immediately. The emergency incident will impact people in this area.

Traffic management

State arrangements for the operation of TMPs are set out in JSOPs and operating procedures. The principle source of guidance is the *Guidelines for the operation of traffic management points during Class 1 Emergencies*. The Guidelines apply to Class 1 Emergencies as defined in the Act

The guidelines are supported by JSOP 3.10 (Traffic Management) that sets out the procedure to be followed by all CFA, DELWP, Metropolitan Fire Brigade and VICSES personnel involved in traffic management.

The guidelines set out general principles and powers for operation of TMPs, and provide detailed guidance on the types of TMPs, planning, activation and deactivation, advising operational staff of access conditions, use of discretion in enforcing access levels, public communication, media access, breaches and log keeping. Standard operating templates for emergency management staff and standard community information sheets complement material found in the guidelines and operating procedures.

Evacuations

Evacuations are to be conducted in accordance with the *Evacuation Guidelines* set out at Part 8 Appendix 9 of the EMMV. A standard operating procedure JSOP 3.12 (Evacuation) details the responsibilities through the five stages of evacuation; decision, warning, withdrawal, shelter and return.

The IC, in consultation with VicPol, makes a recommendation to evacuate, and it is the choice of individuals as to how they respond to this recommendation. VicPol is primarily responsible for managing evacuations, in terms of withdrawal, coordination of shelter, and subsequent return.

Regional arrangements

Regional response plans set out the roles and responsibilities of response organisations within the region, document coordination arrangements, and list contact details for all agencies and the resources they can provide.

A number of regional and municipal plans are relevant to management of the Wye River – Jamieson Track fire, particularly for community safety activities.

The *South West Community Safety Plan* provides the context for community engagement plans for the area. Community engagement plans were prepared in accordance with mutual aid arrangements for the Barwon South West Region, ensuring the involvement of emergency management agencies in the community engagement process.

The *Municipal Emergency Management Plans* (MEMP) of the Colac Otway Shire and Surf Coast Shire detail the agreements for the prevention of, preparedness for, response to, and the recovery from emergencies that could occur in the shires. The MEMPs state the agreed-upon procedures and processes for issuing warnings and alerts in the case of an emergency for that local government area. The MEMPs also identify special considerations for warning persons who are vulnerable, may have a disability or are from non-English speaking groups.

CFA's *Local Response Plans* for Wye River and Separation Creek, Kennett River and Lorne contain information to support evacuation planning, including maps, locations for relief centres, places of last resort or known places where people gather in an emergency. Wye River and Separation Creek have no fire refuge, or designated neighbourhood safer place. Lorne has no fire refuge, but has two neighbourhood safer places on the foreshore and at Point Grey Picnic Area and Carpark.

The Local Response Plans also include guidance for TMPs. This includes maps and pre-identified points for traffic diversion for the Surf Coast and Colac Otway shires, particularly Great Ocean Road TMPs. Operating guidance notes identify that responsibility for coordination of TMPs lies with the VicPol Divisional Operations Commander and Forward Commander. CFA response plans note that the location of TMPs will be determined by VicPol following consultation with the IC and the IMT.

CFA's *Community Information Guide (Bushfire)*, for Wye River and Separation Creek, Kennett River, and Lorne provide general information on the circumstances for evacuation.

Colac Otway Shire's *Bushfire Community Information Guide* for Wye River and Separation Creek notes that the two communities have extreme bushfire risk under the *Victorian Fire Risk Register*. Neither township has a Neighbourhood Safer Place. The guide provides information on the avenues available to residents seeking to reduce their bushfire risk.

5. Fire control

The Wye River – Jamieson Track fire was managed over three broad phases.

The initial attack used bare earth containment lines and aerial bombing. Second, a back-burn strategy was used in areas south of the main fire to reduce fuel loads ahead of expected high fire danger on Christmas Day. Finally, management of the Christmas Day containment line breach which resulted in the loss of 98 houses in Wye River and 18 houses in Separation Creek.

5.1. Detection and initial attack 19–21 December

On 19 December lightning strikes occurred in the Otway Ranges south-west of Lorne. During the afternoon, Mount Cowley observation tower reported smoke at two locations; one near Delaneys Road and the second near Jamieson Track. The first report of the Jamieson Track fire was at 4.10pm.

At the time of detection, winds were from the north. On the morning of 20 December, the change brought westerly winds of 40–50 km/h. Light rain from mid-afternoon and through the night of 20 December moderated fire activity.

Forecasts from 21 December indicated a gradual shift to warmer temperatures and northerly winds as the week progressed.

Preparedness

On 19 December DELWP crews were deployed to strategic locations in and around the Great Otway National Park and Otway Forest Park– East area including the area that subsequently became the Jamieson Track and Delaneys Creek fires.

The State Fleet Aircraft Readiness Arrangements identified 63 aircraft across the state for 19 December. All were identified as ‘available’ in the readiness arrangements.

Fire detection and spread

Nine personnel, one tanker, two SOUs and a dozer was dispatched to the Jamieson Track fire late afternoon on 19 December. A fixed-wing observation aircraft was also dispatched to assess the fire.

This crew were not able to access the fire in their vehicles, encountering terrain that was densely forested and steep.

The crew continued to work on the containment line until light failed. For safety reasons the crew was withdrawn to the dozer track at this time, but maintained a watch on the fire overnight.

On 19 December DELWP and Parks Victoria (PV) had a total of 23 personnel across two shifts. The night crew of 10 personnel was shared across the two fires. Some of these personnel were part of the pre-positioned crews prior to the ignition of the fires. A further 29 personnel were located in the Colac ICC. The first response had 1 large dozer, with 2 available on stand-by. The dozer was able to work until approximately 1am on 20 December, when it encountered steeper terrain.

CFA responded on 19 December with 27 personnel and 9 tankers. These crews were stood down at 6.40pm on this date as the terrain was inaccessible for the tankers. CFA returned on the afternoon of 22 December to support the back-burn operations.

The key contributor interviews repeatedly noted the difficult terrain and access issues. These interviews also noted that further personnel and resources were not deployed due to concern for firefighter safety, and the limitations of the steep and heavily treed terrain.

Construction of bare earth containment lines continued during 20 December. On-ground resources were also increased, with three dozers, and 30 firefighters (8 night crew were shared across the 2 fires). Of the six kilometres fire perimeter, crews had established two kilometres of containment by late on 20 December.

Key contributors commented repeatedly that the conditions where crews were working were extremely difficult and dangerous, with steep, slippery slopes. One crew was only able to cut 140 m of containment line by hand in a day.

Aerial bombing with retardant or water was used on 20 and 21 December, with one fixed-wing observation aircraft used on both days, and helitacks used on the afternoon of 20 December and morning of 21 December.

Aerial surveillance supplemented reports about the fire from ground crews. However, infrared observation on the afternoon of 21 December,

resulted in an increase of fire area estimates. ICs noted that imagery from 21 December showed over 1000 hot spots.

Over the period 19–21 December, the weather remained relatively benign. Despite the weather, the fire remained active, and spotted to the east of the main fire on 21 December. Reports indicate ground crews contained, and established a bare earth containment line around the spot fire. The fire area increased significantly over the period, from 1 ha late on 19 December, to 65 ha on 20 December, and 92 ha by end 21 December.

Aerial support

The first documented request for a helitack on 19 December was at 4.34pm.

Following the request for aircraft to support initial attack, two bombers located at Hamilton were made available. The bombers were loaded with foam, and were deemed not appropriate by the IMT for the task of suppression in the Otway environment.

One medium helitack located in Bendigo was assigned at 4.46pm. The helitack arrived at the fireground at approximately 6.00pm and was operating on both the Jamieson's Track and Delaney's Creek fires, returning to Colac at 8.44pm.

At 6.58am on 20 December the IMT requested aircraft at the fireground as soon as possible. The medium helitack and support aircraft were airborne at 7.24am. At 8.23am further aircraft were requested as the fire had broken the containment lines and was growing rapidly.

The aerial response was strengthened between 9am and 1.30pm with a total of 7 firefighting (as opposed to observing) aircraft including 4 water bombers (2 large air tanker and 2 smaller tankers) and 3 helitacks (2 medium, one large).

One medium and one large helitacks were then assigned to the Wye River – Jamieson Track fire; one until 24 December and the other until 26 December. They remained throughout the period of the back-burn operation.

At the time of ignition of the Wye River – Jamieson Track fire there were 6 major fires with air water bombing resources allocated to them.

In total on 19 and 20 December 2015, aerial water bombing resources were deployed to approximately 32 fires (19 ignited on 19 December and an additional 13 on 20 December), including deployments at Barnawartha, Wonthaggi, Epping, Wandin North, Marysville/Buxton and Cann River.

Concurrent demands were high, and the State Air Desk was required to allocate the available resources to these fires based on the State Strategic Control Priorities. The Scotsburn fire, which ignited an hour earlier than the Wye River – Jamieson Track fire required a significant number of observation and water bombing aircraft (14) to ensure the protection and preservation of life and assets in Scotsburn and surrounding areas.

There was also a need to maintain readiness across the state due to the extreme fire weather conditions.

A detailed list of resources deployed between 19 and 26 December is shown in Figure 3 and Appendix 3.

Image courtesy Ned Dawson, CFA

Initial fire control strategy 19–21 December

First responding crews initially focused on accessing the fire, and assessing its location, size and activity. The initial strategy was containment through the construction of hand lines and dozer breaks, while managing fire activity with aerial bombing.

