

### INTEGRATED URBAN PLANNING FOR BUSHFIRE

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### **ORIGINS**

1850S - 1970S

### Progressive emergence of bushfire risk management into urban planning

Independent beginnings of spatial

planning & bushfire risk management

Set the bases of how urban planning and fire

agencies work now.

Seminal indications of integration, e.g. Victoria Royal Commission (1939) recommendations.

1970S - 1990S

Transfer, testing and accumulation of experiences about bushfire risk management into local urban planning contexts.

Victorian planning system structural changes. Introduction of AS3959 (1991).

### Formalization of the integration of bushfire risk management via urban planning through the WMO

Introduction of the Wildfire Management Overlay (WMO) within the planning system restructuring and the introduction of the Victoria Planning Provisions. AS3959 integration in WMO. AS3959 revision (1999).

#### Commission Friday **Country Fire** Country 1944 **Authority Act Planning Act** Forest Act, 1958 Country Fire Authority Act & Metropolitan Fire Brigades Act Design and Siting 1978 Guidelines: Rural **Subdivision Principles** 1983 ic. Bushfire Review Wednesday Committee & Standing 1984 Committee on Environment Planning & and Conservation **Environment** 1987 Act 1991 WMO & 1997 1999 New WMO mapping criteria 2002 Canberra 2003

National Inquiry on

**Bushfire Mitigation and** 

Fire Brigade

Vid. Royal

Melbourne

Works

Metropolitan Board of

### **EMERGENCE**

### **FORMALIZATION**

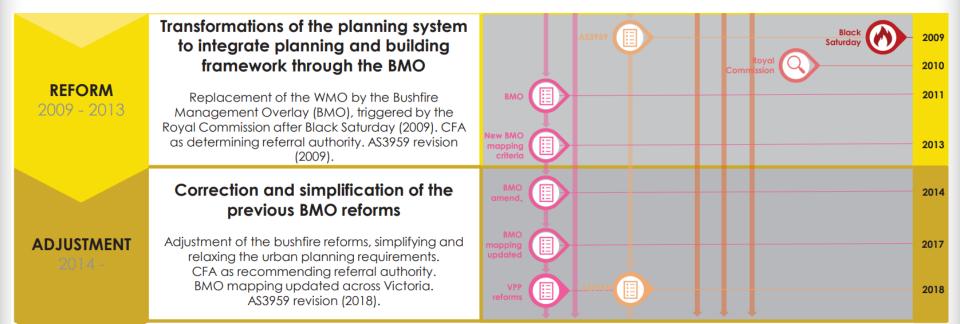
1997 - 2008

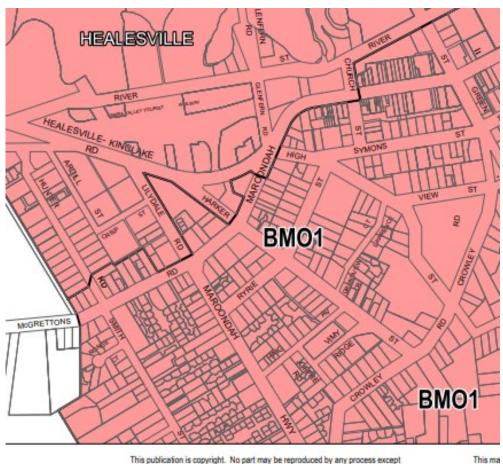
2004

Black

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Thursday





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This ma Maps (if

Overlay	s
	Bushfire Management Overlay
BMO1	Bushfire Management Overlay - Schedule 1
BMO2	Bushfire Management Overlay - Schedule 2

### 44.06

#### **BUSHFIRE MANAGEMENT OVERLAY**

31/07/2018 VC148

Shown on the planning scheme map as **BMO** with a number (if shown).

### Purpose

To implement the Municipal Planning Strategy and the Planning Policy Framework.

To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.

To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.

To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.

### 44.06-1

### Bushfire management objectives and application of schedules

19/09/2017 VC132

A schedule to this overlay must contain a statement of the bushfire management objectives to be achieved for the area affected by the schedule and when the requirements within it apply.

