

Review of Victoria's emergency management sector preparedness for major emergencies

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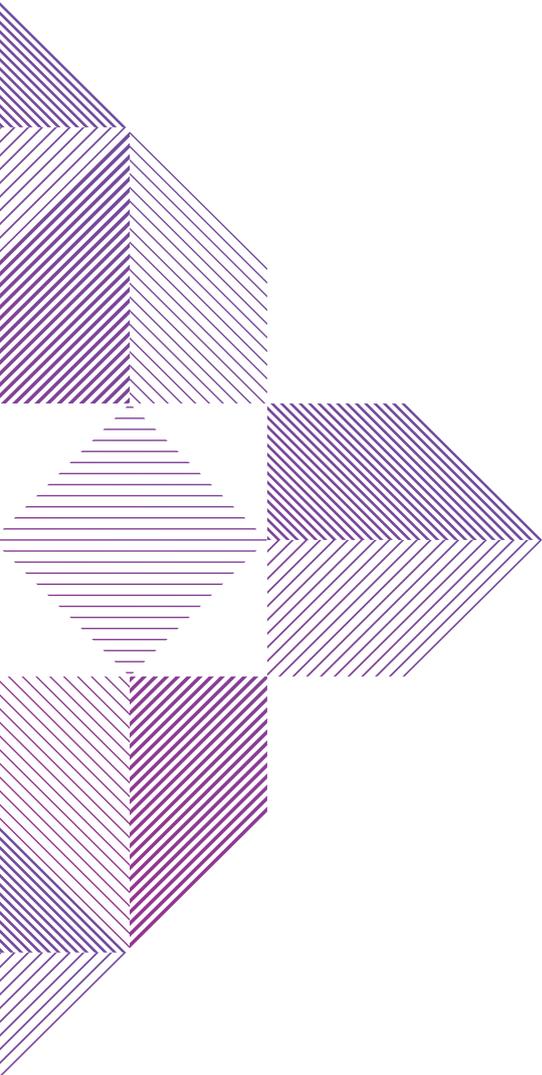
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Acronyms

DEDJTR	Department of Economic Development, Jobs, Transport and Resources
DHHS	Department of Health and Human Services
EMC	Emergency Management Commissioner
EMMV	Emergency Management Manual Victoria
EMV	Emergency Management Victoria
FEMA	Federal Emergency Management Agency
IGEM	Inspector-General for Emergency Management
MEMEG	Municipal Emergency Management Enhancement Group
PRR	Prevention, Response and Recovery
PPRR	Prevention, Preparedness, Response and Recovery
SAP	Victorian Emergency Management Strategic Action Plan 2015–2018
SCRC	State Crisis and Resilience Council
SERP	State Emergency Response Plan
SERRP	State Emergency Relief and Recovery Plan
UK	United Kingdom
US	United States (of America)
VBRC	2009 Victorian Bushfires Royal Commission
VFR	Review of the 2010–11 Flood Warnings and Response
VGRMF	Victorian Government Risk Management Framework
WA	Western Australia

Executive summary



The devastating consequences of major emergencies place enormous pressure on communities, industry and the emergency management sector. The government and communities in Victoria expect effective and efficient preparation for, responses to, and recovery from, major emergencies.

The management and coordination of a major emergency requires emergency management sector organisations (sector organisations) to work outside their individual responsibilities and instead operate as a collaborative network^[1].

Emergency management sector preparedness focuses on the coordination of activities and arrangements across sector organisations that support the prevention of, response to and recovery from major emergencies^[2].

The objective of this review is to identify opportunities to enhance Victoria's emergency management sector preparedness for major emergencies.

The review explores possible pathways for Victoria to strengthen preparedness for major emergencies that recognise and reflect the current emergency management arrangements. However, the Inspector-General for Emergency Management (IGEM) acknowledges that much of the work supporting the reform of Victoria's emergency management arrangements was under development or in the early stages of implementation at the time of this review.

Victoria's emergency management legislative reform

A number of major emergencies including the 1983 Ash Wednesday fires, 1998 Linton fire, the 2009 Black Saturday fires and the 2010–11 Victorian floods have shaped reforms to Victoria's emergency management arrangements.

The *Emergency Management Act 1986* (the 1986 Act) and *Emergency Management Act 2013* (the 2013 Act) govern current Victorian emergency management arrangements.

The objectives of the 1986 Act outline three key functional areas of Victoria's emergency management arrangements – prevention, response and recovery (PRR). As a result planning, preparedness and coordination are implied in the structure that facilitates PRR and are a key responsibility of sector organisations^[3].

This differs to other parts of Australia where the four functional areas of prevention, preparedness, response and recovery (PPRR)^[4] are widely accepted as the key components of a comprehensive approach to emergency management.

While the 1986 and 2013 Acts imply preparedness as a key area of sector endeavour, the *Emergency Management Manual Victoria* (EMMV) refers to preparedness as an organisational role and responsibility.

Emergency management reform since 1983 has not explicitly altered Victoria's statutory approach to preparedness.

Preparedness definitions and principles

In the context of disaster and emergency management there are many definitions of preparedness^[5]. The absence of an agreed definition for and measures of sector-wide preparedness makes it difficult to determine the extent of Victoria's preparedness for a major emergency^[6].

Accordingly, this review examines national and international approaches to preparedness, and identifies some key elements of a good practice preparedness model.

This review found the following interrelated principles of preparedness in its application:

- preparedness is a shared responsibility
- preparedness is guided by risk
- preparedness applies to all stages of prevention, response and recovery.

Shared responsibility in this context implies that all Victorians should engage in preparedness activities that address the highest priority risks in Victoria. Understanding and managing risk is essential at the state level as it informs how, and what, individuals, the community and organisations need to do to prevent, respond to and recover from emergencies.

Towards leading practice

Research and analysis of a range of approaches to preparedness identified that leading practice includes:

- the promotion of interoperability through sound governance arrangements
- understanding and managing risk as the basis of planning, capability assessments, training and exercising
- that plans are developed and implemented
- a well understood emergency management sector capability and capacity
- training and exercising as part of a structured approach to emergency management
- monitoring and evaluation to identify opportunities for improvement.

Two examples of leading practice were identified in Western Australia (WA) and the United States (US). From this research IGEM developed an example model of preparedness proposing seven interlinked elements:

- governance
- understanding and managing risk
- planning
- assessing capability
- training and development
- exercising
- evaluation, monitoring and improvement.

As preparedness occurs at the individual, community, organisation and sector level, the model is scalable. The elements also align with the principles of preparedness and are integrated throughout PRR.

The example model identified within this report is supported by proposed evaluative criteria. This allows an assessment of maturity of the sector's preparedness for each of the model's seven elements.

Victoria and the preparedness model

The implied nature of sector preparedness in Victorian legislation, and a focus on organisational preparedness, has shaped how key stakeholders understand preparedness.

Stakeholder interviews confirmed that organisations are ready and willing to ensure the sector is prepared for major emergencies. They also indicated, however, that organisations are looking for guidance on how this is to be achieved at a sector level.

Responses indicate that sector organisations maintain a good level of preparedness for emergencies within their individual area of responsibility. However, there is uncertainty among agencies regarding the magnitude of major emergencies that they should prepare for.

At the time of this review, Emergency Management Victoria (EMV) is progressing work on reviewing and addressing state-wide risks. This includes the development of frameworks that align with the Victorian Government Risk Management Framework and take into account the range of risk assessment processes at state, regional and local levels.

Stakeholder interviews indicated there is currently minimal measurement or evaluation of sector-wide preparedness for major emergencies. This is influenced by, as one example, the infancy of the current arrangements and the evolution of standards to support reporting requirements. It was generally agreed that measurement requires strong links to prioritised state risk.

Victoria's emergency management reform program includes a range of activities that contribute to sector preparedness. To assess these efforts, a method of reviewing progress that aligns with the principles outlined in the *Monitoring and Assurance Framework for Emergency Management*^[7] must be available.

The development of baseline standards and measures is a priority for establishing the emergency management sector's level of preparedness for major emergencies in Victoria. It is also acknowledged as a priority for all PRR activity areas through progressive performance frameworks being facilitated by EMV.

As a result, IGEM reserves comment on the level of preparedness of the emergency management sector for major emergencies in Victoria as no agreed standards or metrics for assessing preparedness exist. Instead, this review focuses on identifying some of the key principles, elements and evaluative criteria of a good practice preparedness model for consideration in the future.

RECOMMENDATION

IGEM recommends that Emergency Management Victoria continue to lead the development and application of a comprehensive sector-wide preparedness model for integration within and across emergency management arrangements in Victoria.

The model should clearly define preparedness within the context of sector and statewide activity, underpinned by a thorough understanding of risk, and embracing the principles of shared responsibility, through enhanced connections with Victorian communities.

The model should specifically address, among other things, the key elements of governance, risk management, planning, capability and capacity assessment, training and development, exercising, evaluation and monitoring.

Concluding remarks

There are many ways that the sector works together to ensure that individuals, communities and organisations are prepared for major emergencies. Examples are presented in the report's four case studies.

A recurrent theme of stakeholder interviews was the question about what their organisation needs to prepare for, and undertake, to contribute to sector level preparedness.

The development of a shared understanding of sector preparedness in Victoria has the potential to provide an integrated and coordinated approach focused on achieving the vision of a safer and more resilient Victoria.

Preparedness can bring together emergency management activities and provide assurance to government that the state is prepared for major emergencies.

The Preparedness Maturity Matrix (Appendix 2) provides the sector an example of both indicators of leading practice in preparedness and a rating scale. The use of the matrix would require the sector, under the leadership of EMV to identify roles, responsibilities and appropriate measures of sector preparedness. Subsequent to this development, Victoria's emergency management sector preparedness for major emergencies should be routinely assessed.

Progressing this work on the development and application of a comprehensive preparedness model will require extensive engagement and consultation with the emergency management sector. The preparedness model and associated maturity matrix presented in this report provides a sound starting point.

1. Introduction

The Inspector-General for Emergency Management (IGEM) is a legislated appointment established under the *Emergency Management Act 2013* (the 2013 Act) to:

- provide assurance to 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, including reviews of the emergency management functions of responder agencies and government departments as defined in the 2013 Act.

For the purpose of section 64 (1)(b) of the 2013 Act, IGEM develops an *Annual Forward Plan of Reviews*. This plan is developed in consultation with the emergency management sector (the sector).

In developing this plan, IGEM invited responder agencies and government departments to identify key issues or risks facing the sector.

IGEM also considered strategic issues emerging from recent events and reviews of emergency management arrangements in Victoria.

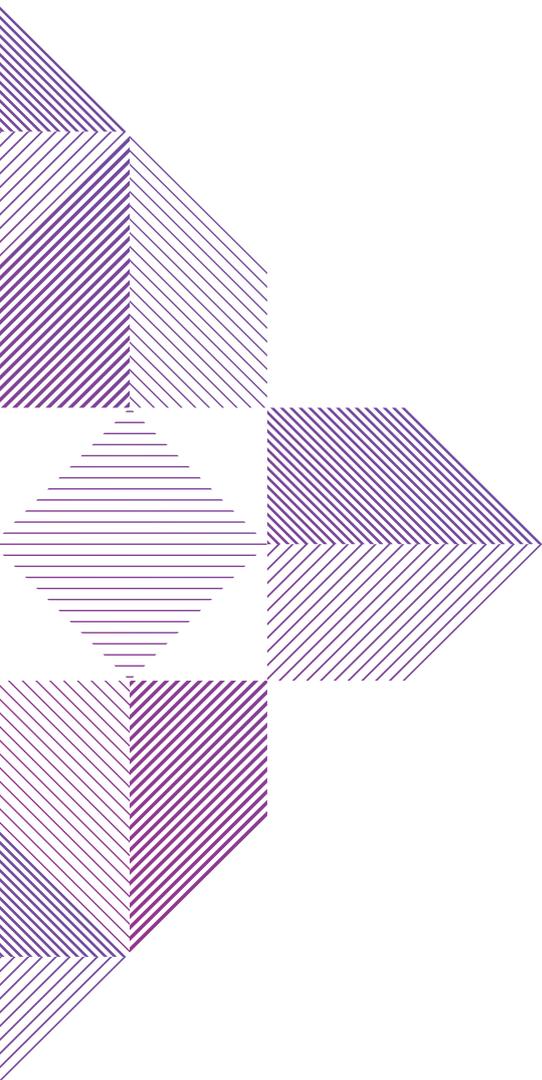
IGEM assessed these issues based on:

- the significance of the risk and whether it justified the commitment of IGEM resources
- the potential for a review to lead to sustainable and systemic improvement
- whether recent reviews had examined similar issues
- whether improvement actions were in the process of being initiated or early stages of implementation.

This review, *Victoria's emergency management sector preparedness for major emergencies*, is one of three reviews in the *Annual Forward Plan of Reviews 2015* ^[6].

In preparing the final report for the minister, IGEM provided draft copies to, and invited comment from, all relevant agencies to which this report relates. Comments received by IGEM from relevant agencies have been taken into account for this final report.

IGEM invites such comment to meet its objective of fostering continuous improvement of emergency management in Victoria, and to meet legislative obligations contained in section 70 of the 2013 Act.



1.1 Objective and scope of the review

This review identifies opportunities to enhance Victoria's sector preparedness for major emergencies.

The original scope of this review outlined in the *Annual Forward Plan of Reviews 2015* was:

"...to identify and analyse lessons from previous domestic and international major emergency events and current leading practice in preparing for major emergencies"

"to explore state, national and international emergency management planning regimes – including 'surge' capacity planning – relating to the sectors capability and capacity to respond to and recover from, a range of major emergencies"^[9].

The scope was refined through project planning to:

- clearly articulate the evolution of current preparedness arrangements for Victoria
- identify and consolidate national and international leading practice in preparing for major emergencies
- identify opportunities to enhance Victoria's emergency management sector preparedness for major emergencies.

The scope of this review focuses on sector preparedness for major emergencies. While it is acknowledged that the preparedness of sector organisations contributes to sector preparedness, this review did not seek to assess individual levels of organisational preparedness.

1.2 Review approach

IGEM's approach involved a variety of information collection methods, including:

- a stakeholder reference group meeting
- a review of literature on preparedness
- an analysis of legislation, inquiries, policies, plans and sector organisations' documents
- interviews with sector representatives and qualitative analysis of data
- a review of national and international models of preparedness.

To reflect the change in scope the following four questions guide the structure of the review and this report:

- What are the current approaches to sector preparedness in Victoria's emergency management arrangements?
- How is preparedness defined and what are some of the key principles?
- What other approaches to sector preparedness exist?
- What would a good practice model of sector preparedness look like?

What are the current approaches to sector preparedness in Victoria's emergency management arrangements?

Chapter 2 – 'Victoria's approach to emergency management sector preparedness' reviews Victoria's emergency management arrangements, including:

- the history of changes in Victoria's emergency management arrangements
- Victoria's current emergency management arrangements
- the role these arrangements have played in the state's approach to sector preparedness.

How is preparedness defined and what are some of the key principles?

Chapter 3 – 'Preparedness definitions and principles' reviews national and international preparedness literature with a view to establishing the key principles of preparedness.

These principles are identified and relationships between them are presented.

What other approaches to preparedness exist?

Chapter 4 – 'National and international preparedness arrangements' presents the results of a review of legislation and publicly available reports about preparedness in other jurisdictions.

It identifies and highlights models of preparedness used in other jurisdictions, including the national context.

The analysis of other approaches guides the development of an example model of sector preparedness based on leading practice.

What would a good practice model of sector preparedness look like?

Chapter 5 – 'Towards leading practice' presents an example good practice model of sector preparedness.

It describes seven elements and evaluative criteria that support the model to assess sector preparedness.

Chapter 6 – 'Victoria and the preparedness model' uses the model as a framework to discuss current examples in Victoria.

The review did not attempt to audit or list the preparedness activities that currently occur in Victoria.

IGEM used cases studies, based on examples provided through stakeholder interviews, to illustrate how Victoria is currently engaged in preparedness activities.

Themes from IGEM interviews highlight existing preparedness elements in Victoria.