The fire was initially managed as a Level 2 incident.

Through the period 19 to late 21 December, the IC's broad strategy was to establish bare earth containment lines to limit the fire's spread within the area bounded by the Cumberland Track to the north, and Jamieson Track to the south.

Figure 3 shows fire control resources for the period 19–26 December.

The initial crew of 9 was increased on 20 December to 30 (8 night crew shared with Delaneys Road) and increased again on 21 December to 41 (10 night crew shared with Delaneys Road). There were four dozers and 17 SOUs on 21 December. Fixed-wing aircraft assisted until late 21 December, and 3 and 2 helitacks respectively for 20 and 21 December.

The IC's expectation late on 19 December was containment of the fire by midday 20 December. By 21 December, containment was not expected until late 24 December, due to increased fire activity on 21 December, including a spot fire to the east of the main fire.

OBSERVATION 1 – INITIAL ATTACK

IGEM considers that the available resources were allocated appropriately (according to the incident Level) to implement this strategy, following due consideration of the fire; safety concerns relating to the extreme danger of the forest environment; steep terrain, thick vegetation; and the weather. It is clear that the safety of firefighters was the foremost consideration from the onset of the fire at all levels of control.

IGEM supports the assertion of incident control personnel that the fire could not have been resourced more during the initial attack without an unacceptable escalation of risk.

OBSERVATION 2 – INCIDENT DOCUMENTATION

IGEM notes that the date and time markers for some incident and planning documentation was inconsistent, or absent.

RECOMMENDATION 1

During the conduct of this review it became apparent that there were discrepancies between the ICC record of the numbers of firefighting resources being applied to the fire at a given time and location versus that of Divisional Commanders (on scene) logs. This situation has the potential to impact both firefighter safety and the effective utilisation of available resources.

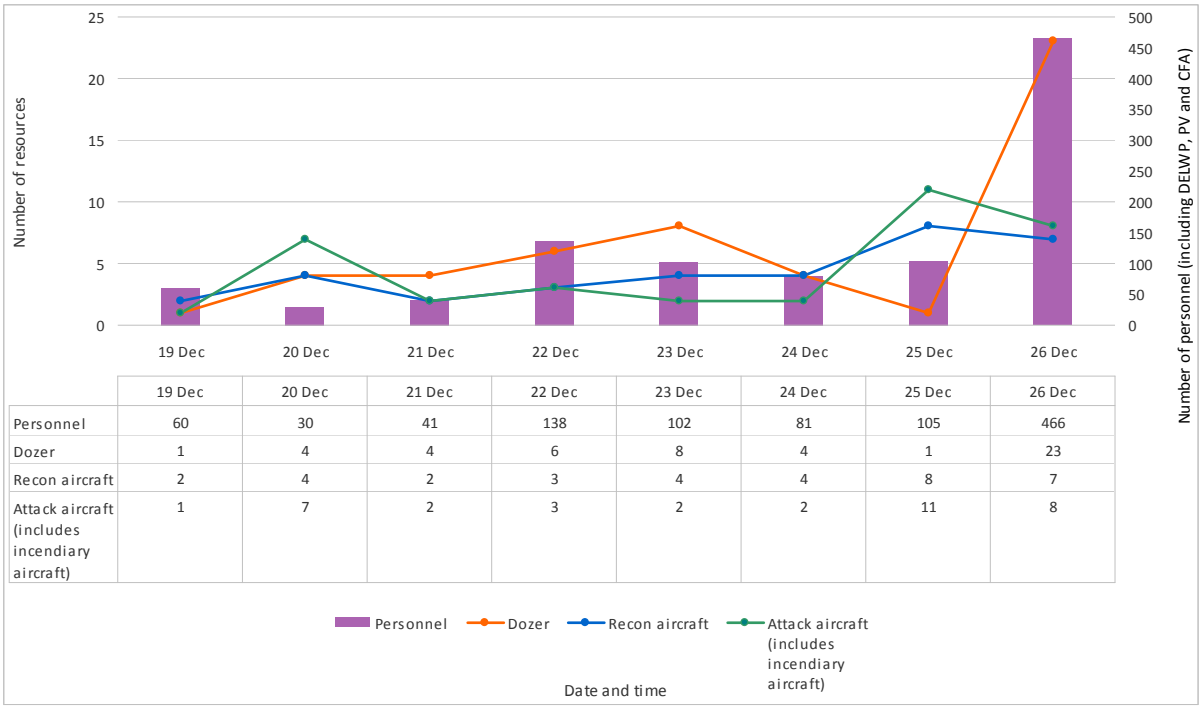
IGEM recommends that fire agencies review their resource allocation recording mechanisms and systems to ensure that an accurate reflection of resources deployed to an incident at any given time can be ascertained.

RECOMMENDATION 2

Throughout this review there were a number of times where important activities were identified as having occurred for which there were either no documented, or inadequately documented records. One such example was the transposing of operationally significant ground points between tactical mapping products, resulting in these points appearing in different locations on subsequent maps. Whilst there was no evidence to suggest that this negatively influenced operational decision making during the response to this fire, the potential exists for it to become an issue in future emergencies.

IGEM recommends that fire agencies review their documentation systems and information recording processes to ensure that all operational activities are captured, and to maintain the accuracy and relevance of all developed products. This includes the need to ensure that all significant points of reference entered into mapping products are geo-coded to facilitate accurate transfer of information from one mapping product to another.

FIGURE 3: Wye River – Jamieson Track fire response and resources 19–26 December



	19 Dec	20 Dec	21 Dec	22 Dec	23 Dec	24 Dec	25 Dec	26 Dec
Personnel	60	30	41	138	102	81	105	466
Dozer	1	4	4	6	8	4	1	23
Recon aircraft	2	4	2	3	4	4	8	7
Attack aircraft (includes incendiary aircraft)	1	7	2	3	2	2	11	8

Source: Incident Situation Reports Wye River – Jamieson Track fire 19–26 December

Assessing progress and adjusting the approach

The initial strategy of direct attack, preparation of containment lines and patrolling increased in intensity; despite this the fire continued to grow in size and was spotting.

Construction of containment lines was slow in the difficult terrain, with reports indicating little progress between 19–22 December. There were significant risks to the safety of firefighting personnel engaged in establishing the containment lines around the fire on steep slopes, which meant that increasing the on-ground resources was not feasible.

Controllers also commented that two other fires requiring significant resourcing at Portland, and in the Strathdownie area of western Victoria, had occurred in the previous month. This ongoing demand meant firefighting personnel were becoming fatigued.

The RCs evolving view of the fire's management on 20 and 21 December was that the fire should be managed with a more focussed approach.

On the afternoon of 21 December, the RC deployed a Level 3 IC to assess the fire management arrangements, and concluded that with extreme fire weather predicted on 25 December, there was significant risk of the fire developing into a major incident.

The RC subsequently discussed escalation of the incident with the DELWP Chief Officer, and SRC leading to a decision to upgrade the incident to Level 3. The formal transition of incident control occurred at 4.18pm on 21 December.

RECOMMENDATION 3

The lightning strike and subsequent fire occurred in an area that was geographically and topographically challenging, carried a heavy and dry fuel load, at a time of worsening weather conditions, and in a location of high tourism visitation where access and egress are significant considerations.

Due to these issues existing from the outset, this fire had potential to become significantly worse.

It is also recognised that degrees of complexity are significant contributors in deciding the level at which to classify an incident

It is evident that the Wye River – Jamieson Track fire met all of the criteria for a Level 2 incident in its early stages, and its eventual re-classification to a Level 3 incident was appropriate.

However it would have been appropriate to have classified the fire as a Level 3 incident from the start on the basis that there scope for re-classification.

IGEM recommends that fire agencies consider an earlier classification of Level 3 incident for fires that present significant complexity such as was evident in the Wye River – Jamieson Track event.

In making this recommendation, IGEM does not suggest that the outcome in this situation would have been any different, however there may be implications for future such fires.

By the afternoon of 20 December, the IMT had commenced planning and analysing alternative options for controlling the fire. Records show the IMT produced iterations of options analyses at 1pm on 20 December, 5pm and 10pm on 21 December.

The final analysis included the four options:

- Option 1 – Direct attack using helitack, aerial bombers, LATs in holding pattern.
- Option 2 – Establish and/or consolidate containment lines by hand trail supported by dozers where practicable.
- Option 3 – Back-burning from Jamieson Track/Wye Road (west) along Jamieson

Track to the spur south of existing spot over in the east.

- Option 4 – Back-burning from Jamieson Track/Wye Road to Great Ocean Road.

Option 4, involving back-burning the unburnt areas between Jamieson Track and east to the Great Ocean Road, was rated at 80–90 per cent chance of succeeding, while Option 3, with back-burning of lesser easterly extent, was rated at 80 per cent chance of success. By contrast, options 1 and 2, which did not involve back-burning, were assessed as having 20 per cent and 50 per cent chance of succeeding respectively.

The IMT analysed the options against cost estimates, firefighting resource requirements and availability, estimated probability of success, consequences of failure and contingency requirements, risks to firefighters, and the public, and broader economic, environmental and organisational impacts.

The IC, together with team leaders of the IMT, identified Option 4 as the approach that had the greatest chance of succeeding in containing the fire.

The final options analysis was underpinned by a detailed rationale for choice of the preferred option against safety and effectiveness, and the level of risk associated with other options. The rationale referred to a wide range of factors including:

- the condition of existing tracks and firebreaks
- predictive fire behaviour through Phoenix RapidFire mapping
- fuel moisture
- fallback and escape routes for fire crews
- access for vehicles
- limitations of the effectiveness of retardant and water bombing
- the time available before expected escalation in fire danger.