#### 44.06-2

### Permit requirement

19/09/2017 VC132

#### Subdivision

A permit is required to subdivide land. This does not apply if a schedule to this overlay specifically states that a permit is not required.

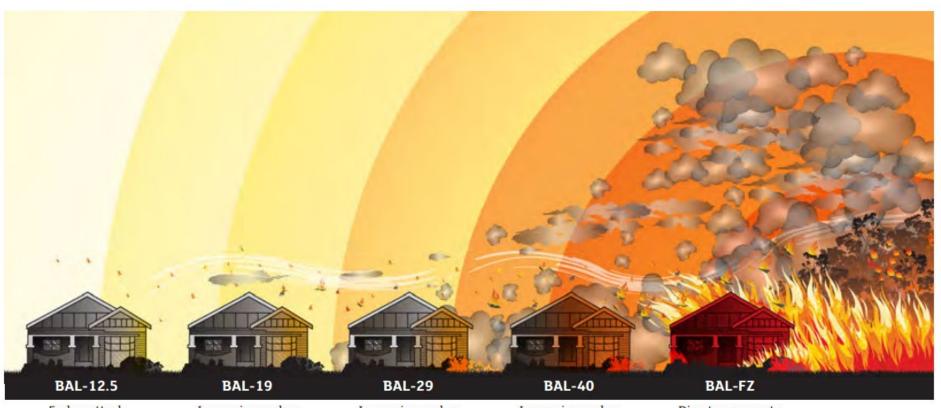
### **Buildings and works**

A permit is required to construct a building or construct or carry out works associated with the following uses:

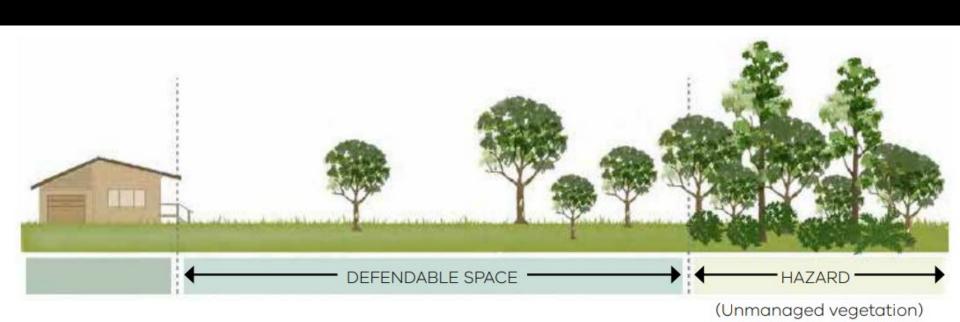
Accommodation (including a Dependent person's unit)

### > Figure 9: BAL construction levels respond to different levels of risk.

withstand different levels of bushfire attack, as illustrated below.



Ember attack radiant heat below 12.5 kW/m². Increasing ember attack and windborne debris, radiant heat between 12.5 kW/m² and 19 kW/m². Increasing ember attack and windborne debris, radiant heat between 19 kW/m² and 29 kW/m². Increasing ember attack and windborne debris, radiant heat between 29 kW/m² and 40 kW/m². Exposure to flames from fire front likelu. Direct exposure to flames, radiant heat and embers from the fire front.



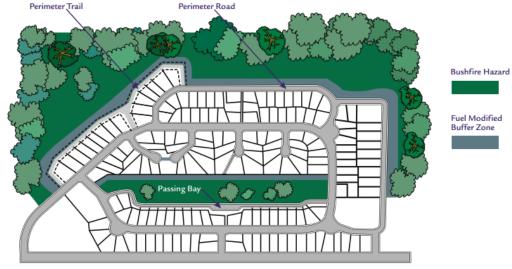
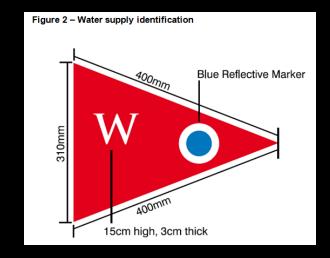


Figure 4. Diagram showing a sub division layout with perimeter roads, bushline and lots.