1.3 Stakeholders

IGEM's legislative context and the review's scope of sector preparedness define the key stakeholders as:

- Ambulance Victoria
- Australian Red Cross
- Bureau of Meteorology
- City of Melbourne
- Country Fire Authority
- Department of Economic Development, Jobs, Transport and Resources
- Department of Environment, Land, Water and Planning
- Department of Health and Human Services
- Department of Treasury and Finance
- Department of Premier and Cabinet
- Emergency Management Victoria
- Emergency Services Telecommunications Authority
- Local Government Victoria
- Metropolitan Fire Brigade
- Municipal Association of Victoria
- Port of Melbourne Corporation
- Victoria Police
- Victoria State Emergency Service.

1.4 Acknowledgements

IGEM acknowledges the significant amount of work that EMV and sector organisations are undertaking to ensure that Victoria is prepared to prevent, respond to, and recover from major emergencies.

IGEM acknowledges and commends the current efforts of the sector as part of the state's emergency management reform program.

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

The Inspector-General is grateful to representatives of sector organisations for their participation and assistance in preparing this report.

2. Victoria's approach to emergency management sector preparedness

The devastating consequences of major emergencies place enormous pressure on communities, industry and the emergency management sector. The government and communities in Victoria expect effective and efficient preparation for, responses to, and recovery from, major emergencies including bushfires, floods and heat events.

Victoria's emergency management arrangements have guided current sector preparedness for major emergencies.

Preparedness involves coordination across sector organisations of activities and arrangements that support the prevention of, response to and recovery from major emergencies^[2].

Neither the 2013 Act nor the *Emergency Management Act 1986* (the 1986 Act) contain a definition of sector preparedness.

The *Emergency Management Manual Victoria* (EMMV) does not define preparedness but refers to a definition outlined in a previous report, as follows:

"The establishment of structures, development of systems and testing and evaluation by organisations to perform their roles."
[9, Ch1, p.2]

This definition focuses on organisational preparedness, not sector preparedness.

In the absence of an agreed definition of sector preparedness, the definition referred to in the EMMV is the guiding principle in this review.

It is important to note that the absence of a definition does not imply that the sector is not engaged in preparedness activities.

This review also adopts the definitions of the sector and major emergencies in the 2013 Act.

The 2013 Act defines Victoria's emergency management sector as "all agencies, bodies, departments and other persons who have a responsibility, function or other role in emergency management".

Section 3 of the 2013 Act defines major emergencies as:

- (a) "a large or complex emergency (however caused) which –
 - (i) has the potential to cause or is causing loss of life and extensive damage to property, infrastructure or the environment; or
 - (ii) has the potential to have or is having significant adverse consequences for the Victorian community or a part of the Victorian community; or
 - (iii) requires the involvement of 2 or more agencies to respond to the emergency; or
- (b) a Class 1 emergency¹; or
- (c) a Class 2 emergency²."

¹ a major fire; or any other major emergency for which the Metropolitan Fire and Emergency Services Board, the Country Fire Authority or the Victoria State Emergency Service Authority is the control agency under the state emergency response plan.

² means a major emergency which is not a Class 1 emergency; or a warlike act or act of terrorism, whether directed at Victoria or a part of Victoria or at any other State or Territory of the Commonwealth; or a hi-jack, siege or riot.

This chapter outlines:

- the history of changes in Victoria's emergency management arrangements
- Victoria's current emergency management arrangements
- the role these arrangements have played in Victoria's approach to sector preparedness.

2.1 Victoria's emergency management legislative reform

Victoria's emergency management legislation has been characterised by change and reform (Figure 1). The 1983 Ash Wednesday fires, 1998 Linton fire, the 2009 Black Saturday fires and the 2010–11 Victorian floods were catalysts for significant practice and legislative change in Victoria. These reforms created a new era in emergency management in Victoria.

The 1983 Ash Wednesday fires and the *Emergency Management Act 1986 (Vic)*

The 1983 Ash Wednesday fires prompted a number of reviews into the state's disaster management arrangements shaping how preparedness is approached in Victoria today.

In 1985, a ministerial working party was established to evaluate the then disaster management arrangements.

The working party found that arrangements for planning, preparedness and coordination for prevention, response and recovery arrangements were absent ^[3].

The working party also found that existing legislation did not provide a comprehensive and integrated emergency management approach. The party's report provided recommendations on the form and scope of legislative changes required ^[3].

The working party formed these recommendations by assessing international approaches to emergency management including the approach used in the United States (US). This approach, known as the *Comprehensive Approach* to emergency management, consists of four functional areas – prevention, preparedness, response and recovery (PPRR) ^[3, 10, 11].

The working party formulated an emergency management framework that did not separate preparedness as a functional area. It argued that preparedness was contained in all areas of emergency management. The working party report proposed that Victoria adopt three key functional areas – prevention, response and recovery (PRR), as shown in Figure 2.

The report defined preparedness as “...the establishment of structures, development of systems, and the testing and evaluation by organisations of their capacity to respond to the functional requirements of disaster management arrangements” ^[3, p.5].

From this perspective, planning, preparedness and coordination are implied in the structure that facilitates PRR and are the key responsibility of sector organisations ^[3].

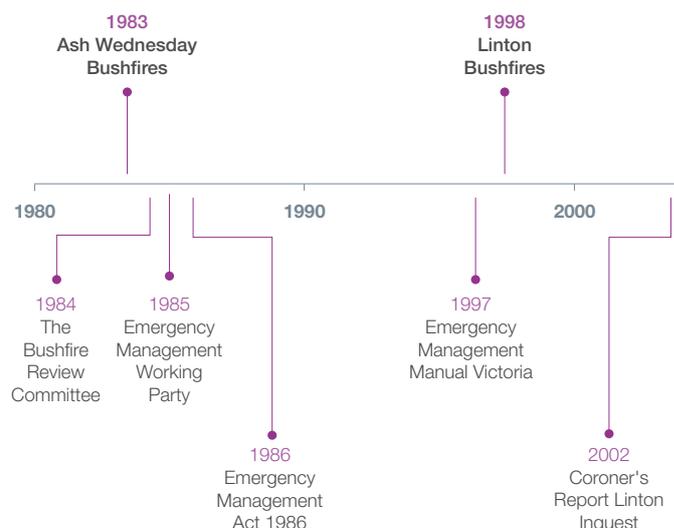
The working party report recommended that this new emergency framework be addressed in policy formation. This report informed the 1986 Act, however, PRR was not specifically included as part of the 1986 Act until it was inserted by amendment S4A in 1994. A preparedness definition was absent in the 1986 Act. PRR was the basis for outlining organisational roles and responsibilities for emergency management in Victoria.

It is important to note that sector level adoption of PRR by Victoria did not preclude organisations using the PRRR model. The Metropolitan Fire Brigade is an example of an organisation that applies this model today ^[12].

Outside Victoria, the PRRR approach to emergency management was adopted at federal and state levels ^[4]. Chapter 4 contains a detailed discussion on the emergency management approach by other Australian jurisdictions.

While Victoria adopted the PRR approach to emergency management arrangements, the intention of these measures remained in alignment with the PRRR approach adopted nationally.

Figure 1: A timeline of key events, reports and legislation influencing Victoria's preparedness approach



The 2009 Victorian Bushfires Royal Commission

The 1986 Act was the governing legislation for emergency management arrangements when the 2009 Black Saturday fires devastated parts of Victoria.

In response to this tragic event, the 2009 Victorian Bushfires Royal Commission (VBRC) was established to investigate aspects of the event including the preparation and planning for bushfires in Victoria ^[13].

The VBRC final report found that state arrangements for emergency management faltered because of confusion regarding responsibilities and accountabilities. During the fires, the roles of senior personnel were not clear and there was no single agency or individual in charge of the emergency ^[13].

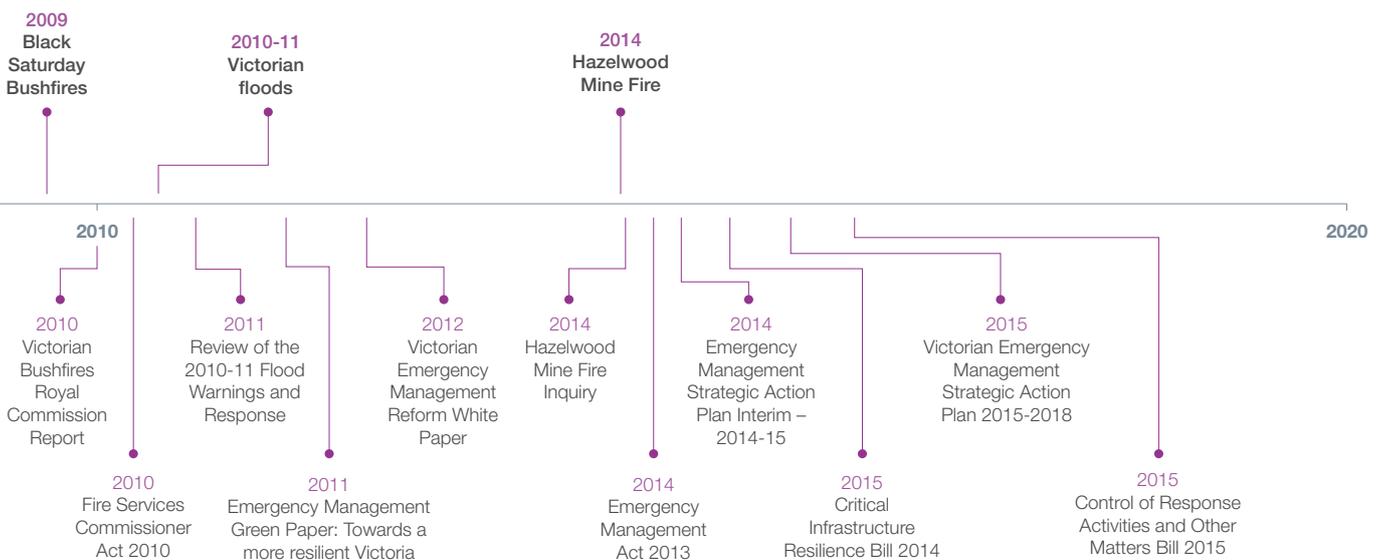
The VBRC final report also found that the well-managed responses were by teams that were well-prepared, well-practised and composed of people with appropriate training and experience ^[13].

The VBRC recommendations called for change in the approach to emergency management. This was to be achieved by changing governance structures, legislative change, system-wide training and exercising requirements, improvements to interoperability, coordination and cooperation in areas such as communications and system-wide planning ^[13].

Figure 2: Victorian emergency management arrangements



Source: Adapted from Emergency Management Manual Victoria ^[9].



The Review of the 2010–11 Flood Warnings and Response

Victoria experienced widespread flooding in 2010–11. The subsequent *Review of the 2010-11 Flood Warnings and Response*, commonly referred to as the Victorian Floods Review (VFR) ^[15], identified shortcomings in Victoria’s emergency management arrangements.

The VFR found that there was a lack of a logical, hierarchical approach to all phases of emergency management, with major gaps identified in planning. Many challenges faced by the sector during the floods were largely a consequence of the absence of an overarching, sector-wide emergency management framework in Victoria ^[15].

The absence of such a framework created a strategic void that resulted in a siloed, uncoordinated approach that broke down in the face of the large-scale emergency ^[15]. The key elements of the strategic void are illustrated in Figure 3.

The VFR argued that an all hazards – all agencies approach to emergency management could not be achieved without addressing the strategic void. The VFR proposed a series of changes to enhance the emergency management arrangements, providing the state with a further catalyst for reform ^[15].

In response to the VBRC and VFR a number of initiatives were put in place such as the Fire Services Reform Action Plan 2013-2016. However, further significant changes to the arrangements were to come.

Figure 3: Strategic void adapted from the Victorian Floods Review



Source: Review of the 2010–11 Flood Warnings and Response ^[15].

Towards a more Disaster Resilient and Safer Victoria: Options and Issues

In September 2011, the Victorian Government released *Towards a More Disaster Resilient and Safer Victoria: Options and Issues* (the green paper), which challenged the Victorian emergency management arrangements and invited public comment ^[14].

The green paper acknowledged Victoria’s need for a sustainable emergency management framework that could effectively deal with large-scale emergencies. The paper contained questions on what could be done to ensure that sector organisations were prepared for complex and challenging events ^[14].

The green paper outlined a number of issues and challenges to the delivery of emergency management arrangements including:

- governance arrangements
- the capacity to deal with large-scale events
- service delivery performance
- government working with the community to build resilience ^[14].

The green paper discussed preparedness for large-scale and complex emergencies in detail. Important preparedness elements identified included cooperation between sector organisations in relation to training and exercising. The green paper also highlighted that efficiencies would be realised through integrated prepared sector organisations ^[14].

The government committed to consideration of the submissions to the green paper, responding through the release of the *Victorian Emergency Management Reform White Paper* (white paper) in 2012.

The 2012 Victorian Emergency Management Reform White Paper and the Emergency Management Act 2013

Prior to the 2012 white paper, Victoria’s emergency management framework had remained largely unchanged since the 1983 Ash Wednesday fires ^[16].

While the green paper discussed preparedness for major emergencies in detail, the white paper did not.

The white paper proposed significant reform measures to emergency management structures and arrangements to address recommendations from major inquiries.

A key priority in the white paper was improving emergency management governance. The proposed reforms aimed to provide clarity of roles and responsibilities, embed cooperation across organisations, and ensure that emergency management reform is coordinated across the sector ^[16].

Victoria adopted a staged approach to introducing the proposed legislative changes to emergency management governance. The 2013 Act commenced on 1 July 2014, partially repealing the 1986 Act and giving effect to the changes in Victoria’s emergency management framework.

This new act did not amend the objectives of the 1986 Act. As a result preparedness is still considered a supporting element of PRR.

Since the 2013 Act was proclaimed, parliament has passed bills including the Critical Infrastructure Resilience Bill 2014, and the Control of Response Activities and Other Matters Bill 2015.

A number of future amendments to the 2013 Act are proposed, including emergency management planning. The amendment process will continue as the sector matures.

To date the reform program has not explicitly altered Victoria's statutory approach to preparedness.

2.2 Victoria's current emergency management arrangements

The emergency management arrangements in Victoria align to three tiers of management; state, regional and municipal.

The 2013 Act established a series of structures, positions and entities to provide governance and oversight of the emergency management arrangements. Of relevance to this review is the:

- **State Crisis and Resilience Council (SCRC)** – responsibilities include acting as the peak crisis and emergency management advisory body to the minister
- **Emergency Management Victoria (EMV)** – responsibilities include coordination of the development of the whole of government policy for emergency management in Victoria
- **Emergency Management Commissioner (EMC)** – responsibilities include coordination of the activities of agencies having roles or responsibilities in relation to the response to Class 1 emergencies or Class 2 emergencies, and coordinating state recovery
- **IGEM** – responsibilities include providing assurance to the government and community in respect of emergency management arrangements in Victoria, and fostering continuous improvement in the emergency management.

The 2013 Act highlights Victoria's adoption of an integrated all hazards – all agencies approach to emergency management.

As both the 1986 and 2013 Acts govern Victorian emergency management arrangements, PRR remains in place and guides how emergency management arrangements are organised. Figure 4 provides an overview of the objectives of both acts.

While implied in both, the 1986 Act is more explicit in its references to preparedness as an overarching element influencing the components of prevention, response and recovery.

Emergency Management Manual Victoria

The EMMV supports the application of both the 2013 Act and 1986 Act.

The EMMV details the integrated approach outlined in the 2013 Act and the PRR approach outlined in the 1986 Act.

