



bushfire&natural
HAZARDSCRC

INTEGRATED URBAN PLANNING FOR BUSHFIRE

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Australian Government
Department of Industry,
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Business
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Centres Programme



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ORIGINS 1850S - 1970S

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.

EMERGENCE 1970S - 1990S

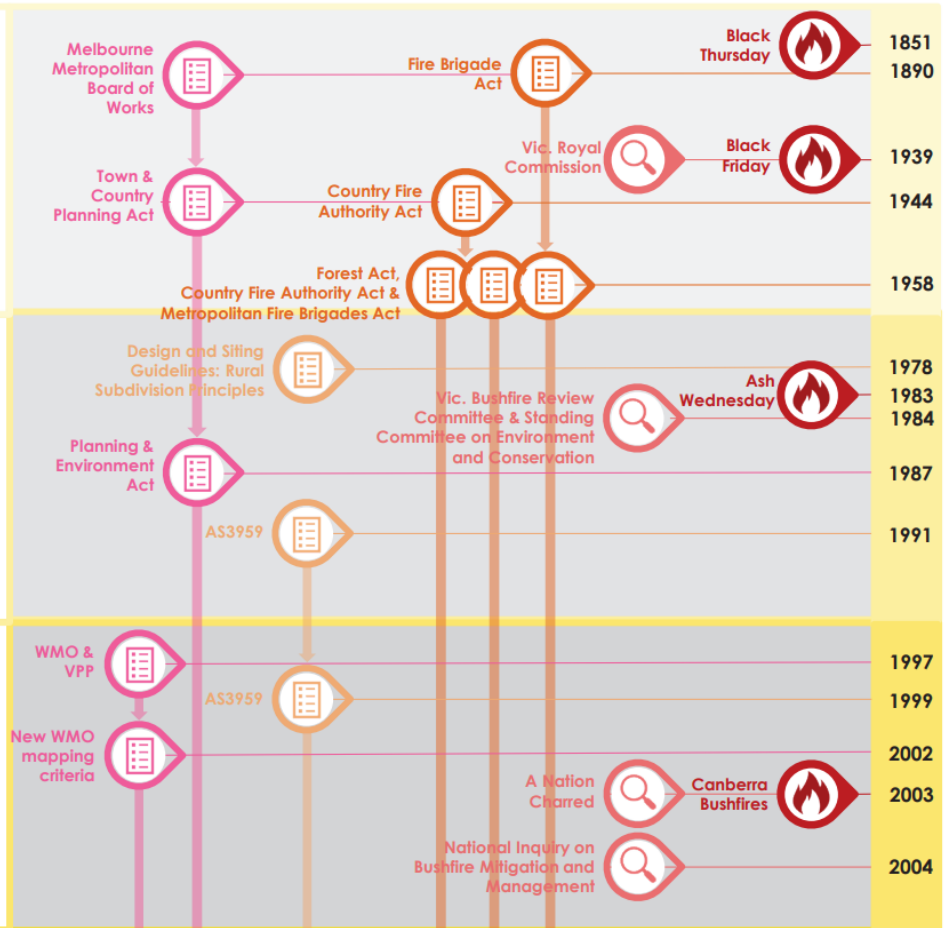
Progressive emergence of bushfire risk management into urban planning

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 1997 - 2008

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).



REFORM
2009 - 2013

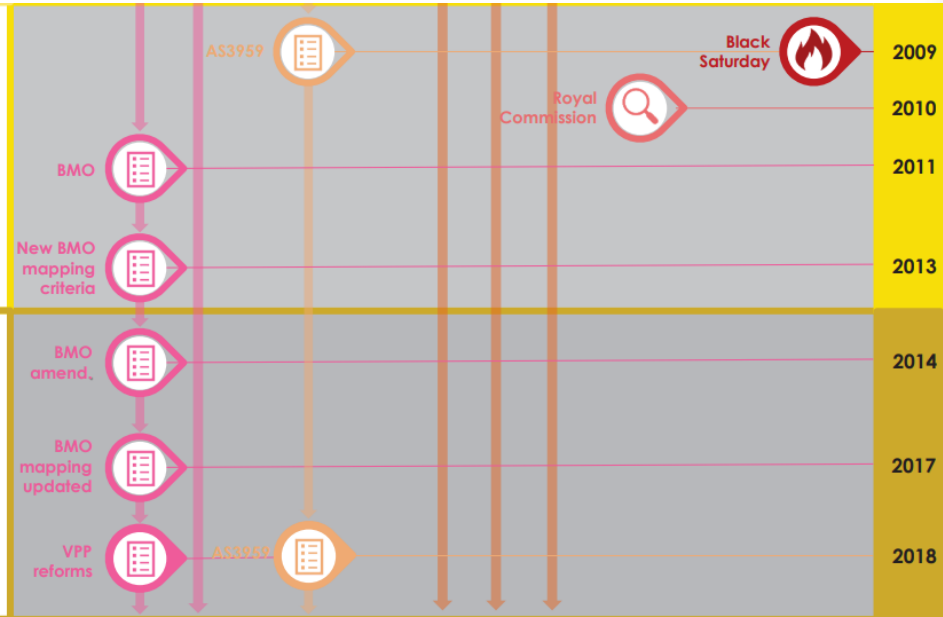
Transformations of the planning system to integrate planning and building framework through the BMO