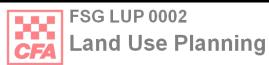
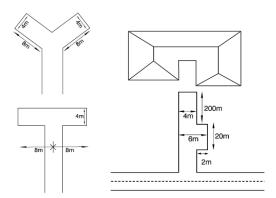


Figure 4 - T-head & Y-head

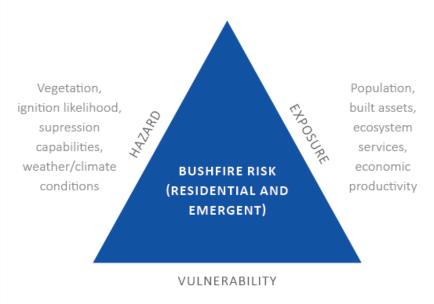
Figure 5 - Driveways longer than 200 m



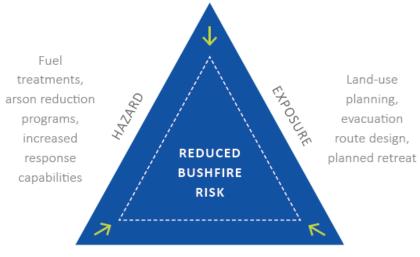




### **URBAN PLANNING & RISK REDUCTION?**



Socio-economic factors, building condition, demographics



VULNERABILITY

Community education programs, improved building standards, business continuity plans