On the morning of 22 December, state, regional and incident controllers discussed the options via teleconference. The window of opportunity for back-burning was favourable, the required containment lines were in place and back-burning offered the greatest potential to reduce the risk to communities and assets.

The back-burning strategy was subsequently approved by the SRC at 1pm. This level of approval exceeded the requirements of DEWLP WI 5.5.3.13. This was then circulated to the Chief Officers of DELWP and CFA.

5.2. Back-burning 22–24 December

Weather on 22 December was moderate, with cloud cover until early afternoon, temperatures below 20 °C, and east-south-east winds of up to nine km/h. Temperatures were expected to increase to mid-20s on 23 December, with winds remaining east south-east and south-east at 10 to 15 km/h. Expectations of considerably increased fire danger on 25 December remained.

Fire control strategy

The fire control strategy adopted from 22 December involved removal of fuel from an unburnt area by back-burning the south side of the existing fire. The IC planned to back-burn the unburnt areas northwards from near Wye Road and Jamieson Track to the edge of the fire. Wye Road and Jamieson Track follow ridge tops, with terrain dropping steeply down into river valleys to the north. The westerly edge of the burn was 0.5 km west of the fire's western extent, with its eastern edge above the Great Ocean Road close to Artillery Rocks.

Firefighting personnel increased from 41 on 21 December, to 138 on the afternoon of 22 December. There were 102 late on 23 December and 81 on 24 December. Twenty CFA personnel assisted DELWP crews on 22 and 23 December. A number of helitacks operated for most of the period 22–24 December, and fixed-wing aircraft operated on 24 December.

Incident planners had identified a much larger fire and risk to assets as the consequence of the back-burn strategy failing. Reflecting these significant consequence and their significant implications for communities, the IC initiated planning for community engagement and safety strategies for communities to the north, and south of the fire, and for the Great Ocean Road.

On 21 December the IC expected the fire to be contained without additional treatment by late 24 December. On the morning of 22

December, this expectation was revised to late 26 December.

Developments over the period

By late 22 December, reports indicate that the back-burn was progressing well, with flame heights of 1–1.5 m. Crews were achieving between 10 and 30 m depth in the western sector, and 50 to 100 m in the eastern sector.

Crews undertook work to assess contingency containment lines to the south of the fire on 22 December. Reports indicate works to cut the lines were scheduled, but do not confirm their completion.

From 4pm aerial incendiaries were used to ignite fire along ridge lines. Progress continued on 23 December, with situation reports indicating the back-burn was mostly successful. In one area moisture levels prevented effective burning of one area around a creek gully on the western side of the main fire.

With the back-burn providing protection against spread of the fire to the south, crews prepared containment lines on the northern side in preparation for a wind change expected for late on 25 December. Crews cut a dozer containment line along the north-west and along Jamieson Creek running along the north-east flank. By 10pm on 24 December, the dozer had progressed up Jamieson Creek from the Great Ocean Road to a point half-way along the fire's northern boundary.

Reports from 24 December indicate the fire was quiet throughout the day, and remained within the existing containment lines. By 24 December, crews were finalising the back-burn.

Assessing progress and adjusting the approach

Reports indicate the back-burn progressed as planned, implementing the strategy of protecting against fire spreading with northerly winds forecast for 25 December. Final reports of 24 December indicate helitack water bombing continued until later afternoon, and that ground crews were patrolling and blacking out hotspots.

Along the northern edge of the fire, dozers were used to establish containment lines to protect against northerly spread of the fire in anticipation of winds from the south-west forecast for late 25 December.

Aerial reconnaissance monitored the fire throughout the period 22–24 December. The IMT undertook smoke modelling to assess the impact on towns and the Great Ocean Road.

This strategy was successful in reducing fuels and potential fire intensity (infrared mapping had previously identified 1000 hot spots in the original fire).

5.3. Break-out 25 December

There were two flare-ups during the night of 24–25 December which were dealt with successfully. By the morning of 25 December the fire was still within the established containment lines.

The southern edge of the fire included a 'tongue' that burnt upslope to within 10 m of Jamieson Track by an earlier overnight fire run on 21 December.

Wind speed increased to maximums of 19 km/h late in the evening of 24 December, and swung to the north north-east. Reports indicate maximum wind speeds of 39 km/h by 5.30am. The northerly wind continued throughout 25 December.

Fire control strategy

Due to high fire danger conditions forecast for 25 December, the fire control strategy focussed on containing the fire within containment lines. Crews monitored the fire into the morning of 25 December. With the northerly wind, any fire not quickly controlled could expand and run to the south. The strategy was for aircraft to immediately attack any spotting that occurred.

Incident reports indicate aircraft were water bombing the fire on the morning of 25 December. This is not recorded in the incident documentation.

Thirty-seven DELWP firefighters were available for most of the day, with an additional 90 CFA personnel in the evening. Crews deployed were eight SOUs and one tanker. This increased to 10 tankers in the evening.

Contingencies for community safety were in place, with communities advised, evacuations of Great Otways National Park completed, and

plans for evacuation of Wye River, Separation Creek, Kennett River and Lorne in place. Plans for closure of the Great Ocean Road were ready for activation.

Developments over the period

By 11.30am spot fires were burning outside containment lines. The fire spot over is reported to have been started by a tree falling from an area that had been previously well burnt. As the tree fell it provided additional unburnt fuel which caught fire, and started throwing embers as a result of the hot and extremely windy conditions. These embers resulted in spot overs and breach of the containment line.

The IC had expected any fire spilling over containment lines would quickly move south over Godfrey's Track. Godfrey's Track runs south south-east for around two km from its junction with Jamieson Track, the southern containment line.

The breach of the containment line prompted an immediate response by the IC. Aircraft were used to drop water on the spot fires as there was no possibility of on-ground crews or dozers accessing the fires.

By 12.45pm the fire had crossed both Godfrey Track and Wye Road. At 2pm another spot fire broke away, 50 m south of Wye Road, on the fire's western edge.

The infrared scans taken immediately prior to and during the run of the fire to the coast locate the first visible growing hot spot adjacent to the 'tongue' area noted above. However, this first indication of a growing fire does occur near the junction of the previously burnt areas.

From around 12.45pm records show the fire area rapidly increasing, from 271 ha overnight to 600 ha at 2pm, and 1399 ha at 4.17pm. Around this time power was cut to Wye River as fallen poles and live wires were causing an electrocution risk to fire crews.

Fire activity with potential to threaten Lorne was evident by 8pm. Two separate spot fires led to northerly spread up to the Cumberland Track with flame heights of two to three metres.

By 10.36pm the fire was within one kilometre of Kennett River, to the south of Wye River. The fire area was estimated to be 2080 ha, and still under the influence of a strong northerly wind. The expected south-west change, originally anticipated at around 8pm, arrived later in the night. A report at 5am on 26 December notes the change brought 3 mm of rain, moderating southerly progress of the fire, which stopped one kilometre short of Kennett River.

Assessing progress and adjusting the approach

Incident records show readiness for the events of 25 December, and a rapid turn to protecting the safety of crews and communities, and assets in the townships to the south.

Reports at 11.30am show that due to spot fires and unfavourable weather conditions, crews at the fireground were not confident of containing the main fire. When the fire breached containment lines the IC initiated community safety plans in response to the escalating risk caused by the rapid southward spread of the fire.

Crews were withdrawn from the fireground, and CFA resources readied in Wye River and Separation Creek to give direct protection to houses. The IC established an additional divisional command to support this effort.

Shortly after 11.30am the IC initiated evacuations of Wye River and Separation Creek, and closed the Great Ocean Road.

With community safety strategies implemented, records show that the IC moved to prepare for the change of wind to the south-west, expected in the evening between 7pm and 9pm. The IC closed the Great Ocean Road at Anglesea to the north of Lorne, and initiated the evacuation of Lorne at 4.11pm.

OBSERVATION 3 – CONTROL STRATEGIES

The Colac IMT adjusted the fire control strategy when good situational awareness identified the failure of the first attack strategy to contain the fire. Using rigorous and extensive process the fire control strategy moved to one of control by fuel removal in strategic areas with back-burning procedures.

IGEM notes that an extensive and exhaustive options analysis was a key part of control strategy planning. The analysis incorporated consideration of potential risk of each option, chance of success, weather conditions, the vegetation and landscape and fire behaviour prediction maps.

IGEM notes the high level of engagement across all levels of control driven by the potential for the fire to escape and the risk it posed to communities.

IGEM recognises the appropriately scaled approach to control and resource allocation throughout this fire. The effectiveness of strategy planning and implementation were highly likely to have contributed to the successful outcome of preserving life and minimising further losses. This achievement of the most important strategic control priority is a successful outcome for the community and the emergency management sector.

Evacuation and traffic management plans were in place to mitigate the potential impact should the back-burning operation result in a larger fire.

IGEM supports the intent, rationale, decision process and implementation of the fire control strategies in order to reduce risk to communities.

6. Community safety

6.1. Detection and initial attack 19–21 December

In the lead up to Christmas, towns along Victoria's south-west coast from Queenscliff to Apollo Bay prepare for the summer influx of holiday makers and tourists. Queenscliff's permanent population swells to over 6800 at peak times, while Lorne has a permanent population of around 1600, which can increase tenfold to over 16,000 during the summer season.