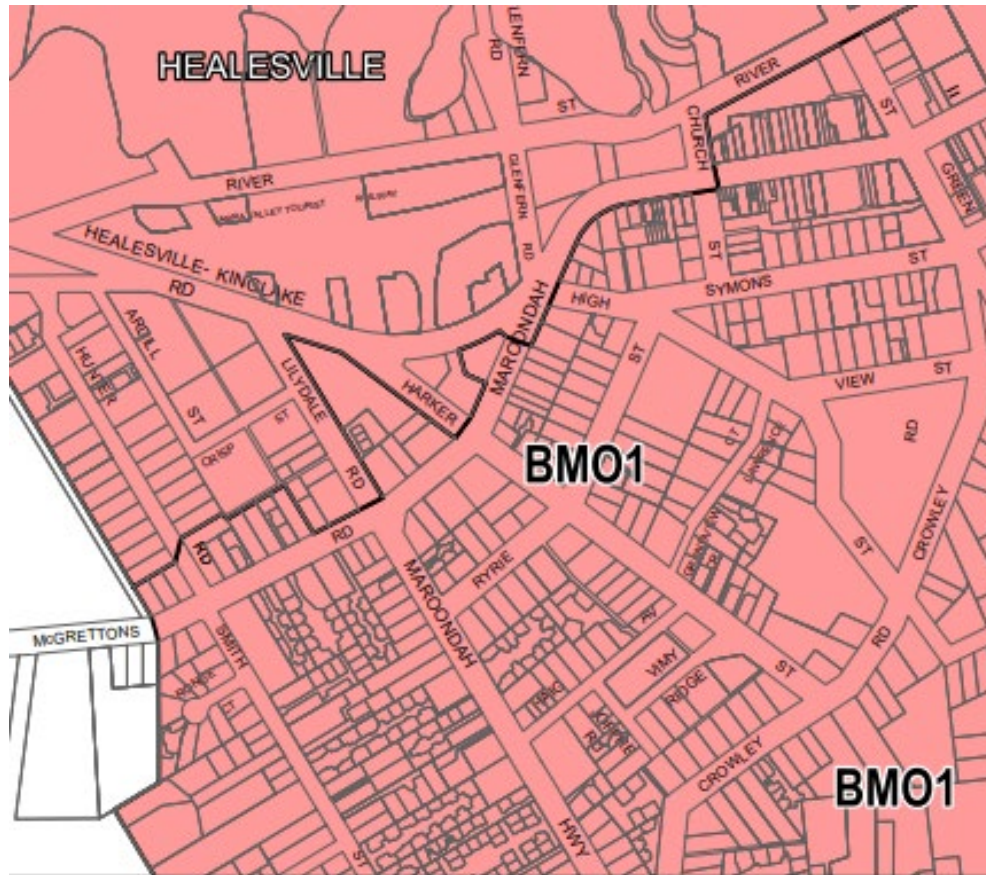
Replacement of the WMO by the Bushfire Management Overlay (BMO), triggered by the Royal Commission after Black Saturday (2009). CFA as determining referral authority. AS3959 revision (2009).

ADJUSTMENT
2014 -

Correction and simplification of the previous BMO reforms

Adjustment of the bushfire reforms, simplifying and relaxing the urban planning requirements. CFA as recommending referral authority. BMO mapping updated across Victoria. AS3959 revision (2018).





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This map
Maps (if

Overlays

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

44.06

31/07/2018
VC148

BUSHFIRE MANAGEMENT OVERLAY

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

19/09/2017
VC132

Bushfire management objectives and application of schedules

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

19/09/2017
VC132

Permit requirement

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.