The EMMV makes reference to the 1985 working group report definition of PRR, which infers a focus of preparedness activity at the organisational level. This is highlighted in the following definition of preparedness:

"Three major functional areas are recognised as necessary components of a comprehensive approach: prevention, response and recovery. These functional areas are organised within a structure that includes:

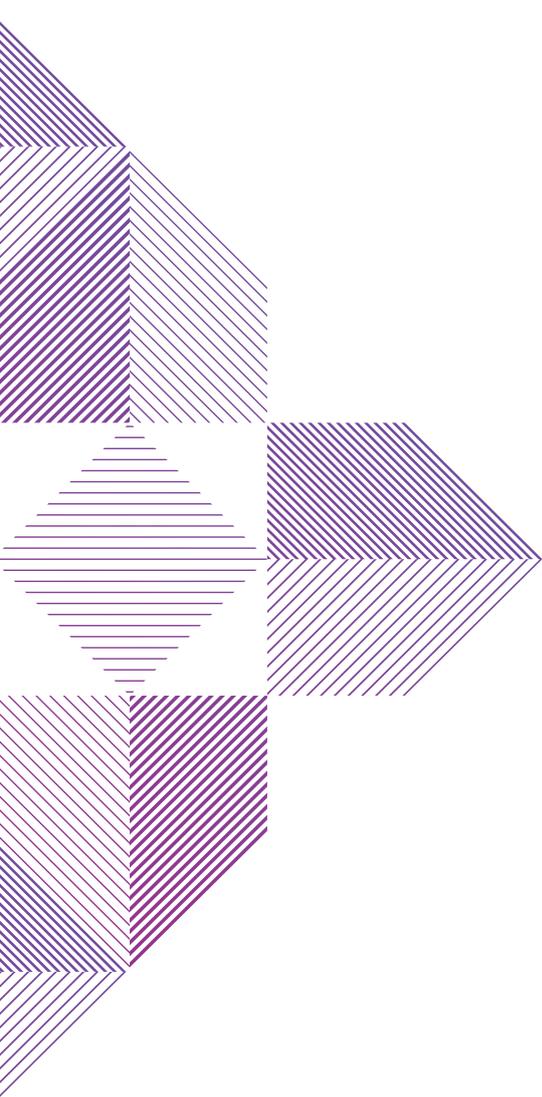
- *Planning: the analysis of requirements and the development of strategies for resource utilisation.*
- *Preparedness: the establishment of structures, development of systems and testing and evaluation by organisations to perform their roles.*
- *Coordination: the bringing together of organisations and resources to ensure effective emergency management.*"^[9, Ch1, p.2]

While the EMMV includes the working group's definition, there are no further references to this definition, nor was an alternative preparedness definition provided for Victoria.

Figure 4: Comparison of the objectives of Victorian legislation

Emergency Management Act 1986 (Vic) objective (section 4A):	Emergency Management Act 2013 (Vic) objective (section 5):
<p>To ensure that the following components of emergency management are organised within a structure which facilitates planning, preparedness, operational co-ordination and community participation:–</p> <p>(a) prevention – the elimination or reduction of the incidence or severity of emergencies and the mitigation of their effects;</p> <p>(b) response – the combating of emergencies and the provision of rescue and immediate relief services;</p> <p>(c) recovery – the assisting of persons and communities affected by emergencies to achieve a proper and effective level of functioning.</p>	<p>(a) foster a sustainable and efficient emergency management system that minimises the likelihood, effect and consequences of emergencies; and</p> <p>(b) establish efficient governance arrangements that -</p> <p>(i) clarify the roles and responsibilities of agencies; and</p> <p>(ii) facilitate cooperation between agencies; and</p> <p>(iii) ensure the coordination of emergency management reform within the emergency management sector; and</p> <p>(c) implement an "all hazards – all agencies" approach based on networked arrangements and greater interoperability.</p>

3. Preparedness definitions and principles



There are many definitions of preparedness in the context of disaster and emergency management ^[5].

However, there is no agreed definition for, or standards of, sector preparedness in Victoria. This makes it difficult to determine the extent of sector preparedness for a major emergency ^[6].

Accordingly, this review examined national and international approaches to preparedness, and identifies common principles and key elements of a good practice preparedness model.

Key themes from IGEM stakeholder interviews emphasise the relevance of these preparedness principles and elements.

The literature review identified the following interrelated principles:

- preparedness is a shared responsibility
- preparedness is guided by risk
- preparedness applies to all stages of prevention, response and recovery.

The following section discusses the three principles, and the contribution they make to preparedness.

3.1 Preparedness is a shared responsibility

Preparedness definitions often include shared responsibility as an essential component of emergency management ^[25]. For the purposes of this review, shared responsibility refers to individuals, communities, emergency service organisations, business, industry and government all having a role in preventing, responding to and supporting recovery from emergencies ^[16].

The role of government and sector organisations in emergency management is recognised; however, a new understanding of shared responsibility to include the broader community was introduced in the 2012 white paper ^[16].

In the US, the Federal Emergency Management Agency (FEMA) describes shared responsibility as a whole of community approach to preparedness that encompasses government stakeholders and non-government organisations, the private sector and communities ^[26].

A whole of community approach recognises that governments are one part of the emergency management process and that arrangements must be in place to access the resources from the private sector and the community ^[27], as highlighted in the following definitions:

“Preparedness involves efforts at all levels of government and between government and private-sector and non-governmental organizations to identify threats, determine vulnerabilities, and identify required resources.” ^[19, p.10]

“Preparedness is typically understood as consisting of measures that enable different units of analysis—individuals, households, organizations, communities, and societies—to respond effectively and recover more quickly when disasters strike.” ^[20, p.3]

This approach includes activities that grow the capabilities of communities to cope with and reduce the effects of an emergency ^[28].

The preparedness definition provided by Emergency Management Australia highlights the community as part of the shared responsibility.

"Measures to ensure that, should an emergency occur, communities, resources and services are capable of coping with the effects." [21, p.88]

Like the PRR activity areas, shared responsibility involves a number of interrelated components that collectively contribute to sector preparedness. The following definition highlights this:

"Preparedness is the existence of necessary structures to ensure the community effectively Prevents or mitigates, Prepares for, Responds to and Recovers from large scale emergencies, commonly referred to as PPRR. It encompasses pre-, during, and post-emergency actions and involves a community approach including various levels of government, business, faith-based and support organisations, volunteers and individuals." [29, p.3]

This suggests individual preparedness contributes to community preparedness. Community preparedness then informs organisational preparedness, which in turn supports sector preparedness.

3.2 Preparedness is guided by risk

Knowledge about hazards, the likelihood of different types of disasters, their likely impacts on the natural and built environments, and the vulnerability and resilience of the community inform all preparedness activities [20, 30-32].

In the context of international emergency preparedness, the Canadian Senate Standing Committee on National Security and Defence in 2008 stated:

"They [emergencies] don't happen often and they mostly happen to other people, but sometimes they come to Canada. Some can be pre-empted. Some can't. All can be prepared for – minimising the risk that they will turn into disasters." [33, p.1]

In Western Australia's (WA) State Emergency Management Committee's 2015 Emergency Preparedness report, there is a direct relationship between preparedness and risk. A full understanding of risk underpins the WA approach to preparedness [34].

Understanding and managing risk at the sector level is essential in determining what to prepare for, including the magnitude of the emergency [34]. A clear understanding of what risks are the priority at the sector level guides risk management activities that organisations, the community and individuals engage in.

Stakeholder interviewees placed a strong emphasis on understanding and managing risk as it informs activity elements such as planning, training and exercising.

Understanding and managing capability as an element of risk was also a theme that emerged during interviews. Understanding what risks are being prepared for informs the capability required. For example, it can inform how many emergency accommodation beds or paramedics are required, or the type of the relief centre required.

It is important to go beyond counting what resources or capabilities each organisation holds, and explore what preparedness means to respond to and recover from potential major emergencies. The interviewees supported this concept.

Most interviewees were confident that their organisation was prepared at the organisational level but expressed concern about the magnitude of the risk that they were required to respond to or recover from at the sector level.

The interviewees emphasised a strong desire to understand what emergencies they are expected to prepare for at the sector level. While hazard specific risks were thought to be well considered at the organisational level, interviews identified that there was a need to better understand sector risks and acceptable thresholds.

Understanding and managing risk is the foundation of emergency management activities as it influences elements of preparedness such as planning, capability and capacity, and training and exercising at organisational and sector levels.

3.3 Preparedness applies to all stages of prevention, response and recovery

Emergency preparedness is more than a readiness to respond to an event; it is integrated throughout the activities that occur before, during and after an emergency [17]. These areas of activity are not separate; they overlap and act concurrently [18].

While preparedness can be considered a stand-alone activity area such as in the *Comprehensive Approach*, it can also be viewed as a key element within each PRR activity area as demonstrated in the following definitions:

"The range of deliberate, critical tasks and activities necessary to build, sustain, and improve the operational capability to prevent, protect against, respond to, and recover from domestic incidents. Preparedness is a continuous process." [19, p.10]

"Preparedness is commonly viewed as consisting of activities aimed at improving response activities and coping capabilities. However, emphasis is increasingly being placed on recovery preparedness – that is, on planning not only in order to respond effectively during and immediately after disasters but also in order to successfully navigate challenges associated with short- and longer-term recovery." [20, p.3]

The definition in the *Australian Emergency Management Arrangements Handbook 9* includes preparedness as part of both response and recovery activities:

"Preparedness involves actions to ensure that – when an emergency occurs – communities, resources and services are available and capable of taking appropriate actions for response and recovery." [11, p.17]

These definitions illustrate how preparedness can support the PRR activity areas. They highlight capability and planning as an embedded element that support PRR activity areas which is explored further in Chapter 5. Stakeholder interviews supported the concept that preparedness is not an isolated area; rather it related to all PRR activity areas.

Capability

Historically preparedness has focused on the development and maintenance of emergency response capabilities, captured in the following definitions:

“Within the National Inter-Agency Incident Management System preparedness is operationally focused on establishing guidelines, protocols, and standards for planning, training and exercises, personnel qualification and certification, equipment certification, and publication management.” [19, p.10]

“Arrangements to ensure that, should an emergency occur, all those resources and services which are needed to cope with the effects can be efficiently mobilised and deployed. Measures to ensure that, should an emergency occur, communities, resources and services are capable of coping with the effects.” [21, p.88]

“...developing skills and competencies to ensure effective performance of disaster-related tasks.” [20, p.3]

These definitions illustrate the close relationship between readiness and preparedness in an operational context.

Emergency Management Australia provides two closely related preparedness definitions; one has a response capability focus, and the other includes the community and is discussed in section 3.1.

A focus on organisational response capability was evident in the interviews with key stakeholders. Interviewees were confident that their organisation was meeting its legislated capability requirements. They were, however, uncertain about what capabilities are expected at the sector level.

Planning

Planning is an essential element of being prepared [22]. Many definitions of preparedness feature a requirement for planning, for example:

“The activities that are commonly associated with disaster preparedness include developing planning processes to ensure readiness; formulating disaster plans; stockpiling resources necessary for effective response.” [20, p.3]

“Tasks for preparedness primarily include planning tasks such as the development of pre-event recovery plans and those tasks necessary to maintain preparedness (to activate those plans when required).” [11, p.145]

These definitions highlight that plans are one of the necessary elements of preparedness [20, 23, 24]. In the absence of other necessary elements of preparedness, plans can create an illusion of preparedness [24].

Planning was a key theme in the interviews. Stakeholders discussed the extensive plans that have been developed, for example, the State Emergency Response Plan (SERP), State Emergency Relief and Recovery Plan (SERRP), Municipal Emergency Management Plans, Standard Operating Procedures and workforce and resourcing plans.

There were notable differences in interviews regarding the interpretation of preparedness across the PRR activity areas. Response and recovery activity areas were mentioned more often as elements of preparedness than the activity of prevention. The focus of the activity areas discussions also differed; discussion about recovery activity suggested that developmental work was occurring while response activity was more mature.

3.4 Summary

The literature review identified three interrelated principles:

- preparedness is a shared responsibility
- preparedness is guided by risk
- preparedness applies to all stages of prevention, response and recovery.

Individuals, the community, organisations and the sector engage in preparedness activities that support each PRR activity area. Capability and planning are important elements of each PRR activity area, discussed in further detail in Chapter 5.

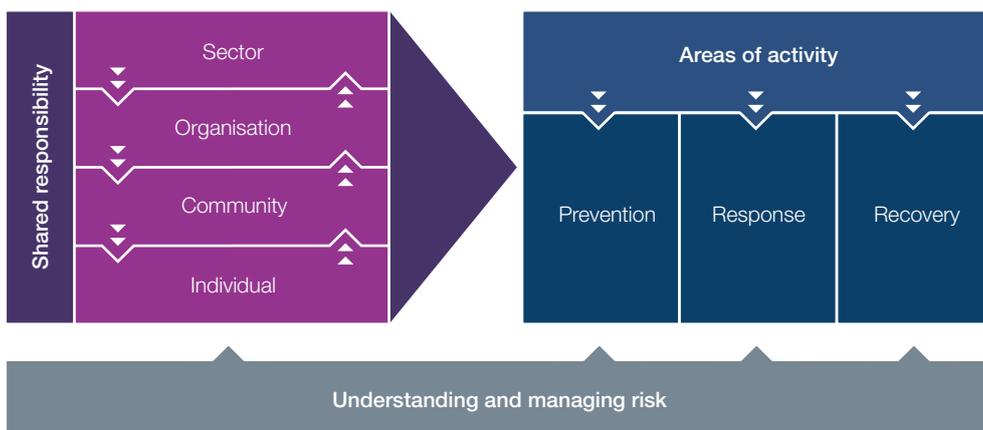
Under the concept of shared responsibility, preparedness encourages all Victorians to engage in PRR activities to address the highest priority risks in Victoria. As Figure 5 illustrates, there is a direct link between each of the three principles.

As detailed in Figure 5, an understanding and prioritisation of risk underpins preparedness areas of activity across the full spectrum of PRR. In order to be prepared it is essential that individuals, the community, organisations and sector know what they are preparing for.

Understanding and managing risk is essential at the sector level as it informs how, and what, all of these stakeholders do in each of the activity areas.

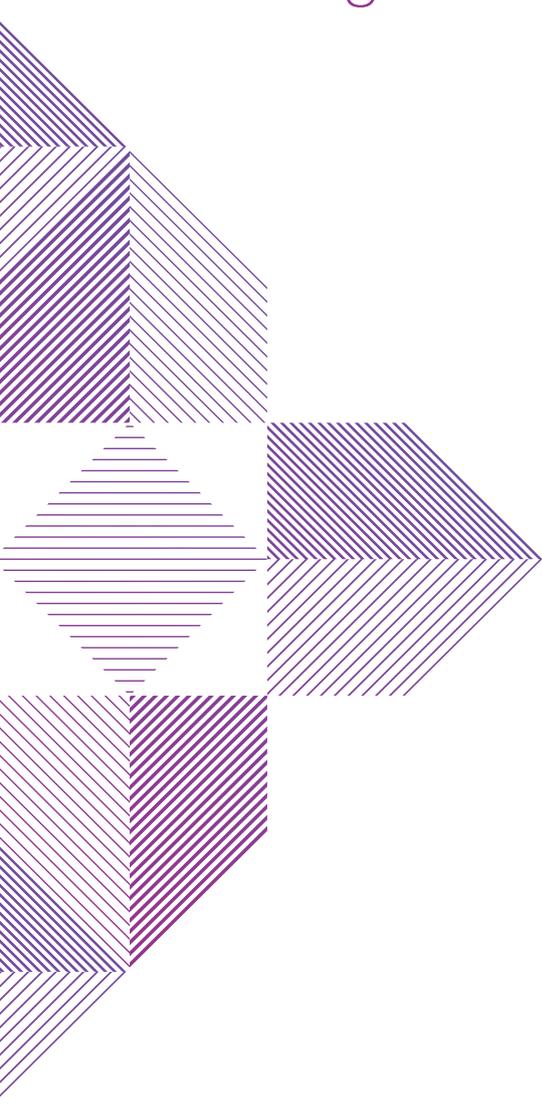
The three principles are highlighted in the EMMV, and are promoted widely across the Victorian emergency management system.

Figure 5: The principles of preparedness in Victoria



Source: Inspector-General for Emergency Management 2015

4. National and international preparedness arrangements



IGEM undertook a review of national and international legislation and preparedness activities.