### **Risk Reduction Outcomes**



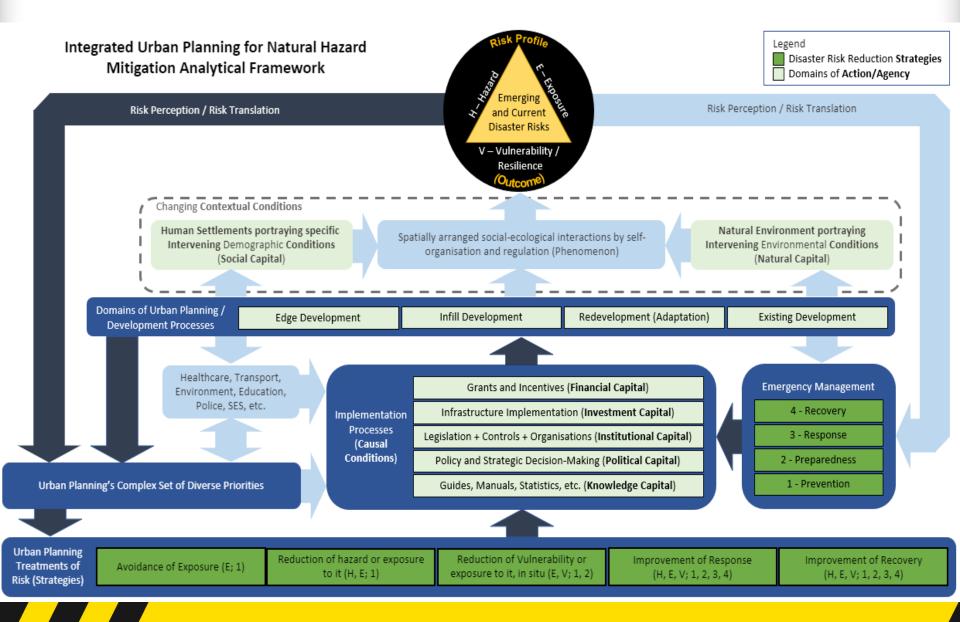








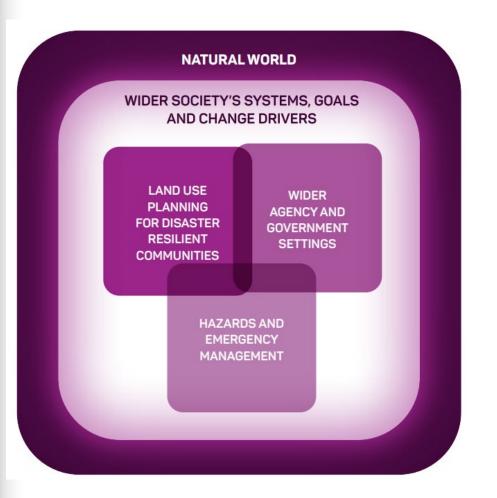
### THE CHALLENGE OF INTEGRATED ACTION

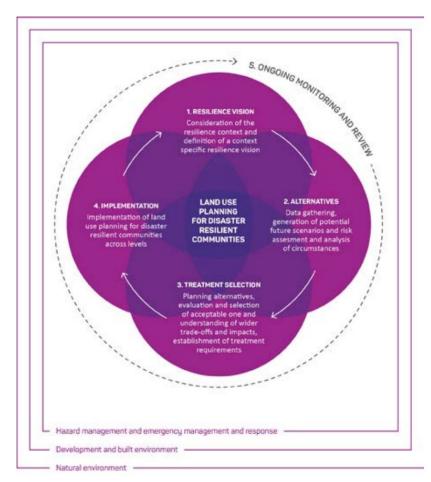




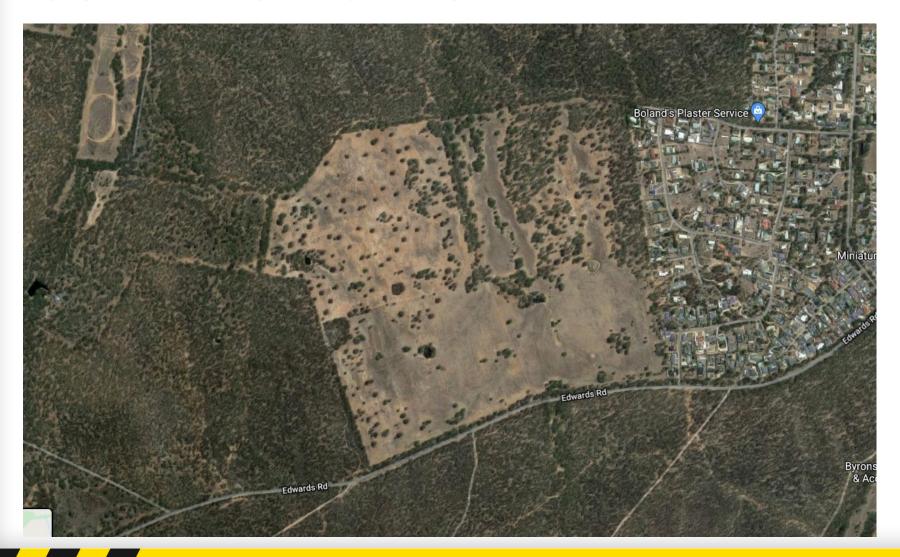


Risk management procedure	Land use planning procedure		
Establishing the context	Visioning, overarching desired futures		
Risk assessment	Analysis of the circumstances and problems/opportunities		
Selection of risk treatment options	Identification of planning alternatives, and evaluation and selection of them		
Risk treatment implementation	Planning implementation		
Ongoing communication and consultation	Communication and consultation		
Ongoing monitoring and review	Monitoring effects and adjusting		





## **SCENARIO TESTING**



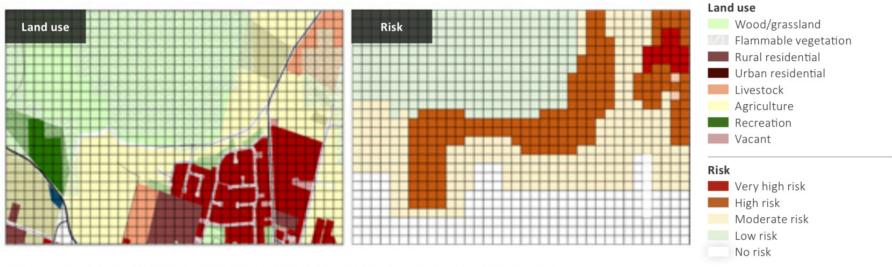


Figure 8: 2018 development layout (left-side panel) and bushfire risk (right-side panel).