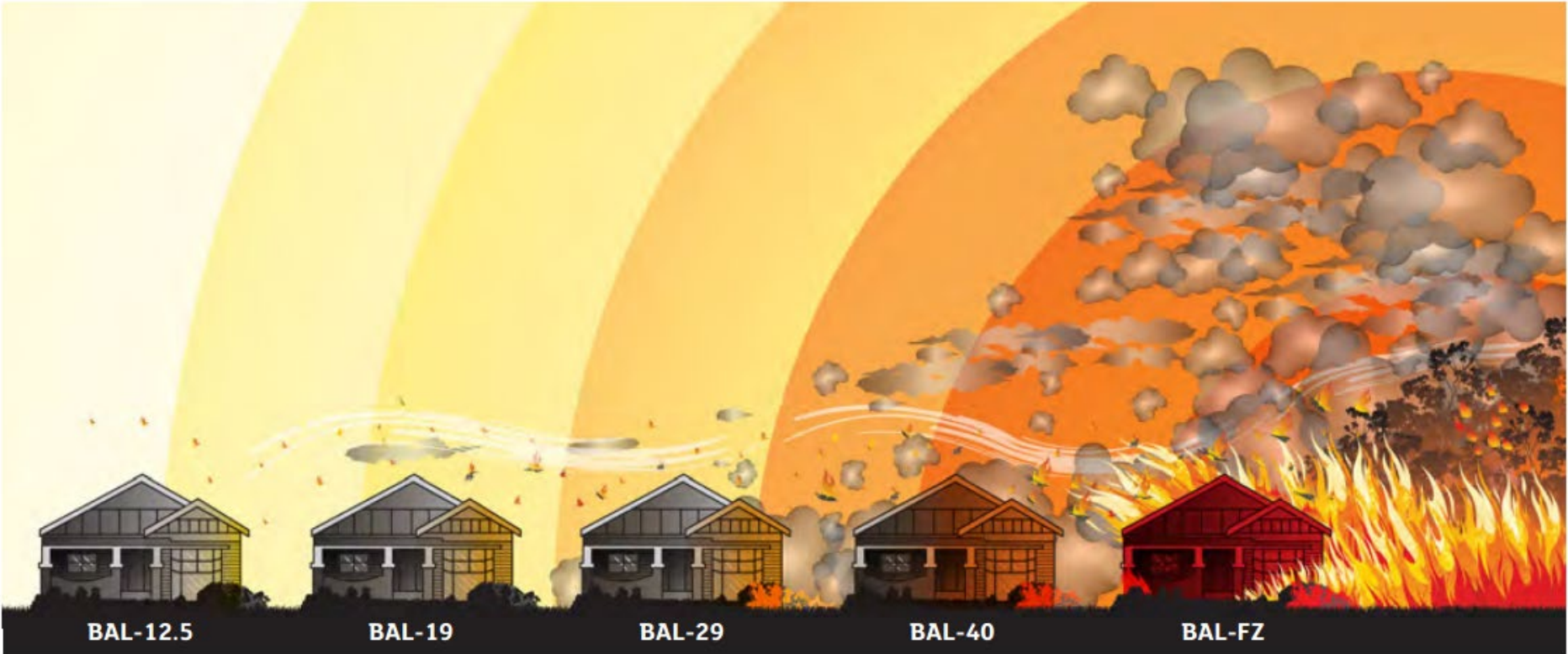
Buildings and works

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.



BAL-12.5
Ember attack
radiant heat below
12.5 kW/m².

BAL-19
Increasing ember
attack and
windborne debris,
radiant heat
between
12.5 kW/m²
and 19 kW/m².

BAL-29
Increasing ember
attack and
windborne debris,
radiant heat
between 19 kW/m²
and 29 kW/m².

BAL-40
Increasing ember
attack and
windborne debris,
radiant heat
between 29 kW/m²
and 40 kW/m².
Exposure to
flames from fire
front likely.

BAL-FZ
Direct exposure to
flames, radiant
heat and embers
from the fire front.