Examination included Australian state and territory legislation that specifically includes preparedness, and where a model or framework is established, and preparedness in other countries. Insights include:

- an understanding of risk is an important element of preparedness
- WA provides a solid example of preparedness measurement and reporting in Australia
- the US has a comprehensive preparedness framework.

The identified insights into preparedness practices are the basis of the 'example' preparedness model.

4.1 Practice in Australia

Australian emergency management arrangements support state and territory governments in situations when an emergency is widespread or beyond their capacity ^[11].

These arrangements are based on partnerships and support national coordination through outlining principles, structures and procedures. The comprehensive (PPRR) and integrated approaches guide these emergency management arrangements ^[11].

In addition, the National Strategy for Disaster Resilience, adopted by the Council of Australian Governments in 2011, supports a shift in emergency management from a focus on response and recovery to include prevention and preparedness ^[11].

The national arrangements provide guidance to state and territory emergency management arrangements ^[6]. The national arrangements describe preparedness as activities that include resource management, learning and training, exercising and communicating ^[11]. The importance of planning for all hazards is also emphasised.

Under the constitutional arrangements in Australia, state and territory governments have primary responsibility for emergency management in their respective jurisdictions^[11]. While PPRR is advocated at the national level, variation exists across jurisdictional emergency management legislation ^[11].

A review of state and territory legislation found that inclusion of preparedness differs. For example, the Australian Capital Territory, New South Wales, Queensland and Western Australia take a PPRR approach while South Australia includes preparedness as part of planning activities.

Accordingly, the range of activities that support preparedness in state and territory legislation differ. Common preparedness activities in legislation include arrangements for planning and governance for response and recovery arrangements. However, legislation varies regarding provisions for risk assessments, training and exercising, obtaining supporting resources and reporting. Table 1 illustrates this variation.

The comparison was confined to emergency or disaster management legislation. IGEM notes that some elements of preparedness for emergency management are covered in other legislation or regulatory instruments.

Table 1: Variation in legislation and preparedness elements in Australia

ELEMENT OF PREPAREDNESS	Victoria <i>Emergency Management Act 1986 & Emergency Management Act 2013</i>	New South Wales <i>State Emergency and Rescue Management Act 1989</i>	Queensland <i>Disaster Management Act 2003</i>	South Australia <i>Emergency Management Act 2004</i>	Western Australia <i>Emergency Management Act 2005</i>	Tasmania <i>Emergency Management Act 2006</i>	Australian Capital Territory <i>Emergency Management Act 2004</i>	Northern Territory <i>Emergency Management Act 2013</i>
Arrangements for response	✓	✓	✓	✓	✓	✓	✓	✓
Arrangements for recovery	✓	✓	✓	✓	✓	✓	✓	✓
Conduct of risk assessment				✓	✓	✓ *	✓	
Planning at state/territory level	✓	✓	✓	✓	✓	✓	✓	✓
Planning at regional level		✓	✓		✓	✓		✓
Planning at municipal level	✓	✓	✓		✓	✓		✓
Assess and/or plan capabilities	✓		✓	✓			✓	
Undertake training		✓	✓			✓	✓	
Undertake exercises		✓			✓		✓	
Review effectiveness or audit plans	✓		✓			✓		
Governance at jurisdictional level	✓	✓	✓	✓	✓	✓	✓	✓
Governance at municipal level	✓	✓	✓		✓	✓		✓
Inter-municipal level support	✓	✓			✓	✓		
Inter-state or commonwealth support	✓		✓			✓	✓	

* refers to operational risk only

Western Australia’s emergency preparedness

Under section 14(1) of the *Emergency Management Act 2005 (WA)*, the State Emergency Management Committee reports to the Minister for Emergency Services on state preparedness.

In 2009, the West Australian Auditor-General conducted a performance examination, *Coming, ready or not: Preparing for large-scale emergencies* [35] in accordance with section 25 of the *Auditor General Act 2006 (WA)*. Two recommendations in the report influenced the approach to preparedness in WA. These recommendations stated that the State Emergency Management Committee WA should:

“provide an assessment of the state’s level of preparedness at least annually, including any gaps identified and significant risks” [35, p.30]

“formally assess each year which hazards the state should prepare for and decide if there are any areas which can be excluded for a particular hazard” [35, p.17].

Following these recommendations, the WA government released its first annual preparedness report that included a risk-based approach to emergency management preparedness in 2012 [29]. The reports are evolving over time, moving from qualitative assessments to more quantitative assessments [36].

The 2015 annual report focuses on preparedness as a cycle that consists of three components:

- assessing the risk
- evaluating the available capability
- measuring the impact.

These three areas are a part of a constant cycle of preparedness activities [34] (Figure 6).

Figure 6: Western Australia Preparedness Cycle



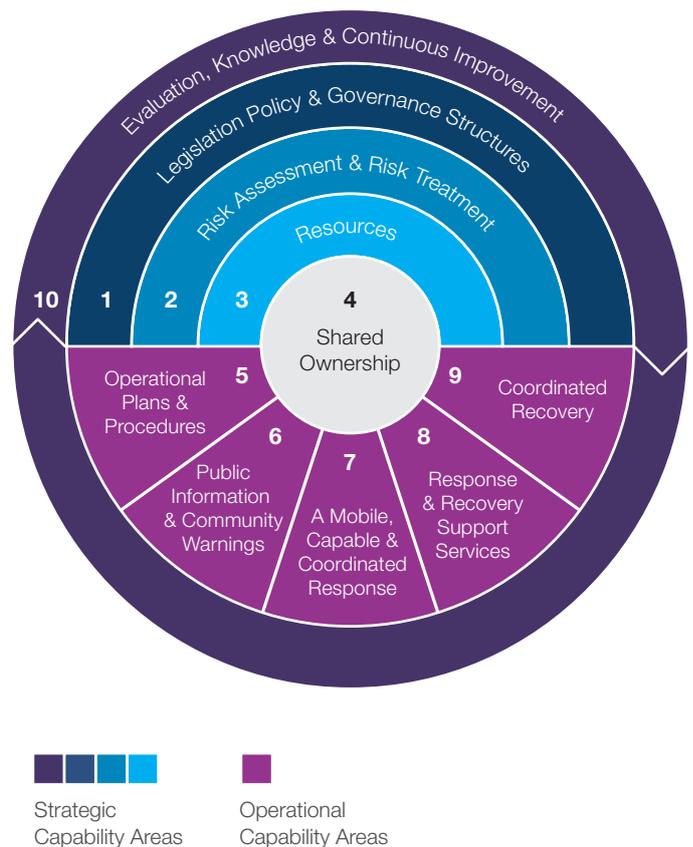
Source: Emergency Preparedness Report 2015 [34].

The first component, assessing the risk, requires the hazards that are prescribed in WA legislation to be assessed and prioritised by the State Risk Project each year. The findings from this project inform the content of the risk assessment workshops held over the year at the state and district level [34].

The second component, evaluating the available capability, includes a framework that contains 10 capabilities (Figure 7) underpinned by 24 achievement objectives to measure performance of the capabilities. Self-assessment surveys collect information from relevant organisations including government, service providers and local government authorities [34].

The final component, measuring the impact, is under development and includes information from post-incident analyses [34].

Figure 7: Western Australia Capability Framework



Source: Emergency Preparedness Report 2015 [34].

Queensland's emergency preparedness

Queensland's emergency management process follows a comprehensive and integrated approach. The Queensland Emergency Management Plan ^[37] and the *Disaster Management Act 2003 (Qld)* aim to ensure that preparatory measures enable communities to cope with the effects and impacts of emergencies. The Queensland State Disaster Management Plan ^[37] divides emergency preparedness into five functional areas:

- community education and engagement
- planning and arrangements
- training and education
- exercises
- communication ^[37, 38].

The Queensland Disaster Management Committee (formerly the State Disaster Management Group) provides the strategic direction and state-level decision making for disaster management within Queensland. This strategic direction ensures the PPRR activities are coordinated from a whole-of-government perspective and based on an all hazards approach ^[38].

Until 2013, the State Disaster Management Group reported annually to the relevant minister on activities to enhance and maintain disaster management in Queensland aligned with the principles of prevention, preparedness, response and recovery ^[39].

New arrangements assign the Queensland Inspector-General Emergency Management with the legislative responsibility to regularly review and assess the effectiveness of disaster management by the state ^[37, 40].

The Queensland Inspector-General Emergency Management has established an Emergency Management Assurance Framework to support continuous improvement of programs across all phases of emergency management ^[37, 40].

4.2 Selected international practice

IGEM examined sector preparedness activities from the United Kingdom (UK), New Zealand and US. Each of these countries has legislation that addresses preparedness activities.

United Kingdom

The UK approach to preparedness is focused on response and recovery capability development through the National Resilience Capabilities Programme ^[41].

This program has a distinct focus on building response capability to support managing emergencies and has 22 work streams with regular reporting.

The National Resilience Capabilities Programme builds on response capability and is informed by an understanding of risk. Both are important elements of preparedness ^[41].

Without a framework or a model the UK has an implicit approach to preparedness.

New Zealand

Emergency management preparedness in New Zealand is legislated in the *Civil Defence Emergency Management Act 2002 (New Zealand)* (the 2002 Act). The 2002 Act details the planning and preparation arrangements for emergency response and recovery. The 2002 Act requires a risk management approach be adopted including maintenance of business as usual principles with a focus on functioning throughout an emergency, even at a reduced level.

Like the UK, New Zealand has a capability approach to preparedness and is outlined in the National Civil Defence Emergency Management Strategy ^[42]. This strategy is evaluated through a self-assessment tool and reporting on national capability occurs on a three-yearly basis.

New Zealand's national reporting focuses on response capability and highlights the importance of reporting at both organisational and sector levels.

New Zealand's approach includes explicit consideration of business continuity as part of risk and response capability considerations.

United States

In 2005, Hurricane Katrina exposed US governments' flaws in their ability to prepare for catastrophic events. In the aftermath of Katrina, the *Post-Katrina Emergency Management Reform Act of 2006 (United States)* and amendments to the *Homeland Security Act 2002 (United States)*, greatly expanded the responsibilities of FEMA ^[43].

These changes resulted in a comprehensive sector preparedness framework, consisting of:

- a presidential preparedness directive
- a National Preparedness Goal
- legislation specifically mentioning catastrophic incidents
- annual progress reporting ^[27].

The National Preparedness Goal (the goal) defines what it means for the whole community to be prepared for all types of emergencies. The goal considers preparedness to be a shared responsibility that requires coordination of federal, state, local, tribal, private and non-government entities to minimise the impact on lives, property and economy ^[44].

The goal ^[44] is supported by the:

- National Preparedness System ^[25]
- National Incident Management System ^[45]
- National Planning Frameworks ^[46]
- National Preparedness Report ^[47]
- Threat and Hazard Identification and Risk Assessments ^[48].

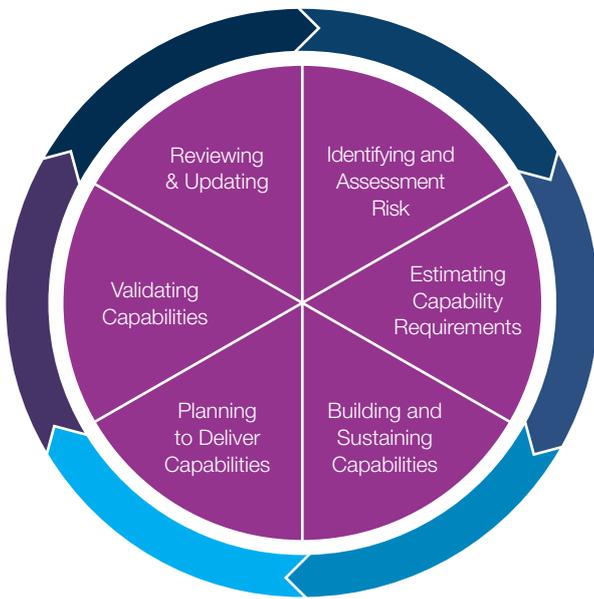
The goal does not use PPRR or PRR. Instead, it describes its emergency management approach through mission areas: prevention; protection; mitigation; response and recovery ^[44]. Like the UK and New Zealand, the US adopts a capability approach to preparedness with the goal outlining 32 core capabilities to support the execution of the mission areas ^[27] (Appendix 1).

The annual National Preparedness Report evaluates progress on the core capabilities through the collection of data from over 450 sources and 143 stakeholders [27]. The results presented in the report are based on self-assessments and are completed at the community through to the federal level [27]. This approach to reporting assesses the emergency management sector’s preparedness and the whole system, including community and private organisations [27].

To provide structure to these reporting requirements, the National Preparedness System (Figure 8) organises the reporting and activities into six components:

- identifying and assessing risk
- estimating capability requirements
- building and sustaining capability
- planning to deliver capabilities
- validating capabilities
- reviewing and updating [25].

Figure 8: United States National Preparedness System



Source: National Preparedness System [25].

The National Preparedness System focuses on building capabilities to ensure a collaborative approach is adopted to building a prepared and resilient nation [25]. The components of the system are integrated and are a continuous process that create a consistent approach to preparedness [25].

US jurisdictions, at all levels, assess preparedness for each part, including identifying gaps and mitigation strategies [27]. Through the use of core capabilities and the National Preparedness System, the US has created annual reporting that measures preparedness.

4.3 Summary

There are number of different approaches to preparedness adopted by emergency management sectors in Australia and overseas.

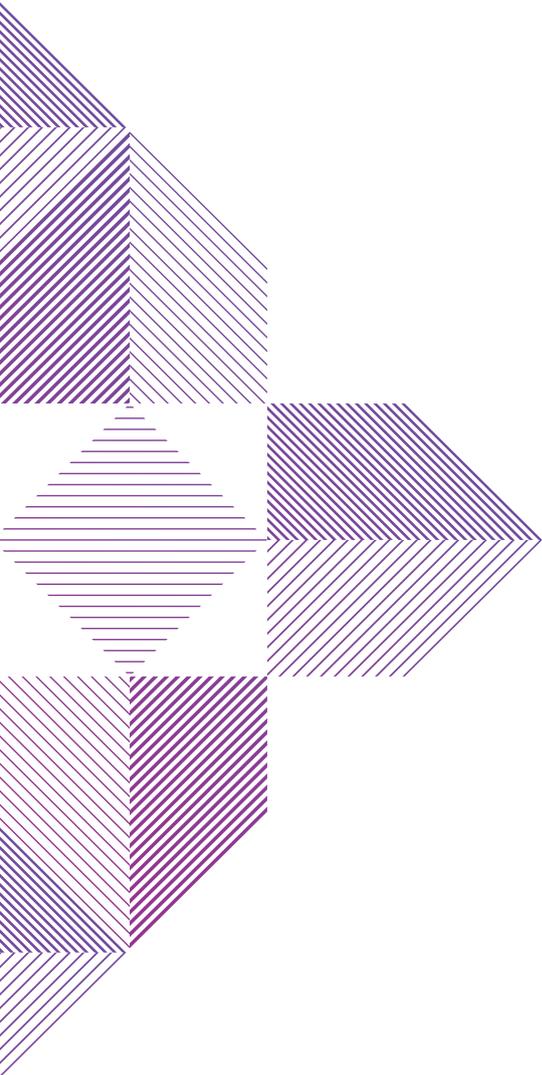
These range from: the PPRR approach taken in Queensland; the capability and risk focus taken in the UK and New Zealand; and specific preparedness frameworks adopted in WA and the US.

Measurement and reporting, supported by legislation, is common across these preparedness approaches. Measurement and reporting of preparedness is an important part of understanding how prepared a sector is.

WA and the US are unique examples of the application of a preparedness framework through a cycle (WA) and goal (US). These examples use preparedness as a lens to frame the assessment of emergency management arrangements and activities.

Preparedness is used to bring together emergency management activities and provide assurance to government that the nation or state is prepared for major emergencies.

5. Towards leading practice



The review identified leading practice in emergency management sector preparedness to include:

- promotion of interoperability through sound governance arrangements
- understanding and managing risk as the basis of planning, capability assessments, training and exercising
- plans are developed and implemented
- a well understood emergency management sector capability and capacity
- training and exercising as part of a structured approach to emergency management
- monitoring and evaluation to identify opportunities for improvement.