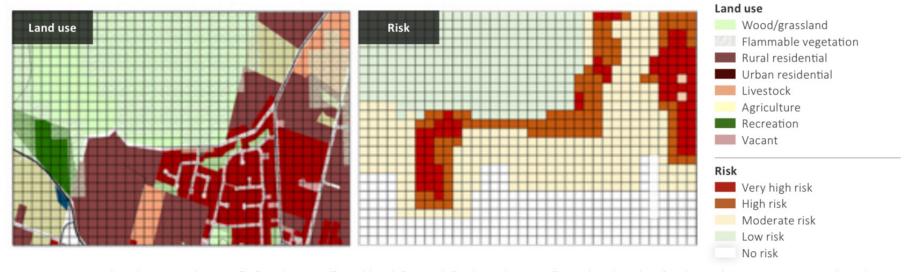


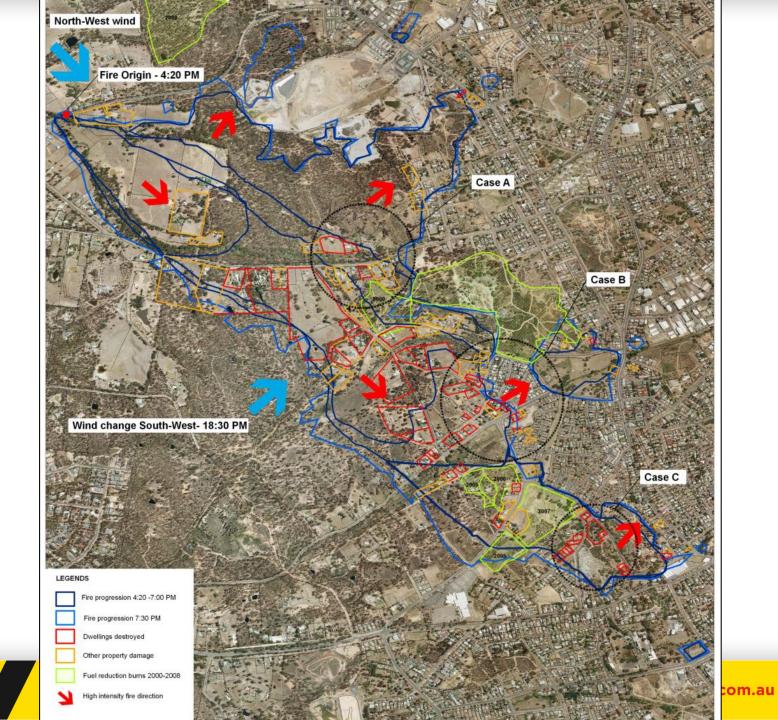
Figure 9: 2050 development layout (left-side panel) and bushfire risk (right-side panel). Higher levels of risk can be seen compared to the 2018 risk (Figure 8) due to the expanded residential development and its greater interaction with vegetated areas.