(Unmanaged vegetation)

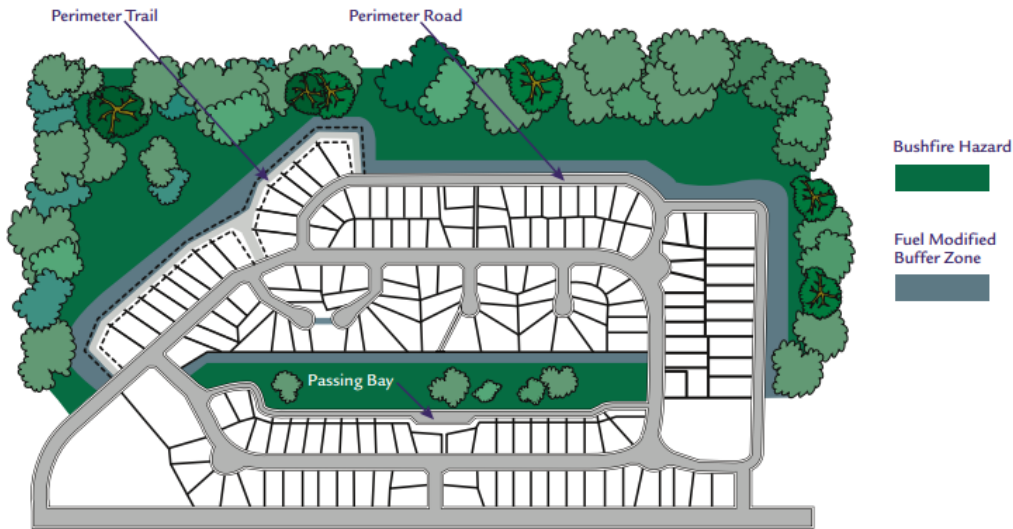
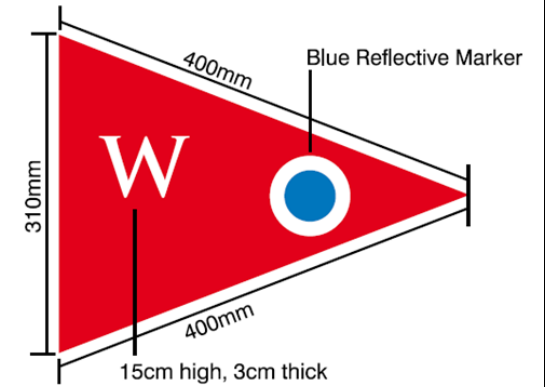


Figure 4. Diagram showing a sub division layout with perimeter roads, bushline and lots.

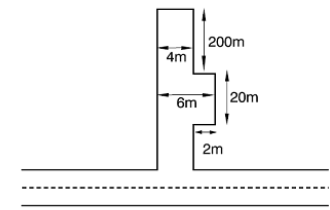
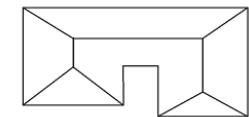
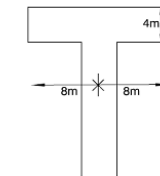
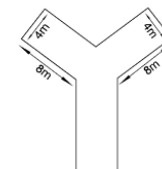
Figure 2 – Water supply identification