Traffic volumes on the Great Ocean Road increase significantly over this period, with a peak of 22,500 vehicles over the Christmas – New Year period recorded in 2014–15. The Great Ocean Road is the only major road accessing coastal towns of this area.

Since 1993, the Falls Festival has been held from 28 December to 1 January in the hills above Lorne. This festival attracts up to 17,000 people.

Due to the risk from fires impacting Wye River and Separation Creek, and anticipated warm temperatures to impact Victoria on New Year's Eve, the 2015 festival was moved to Mount Duneed Estate near Geelong.

Community safety strategy

General state and regional community safety strategies were in place from detection of the fire on 19 December through to its upgrade to a Level 3 incident on 21 December.

Across the state, the summer fire communications campaign was in progress. The campaign aims to improve community safety by lifting public awareness of bushfire planning and response. The campaign uses multiple channels of communication including:

- television community service announcements
- community newspaper advertisements (metropolitan and regional)
- culturally and linguistically diverse print advertising
- social media advertising (metropolitan and regional)
- digital advertising (metropolitan and regional)
- weekday news updates on selected regional radio stations
- social media program through CFA channels and supported by other agencies.

The *South West Community Safety Plan* formed the basis for community engagement and communication for the period 22 December 2015 to 4 January 2016.

The *Otways Community Engagement Plan for Period Starting 28 December* outlines mechanisms for communication with communities including community newsletters, direct communication with clubs, door knocks, static information boards and social media. The plan also included liaison with regional stakeholders including municipal councils, visitor information centres, tourism operators and event organisers.

EMJPIC met on 21 and 24 December and issued a media plan on 24 December with fire-related messaging reflecting increased fire danger forecast for the forthcoming weekend.

Developments over the period

Incident control messaging – From initial response to the fire, the IC sent regular advice messages. The IC's initial concern on 19 December was noted as Lorne, 13 km south west of the fire.

Community information – The IC initiated preparation of a community newsletter on 20 December, as smoke from the fire was drifting over Lorne. The newsletter included information for campers and visitors regarding safety, health, road traffic, contact details and a map showing size and status of the fire. The newsletter indicated the possibility of TMPs being enacted, and cautioned drivers to take appropriate care. The newsletter aimed to link key state messages to local incident information.

The newsletter of 21 December was updated on the morning of 22 December. Whilst noting the absence of any fire threat to communities, it advised communities to listen for alerts. It also included notice of public meetings in Lorne and Wye River scheduled for the 23 December.

On 21 December, DELWP Officers worked with Surf Coast Shire Council and Colac Otway Shire Council to plan for the opening of Visitor Information Centres on Christmas Day.

Community liaison and engagement – The IC continued providing advice to the Lorne community on 21 December, and noted that two community liaison staff would be located at the Lorne Visitor Centre and would visit local communities with bushfire information.

On 22 December, with commencement of the back-burn and likely smoke effects on communities in coastal towns and users of the Great Ocean Road, the IC scheduled community meetings at Lorne and Wye River for the 23 December.

Other information sources included media conferences broadcast from the State Control Centre on 19 and 20 December with spokespeople including the Premier of Victoria and the EMC.

Warning channels – Through OSOM, community information and warnings were issued via a range of channels including VicEmergency, as the primary website for information during emergencies. General information updates also appeared on the CFA website during the period 22–24 December.

Reviewing and updating strategy over the period

Events reflect that entities involved in managing the emergency monitored the changing situation, and that there was coordination and collaboration in operational decisions responding to the fire.

State level – The *State Strategic Risk and Consequence Plan for Heatwave, Fire & Extreme Weather 19 to 27 December* indicated a high level of confidence in existing state arrangements for evacuation and relief.

The State Control Team *7 Day Action Plan* for the period commencing Monday 21 December was updated on Tuesday 22 December. The plan updates risks to emergency management objectives, and sets priority actions and responsibilities for the State Control Team. The Wye River – Jamieson Track fire was upgraded from a Level 2 to Level 3 incident by the RC Barwon South West. The fire was then managed as a Level 3 incident with associated planning and resourcing for a fire impacting on Wye River and the broader Otways coast and hinterland.

The EMJPIC Executive met on 17, 21, 24, and 26 December. During the summer season EMJPIC normally issues weekly media plans. On 24 December, in response to the Wye River – Jamieson Track fire, EMJPIC updated its plan of 21 December.

DHHS activated its communications plan on 21 December.

Through the RCs teleconference, the SRC clarified the role of the SCC Public Information Unit's support for messaging, specifically the role of SCC officers in ensuring the quality and consistency of warnings issued by the IC.

Incident level – Reports show the IC responded to changing circumstances, and adopted wider communication and engagement strategies. As the fire expanded, and smoke affected coastal township communities and users of the Great Ocean Road, the fire control strategy shifted to back-burn during 22 December.

The IC's Strategic Plan for 21 December outlined that Colac IMT would be developing scenarios for when traffic management and evacuation plans were to be triggered.

Colac IMT had commenced work on a Traffic Management Plan and Evacuation Plan, in conjunction with regional emergency management agencies. Colac Otway Shire was nominated as the lead local government agency.

Evacuation planning considered the potential impact on the Wye River and Lorne communities.

Evacuation planners drew on existing Community Information guides (formerly known as Township Protection Plans). These were supplemented with additional information from local government including property maps and registers of vulnerable persons. The planning team also divided the towns into sectors for the purpose of resource allocation and identification of priority areas in the event of an evacuation.

Agencies discussed their resource availability for possible implementation of the evacuation plan. The planning team used resources such as the Colac Otway Shire Vulnerable Persons Register in this planning phase.

Evacuation planning was completed late in the evening of 23 December according to an Incident Situation Report of 10.55pm. The *SCC Situation Report* of 6pm 24 December confirms that evacuation planning was complete

Evacuation guidance documents from midday 24 December 2015 indicate that guidance had been prepared to support the evacuation of Wye River and Separation Creek, Kennett River and Lorne. This included evacuation maps for Wye River, Separation Creek and Kennett River. IGEM did not sight an evacuation map for Lorne.

Relief centres were in readiness and commenced operating from 25 December. Relief centres were set up at Apollo Bay for evacuation from Wye River, Separation Creek and Kennett River, and at Torquay for evacuations from Lorne.

6.2. Back-burning and break-out 22–25 December

Authorities were facing increased risks as forecasts showed a weather pattern leading to hot conditions with strong northerly winds on 25 December with strong northerly winds. The scale of the community safety risk would increase during the second half of the week as more people travelled to the coastal townships for Christmas Day.

OBSERVATION 4 – COMMUNITY ENGAGEMENT, PUBLIC INFORMATION AND WARNINGS

From the evidence sighted by IGEM, information and warnings for the Wye River – Jamieson Track Fire during the period 19–25 December were constructed and issued in accordance with protocol.

IGEM notes that information and warnings were distributed through a range of technologies and communication channels to reach communities that could be affected.

IGEM observed that the linkages between key state, regional and incident management personnel, local government and responding agencies' personnel was integral to successful community engagement.

IGEM notes that provision was made during the evacuation planning for all persons potentially affected by the fire including vulnerable persons and visitors to the areas.

Community safety strategy

The shift in fire control strategy on 22 December was accompanied by a shift in community safety considerations.

The IC was aware on 22 December that, in the context of unfavourable weather conditions on 25 December, that if the back-burn failed to contain the fire, the outcome would be a much larger fire and potential threat to assets over the longer term.

The IC's considerations for community safety from 22 December recognised the need for community safety actions to be ready, and commensurate with these risks to communities. From 22 December planning for community engagement, traffic management, and evacuation, including resourcing, were underway, and were completed by late 23 December.

As reported in State Emergency Management Team Situation Report of 23 December, VicPol worked collaboratively with the IMT to manage traffic control to provide timely and safe access for property owners at TMPs.

Developments over the period: 22–24 December

On 21 December IMT circulated information on the status of the incident to local authorities. At this stage, the IC noted the importance of informing the public given the increase in smoke and fire size that would result from the back-burn.

On 22 December the IMT modelled smoke drift patterns through to the late afternoon of 24 December to guide decision making.

Throughout 23 December the IC provided advice to local authorities on status of the fire and smoke. Late on the evening of 24 December, the IMT noted advice and updated information had been provided for local communities. The advice would remain current until 8am the following morning, 25 December. The IMT noted there were no current community related issues at that time.

From 22 December, community safety actions were taken as follows:

Community information – On 22 December an updated community information newsletter was issued highlighting the fire threat level and safety warnings, and included maps with the size and status of the fire. The newsletter included public notice of community meetings at Lorne and Wye River for 23 December.

Community liaison and engagement – Community meetings were conducted on 23 December at Lorne Senior Citizens Centre at 10am and Wye River Surf Lifesaving Club at 1pm. 560 people attend the Lorne meeting. The Wye River meeting was well attended but exact numbers are not available.

VicPol members were present at community meetings as reported in State Emergency Management Team Situation Report of 23 December.

Warnings and community updates – Warning messages (Advice level) and community updates were sent to communities throughout the period 19–24 December. As shown in Table 1, 31 advice messages and 12 updates were sent using OSOM.

Image courtesy Wayne Rigg, CFA

Table 1: Community messages for the period 19 to 24 December

Date	Advice	Community Update
19 December	5	
20 December	7	2
21 December	4	2
22 December	10	5
23 December	3	2
24 December	2	1
Total	31	12

Source: OSOM message data

The 24 December video update from the Colac IMT, published to social media channels, recorded more than 16,000 views.