In this chapter, leading practice is explored through introduction of an example model of preparedness (the model) and suggested criteria for assessing sector level preparedness.

The preparedness model is based on: the principles of preparedness discussed in Chapter 3; existing preparedness approaches presented in Chapter 4; and drawing on the preparedness approaches taken by WA and the US.

5.1 An example model of sector preparedness

The US and WA have similar approaches to preparedness.

The US takes a systems approach made up of six components ^[25]. WA takes a cyclical approach made up of three components, including a capability framework ^[34] (refer to Figure 6).

Table 2 compares the US National Preparedness System and the WA Capability Framework.

Table 2: Comparison of preparedness approach

US NATIONAL PREPAREDNESS SYSTEM ^[25]	WA CAPABILITY FRAMEWORK ^[34]
	Legislation, policy and governance structures
Identifying and assessing risk	Risk assessment and risk treatment
Planning to deliver capabilities	Operational plans and procedures
Estimating capability requirements	Resources
Building and sustaining capability	Resources
Validating capabilities	Operational plans and procedures
Reviewing and updating	Evaluation, knowledge and continuous improvements

From its capability framework, the WA comparison includes the five strategic capabilities, and excludes the operational capabilities as they relate to operational preparedness.

As highlighted in Figure 9, the following elements are considered as integral to preparedness:

- governance
- understanding and managing risk
- planning
- assessing capability
- training and development
- exercising
- evaluation, monitoring and improvement.

Like both the US and WA approaches, the elements are integrated and critically linked to each other in a continual process (Figure 9).

As preparedness occurs at the individual, community, organisation and sector level, the model is scalable. Governance is integral to all elements.

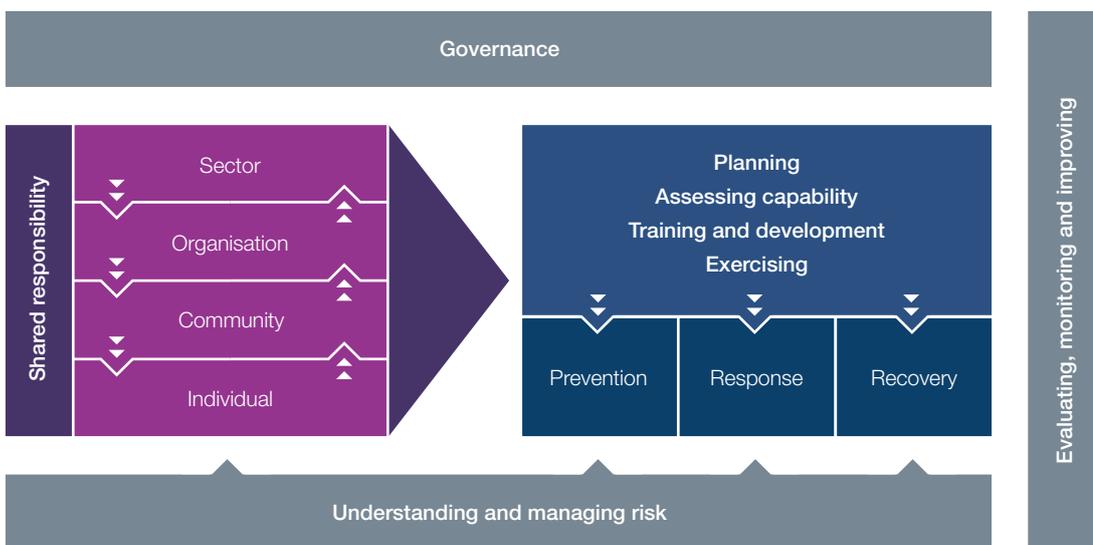
Figure 10 illustrates the relationship between the key elements of preparedness good practice and the three principles of preparedness identified and outlined in Chapter 3.

Figure 9: Key elements of preparedness



Source: Inspector-General for Emergency Management 2015

Figure 10: The interrelationships between the elements and principles of preparedness good practice



Source: Inspector-General for Emergency Management 2015

5.1.1 Governance

In preparation for, response to and recovery from emergencies, governance arrangements should support collaboration and interoperability, and improve integration and effectiveness of planning and preparation.

In the model, governance is an element in itself and requires consideration in each of the other six elements. Without appropriate governance arrangements, roles, responsibilities and accountabilities can be unclear or absent.

Governing legislative framework and supporting documents should reflect institutional arrangements and address the role of key sector organisations and the community in preparedness activities. It should also clearly establish regular monitoring and reporting on emergency preparedness^[31].

For example, legislative incorporation of a US presidential policy directive oversees governance^[49]. WA incorporates governance, including legislation and policy, as part of its capability framework^[34].

5.1.2 Understanding and managing risk

Risk can be physical, social, technical, environmental, cultural and economic^[42]. An analysis of risk should consider all possible consequences including secondary consequences that may result, for example, cascading impacts due to infrastructure loss.

In the model, a shared understanding of risk informs what the sector should be prepared for by outlining, at the state level, the magnitude and consequences of emergencies. As a result, risk has a strong relationship to both the planning and assessing capability elements, including the identification of the capability and capacity requirements to prevent, respond to and recover from major emergencies.

Risk assessments are an important preparedness step^[50]. Accurate data and research is fundamental to better understand emergencies and their impact on communities, businesses and governments^[51].

Risk assessments at the organisation and community levels inform risk at the sector level. Risk assessments should extend beyond the hazard specific context and analyse risk exposure/s relating to factors including community characteristics and emergency management governance, systems and processes.

Population growth and new developments over time change the nature of emergency risk, necessitating a continual updating of risk assessments. It is important that there are good processes for coordinating and prioritising research activities to maintain up-to-date knowledge of emergency risk^[52].

The process of undertaking risk assessments should include consultation and participation by stakeholders including the community, sector organisations, local government and infrastructure operators^[42].

While risk assessments are a critical component of understanding and managing risk it is also essential that a clear framework prioritises and guides risk assessment activities. A risk framework addresses sector level issues such as interoperability, inter-agency and state significant risks^[53].

Both the US and WA incorporate risk in their respective approaches to preparedness and advocate for risk assessments to be conducted at all levels.

5.1.3 Planning

Emergency management planning is a systematic and ongoing process that prepares organisations for the mitigation of, response to, and recovery from, emergencies. Effective PRR activities are based on pre-designed plans that map various activities necessary during an emergency^[22, 23]. It evolves as lessons are learned and addressed as circumstances change^[54].

In the model, planning has a strong relationship with the other preparedness elements, and in particular its linkages to understanding and managing risk. At the sector level, inter-agency and state significant risks inform planning for major emergencies^[53].

The aim of an emergency management plan is to increase multi-agency and community resilience by ensuring that those responsible for managing the emergency:

- know their role/s
- are competent to carry out their role/s
- have access to available resources and facilities
- have confidence that their partners in response are similarly prepared^[54].

Planning should involve identifying the demand that a major emergency would impose upon emergency response and recovery organisations and the resources needed by those organisations to undertake their roles and responsibilities^[18, 55]. Plans developed for lesser scale events may not be entirely suitable. Planning for major emergencies must recognise that they are different from minor everyday emergencies^[56].

In addition, plans should also consider business continuity arrangements required if the capacity of the emergency management sector is disrupted^[31]. This process is essential to ensure critical capabilities will remain available during the occurrence of an event.

For example, best practice guidelines have been developed by the Australian, Canadian and UK governments to guide practitioners in the development of emergency management plans^[17, 54, 57].

The planning that WA has included in its capability framework has an operational focus on ensuring that roles and responsibilities are clearly outlined^[34]. The US system also includes planning at the operational level however it also encompasses interoperability across all levels of the National Preparedness System^[25].

5.1.4 Assessing capability

Assessing capability includes identifying competencies and skill sets people should have. It includes identifying and acquiring standard and surge resources such as personnel, equipment and systems.

In the model, understanding sector risks influences capability requirements and planning. A shared understanding of risk is essential in determining what capability is required to respond to major emergencies.

There is a strong relationship between risk and capability. As state emergency management capabilities increase, the level of risk decreases ^[34]. However, there are limitations to preparing and resourcing for every possible contingency with the effectiveness of emergency management capability and capacity inevitably reaching a limit beyond which they are exceeded ^[56].

An understanding of risk allows planners to identify what capability and capacity is required, including challenges anticipated during major emergencies. Determining capability and capacity gaps requires an assessment of current resources (human and physical), systems and infrastructure available against a knowledge of risk, strategies outlined in plans and known resource requirements ^[56, 59].

Outcomes of a capability assessment process may include:

- a capability framework
- forward planning for the development of new capabilities
- possible adjustments to emergency plans including the re-ordering of strategic, operational and/or tactical priorities
- assessing the availability of wider community capabilities ^[59].

Capability is the main focus in both the WA and US approaches to preparedness.

5.1.5 Training and development

Training and development of skills is pivotal to building organisational and sector capability.

Preparedness requires sufficient numbers of trained and skilled people to respond to emergencies ^[1]. Effective training should be informed by clear goals, be relevant, reflect current practice and incorporate critical self-reflection ^[1].

The preparedness model identifies a relationship between capability, training, and exercising. Training offers an opportunity to fill gaps that are identified when assessing capabilities.

Training for all stakeholders in given areas of expertise is essential. Increasingly it has become important that stakeholders must also possess awareness of other responders' roles. Therefore, training should include all aspects of response and recovery.

Governance arrangements should provide for consultation with stakeholders to ensure that training strategies meet local requirements ^[60].

Training decisions should be made based on information derived from risk assessments, capability assessment and planning ^[25].

Training is included in the WA capability framework as a subcomponent of resources. The US includes training as part of building and sustaining capabilities. Both highlight the importance of the link between this element and assessing capabilities.

5.1.6 Exercising

Exercising can measure the effectiveness of plans and allow personnel an opportunity to practise their skills and build relationships with other organisations ^[61]. It has been argued that it is almost a foregone conclusion that plans that are not exercised are either not used at all or will fail or not be fully effective in an actual emergency situation ^[18].

Multi-year exercise plans build preparedness by using a step-by-step approach, where planning and training are linked to the exercise program ^[61].

The preparedness model identifies the strong relationship exercising has with understanding and managing risk, planning, assessing capability and training. Exercising tests the effectiveness of plans that are developed to address the identified priority risks. They should also focus on strengthening capability development areas that have been included in training programs.

Overall, exercises provide an opportunity to:

- clarify roles and responsibilities
- improve operational readiness and test equipment
- identify planning weaknesses and resource gaps
- improve inter-agency coordination and communication
- evaluate plans, policies and procedures
- provide training, improve individual performance and demonstrate capability ^[61].

In addition, exercises should be evaluated to identify improvements needed in an organisation, process or function and establish whether the exercise achieved its objectives ^[61].

Governments of Australia, New Zealand and the UK have produced good practice guidelines that provide practical advice regarding the design, planning, execution and evaluation of exercises ^[54, 61, 62].

5.1.7 Evaluation, monitoring and improvement

Embedding evaluation and monitoring activities in all aspects of emergency management assists in the identification of improvement opportunities and enables the provision of assurance to government and the community.

Emergency events and exercises provide an important opportunity to validate emergency plans and preparedness elements ^[25]. It is therefore critical to undertake evaluations to review the effectiveness of emergency management plans and preparedness elements after emergency events and exercises.

In the preparedness model, evaluation, monitoring and improvement provides the sector with an opportunity to reflect on the effectiveness of all elements and changes in practice, and is a continuous process.

In some cases, independent monitors or assurance bodies provide assurance of implementation of recommendations from reviews and evaluations. For example, IGEM as an assurance body, monitors implementation of the VBRC and the 2014 Hazelwood Mine Fire Inquiry recommendations, affirmations and actions.

Each sector organisation should endeavour to address actions from lessons identified. However, there is frequent criticism about the failure to learn lessons identified from evaluations, reviews and audits ^[13, 63].

Evaluation, measuring, monitoring and reporting on emergency preparedness outside the occurrence of an emergency event or exercise should also occur. Examples of organisations reporting on preparedness in the emergency management context were identified in the US, New Zealand and WA. The same can be said of sector organisations that report on preparedness activities in their annual reports.

The development of clear and defined indicators is a vital component of such assurance activities. Assessment against the defined indicators assists to provide focus and direction to help identify strengths and weaknesses in emergency preparedness levels and facilitate targeted improvement ^[23].

5.2 Preparedness evaluative criteria

Evaluative criteria were developed to support the example model of preparedness in application. The sample criteria allow for the maturity of the sector's preparedness to be assessed against each of the model's seven elements.

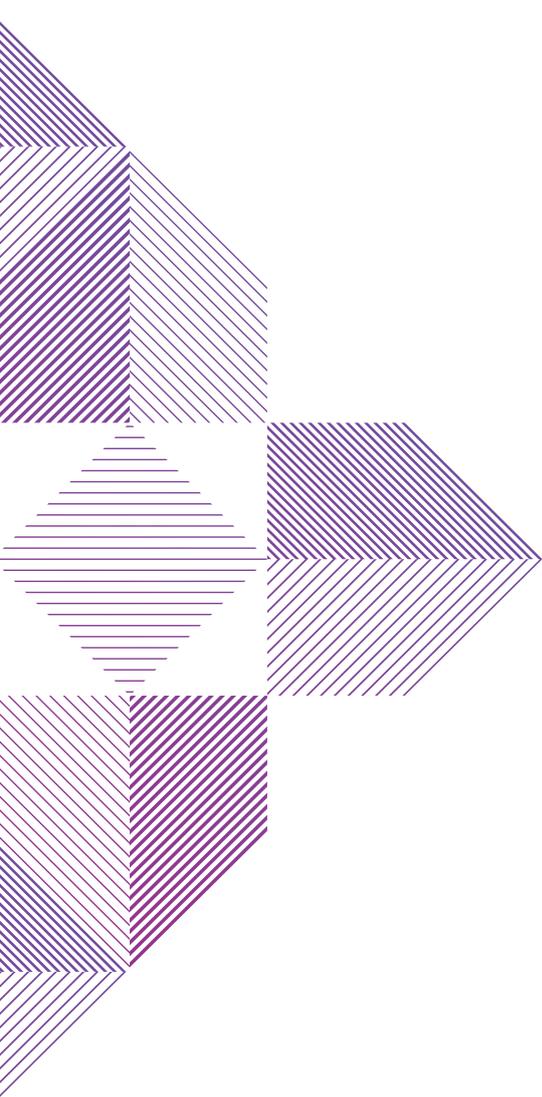
In Table 3, the relationship between the elements of leading practice and the sample criteria is outlined. The seven assessment elements are rated on a maturity basis, based on a Preparedness Maturity Matrix provided at Appendix 2.

A prepared sector is assumed as one that rates as mature across all of these seven elements. Maturity in isolated elements does not infer preparedness overall.

Table 3: Relationship between preparedness elements and criteria in the example sector preparedness model

ELEMENT	CRITERIA	DESCRIPTION
Governance	Governance and culture drive preparedness activities	The extent to which governance and culture drive preparedness.
Understand risk	Risks are identified and assessed	The extent to which detailed evidence-based risk assessments covering a range of priority hazards are available, including a detailed knowledge of secondary impacts, across a range of hazard probabilities from frequent to rare events.
Planning	Emergency plans are prepared	The extent to which plans encompassing arrangements for major emergencies are developed and integrated vertically and horizontally across all levels and organisations, and utilise a robust planning process.
	Business continuity planning is undertaken	The extent to which organisations and the sector have implemented robust business continuity management systems to manage disruptions to critical services.
Assessing capability	Capabilities are established and available	The extent to which the existing capability and capacity of organisations and the sector with emergency management responsibilities is well understood. If gaps have been identified after assessing likely resources required in major emergencies, plans are in place and being implemented to address deficiencies.
Training and development	Personnel are appropriately trained and skilled	The extent to which all personnel needing to be trained have received the required training and appropriate learning and development systems are in place.
Exercising	Plans are regularly validated	The extent to which plans are validated utilising exercises, including the effectiveness of the processes for planning and conducting the exercise.
Evaluation, monitoring and improvement	Preparedness is monitored, evaluated, reported and improved	The extent to which: <ul style="list-style-type: none"> • levels of emergency management preparedness across the entire sector are monitored and reported to government • exercises and incidents are evaluated, and lessons learnt are established, recorded, implemented, tracked and assured • independent risk-based assurance is provided across the preparedness system.