FSG LUP 0002
Land Use Planning

Figure 4 – T-head & Y-head

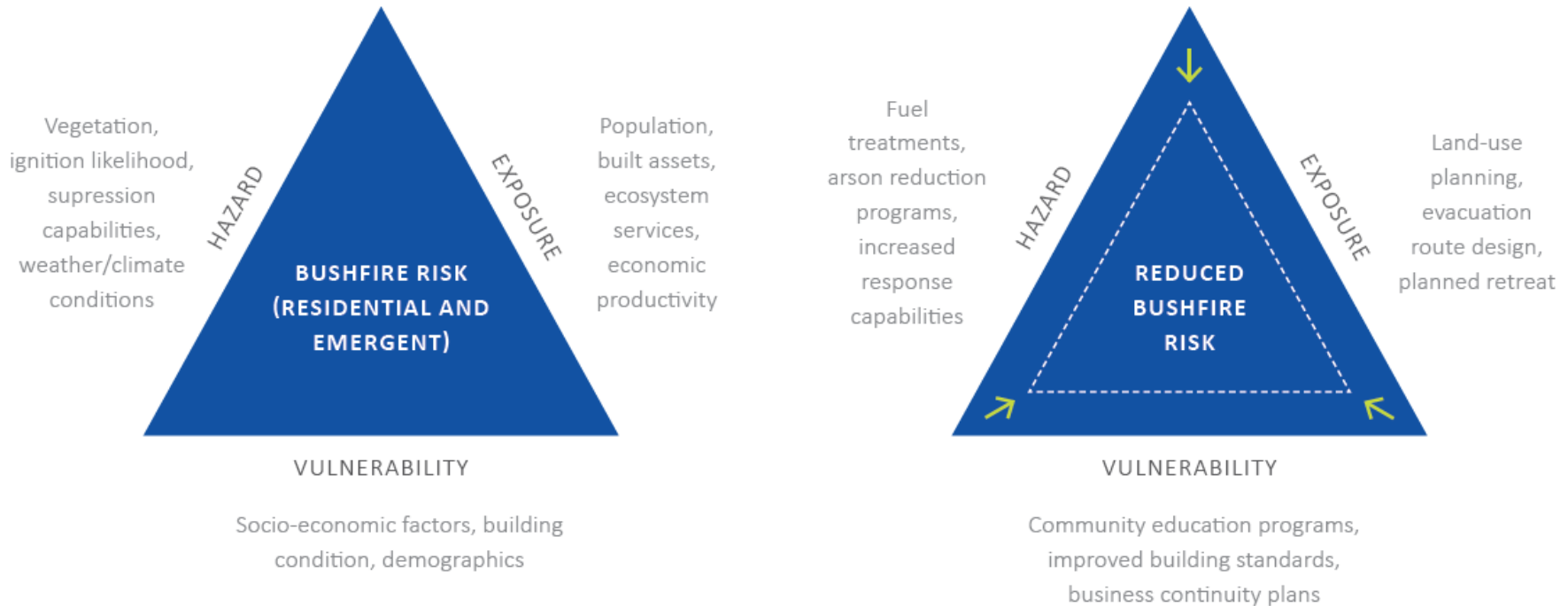
Figure 5 – Driveways longer than 200 m







URBAN PLANNING & RISK REDUCTION?