Other information sources including a media conference were broadcast from the SCC on 24 December with spokesperson CFA Chief Officer, live TV crosses from the SCC and the Colac ICC, and radio interviews.

Traffic control – Emergency management agencies undertook a range of actions from 21 to 23 December in preparation for possible road closures.

Community information newsletters dated 21 and 22 December warned of possible traffic management measures on the Great Ocean Road, and the need for road users to exercise care and monitor the fire situation.

On 22 December contingency arrangements for the Great Ocean Road were ready in the event that closure was required.

Camping grounds in the Great Otway National Park were closed. Tracks and minor roads in the area were also closed, including Curtis Track, Godfrey Track, Jamieson Track, Wye River Road, Wye River Track and Wye Road.

For the night of 22 December vehicle speed restrictions were monitored and implemented on the Great Ocean Road. Heavy smoke at ground level was likely as a result of a temperature inversion during the night. The SCC worked with VicRoads to send alerts to motorists not to stop on the Great Ocean Road.

Evacuation planning was conducted in response to the potential impact on the Wye River and Lorne communities. Agency

discussion centred around arrangements for resource availability in the event of implementation of the evacuation plan.

By 23 December VicPol was working with the IC to control access to properties, and ensure property owners had timely and safe access to their properties.

On 24 December the IC and the VicPol commander and traffic manager, developed traffic management arrangements for the fire affected areas of the Great Ocean Road. On 24 December police closed the Great Ocean Road between Lorne and Skenes Creek, six km north east of Apollo Bay.

A manned TMP at the Great Ocean Road intersection with Deans Marsh Road at Lorne directed south-bound traffic north to Deans Marsh. On the southern side of Lorne, a TMP at the Hird Street intersection with the Great Ocean Road prevented vehicles proceeding further south.

At Skenes Creek, a manned TMP directed traffic headed north-east on the Great Ocean Road northwards to Forrest along the Skenes Creek – Forrest-Apollo Bay Road.

Police records note that upon evacuation of Wye River and Separation Creek, police planned to prevent any traffic travelling north on the Great Ocean Road, so as to facilitate the evacuation.

VicRoads supported traffic management with electronic signs on main arteries into the south-west coast area advising drivers to use alternative routes and avoid the fire-affected section of the Great Ocean Road. On the north side of fire-affected area VicRoads located signs at the Princes Freeway inbound and outbound from Geelong, at Bellbrae between Torquay and Anglesea. On the south side of affected areas, signs were also were located at Cape Otway and Skenes Creek, and inland at Dean's Marsh, and Forrest.

Developments over the period: 25 December

By 11.30am on 25 December, the fire had broken containment lines, with the expectation of it expanding south in the strengthening northerly wind. The IC was monitoring the pre-established triggers for evacuations and indicated that a call for the evacuation of Wye River and Separation Creek would be by 11.50am.

The evacuation of Wye River and Separation Creek commenced at 11.57am. At this time an aircraft flew the closed sections of the Great Ocean Road to identify if any additional people in the area.

The IC requested a strike team and an additional Divisional Command to be set up at Wye River to deal with spot fires threatening assets in the township.

The evacuation of Wye River, Separation Creek and Kennett River was completed shortly after 2pm.

By 2pm the IC's priority was to ensure the safety of firefighting personnel and the community. Firefighting resources were turned to asset protection in Separation Creek and Wye River.

After 2pm the focus of IMT planning turned to scenarios arising from a forecast south-west wind change, expected to arrive between 7pm and 8pm.

Emergency warnings and evacuation – Wye River and Separation Creek – Evacuation plans indicate the trigger for evacuation of Wye River and Separation Creek as the breaking of containment lines, or the IC's decision in relation to the balance of risk of remaining in situ against those of evacuation.

The decision to issue an emergency warning on 25 December was based on knowledge that approximately 400 people were in Wye River and the expectation that the fire would reach the township by 3pm.

Evacuations of Wye River and Separation Creek commenced at 11.57am on 25 December. From this time, eight emergency warnings and five recommendation to evacuate messages were issued for the Lorne, Wye River and Separation Creek areas.

The national Emergency Alert telephone warning system was used to issue emergency warnings (five instances) as voice messages to landlines, and text messages to mobiles active in the warning areas based on handset location and service address. Data analysis indicated the 'rule-of-thumb' success of system performance.

A decision was made to door knock all properties in Separation Creek and Wye River. VicPol also checked on persons identified as vulnerable by Colac-Otway Shire.

People were advised to seek shelter at the Apollo Bay Leisure Centre at 34 Costin Street, Apollo Bay. Messages at 11.57am, 12.50pm, 1.19pm and 1.36pm indicated that leaving after 1pm may be too late, and that evacuation after this time would be life threatening.

The final message at 1.52pm indicated that residents should take shelter immediately, that it was too late to leave, and Wye River and Separation Creek were about to be impacted by fire.

According to an incident situation report, the evacuation of Wye River and Separation Creek was complete at 2.07pm.

Emergency warnings and evacuation – Kennett River and Grey River – On 25 December six emergency warnings and eight 'Recommendation to Evacuate' messages were issued for Kennett River and Grey River. Three watch and act messages were issued for Wongarra, which is 7.8 km west of Grey River.

Evacuations of Kennett River and Grey River commenced at 1.30pm. Eight messages recommending residents evacuate were sent between 1.30pm and 5.20pm. People were advised to seek shelter at the Apollo Bay Leisure Centre.

Evacuation messages include a time after which leaving the area may be too late, and that evacuation after this time may be life threatening. In messages to Kennett and Grey River communities, this latest time of safe departure shifted back three times:

- messages at 1.30pm, 1.41pm – Safe leaving time of 2.30pm
- messages at 2.51pm and 3.07pm – Safe leaving time of 4pm
- messages at 4.23pm and 4.29pm – Safe leaving time of 5pm
- the final message at 5.20pm – Safe leaving time of 5pm.

An incident situation report at 2.07pm indicates that the evacuation of Kennett River was complete. Five evacuation messages were sent after this time. Whilst evacuation took place in Grey River, IGEM is not able to say when this was completed.

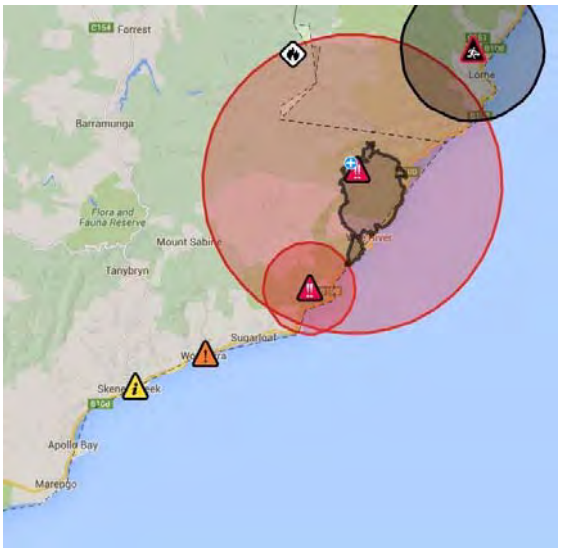
Emergency warnings and evacuation – Lorne, Allenvale – From 2pm the IC shifted attention to preparing for the south-westerly wind change expected on the evening of 25 December. The predicted change brought the potential for fire to be pushed north-west towards Allenvale on the southern side of Lorne.

The decision to evacuate Lorne was at the IC's discretion. This decision was based on balancing risks of remaining in situ in Lorne against evacuation.

The 'Recommendation to Evacuate' messages were sent to Lorne and Allenvale communities from 4.11pm on 25 December. Six evacuation messages were sent on 25 December at 4.11pm, 5.57pm, 6.24pm, 8.42pm, 9.33pm, and 11.37pm. A further nine messages were sent on 26 December between 12.26am and 8.27am. From 1.53pm messages indicated VicPol visiting and advising people of the evacuation. The emergency messages are consolidated into Table 2.

People were advised to seek shelter at 1 Merrijig Drive Torquay.

The Lorne community alert siren, triggered by OSOM, sounded six times on 25 December and eight times on 26 December. OSOM logs indicate that it was unlikely that the Wye River siren was activated on 25 December. IGEM has not sighted other evidence that the Wye River siren was activated.



The red area represents an Emergency Warning issued by Country Fire Authority for Kennett River, Grey River

OBSERVATION 5 – EVACUATION AND TRAFFIC MANAGEMENT

The potential for this fire to break containment lines and the risk to communities was identified across all levels of control during the first days following detection. The options analysis risk and consequence work informing fire control strategy strengthened the need for mitigation of the risk to communities, and subsequently planning for evacuation and traffic management commenced on 21 December.

IGEM notes the strong cooperation and collaboration between VicPol, DELWP, Parks Victoria, local government and ICC resources were critical to the planning and successful implementation of the evacuation. The commitment of the agencies is commended.

Evacuation and traffic management planning drew on state policy and guidance as well as pre-prepared local response plans. A risk-based evacuation plan was adopted.

The evacuation plan was implemented effectively due to the multi-agency planning and preparation that had taken place. VicPol led the execution of the plan, supported by VICSES.

IGEM considers the evacuation strategy to be prudent, well planned and executed. It is an example of leading practice for shared learning.