6. Victoria and the preparedness model



The implied nature of sector preparedness in Victorian legislation, and a focus on organisational preparedness, has shaped how key stakeholders understand preparedness.

Interview participants identified the uncertainty resulting from the absence of a definition of sector preparedness. Subsequently most stakeholders identified that their focus is on preparedness activities that support individual organisational activities such as planning, governance, capability and exercising, as highlighted in Figure 11.

The seven key elements have been used as a framework to discuss current emergency management practices in Victoria. There are many examples that inform an assessment of Victoria's sector preparedness. This chapter highlights examples raised during IGEM's interviews with stakeholders, and those in published documents.

The *Victorian Emergency Management Strategic Action Plan (SAP)* is a rolling, three-year plan developed by the SCRC. The SCRC is responsible for the development of the SAP, which includes eight priorities and 30 actions ^[64].

The actions undertaken as part of a commitment to the SAP are considered part of ensuring Victoria is prepared. Only SAP actions raised in the key stakeholders' interviews feature in the following chapter. IGEM acknowledges the work that is currently underway as part of this initiative.

Figure 11: Stakeholder comments about Victoria's sector preparedness



6.1 Governance

Continued enhancement of the arrangements at the sector level is a key priority in Victoria's emergency management reform program. The SAP Priority (E) focuses on:

- governance arrangements for all hazards across all tiers of government, non-government organisations, agencies, business and communities
- legislative reform on land use and infrastructure planning
- champion partnerships across governments, their departments and agencies to foster collaboration and innovation^[64].

Governance was discussed frequently in stakeholder interviews. Interviewees provided numerous examples of initiatives and activities where governance arrangements and multi-agency accountabilities were aimed clearly at facilitating preparedness.

Some stakeholder representatives expressed uncertainty around the robustness of the new governance arrangements, noting that the new arrangements have not been tested during a major emergency of the magnitude of Black Saturday fires or the 2010–11 Victorian floods. Nor have the new arrangements been tested for Class 2 emergencies.

Case study 1: Combining portfolios to ensure preparedness – DEDJTR

At a meeting of the Emergency Coordination Committee, the Secretary of DEDJTR spoke of their department's preparedness. The Secretary described preparedness as more than having a plan, it required a set of capabilities, agility, decision making, being responsive and deploying resources efficiently. It also required coherent communication and good connections to the community. These are the underpinning principles that DEDJTR is now implementing through governance strategies and emergency management frameworks.

DEDJTR has five service delivery groups and three enabling (corporate) groups. Each of the service delivery groups within DEDJTR has responsibility across the emergency management spectrum to provide support to the community as part of prevention, response and recovery activities.

DEDJTR has mapped its legislative accountabilities for each of the service delivery groups against EMMV requirements. The DEDJTR Emergency Management Governance Model (Appendix 3) ensures that all areas within the department clearly identify their roles and accountabilities for prevention, and during response and recovery stages of an incident.

Preparedness has been encouraged and promoted through various sub-committees including resilience, planning, capability and response and recovery. This allows for integration and coordination of resources, understanding of responsibilities and provides awareness for communication linkages.

The amalgamation of multiple portfolios into the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) resulted in a complex and diverse department.

DEDJTR could be considered a system for the purpose of demonstrating governance arrangements for emergency management responsibilities within its portfolio (Case study 1).

Victoria has implemented a range of governance arrangements designed to clarify accountability, roles and responsibilities and improve visibility in key areas.

An example of this is the relief and recovery arrangements following transition of accountabilities from Department of Health and Human Services (DHHS) to EMV (Case study 2).

The Victorian emergency management sector has experienced rapid changes in its governance arrangements since the introduction of the 2013 Act. Continued enhancement of Victoria's governance arrangements at the sector level is a key priority in Victoria's emergency management reform program. The efficacy of these arrangements should be evaluated after the sector has had an opportunity to implement them.

Case study 2: Transition of relief and recovery accountabilities

On 1 September 2015, responsibility for state-level relief and recovery coordination was transferred to EMV from DHHS. This change required the collaboration of the DHHS Emergency Management Branch, the EMV Relief and Recovery Directorate and the EMC. To support this transition, project and communication plans were developed to facilitate the handover of legislated responsibilities, a significant amount of preparatory doctrine, policies and operational procedures, and to ensure uninterrupted provision of service coordination through this period.

Under these new arrangements, and following recent changes in government process, the key priority of EMV was twofold: to work collaboratively with all government departments and key agencies to review relief and recovery accountabilities; and to design and implement governance arrangements to streamline state-level coordination.

This resulted in the State Relief and Recovery Plan (Part 4 of the EMMV) being updated and endorsed. It now details the new recovery functional areas, state-level coordination and service delivery responsibilities to effectively support community relief and recovery (Appendix 4). Additionally new governance arrangements to support reporting and information flow have also been endorsed. The new arrangements were tested and confirmed through a state-level, joint agency desktop exercise in late November 2015.

6.2 Understanding and managing risk

At the state level, risk is identified/assessed in a number of ways.

For example, the Victorian Government Risk Management Framework (VGRMF) sets out the minimum risk management standards for departments and public bodies covered by the *Financial Management Act 1994 (Vic)*. This document recognises that an organisation's risk management responsibilities include collaboration with other entities to consider inter-agency and state-significant risks, in order to achieve a full understanding of risk ^[65].

The 2014 *Emergency Risks in Victoria* report identifies and supports the management of risk at the state level. Based on the 2012–13 State Emergency Risk Assessments, 15 high-priority hazards were identified for assessment ^[65]. This process has not since been replicated on this scale at the state level.

Understanding risk was a key theme in IGEM's stakeholder interviews. Interviewees indicated that sector organisations believe they maintain a good level of preparedness for emergencies within their area of responsibility. However, there is uncertainty among agencies about the magnitude of major emergencies that they need to prepare for.

Interview responses also emphasised the importance of risk to many of the other activities they carry out, including determining capacity and capability requirements, training and exercising, and effective planning. Stakeholders acknowledged that there is a limit to preparedness and expressed a desire to understand what is an acceptable level or risk to prepare for at the state level.

At the time of this review, EMV advised IGEM that it is progressing work on state risk, seeking to align it with the VGRMF through the development of frameworks that align with a range of risk assessment processes at state, regional and local levels.

However, no visible and regular process for comprehensively assessing and prioritising risks at state level was evident. While the identification of the 15 priority hazards is an essential component of assessing risk, understanding Victoria's exposure to risk extends beyond the hazard-specific context and should consider the sector's risk in relation to systems, functions and interoperability.

6.3 Planning

In Victoria the EMMV details the guidelines for emergency management planning ^[9]. EMV recently reviewed and updated the SERP and SERRP with a more strategic and all hazards – all agencies approach. These plans provide the foundation for the hazard specific sub-plans.

It is important that emergency recovery activities involve a number of organisations from the private and not-for-profit sectors, in addition to government departments. The governance arrangements for recovery efforts in Victoria have been established and planning is now a priority.

Plans should consider arrangements to coordinate supporting resources from within an affected jurisdiction, other jurisdictions and internationally, when local resources are stretched or exhausted during a major emergency.

Stakeholder interviews highlighted a focus on the response plan in Victoria. It was suggested that more work on sector-wide planning was required in the recovery area.

There are examples of Victoria assisting other jurisdictions under formal arrangements such as the 2015 South Australia Pinery Region fires and international assistance agreements that support deployments such as the US wildfires in August 2015. An example of collaborative emergency planning is the establishment of local government collaborations (Case study 3).

The interviews provided extensive planning examples, including the development of relief and recovery plans that are under development or in the implementation phase due to the prior focus on response. The efficacy of these plans should be evaluated after the sector has had an opportunity to fully implement them.

Case study 3: Collaborative emergency management – local government

Eleven local government-led collaborative initiatives operate across Victoria to which Local Government Victoria provides secretariat support and coordination, including: pilot programs, regional Municipal Emergency Management Enhancement Groups (MEMEG) and partnerships or cluster groups. The intent for collaborative emergency management across local government includes a willingness to share resources, share and standardise documentation, processes and operating procedures, combined training and exercising, and combined emergency management strategies in relation to planning, relief and recovery.

A number of positive aspects have been identified through the pilot collaboration projects. These have included providing a more efficient and effective service to the community in response to an emergency. This has been demonstrated through improved planning, documentation and increased knowledge and resource sharing to build capacity during an emergency as they are shared across the municipalities. Increased preparation for relief and recovery requirements, clear communication on emergency management expectations, greater understanding of each municipality's capability and capacity for emergencies and consistency is apparent across a range of councils.

The state MEMEG is the coordinating point for all of the regional MEMEGs, clusters, partnerships, groups and collaborations. MEMEGs are council-led committees which link councils with their neighbours and emergency management agencies to collectively strengthen municipal level emergency management capability and capacity. Issues identified at a regional MEMEG or by a partnership group are passed into the state MEMEG for action or escalation.

6.4 Assessing capability

A key element of Victoria's emergency management reform is to understand Victoria's current capability and capacity to prepare for, respond to and recover from major emergencies.

Most interviewees expressed confidence that capability requirements were being met at the organisation level. Surge capacity was often raised as a tension that had to be balanced with business as usual duties. Interviewees also expressed a desire for capability and capacity requirements at the sector level to be clearly articulated.

EMV has commenced an initiative – Emergency Management Capability and Capacity in Victoria. This project is part of the SAP in Priority G:

“Progress to an all hazards emergency management capability model that captures and baselines the state's current capability and capacity and identifies current gaps and reinvestment opportunities.” [64, p.23]

Through this project, EMV aims to establish a baseline of Victoria's current emergency management capability and capacity by developing a framework to define the core capabilities needed to address major emergency risks in Victoria. EMV has delivered the Emergency Management Capability Blueprint [66] as part of this project.

The outcomes from this initiative aim to establish leading utilisation of sector strengths and provide clarity about available and required capability and capacity across the sector. The capability framework will be a key enabler in understanding Victoria's capability and capacity to manage major emergencies into the future.

Delivery of the capability project is due in December 2016.

6.5 Training and development

A key element in fostering an integrated approach to training and development is the alignment of organisational governance arrangements for training with state arrangements.

A key theme from interviews was organisational confidence in their individual training regimes. It was unclear to interviewees what training is required at sector level, from an all hazards – all agencies approach.

Section 50 of the 2013 Act requires the EMC to develop and review the training, development and accreditation of incident management personnel for the planning and preparation for the response to emergencies.

In the Victorian context, organisations are actively encouraged to embrace and integrate the fundamentals of EMV-led policy into existing programs and activities from recruit level through to executive level development programs.

EMV advised IGEM that it is building on the principles, commitments and goals of the previous Victorian State Fire and Emergency Services Training Framework. This project is part of the SAP in Priority D:

“Develop and implement a 10-year workforce strategy and sector training framework that delivers a highly diverse and technically competent workforce.” [64, p.21]

This project includes the development and refinement of a new state training framework. EMV is working with sector organisations to ensure sector-wide training and exercising inputs, activities and outputs align to intended outcomes.

The state training framework will include:

- development of all-hazards training and accreditation materials
- implementing an accreditation system
- an online training system
- addressing the training requirements of incident, regional and state levels.

EMV has commenced the adaptation and implementation of these programs and frameworks. However, there may be a discontinuation of funding from June 2016 which would substantially impact the expected delivery of the programs. Therefore, the ongoing system will now be staged and the projected completion timeline is now unknown.

6.6 Exercising

A key theme that emerged from stakeholder interviews was that while exercises were occurring, inclusion was often based on local, or informal networks. Exercises were often organisation specific, hazard specific and focused on response and recovery.

Interviews revealed that exercises for emergencies such as bushfire, flood and severe storms were well tested. However, emergencies such as Class 2 emergencies, are not as well tested at sector level. (IGEM notes that a significant Class 2 exercise is planned for 2016).

Some stakeholders identified the lack of a sector-wide exercising program to guide what is exercised and how often. EMV advised IGEM that an exercising framework for the sector, to provide a structured approach to exercising, is under development. EMV has endorsed an ongoing process of exercising relief and recovery arrangements.

The EMV-led development of the state exercise framework focuses on multi-agency exercising that has a consequences approach. An example of a joint training exercise such as this is Exercise Prometheus (Case study 4).

This initiative informs exercising at multiple levels: state, regional and local. It also recognises governance as a significant consideration, with procedures for authorisation, support and commitment sought from the executive level.

The state exercise framework also recognises that the primary responsibility for the planning and conduct of exercises within the sector lies with those organisations that have control and/or support functions as listed in the EMMV Part 7 [6].

The state exercise framework includes an Exercise Portal with a single point of reference for sector organisations involved in the development, conduct and evaluation of exercises. The portal includes an exercise calendar, library and exercise resources section.

Lessons from exercises should be integrated into updated plans and procedures that improve the ability to respond to and recover from emergencies [61].

Case study 4: Exercise Prometheus

On 21 October 2015 IGEM observed the multi-agency exercise, Prometheus, at the Hume Global Learning Centre. Approximately 200 people attended the event hosted by the Metropolitan Fire Brigade, EMV and Hume City Council.

Exercise Prometheus aimed to explore the response and recovery elements of Victoria's emergency management arrangements when applied during a large-scale event within the Melbourne metropolitan district. Three panels were established, one each for the response, recovery and preparation phases. The panels included representatives from organisations responsible for prevention, response and recovery.

The hypothetical emergency involved a full capacity Boeing 777 crashing into the northern suburbs of Melbourne due to a bird strike. The incident involved an emergency management response of 21 government agencies, councils and commercial industries, with objectives:

1. Explore the roles and responsibilities of emergency management sector agencies and organisations during a large-scale emergency
2. Explore the current activities which the emergency management sector undertakes to prepare for large-scale emergencies
3. Explore the current plans and arrangements which exist within Victoria and can be applied to large-scale emergencies
4. Explore the capacity of individual emergency management agencies and organisations to respond to large-scale emergencies within the metropolitan district
5. Explore the challenges individual agencies and organisations may experience maintaining business as usual activities while engaged in operations at a large-scale emergency.

The sector is establishing appropriate systems and databases that ensure a contemporary understanding of required skills, endorsements and qualifications against existing capability and capacity.

EMV in collaboration with the sector has developed the EM-LEARN Framework (EM-LEARN). EM-LEARN establishes common processes through the implementation of a lessons management life cycle (see Appendix 5). The intention is that, in the future, lessons will be incorporated into a system that supports EMV's EM-LEARN.

Implementation of EM-LEARN has the potential to influence all aspects of emergency management including: training, underpin safety initiatives, provide evidence for strategic decisions, track behaviour change and support the capture of community feedback.

6.7 Evaluation, monitoring and improvement

A theme that emerged from stakeholder interviews was that there is currently minimal measurement or evaluation of sector emergency management preparedness.

Reasons given include the infancy of the current arrangements and the evolution of standards to support reporting requirements.

A future consideration is to move beyond counting resources. It was generally agreed that any measurement requirements require strong links to prioritised state risk.

The interviews indicate that sector organisations undertake preparedness activities related to, and applicable with their area of responsibility. Interviewees were less confident of how organisational preparedness contributes to an overall 'joined up' sector preparedness approach.

In accordance with the 2013 Act, EMV is working to review and develop operating standards and procedures. EMV is also responsible for promoting and leading implementation of the SAP actions on behalf of the SCRC and reporting to the minister at regular intervals.

IGEM has a specific role to monitor and report on the implementation of actions under the SAP and assess the effectiveness and efficacy of the implemented recommendations. IGEM works closely with EMV to prepare periodic reports for the minister.