Risk Reduction Outcomes



Reduce vulnerability to bushfire



Reduce bushfire hazard



Avoidance of exposure



Improve response



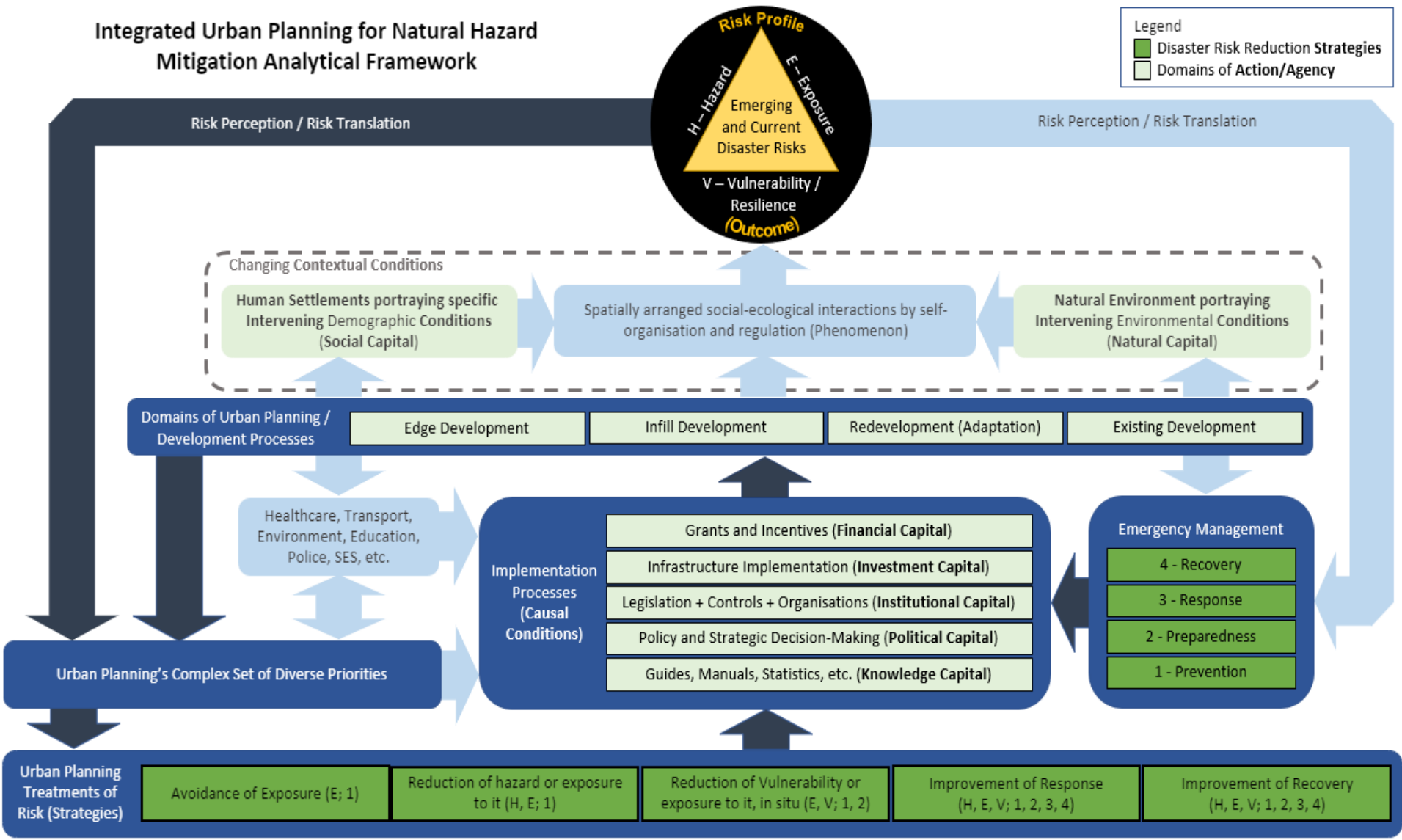
Improve recovery - build back better

THE CHALLENGE OF INTEGRATED ACTION

Integrated Urban Planning for Natural Hazard Mitigation Analytical Framework

Legend

- Disaster Risk Reduction Strategies
- Domains of Action/Agency