Table 2: Emergency messages issued on 25 and 26 December for Wye River, Separation Creek, Kennett River and Lorne areas

Date	Message area description	Recommendation to Evacuate	Emergency Warning	Watch And Act
25 December	Allenvale			2
	Lorne			1
	Lorne, Allenvale	6		1
	Wongarra			3
	Wye River, Separation Creek	5	8	
	Wye River, Separation Creek, Kennett River			2
	Kennett River, Grey River	8	6	
26 December	Lorne, Allenvale	9		3
	Wongarra			6
	Wye River, Separation Creek		15	1
	Kennett River, Grey River		12	4

Source: OSOM message data

7. Good practice and learning the lessons

The Wye River – Jamieson Track fire response required implementation of a fire control strategy supported by dynamic planning. Interviews with state, regional and incident level personnel identified multiple examples of innovative or good practice that occurred in the management of the incident between 19 and 25 December. IGEM also examined relevant documents to substantiate the key interview themes.

All contributors highlighted the effective use of planning during the period of 19 – 25 December. Plans were flexible and able to be adjusted. Plans were implemented based on extensive and constant modelling and risk assessments.

Evacuation planners drew on existing Township Protection Plans. These were supplemented with additional information from local government including property maps and registers of vulnerable persons. The planning team also sectorised the towns and used those sectors to progressively evacuate residents.

The evacuation plan provided to the IMT included the strategy, maps and vulnerability registers. This was available for immediate sign-off when the decision to evacuate Wye River and Separation Creek was made by the IC on 25 December 2015

Traffic management and evacuation plans were implemented effectively and efficiently by VicPol. The plan was well-supported by community information and warnings, resulting in communities that were well prepared when they were informed of the evacuation. This view was supported by numerous contributors and emphasised by operational personnel.

Interviewees commented on the coordination and collaboration between all response agencies. Selected key contributors noted the strong presence of an all-agencies joined-up approach to management of the incident. The coordination and cooperation between VicPol and the IMT was also well recognised.

The IMT included multiple deputy incident controllers with designated roles, such as the VicPol officer assigned to manage evacuation planning and traffic management. Key contributors at regional and state level noted the value of the region-wide approach and unique governance structures.

The appointment of a senior fire controller to augment the existing control structure and oversee both the Wye River – Jamieson Track and Delaneys Road operations was deemed to be effective. This structure created strong situational awareness and a high level of accountability. All key contributors noted with approval that there was strong coordination between state, regional and incident control levels. This is further supported by IGEM's analysis of the situational reporting and communications across state, regional and incident level.

The majority of key contributors also identified strong state, regional and incident level leadership throughout the incident. The strong capability of certain individuals and response agencies throughout the incident was also a common theme throughout the interviews.

The IC was cognisant from the outset of the inherent dangers of forest firefighting, and factored this into their planning processes. Activities such as dangerous tree management were a key consideration. DELWP's *Bushfire Management Manual* provides a series of SOPs to support ICs. A further innovative approach was the deployment of trained wilderness paramedics to mitigate the risk of injury on the fireground. As a result there were no deaths or serious injury to any agency or community members.

Additional approaches noted by interview participants were:

- the value of local knowledge
- the range of planning tools utilised
- the use of ribbons to identify houses where residents had evacuated
- the well-practised IMT at Colac.

Glossary

Air Attack Supervisor (AAS)	Person responsible for the safe, effective and efficient tactical coordination and direction of firebombing aircraft operating at a fire
Australasian Inter-service Incident Management System (AIIMS)	A nationally adopted management framework for organisations working in emergency management, providing a common language and consistent approach for the effective and efficient control of incidents
Back-burn	As defined in the Code: an indirect attack tactic where a controllable fire is ignited along the inner edge of a fire control line to consume the fuel in the path of a wildfire, producing a burnt area to expand the depth of the fire control line. As distinct from Burning-out
Bare (Mineral) Earth	A non-flammable surface (either natural or prepared) which provides a break in understorey, litter and humus fuels and hence a barrier (of varied effectiveness depending, amongst other things, on its width and the intensity of the approaching fire) to fire travelling on or near the ground surface
Birddog	Call sign designator for twin engine fixed wing aircraft carrying the person directing firebombing action on a fire, or conducting reconnaissance or gathering fire intelligence
Burn out	A fire control tactic, where fire is ignited to consume unburnt fuel inside a fire control line to prevent further ignition or to minimise the potential of fire crossing the fire control line (from the DELWP Glossary)
Contained (incident status)	Indicates that the spread of the fire is halted even though it may still be burning within the perimeter or control lines. Such a fire may still require continuous suppression action (e.g. completion of fire control lines) before it is 'under control' to bring about a 'controlled' situation (status = 'Under Control 1')
Containment Line	Also referred to as Fire Control Line: a natural or constructed barrier, or treated fire edge, used in fire suppression and prescribed burning to limit/prevent the spread of fire
Deputy Incident Controller	An individual nominated by the Incident Controller to support the Incident Controller in the management of the incident and, in the absence of the Incident Controller, to have responsibility for management of the incident within the parameters agreed to with the Incident Controller
Direct Attack	A fire control strategy where suppression action is taken adjacent to or on the fire edges where wet or dry firefighting techniques are used
Division Commander	Person responsible for implementing the Incident Action Plan appropriate to the division
Dozer	Any tracked vehicle with a front mounted blade or stick rake used for exposing mineral earth
Emergency Alert (EA) System	The telephony based system used by response agencies to send warning messages via mobile and landline telephones to targeted communities
Emergency Management Manual Victoria (EMMV)	The manual developed under the Emergency Management Act 1986 (Vic) which integrates into a single multi-part book the principal policy and planning documents for emergency management in Victoria and is produced Emergency Management Victoria
Evacuation (from JSOP 3.12 – 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

Firebird (FBD)	Call sign designator for Type 3 helicopter used for fire suppression and prevention operations
Firebomber	An aircraft fixed or rotary wing with the capability of delivering fire retardant slurry, water/ foam mixture or water directly onto a designated (targeted) fire area
Firebombing	The technique of dropping a suppressant or retardant from specialist aircraft to suppress a bushfire
Fireground	The area in the vicinity of the bushfire and fire suppression operations, and the area immediately threatened by the fire. It includes burning and burnt areas; constructed and proposed fire control lines; the area where firefighters, vehicles, machinery and equipment are located when deployed; roads and access points under traffic management control; tracks and facilities in the area surrounding the actual fire; and may extend to adjoining area directly threatened by the fire
Firespotter (FS)	Call sign designator for a single engine fixed wing aircraft used for fire intelligence gathering operations
FireWeb	A DELWP on-line information management system
Fire Crew	Two or more firefighters organised to work as a unit with a nominated crew leader.
Fire Tower	An elevated tower with a lookout box mounted on top used to detect and locate fires
First Attack	The suppression work undertaken in the initial response to an incident
Forward Looking Infra-Red (FLIR)	Video output sensor designed to detect and record thermal energy instead of visible light. For fire control purposes, as thermal energy is able to pass through smoke, FLIR units are effectively able to “see” through smoke
Hand Line	A fire control line constructed with hand tools
Helitack	Call sign designator for a Type 1 or 2 capacity helicopter, used for fire bombing and rappelling duties
Incident Action Plan (IAP)	1. In the Code context: is the course of action taken to restrict the spread of wildfire. This plan will generally be documented when the wildfire is not likely to be controlled before 7.00 am on the day following its detection 2. In the AIIMS context, is the plan used to describe the incident objectives, strategies, resources and other information relevant to the control of an incident
Incident Controller (IC)	The person having overall management of a fire in accordance with AIIMS
Incident Control Centre (ICC)	The location where the Incident Controller and various members of the Incident Management Team provide overall direction of response activities
Incident Management Team (IMT)	The team assembled to assist the Incident Controller perform the control function, applied using the principles of the AIIMS (definition from JSOP 3.12 – Evacuation)
Incident Shift Plan (ISP)	The key components of the IAP that are essential for field operations. The documentation follows the SMEACS format, and is accompanied by maps and any other supporting documentation relevant to field operations
Level One Incident	A small, simple fire (or group of fires) which is controlled with local resources: • may include other agencies • incident Controller probably undertaking more than one function • second shift unlikely to be required

Level Two Incident	A developing, or developed fire of medium size or complexity: • expected that the incident will be controlled within 24 hours • resources from other locations are involved • incident Controller may be undertaking more than one function but will normally have delegated at least the Operations function • 5 to 20 ha (or much larger if there is little complexity)
Level Three Incident	A large or complex fire where resources from a range of locations are involved: • normally but not necessarily involve several agencies • normally expected to exceed 24 hours • incident Controller will normally have delegated all functions
PHOENIX RapidFire	A wildfire or bushfire simulation modelling program
Public Land	All State forest, national park and protected public land as defined by section 3 of the Forests Act 1958 (or its future equivalent)
Rakehoe	A hand tool used for dry firefighting consisting of a handle and a metal head with one pronged edge for raking and one sharpened edge for cutting, chipping and scraping down to mineral earth
Readiness	Resources set to a pre-determined level of availability for detection and control of bushfire in accordance with the district, regional or state readiness and response plan
Retardant	Chemicals mixed with water to inhibit combustion
Situation Report	A Departmental document which provides periodic reports on the progress of the fire and efforts to control it. The first situation report is normally provided within forty five minutes of detection of the fire
Slip on unit (SOU)	A firefighting unit often on a 4 x 4 tray body vehicle with a small water tank (400 litres), a pump and length of hose
SMEACS	A briefing format incorporating: Situation, Mission, Execution, Administration and Logistics, Command and Communications, Safety, followed by questions.
Spot Fire/ Spot Over	An isolated fire ignited outside the fire area in unburnt fuel, ahead of or adjacent to the main fire, by sparks, embers or other ignited material, sometimes to a distance of several kilometres
Spotting	Behaviour of a fire producing sparks or embers that are carried by the wind or convective activity and start new fires beyond the zone of direct ignition by the main fire
State Air Desk	The unit established to coordinate and where appropriate dispatch aviation resources required by the CFA and DELWP
State Control Centre (SCC)	The State's primary facility for response to bushfire managed by the Fire Services Commissioner on behalf of and in collaboration with all emergency service agencies
Strike Team	A set number of resources of the same type that have an established minimum number of personnel. Strike Teams always have a leader (usually in a separate vehicle), and have a common communications system. They are usually made up of five resources of the same type, such as vehicles, crews or earth moving machinery
Tanker	A mobile firefighting vehicle equipped with a water tank, pump, and equipment for spraying water and/or foam on bushfires
VicEmergency	Victoria's emergency website emergency.vic.gov.au