Evaluation and monitoring activities are an essential element of preparedness, and all emergency management activity areas.

While separate or independent bodies are required in some situations, evaluation and monitoring should be incorporated by all emergency management organisations as part of business as usual processes.

For some bodies, responsibility for the conduct of reviews is mandated in legislation. For example, IGEM provides assurance to the State and community of Victoria through its Annual Forward Plan of Reviews. IGEM has also developed the *Monitoring and Assurance Framework for Emergency Management*^[7] which provides a starting point for a coordinated and collaborative approach to sector-wide assurance across the emergency management sector.

The development of baseline standards and measures is a priority for establishing how prepared Victoria's emergency management sector is for major emergencies. As detailed above, it is acknowledged as a priority for all PRR activity areas and EMV is progressively working to develop sector-wide performance management frameworks.

As a result, IGEM reserves comment on the level of emergency management sector preparedness for major emergencies in Victoria as no agreed standards or metrics for assessing preparedness exist.

6.8 Summary

The development and implementation of a number of initiatives outlined in this chapter, along with increased sector maturity, has the potential to provide information that would be able to inform a future assessment of Victoria's emergency management sector preparedness for major emergencies.

The interviews with stakeholders were testimony that organisations are ready and willing to ensure the sector is prepared for major emergencies. However, organisations are looking for guidance on how this will be achieved at a sector level.

Victoria's emergency management reform program includes a range of activities, which are contributing to sector preparedness. To assess these efforts, a method of reviewing progress that aligns with the principles outlined in the *Monitoring and Assurance Framework for Emergency Management* ^[7] must be available.

As the sector does not have standards or a baseline to measure sector preparedness, this review presents an example model of preparedness for emergency management activities including reporting and assessing.

Progressing work on the development and application of a preparedness model will require extensive engagement and consultation with the emergency management sector. The preparedness model and associated maturity matrix presented in this review provides a sound starting point for such a discussion.

RECOMMENDATION

IGEM recommends that Emergency Management Victoria continue to lead the development and application of a comprehensive sector wide preparedness model for integration within and across emergency management arrangements in Victoria.

The model should clearly define preparedness within the context of sector and statewide activity, underpinned by a thorough understanding of risk, and embracing the principles of shared responsibility, through enhanced connections with Victorian communities.

The model should specifically address, among other things, the key elements of governance, risk management, planning, capability and capacity assessment, training and development, exercising, evaluation and monitoring.

7. Concluding remarks

There are many ways that the emergency management sector works together to ensure that individuals, communities and organisations are prepared for major emergencies.

IGEM acknowledges the significant work currently underway during the early stages of the emergency management reform program and that sector organisations are working together to achieve the reform outcomes.

A recurrent theme in the stakeholder interviews was the question about what they, as organisations, need to be prepared for at a sector level.

Understanding Victoria's emergency hazards and associated risks is the foundation to answering this question.

The increase in frequency and severity of some natural hazards means there is additional pressure to ensure the sector is prepared.

A shared understanding of sector preparedness goals and strategies in Victoria has the potential to provide a coordinated approach focused on priority preparedness issues.

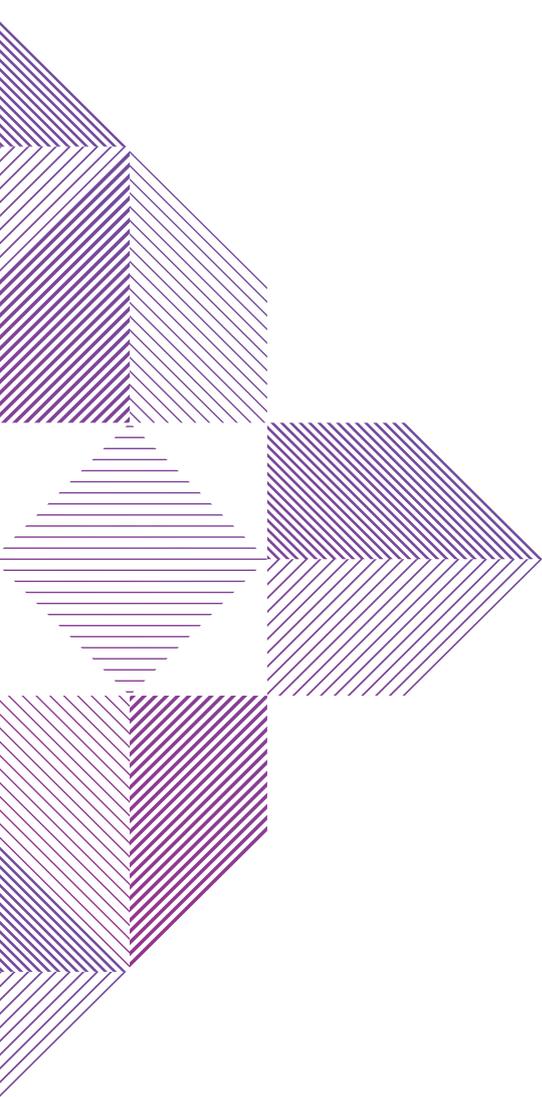
Preparedness is not an additional requirement, rather it is an implicit component across all layers of emergency management. There is an opportunity to bring all the activities that are currently undertaken and view them as components of one system.

In this review, IGEM provides observations, case studies, examples and a recommendation aimed at improving Victoria's emergency management sector preparedness.

The contemporary examples of leading practice informed the identification of an example model of preparedness and evaluative criteria including a maturity matrix. The model described in the review considers preparedness in an organised structure that can be scaled and applied at sector and organisational levels.

The review recommendation is consistent with reform priorities identified in the SAP.

Implementation of this recommendation will strengthen the work of the sector toward a safer and more resilient Victoria.



8. Legislation

Auditor General Act 2006 (WA)

Civil Defence Emergency Management Act 2002 (New Zealand)

Disaster Management Act 2003 (Qld)

Emergencies Act 2004 (ACT)

Emergency Management Act 1986 (Vic)

Emergency Management Act 2013 (Vic)

Emergency Management Act 2004 (SA)

Emergency Management Act 2005 (WA)

Emergency Management Act 2006 (Tas)

Emergency Management Act 2013 (NT)

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Appendix 1: US Core capabilities by mission areas

PREVENTION	PROTECTION	MITIGATION	RESPONSE	RECOVERY
Planning				
Public Information and Warning				
Operational Coordination				
Intelligence and Information Sharing	Intelligence and Information Sharing	Community Resilience	Infrastructure Systems	Infrastructure Systems
Interdiction and Disruption	Interdiction and Disruption	Long-term Vulnerability Reduction	Critical Transportation	Economic Recovery
Screening, Search, and Detection	Screening, Search, and Detection	Risk and Disaster Resilience Assessment	Environmental Response/Health and Safety	Health and Social Services
Forensics and Attribution	Access Control and Identity Verification	Threats and Hazards Identification	Fatality Management Services	Housing
	Cybersecurity		Fire Management and Suppression	Natural and Cultural Resources
	Physical Protective Measures		Logistics and Supply Chain Management	
	Risk Management for Protection Programs and Activities		Mass Care Services	
	Supply Chain Integrity and Security		Mass Search and Rescue Operations	
			On-scene Security, Protection, and Law Enforcement	
			Operational Communications	
			Public Health, Healthcare, and Emergency Medical Services	
			Situational Assessment	

Source: National Preparedness Goal ^[44].

Appendix 2: Preparedness Maturity Matrix

The criteria outlined provide a future opportunity to review and measure the extent to which the elements of a preparedness model are operating to build sector preparedness for major emergencies.

	GOVERNANCE AND CULTURE DRIVE PREPAREDNESS ACTIVITIES	RISKS ARE IDENTIFIED AND ASSESSED	EMERGENCY PLANNING IS UNDERTAKEN	BUSINESS CONTINUITY PLANNING IS UNDERTAKEN
Advanced maturity	Roles and responsibilities and requirements for all preparedness functions are defined in legislation. There is clear senior leadership buy-in regarding preparedness activities. A clear preparedness culture exists within organisations. Individuals and committees with preparedness functions drive a culture of preparedness and working together. Risks to the achievement of a prepared emergency management sector are assessed and managed.	Detailed evidence-based risk assessments are available for all priority hazards across a range of hazard probabilities for all at-risk communities. All assessments utilise hazard modelling and historical knowledge alongside detailed knowledge of community exposure and vulnerability. All assessments include possible secondary consequences. Catastrophic major emergency scenarios are well known and understood.	Emergency plans encompassing arrangements for all major possible emergencies are developed and integrated across all levels and organisations. Plans for specific catastrophic major emergencies scenarios are developed. All stakeholders are aware of their roles and responsibilities, including the community at-risk. All plans are risk based, and are regularly reviewed and endorsed by the relevant governance group. All planning includes all government, non-government and community stakeholders. All planning includes arrangements for accessing resources from outside the area impacted including international, commonwealth and interstate assistance, and includes functions that would be required for a major emergency.	Business continuity plans and IT disaster recovery plans have been established for all critical services and systems across all of the emergency management sector, and suitable redundancies are in place. All plans are tested at a minimum on an annual basis, and lessons learnt are established, tracked, implemented and assured. All staff are aware of their roles, and have received appropriate training.
Mature	Roles and responsibilities and requirements for almost all preparedness functions are defined in legislation. There is clear senior leadership buy-in regarding preparedness activities. A clear preparedness culture exists within organisations. Individuals and committees with preparedness functions drive a culture of preparedness and working together. Risks to the achievement of a prepared emergency management sector are assessed and managed.	Detailed evidence based risk assessments are available for almost all priority hazards across a range of hazard probabilities for almost all at-risk communities. Almost all assessments utilise hazard modelling and historical knowledge alongside detailed knowledge of community exposure and vulnerability. Almost all assessments include possible secondary consequences. Catastrophic major emergency scenarios are known and mostly understood.	Emergency plans encompassing arrangements for almost all major possible emergencies are developed and integrated across all levels and organisations. All stakeholders are aware of their roles and responsibilities. All plans are risk based, are regularly reviewed and endorsed by the relevant governance group. All planning includes all government, non-government and community stakeholders. Almost all planning includes arrangements for accessing resources from outside the area impacted including commonwealth and interstate, and includes functions that would be required for a major emergency.	Business continuity plans and IT disaster recovery plans have been established for all critical services and systems across almost all of the emergency management sector, and suitable redundancies are in place. Almost all plans are tested at a minimum on an annual basis, and lessons learnt are established, tracked, implemented and assured. Almost all staff are aware of their roles, and have received appropriate training.
Moderate maturity	Roles and responsibilities and requirements for most preparedness functions are defined in legislation. There is some senior leadership buy-in regarding preparedness activities. A clear preparedness culture is developing within organisations. Individuals and committees with preparedness functions drive a culture of preparedness and working together, though not consistently. The identification and management of risks to preparedness is inconsistent.	Detailed evidence based risk assessments are available for most priority hazards across a range of hazard probabilities for most at-risk communities. Most assessments utilise hazard modelling and historical knowledge alongside knowledge of community exposure and vulnerability. Most assessments include possible secondary consequences. Catastrophic major emergency scenarios are mostly known, but not well understood.	Emergency plans encompassing arrangements for most major possible emergencies are developed and integrated across all levels and organisations. Almost all stakeholders are aware of their roles and responsibilities. Almost all plans are risk based, are regularly reviewed, and endorsed by the relevant governance group. All planning includes almost all government and non-government stakeholders but does not extensively involve community stakeholders. Most planning includes arrangements for accessing resources from outside the area impacted including commonwealth and interstate, and includes functions that would be required for a major emergency.	Business continuity plans and IT disaster recovery plans have been established for all critical services and systems across most of the emergency management sector, and some suitable redundancies are in place, whilst others are in development. Most plans are tested at a minimum on an annual basis, and lessons learnt are established, tracked and implemented though not consistently. Most staff are aware of their roles, and have received appropriate training.

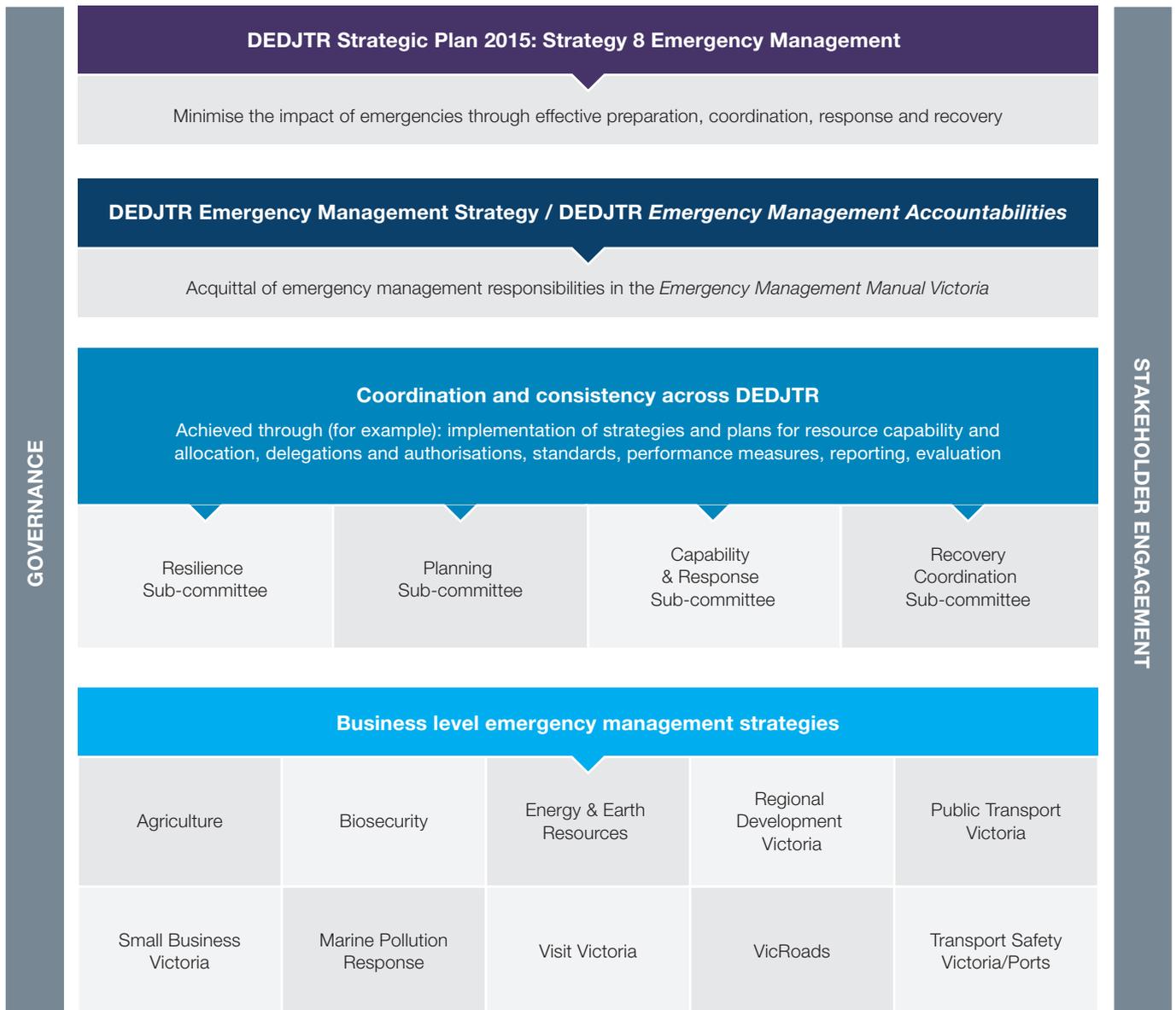
CAPABILITIES ARE ESTABLISHED AND AVAILABLE	PERSONNEL ARE APPROPRIATELY TRAINED AND SKILLED	PLANS ARE REGULARLY VALIDATED	PREPAREDNESS IS MONITORED, EVALUATED AND IMPROVED
<p>Capability and capacity of the emergency management, interstate, non-government, commercial and community sectors are completely understood and regularly assessed. Possible service demands are completely understood. Where gaps are identified plans are in place and have been implemented to address deficiencies. Arrangements with non-government and commercial providers exist to supplement government capabilities. Succession planning for key emergency management leadership roles is in place. Investments in new capabilities are fit for purpose and build interoperability. There is an active research program in place to identify capability enhancement opportunities.</p>	<p>All personnel needing to be trained have received the required training and development. There is a learning and development strategy in place for the state that is aligned to the needs identified across all required capabilities and relevant to the identified risks. Training promotes and takes opportunities to enhance interoperability between organisations. All learning and development programs are evaluated and results are incorporated to improve programs.</p>	<p>Exercises are conducted across all organisations and incident tiers, including a minimum frequency of bi-annual exercises. Exercises are conducted in accordance with an exercise strategy. Priorities and requirements are aligned to the identified risks. Exercises test arrangements for large-scale events and involve all stakeholders identified with emergency roles and responsibilities in response and recovery. Exercises include testing of interoperability between different organisations, command and control across different incident tiers and decision making. Opportunities are actively sought to involve the community.</p>	<p>Levels of emergency management preparedness across the entire sector are monitored and reported to government, and reports are publicly available. Deficiencies in preparedness are promptly reported in accordance with the established governance structure for resolution in a consistent manner. Exercises and incidents are evaluated, and lessons learnt have been implemented and effectively assured. Independent risk-based assurance is provided across the preparedness system, and reports are made publicly available.</p>
<p>Capability and capacity of the emergency management sector, non-government and community sectors are well understood. Possible service demands are well understood and regularly assessed. Where gaps are identified plans are in place and being implemented to address deficiencies. Arrangements with non-government and/or commercial providers exist to supplement government capabilities. Investments in new capabilities are fit for purpose and build interoperability. There is an active research program in place to identify capability enhancement opportunities.</p>	<p>Almost all personnel needing to be trained have received the required training and development. There is a learning and development strategy in place for the state that is aligned to the needs identified across all required capabilities and relevant to the identified risks. Training promotes and takes opportunities to enhance interoperability between organisations. Almost all learning and development programs are evaluated and results are incorporated to improve programs.</p>	<p>Exercises are conducted across all organisations and incident tiers, including a minimum frequency of annual exercises. Exercises are conducted in accordance with an exercise strategy. Priorities and requirements are mostly aligned to the identified risks. Exercises involve almost all stakeholders identified with emergency roles and responsibilities. Exercises include testing of interoperability between different organisations, command and control across different incident tiers and decision making. Where appropriate the community is involved.</p>	<p>Levels of emergency management preparedness across almost all of the sector are monitored and reported to government, and reports are publicly available. Deficiencies in preparedness are promptly reported in accordance with the established governance structure for resolution in a consistent manner. Almost all exercises and incidents are evaluated, and lessons learnt are established, recorded, implemented and tracked. Independent risk-based assurance is provided across the preparedness system, and reports are made publicly available.</p>
<p>Capability and capacity of the emergency management sector and possible service demands are mostly understood. Where gaps are identified plans are being developed for implementation. Arrangements with non-government providers exist to supplement government capabilities but not with commercial providers. Investments in new capabilities are fit for purpose and build interoperability. Research is undertaken, but not well planned.</p>	<p>Most personnel needing to be trained have received the required training and development. Training promotes and takes opportunities to enhance interoperability between organisations. Most learning and development programs are evaluated and results are incorporated to improve programs. A state learning and development strategy is under review or development.</p>	<p>Exercises are conducted across most organisations and all incident tiers, including a minimum frequency of annual exercises. No exercise strategy exists and exercises conducted are not consistently aligned to risk-based priorities. Exercises involve most stakeholders identified with emergency roles and responsibilities. Exercises include testing of interoperability between different organisations, command and control across different incident tiers and decision making. Opportunities to involve the community are not regularly taken.</p>	<p>Levels of emergency management preparedness across most parts of the sector are monitored and reported to government, and reports are publicly available. Deficiencies in preparedness are promptly reported in accordance with the established governance structure for resolution. Most exercises and incidents are evaluated, and lessons learnt are established, recorded, implemented and tracked. Independent risk-based assurance is provided across some components of the preparedness system, though reports are not always made publicly available.</p>