### **HUMAN IGNITION**

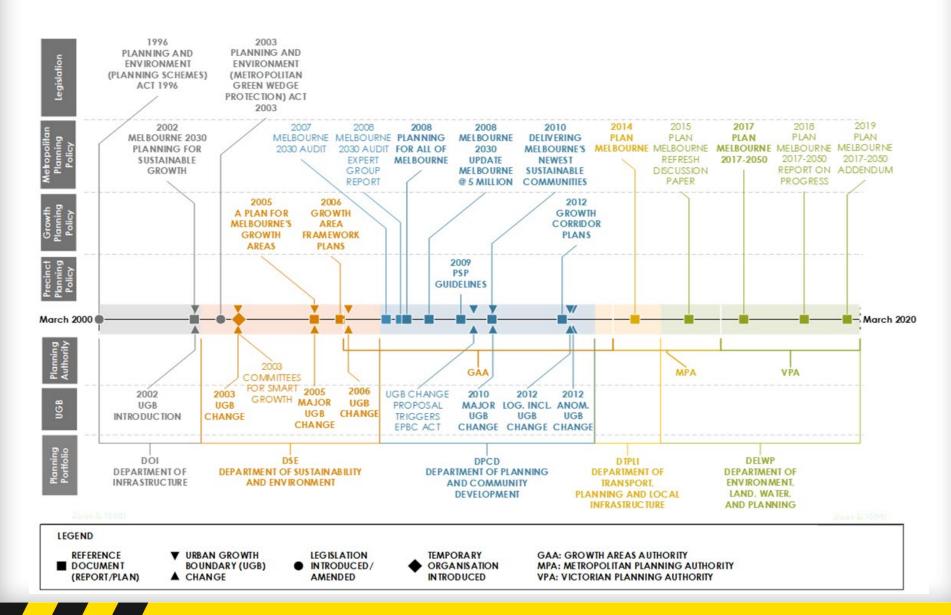


## **EXISTING SETTLEMENTS**





### **TIMING OF RISK ASSESSMENT & "PNR"**



#### Figure 2: Planning Process Flowchart

#### Pre-planning

- GAA or other planning authorities provides advance notice to state agencies and service providers.
- Project management plan is put in place this will refine timeframes, resourcing and budget depending on the complexity of the Precinct Structure Plan
- A gap analysis of previous background technical studies is undertaken.
- Background technical studies that require additional time for completion are commenced.
- Initial 'vision setting' workshops may be held.

#### Preparing the Precinct Structure Plan

- · Vision established for the new community and precinct.
- Background technical reports completed and implications analysed.
- Input received from council, state agencies, land-owners, developers and other service and infrastructure providers.
- Precinct structure plan document prepared.
- Precinct infrastructure plan, native vegetation precinct plan and cultural heritage management plan (where
  required) prepared.

#### Approval of Precinct Structure Plan and Planning Scheme Amendment

- Planning scheme amendment prepared and exhibited including schedules to the Urban Growth Zone and native vegetation precinct plan.
- Submissions received and considered; may lead to changes to the exhibited plan.
- · Independent panel considers submissions, if required.
- Precinct structure plan finalised.
- Precinct structure plan approved by the Minister for Planning and incorporated into the local planning scheme.
- Native vegetation precinct plan approved by the Minister for the Environment and incorporated into the local planning scheme.
- Cultural heritage management plan approved by Registered Aboriginal Parties or Aboriginal Affairs Victoria.

#### Planning Permit Applications

- Planning permit applications lodged with the relevant authority for approval. (Note: The Planning and Environment Act 1987 allows planning permit applications to be prepared and approved concurrently with a precinct structure plan and planning scheme amendment.)
- Permit application is exempt from further public notice, decision and review rights as set out in clause 37.07-13.
- Planning permit is issued with conditions related to the specific development.

**Emergency Management** Emergency Management Manual Victoria Planning and Environment Act (1987)DELWP's Standing on Committees Emergency Management Act 2013 Victorian Planning Provisions Bushfire Management Overlay SCRC's Strategic Action Plan Non risk Objectives of the Act: Flood Overlays State Emergency Response Plan Plan Melbourne General Risk Mitigation Policies and Decision Criteria State Emergency Relief and Recovery Plan Referral and Panel Decision Processes State Relief & Recovery Coordination Plans Guidelines for Interstate Externalities Regional Relief & Recovery Plan Assistance (Community Vic Roads Recovery) 2015 Municipal Emergency Management Major Projects Infrastructure Victoria Plans (for all Municipalities) Victorian Emergency Animal Welfare Plan Population Growth Economic Fluctuations State Health Emergency Response Plan

Climate Change

Urban Planning

## **HUMAN BEHAVIOUR**



## **HUMAN KNOWLEDGE**



## **HUMAN KNOWLEDGE (2)**



### **Royal Commission**

into National Natural Disaster Arrangements What are you looking for?