Appendix 1

Minister's Request

Minister for Emergency Services

Level 26
121 Exhibition Street
GPO Box 4356
Melbourne Victoria 3001
Telephone: (03) 8685 1555
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DX 210077

Our ref: CD/16/2127

Mr Tony Pearce
Inspector General Emergency Management
Department of Justice and Regulation
Level 23, 121 Exhibition Street
Melbourne 3000

Dear Mr Pearce

CONTINUOUS IMPROVEMENT OF EMERGENCY MANAGEMENT IN VICTORIA

In accordance with the objectives of the Emergency Management Act 2013 and importantly to document good practice and foster continuous improvement of emergency management in Victoria I request that you report on the learnings to date from the Wye River - Jamieson Creek Track fire.

The report will need to consider and incorporate good practice and learnings from the following:

1. Detection of the lightning strike and Initial Attack on the Wye River Jamieson Track fire which occurred on the 19 December 2015.
2. Incident Action Planning developed and implemented by the Incident Controller for the Wye River Jamieson Track fire.
3. The fire control strategy developed and implemented between 19 December and 25 December 2015 for the Wye River Jamieson Track fire.
4. The community information, warnings and engagement plans and actions that were developed and implemented in managing the Wye River Jamieson Track fire between the 19 December and 25 December 2015.
5. The Evacuation and Traffic Management planning that was developed and effected on the 25 December 2015 for the Wye River Jamieson Track fire.

I understand that you and your staff were in attendance at this fire over a number of days conducting monitoring and evaluation functions as part of your legislative role and that a number of observations were made relative to those issues listed above.

I request that you provide an update and initial draft report to myself by the 21 January 2016.

Yours sincerely

Jane Garrett MP
Minister for Emergency Services

Victoria

Appendix 2

List of incident documents used to conduct review

Type of report	Date of files used
7 Day weather predictions	20 to 27 Dec 2015
Aviation	• State Air Desk Log Books - Incident management log (18 to 22 Dec 2015) • Aircraft dispatch logs (18 to 21 Dec 2016) • State Fleet Aircraft Readiness Arrangements (19 to 25 Dec 2015) • State Aircraft Unit Procedures 1.05, 10.6 & 1.08)
Incident shift plans	19 to 25 Dec 2015
Community engagement plans	• WOVG Relief and Recovery Key Messages 27 Dec 2015 • Otways Community Engagement Plan for Period Starting 28 Dec 2015 • BSW Community Engagement Plan 31 Dec 2015
Community information & warnings	• OSOM messaging - Lorne (19-25 Dec 2015) • EMV Public Information Evaluation Framework • CFA community updates (22 to 24 Dec 2015) • Community newsletter (21 and 22 Dec 2015) • Report of Deans Marsh & Lorne community meetings
DELWP FireWeb fire situation report	19 to 25 Dec (multiple updates per day)
EMJPIC	• Minutes (21 and 24 Dec 2015) • Executive Minutes (21 and 24 Dec 2015) • Media Plan (21 and 24 Dec 2015)
Fire spread prediction, fire behaviour and burnout escape reports	21 to 25 Dec 2015
Joint standard operating procedures	J2.01, J2.03, J2.06, J3.01, J3.03, J3.04, J3.10, J3.12, J3.14, J3.15 & J3.17 & J4.01
Minutes	• DELWP EMT Teleconference (20 and 21 Dec 2015) • State Emergency Management Team (19, 20, 21 & 24 Dec 2015) • State Control Team (20 to 24 Dec 2015) • Regional Controller Teleconference (20 to 24 Dec 2015)
Regional 7 day action plan	16 and 24 Dec 2015
SCC 7 day action plan	14 and 22 Dec

Type of report	Date of files used
SCC daily briefing intelligence	20 to 25 Dec 2015
SEMT situation report	20 and 23 Dec 2015
State operational situation report	18 to 25 Dec (18, 19, 20, 22, 23, 24 and 25 Dec 2015) (multiple updates per day)
State operational situation update	18 to 25 Dec (12, 19, 20, 23 and 25 Dec 2015)
Topographic, linescans and forward looking infrared maps	18 to 25 Dec 2015
Traffic management points, evacuation guidance, IMT traffic management plans & Police evacuation maps.	24 to 25 Dec 2016
State strategic risk & consequence management plans	Not applicable

Appendix 3

Resources deployed between 19–26 December 2015

Resources		19 Dec	20 Dec	21 Dec	22 Dec	23 Dec	24 Dec	25 Dec	26 Dec
Plant	**Dozer**	1	4	4	6	8	4	1	23
	Excavator	0	0	1	1				
	Plant (total)	1	4	5	7	8	4	1	23
Aircraft	**Reconnaissance and Air Attack Supervising**	**2**	**4**	**2**	**3**	**4**	**4**	**8**	**7**
	Firebird	1	1	2	2	2	2	3	3
	Firebird (FLIR)	0	0	0	0	1	1	1	1
	Firespotter	1	1	0	0	0	0	1	1
	Birddog	0	2	0	0	0	0	2	1
	Firescan	0	0	0	1	1	1	1	1
	Attack	**1**	**7**	**2**	**3**	**2**	**2**	**11**	**8**
	Bomber (Single Engine Air Tankers - SEATS)	0	2	0	0	0	0	0	0
	Bomber (Large Air Tankers - LATs)	0	2	0	0	0	0	3	0
	Helitack (Medium)	1	2	1	1	1	1	5	5
	Helitack (Large)	0	1	1	1	1	1	3	3
	Firebird (Incendiary)	0	0	0	1	0	0	0	0
	Aircraft (total)	**3**	**11**	**4**	**6**	**6**	**6**	**19**	**15**
Personnel (DELWP & PV - Wye River - Jamieson Track fire)	**Day Shift (DELWP/PV)**	15	14	24	56				
	Swing Shift (DELWP/PV)	8	8	7	31				
	Night Shift	10	8	10	31				
	CFA	27	0	0	20				
	Personnel (total)	60	30	41	138	102	81	105	466

Source: ICC & State Air Desk aviation logs

Image courtesy EMV

Addendum

The Wye River – Jamieson Track fire provided the Inspector-General an opportunity to directly observe enhancements in Victoria's emergency response arrangements related to the ongoing implementation of recommendations arising from the 2013-14 Fire Season Compliance Report and as part of IGEM's broader assurance role.

IGEM has responsibility in legislation to report on any matter related to its functions at the request of the Minister for Emergency Services, and to monitor the implementation of relevant recommendations arising from reviews and inquiries that are accepted by government following emergencies.

In accordance with agreed protocols, IGEM periodically undertakes in-field monitoring activities to directly observe whether policy and procedural changes are being achieved or realised in practice during emergency events.

The Inspector-General and IGEM staff attended the Wye River – Jamieson Track fire on 26, 27, 30 and 31 December 2015 and 1 January 2016 to observe the following activities;

- **Fire control strategies including initial attack / utilisation of resources** – the initial attack on the Wye River – Jamieson Track fire caused by lightning on 19 December 2015 is addressed in this report as part of the review process.
- IGEM also had an interest in the initial attack on the fire that impacted Wye River and Separation Creek communities following the spot fire breakaway on 25 December 2015. Specifics included the use of available Victorian agency and state resources, integration of initial attack ground and air resources, use of private contractors, longer term use of interstate and international resources, and integration of local government into emergency management teams.
- **Traffic management points (TMP's)** – considerations included but were not limited to the decision making process used to decide when and where TMP's should be established, who would have access through them and for what reason, the decision making process for reopening previously closed roads, and the community consultation and engagement processes employed to ensure communities were aware of their existence.
- **Evacuation management** – considerations included but were not limited to evacuation planning, decision making around the triggers for evacuation, the evacuation process, the return of evacuated community members to their properties, and the community consultation and engagement activities employed to ensure that communities were aware of the evacuation process and triggers.
- **Community information, consultation and engagement** – considerations included but were not limited to the conduct of community meetings, the information provided, and the use of social media and other mediums to provide information.
- **Local government inclusion in emergency management teams** – considerations included but were not limited to relevant local government areas inclusion in incident/emergency management teams, local government representation in appropriate control centres.

The following are observations relevant to each of the above-mentioned issues and, where appropriate, more detail will be provided as part of the ongoing implementation monitoring and reporting processes to which they apply.

It is worthwhile noting progress on each of these issues in this report as the strategies for many activities were developed following detection of the initial fire on 19 December and then implemented following the impact on Wye River and Separation Creek communities on 25 December 2015.