Appendix 2 (continued)

	GOVERNANCE AND CULTURE DRIVE PREPAREDNESS ACTIVITIES	RISKS ARE IDENTIFIED AND ASSESSED	EMERGENCY PLANNING IS UNDERTAKEN	BUSINESS CONTINUITY PLANNING IS UNDERTAKEN
Basic maturity	Roles and responsibilities and requirements for a few preparedness functions are defined in legislation. There is emerging senior leadership buy-in regarding preparedness activities. A preparedness culture exists but only within certain parts of the sector.	Detailed evidence-based risk assessments are available for some priority hazards for some at-risk communities, but not for rare events. Some assessments utilise hazard modelling and historical knowledge alongside some knowledge of community exposure and vulnerability. Some assessments include possible secondary consequences. Catastrophic major emergency scenarios are not well known.	Emergency plans encompassing arrangements for some major possible emergencies are developed and integrated across all levels, but not all organisations. Most stakeholders are aware of their roles and responsibilities. Most plans are risk based, are regularly reviewed and endorsed by the relevant governance group. Planning includes most government stakeholders, but does not include non-government or community stakeholders. Some planning includes arrangements for accessing resources from outside the area impacted including commonwealth and interstate, and some functions required in a major emergency.	Business continuity plans and IT disaster recovery plans have been established for most critical services and systems across some parts of the emergency management sector, and there are gaps in existing redundancies. Some plans are tested at a minimum on an annual basis. Lessons learnt are rarely incorporated in revised plans. Some staff are aware of their roles, and have received appropriate training.
Immature	Roles and responsibilities and requirements for preparedness functions are not defined in legislation. There is little senior leadership buy-in regarding preparedness activities. A preparedness culture is not valued within the sector.	Detailed evidence-based risk assessments are available for a small number of priority hazards for some at-risk communities. Assessments mainly utilise historical knowledge, with a few utilising hazard modelling and knowledge of community exposure and vulnerability. Few assessments include possible secondary consequences. Catastrophic major emergency scenarios are not well known.	Emergency plans account for only a few possible major emergency scenarios. Plans are developed in isolation, and are not known by stakeholders. Planning does not account for arrangements to obtain resources from outside the affected area, or functions required in a major emergency.	Business continuity plans and IT disaster recovery plans are in development.

CAPABILITIES ARE ESTABLISHED AND AVAILABLE	PERSONNEL ARE APPROPRIATELY TRAINED AND SKILLED	PLANS ARE REGULARLY VALIDATED	PREPAREDNESS IS MONITORED, EVALUATED AND IMPROVED
<p>Capability and capacity of the emergency management sector and possible service demands are partially understood, and where gaps are identified plans are being developed. Arrangements with non-government or commercial providers do not exist to supplement government capabilities. There is no research program in place.</p>	<p>Some personnel needing to be trained have received the required training and development. Opportunities to enhance interoperability between organisations are not consistently taken. Some learning and development programs are evaluated but lessons learnt are not well incorporated. No state learning and development strategy is in place.</p>	<p>Exercises are conducted across some organisations and incident tiers, including a minimum frequency of annual exercises. Exercises are not aligned to risk priorities. Exercises involve some stakeholders identified with emergency roles and responsibilities.</p>	<p>Emergency preparedness activities undertaken are reported to government, and reports made publicly available, but not measured against any criteria. Deficiencies in preparedness are reported but not in a consistent manner. Some exercises and incidents are evaluated, and lessons learnt are established. Rarely are lessons learnt recorded, tracked and effectively implemented. Independent risk-based assurance is provided across the a few components of the preparedness system, and reports are not made publicly available.</p>
<p>Capability and capacity of the emergency management sector and possible service demands are not well understood. Gaps have not been identified.</p>	<p>Few personnel needing to be trained have received the required training and development. Opportunities to enhance interoperability between organisations are not taken. Learning and development programs are not routinely evaluated.</p>	<p>Exercises are infrequently conducted and not effectively planned.</p>	<p>Emergency preparedness activities are not reported to the government or publicly. Preparedness deficiencies are not well known. Exercises and incidents are rarely evaluated. Independent risk-based assurance is not provided.</p>

Appendix 3: DEDJTR Emergency Management Governance Model



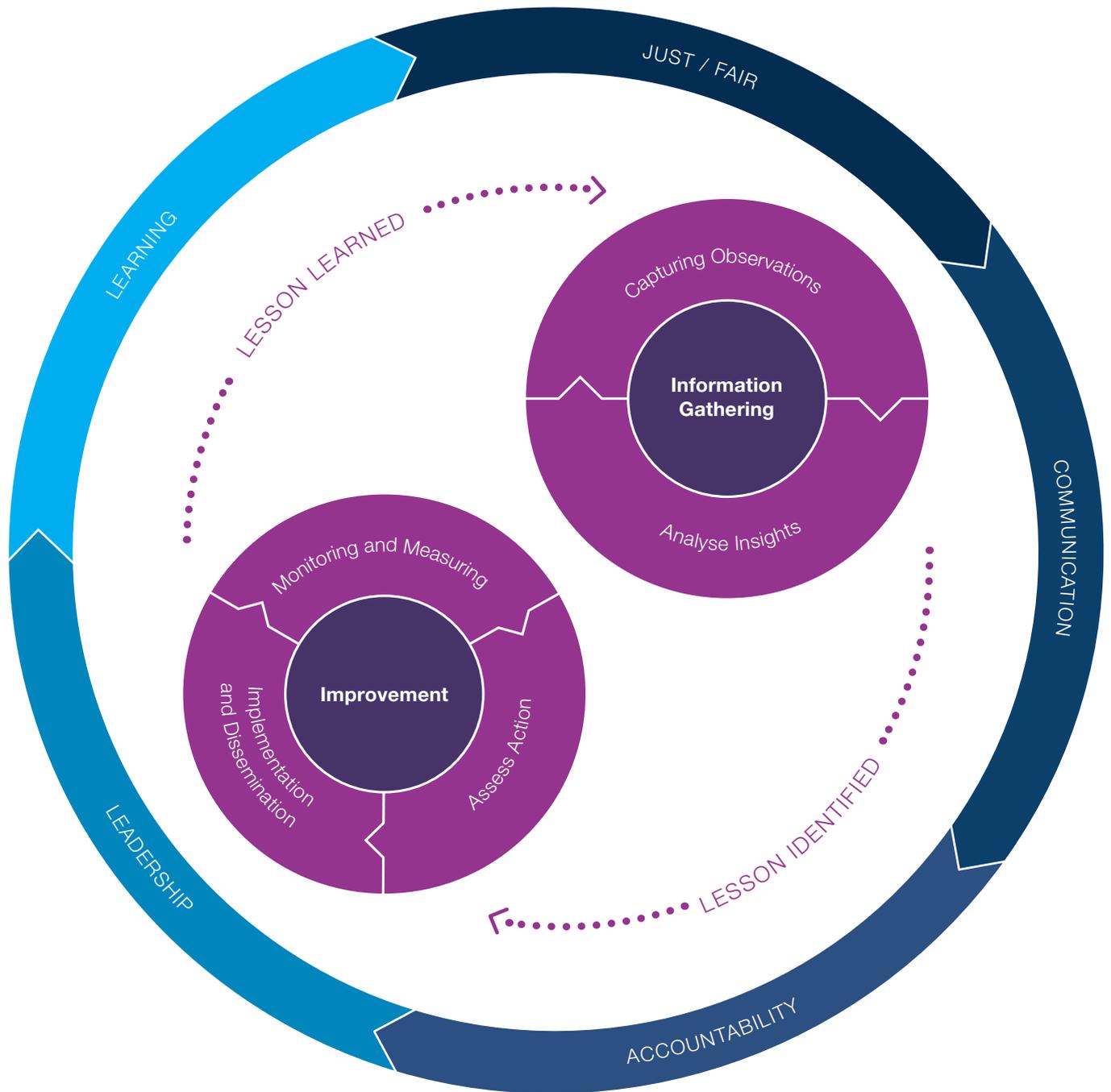
Source: Department of Economic Development, Jobs, Transport and Resources 2015

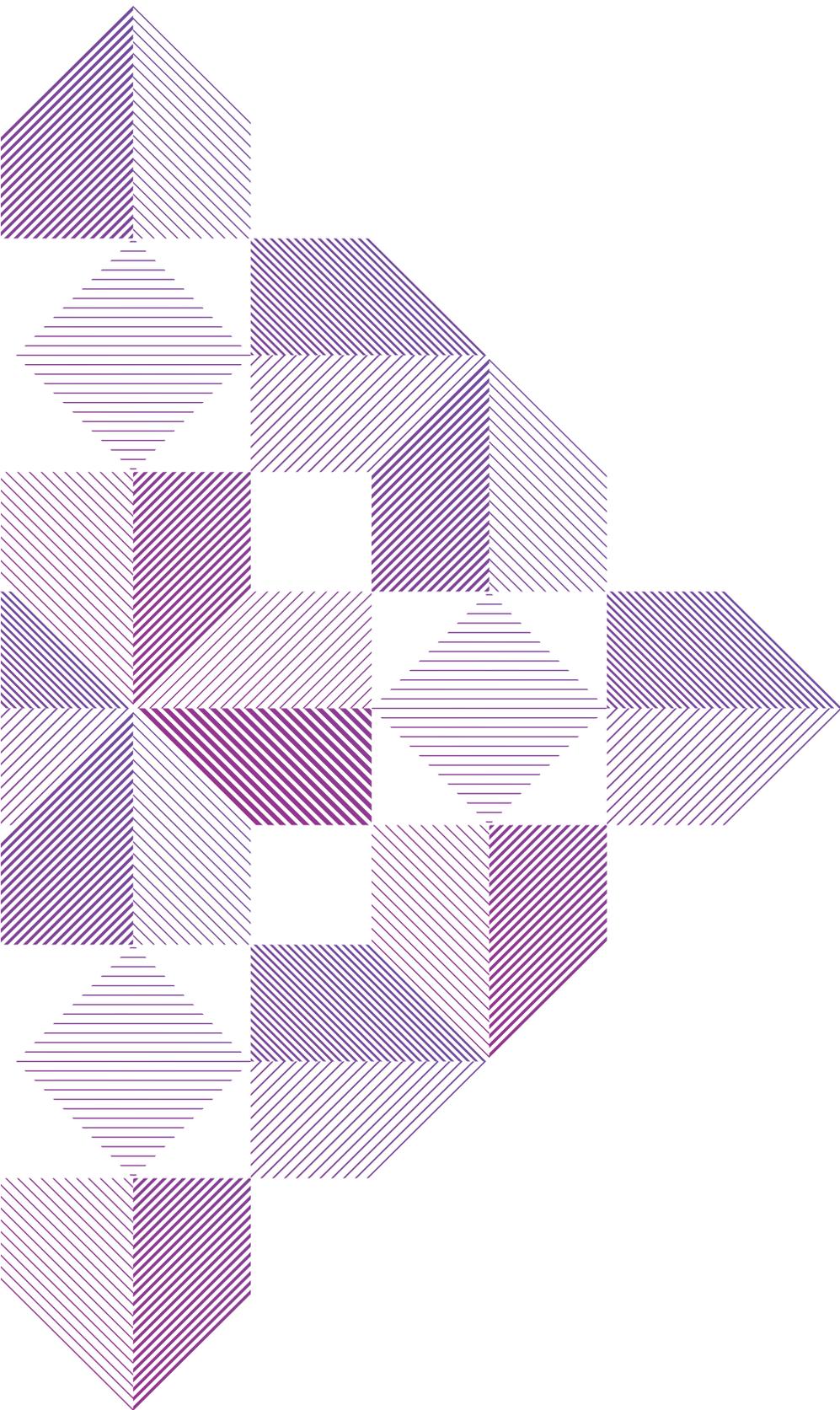
Appendix 4: Recovery environments functional areas and accountabilities



Source: Emergency Management Victoria 2015

Appendix 5: EM-LEARN lessons management life cycle





Inspector-General for
Emergency Management