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## AUSTRALIAN INQUIRIES INTO NATURAL HAZARD EVENTS

Recommendations relating to urban planning for natural hazard mitigation (2009-2017)

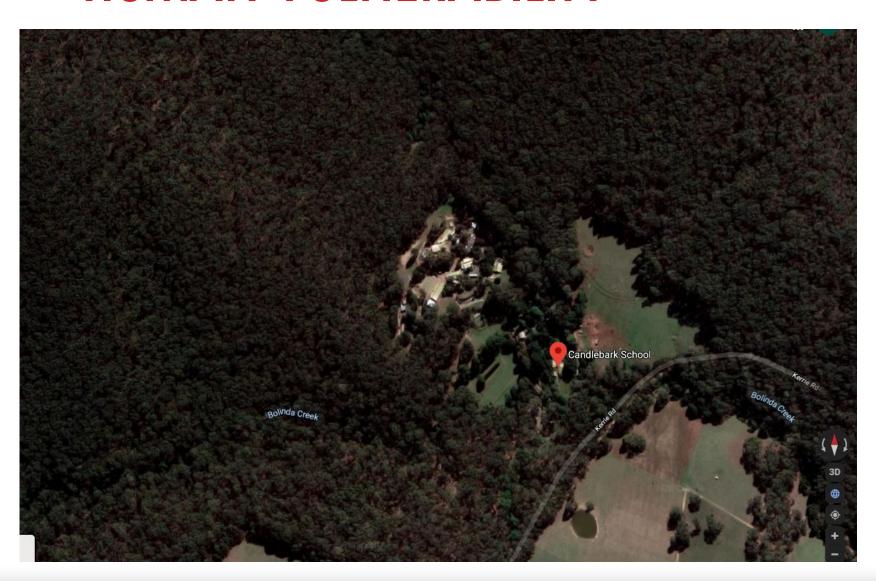
Alan March<sup>1</sup>, Leonardo Nogueira de Moraes<sup>1</sup>, Graeme Riddell<sup>2</sup>, Stephen Dovers<sup>3</sup>, Janet Stanley<sup>1</sup>, Hedwig van Delden<sup>2,4</sup>, Ruth Beilin<sup>1</sup>, Holger Maier<sup>2</sup>

<sup>1</sup>The University of Melbourne, <sup>2</sup>The University of Adelaide, <sup>3</sup>Australian National University <sup>4</sup>Research Institute for Knowledge Systems,

### **Welcome to the Royal Commission**

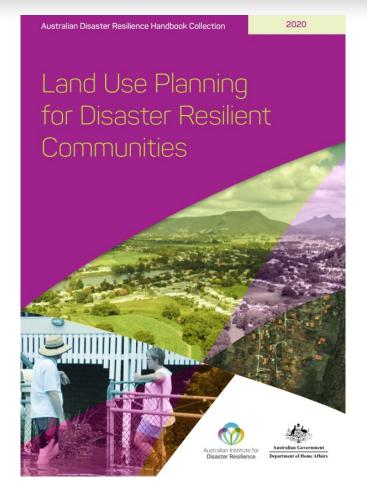
The Royal Commission into National Natural Disaster Arrangements was established on 20 February 2020 in response to the extreme bushfire season of 2019-20 which resulted in loss of life, property and wildlife and environmental destruction.

## **HUMAN VULNERABILITY**



## **CAPABILITIES**

	Agenda, Projects	Law, Policy & Regulation	Vision	Designs, Masterplan	Strategic
Overall assessment and example	Financial allocations to fund projects or actions. Eg mapping and research to identify flood risk	Zones, overlays and Buildings Codes	Evidence based development of overall agreed principles and approaches	Detailed design of a settlement's road patterns to achieve community resilience	Development & implementatio n of an overall risk assessment & management program that brings about ongoing improvement and change
Avoidance of exposure to hazards					
Reduction of hazard impacts or exposure in situ					
In situ reduction or increased resistance in situ					
Improve response					
Improve recovery					





# Graduate Certificate in Bushfire Planning and Management (GC-BFIREPM)

Graduate Certificate / Year: 2020 / Delivered: On Campus (Parkville)

### **URBAN PLANNING DIAGNOSTICS**