OBSERVATION 6 – INITIAL FIRE CONTROL STRATEGIES (25 DEC)

IGEM's general observations regarding the management of the fire that impacted Wye River and Separation Creek on 25 December were based on in-field observations on 26-27 December, review of documentation including incident action plans, and interviews with appointed controllers and senior decision makers.

The management of the Wye River–Jamieson Track Fire provided sound evidence of the implementation of recommendations relating to initial attack and resource utilisation from previous reports.

Appropriate and available ground and air firefighting resources were applied to the fire from the outset. Firefighting activities occurred both day and night, local knowledge and experienced contractors were engaged to assist in the response effort, and the need for interstate and international resource supplementation was considered and eventually requested and deployed via the Interstate/International Liaison Unit.

Fire management strategies were developed with the involvement of state, regional and incident level control structures.

OBSERVATION 7 – TRAFFIC MANAGEMENT

Field observation at this fire, both through attendance at the Colac Incident Control Centre (ICC) and then at specific traffic management points provides evidence of the implementation of recommendations from previous reports.

New Traffic Management Guidelines have been agreed and issued including a new Joint Standard Operating Procedure (JSOP 3.10).

IGEM observations in the ICC included a dedicated traffic management team staffed by Victoria Police with input from all relevant agencies. This team was led by a Victoria Police Inspector who was also a designated Deputy Incident Controller.

A traffic management plan was developed and maintained, reviewed regularly, and disseminated to all relevant personnel and agencies.

Information from the plan was disseminated to the community through a number of mediums as well as at the regularly convened community meetings. IGEM also attended and passed through the Skenes Creek TMP on 27 December 2015 with members of the Wye River community who were being provided with escorted access to view their properties, and again attended the same TMP on 31 December to observe the evacuation and re-entry process of Kennett River, Grey River and Wongarra community members.

IGEM's observations of TMP management was that it complied with the requirements of the Traffic Management Guidelines, JSOP 3.10, and the incident traffic management plan developed in the ICC.

OBSERVATION 8 – EVACUATION MANAGEMENT

Similarly, field observation at this fire, both through attendance at the Colac ICC and then at specific traffic management points to observe the evacuation and re-entry process provides evidence of the implementation of recommendations from previous reports.

IGEM observations in the Colac ICC included a dedicated evacuation management team staffed by Victoria Police and with input from all relevant agencies. This team was led by a Victoria Police Inspector who was also a designated Deputy Incident Controller.

Evacuation management plans were developed for each area based on risk and were reviewed regularly.

Victoria Police conducted door knocks in the areas at risk on 24 December to prepare residents of Wye River and Separation Creek for a potential evacuation on 25 December (which ultimately occurred). The same process was applied again on 30 December for a potential evacuation of residents from Kennett River, Grey River and Wongarra on 31 December (which also eventuated).

IGEM interviews with the IMT Evacuation Manager, Wye River – Jamieson Track Incident Controller, IGEM observations of the evacuation process and IGEM inquiries of some of those evacuated while passing through the Skenes Creek TMP indicated that the evacuations and subsequent return of residents from at risk areas was well planned, well executed, and well communicated.

OBSERVATION 9 – COMMUNITY INFORMATION

IGEM made positive observations regarding the provision of community information and the active engagement of at risk communities both in the lead up to 25 December and thereafter.

IGEM attended community meetings in Apollo Bay, Lorne and Deans Marsh and is aware that other meetings were held in Wye River, Forrest and Torquay.

IGEM considers that the information provided at the meetings it attended was timely, accurate, and tailored to the relevant communities. General enquiry of community members by IGEM officers suggests that they were appreciative of the information provided and as best as could be ascertained believed that it addressed the majority of their needs.

Face to face community meetings were only one of the ways by which community information was provided, other mediums included social media sites, agency web sites, agency mobile information buses, specifically prepared newsletters, print and electronic media.

OBSERVATION 10 – LOCAL GOVERNMENT INCLUSION

IGEM made positive observations of the integration of local government into the Incident Control structures for this fire.

Established local area arrangements show that Colac Otway Shire has been a member of the Incident Management Team structure for the past three years.

IGEM observed that community meetings held at Apollo Bay were chaired jointly by the Incident Controller and the Chief Executive Officer of Colac Otway Shire.

IGEM also observed the participation of Colac Otway Shire in the traffic management, evacuation management, and emergency relief planning processes by the IMT, and their establishment and management of the emergency relief centre in Apollo Bay.

Local government more broadly supported Colac Otway Shire in their role, with Surf Coast Shire, City of Wyndham, Corangamite Shire Council, Warrnambool City Council, Nillumbik Shire Council and Yarra Ranges Shire Council being absorbed into the processes to assist Colac Otway Shire in delivering its emergency management objectives.

The examples outlined highlight many instances of leading practice that were observed by IGEM in the days following the impacts of the fire on 25 December 2015. It is evident that the state has made considerable improvements to its emergency management arrangements since the events of February 2009 and more recently the East Gippsland fires of 2013–14.

The state must ensure that these innovations are well documented, communicated and where possible used to promote good practice for future emergencies. To that end IGEM recommends the following:

RECOMMENDATION 4

IGEM recommends that Emergency Management Victoria and relevant agencies review the response to the Wye River – Jamieson Track fire with a view to preparing case studies of areas of leading practice, and that the developed case studies are then shared with and within agencies at the state, regional and local level.

Some areas for consideration include the community planning processes undertaken prior to this emergency, the structure and operations of the IMT/ICC, the traffic management and evacuation management planning and execution processes, and the community engagement and information processes.

IGEM finds that the way in which these aspects of the response were managed, among others, provides a ‘good practice’ template or model policy to guide processes for other areas of Victoria to benefit from in future emergencies.

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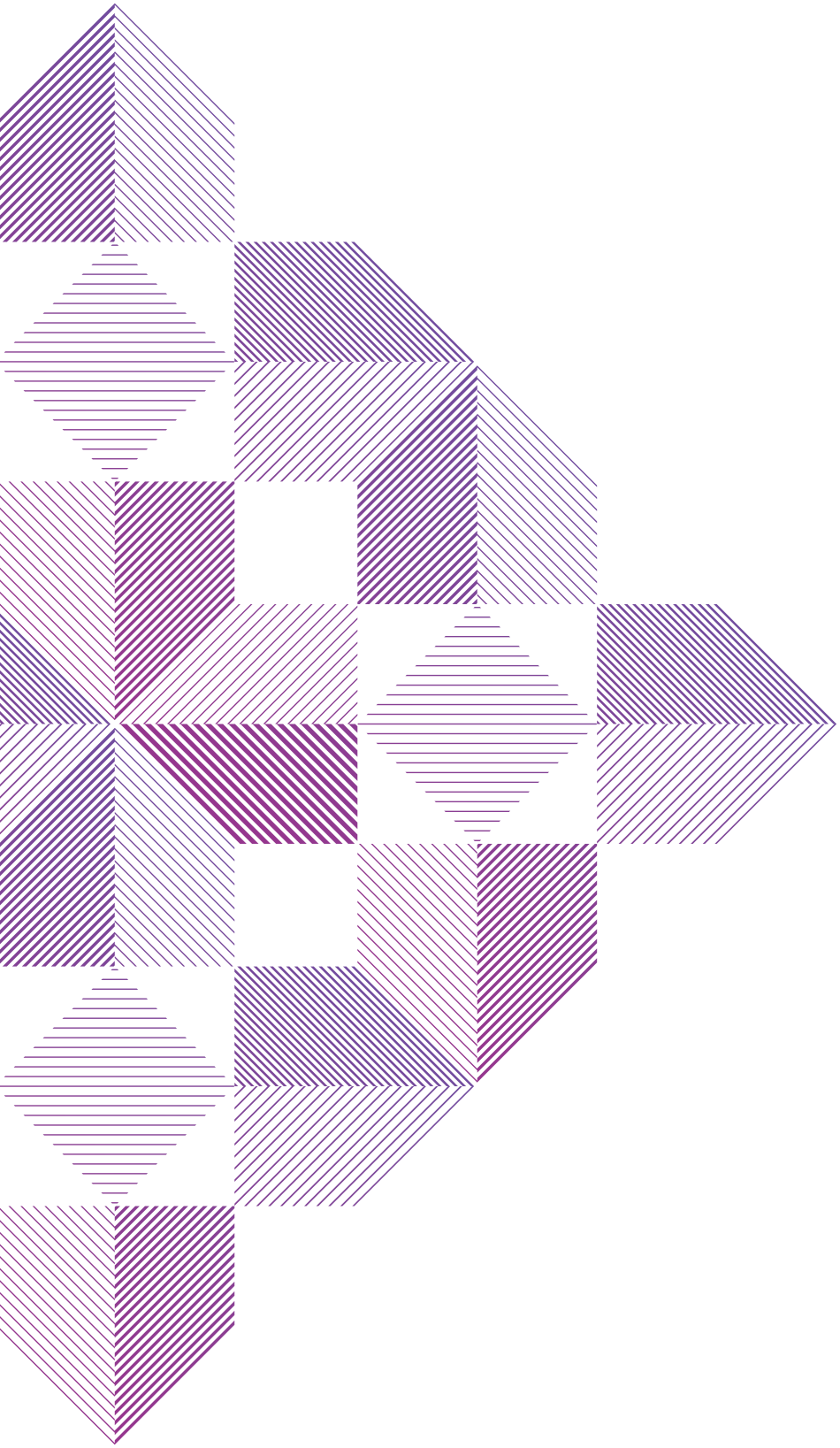

Inspector-General for
Emergency Management

VICTORIA
State
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