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

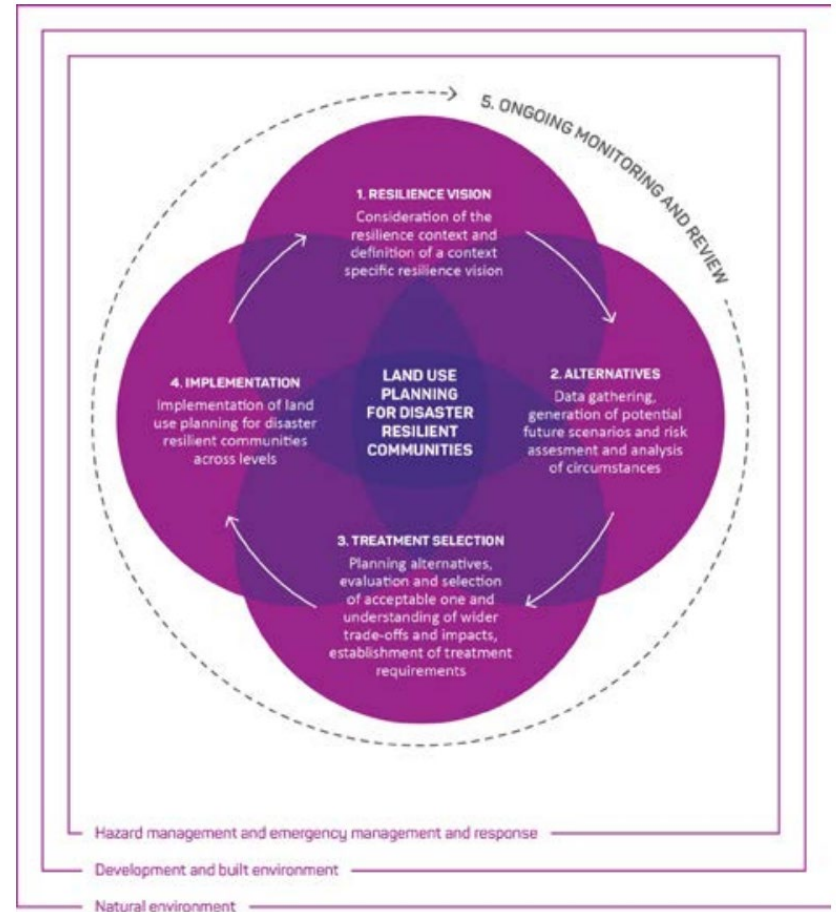
NATURAL WORLD

WIDER SOCIETY'S SYSTEMS, GOALS
AND CHANGE DRIVERS

LAND USE
PLANNING
FOR DISASTER
RESILIENT
COMMUNITIES

WIDER
AGENCY AND
GOVERNMENT
SETTINGS

HAZARDS AND
EMERGENCY
MANAGEMENT



SCENARIO TESTING



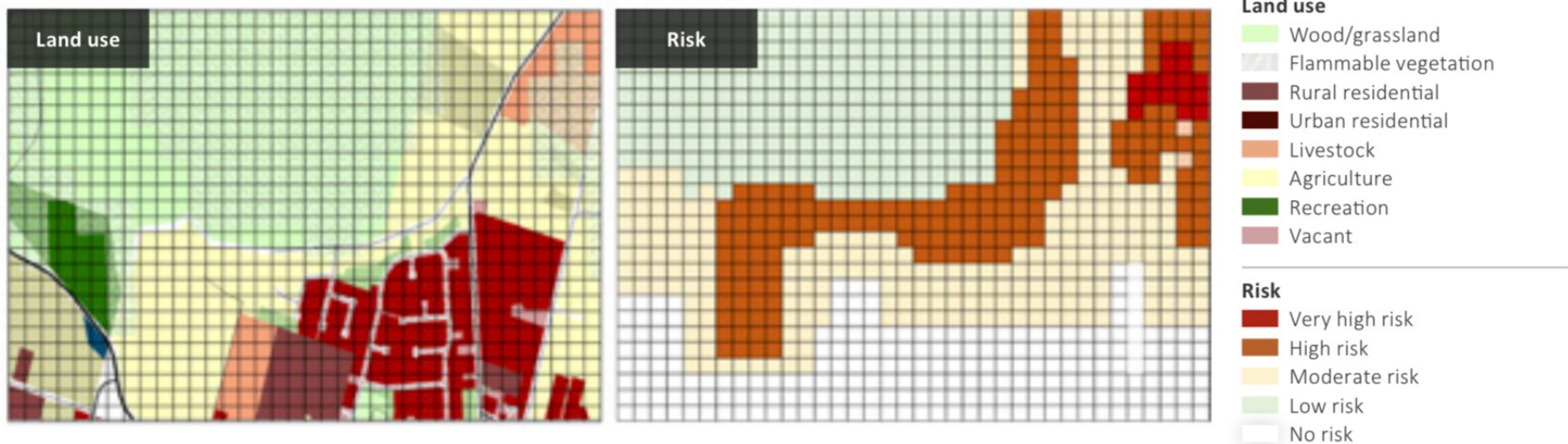


Figure 8: 2018 development layout (left-side panel) and bushfire risk (right-side panel).

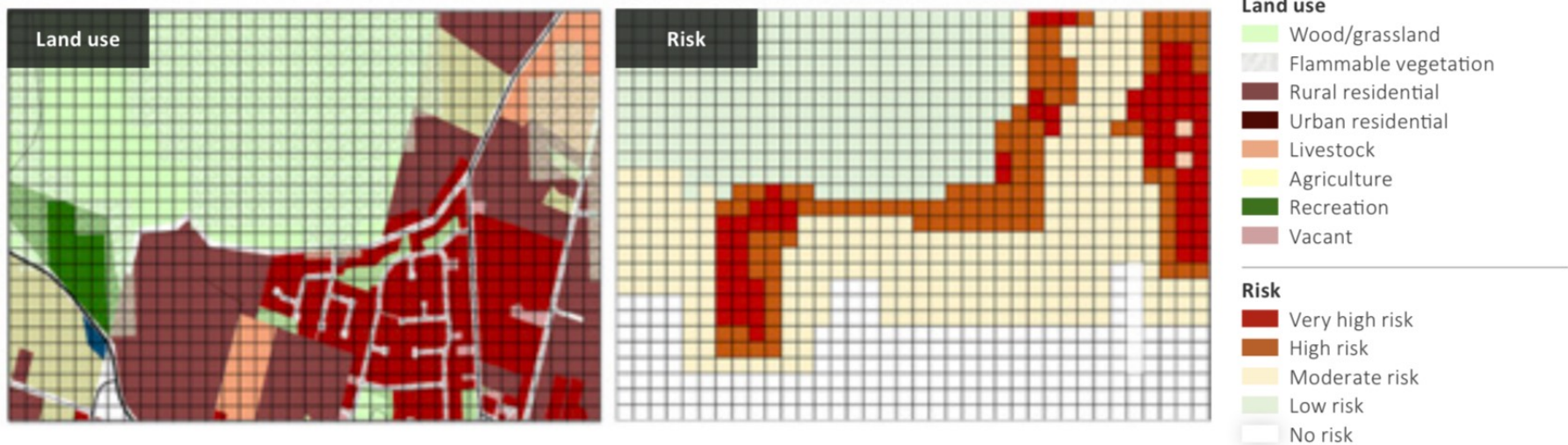


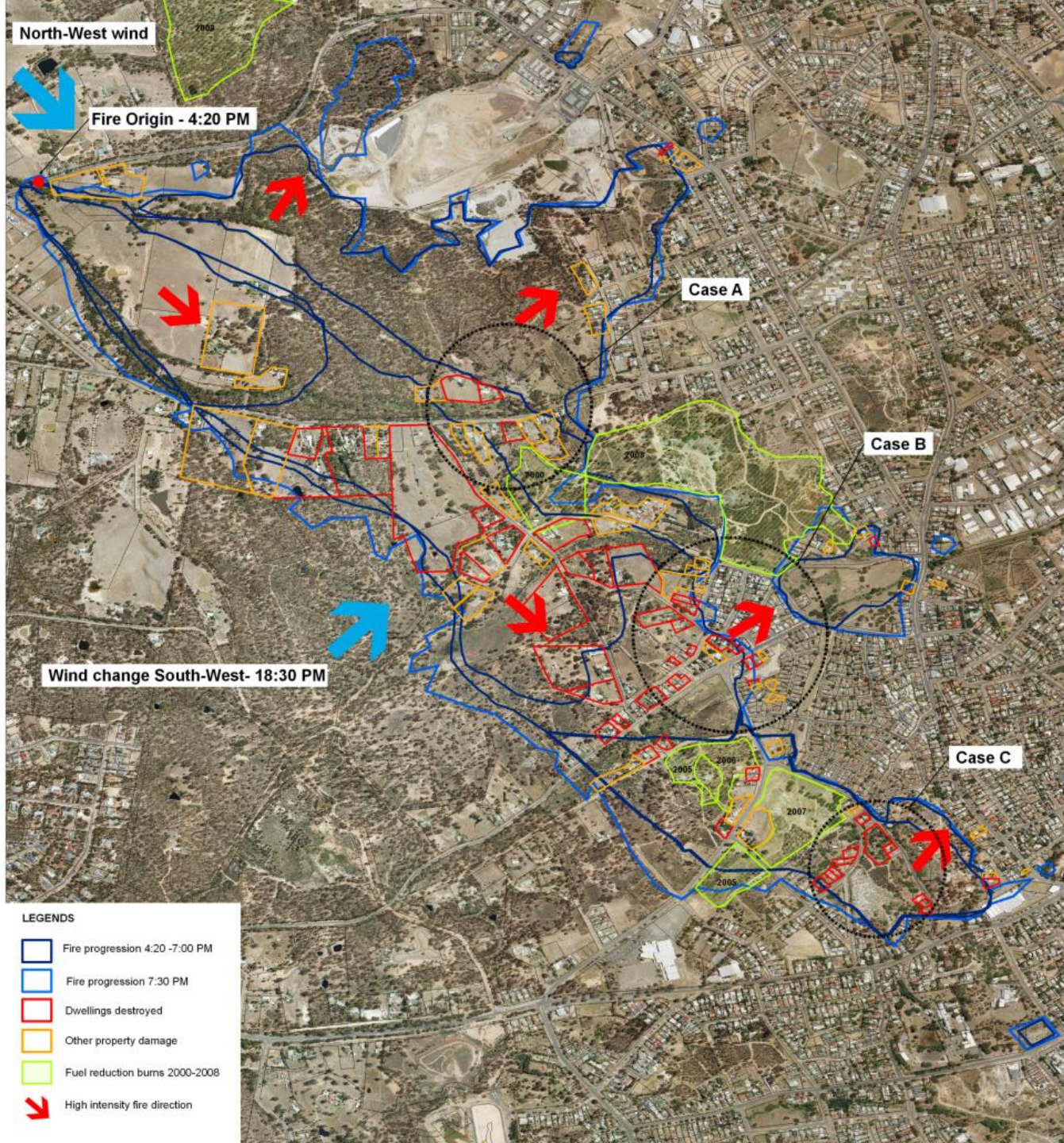
Figure 9: 2050 development layout (left-side panel) and bushfire risk (right-side panel). Higher levels of risk can be seen compared to the 2018 risk (Figure 8) due to the expanded residential development and its greater interaction with vegetated areas.

HUMAN IGNITION

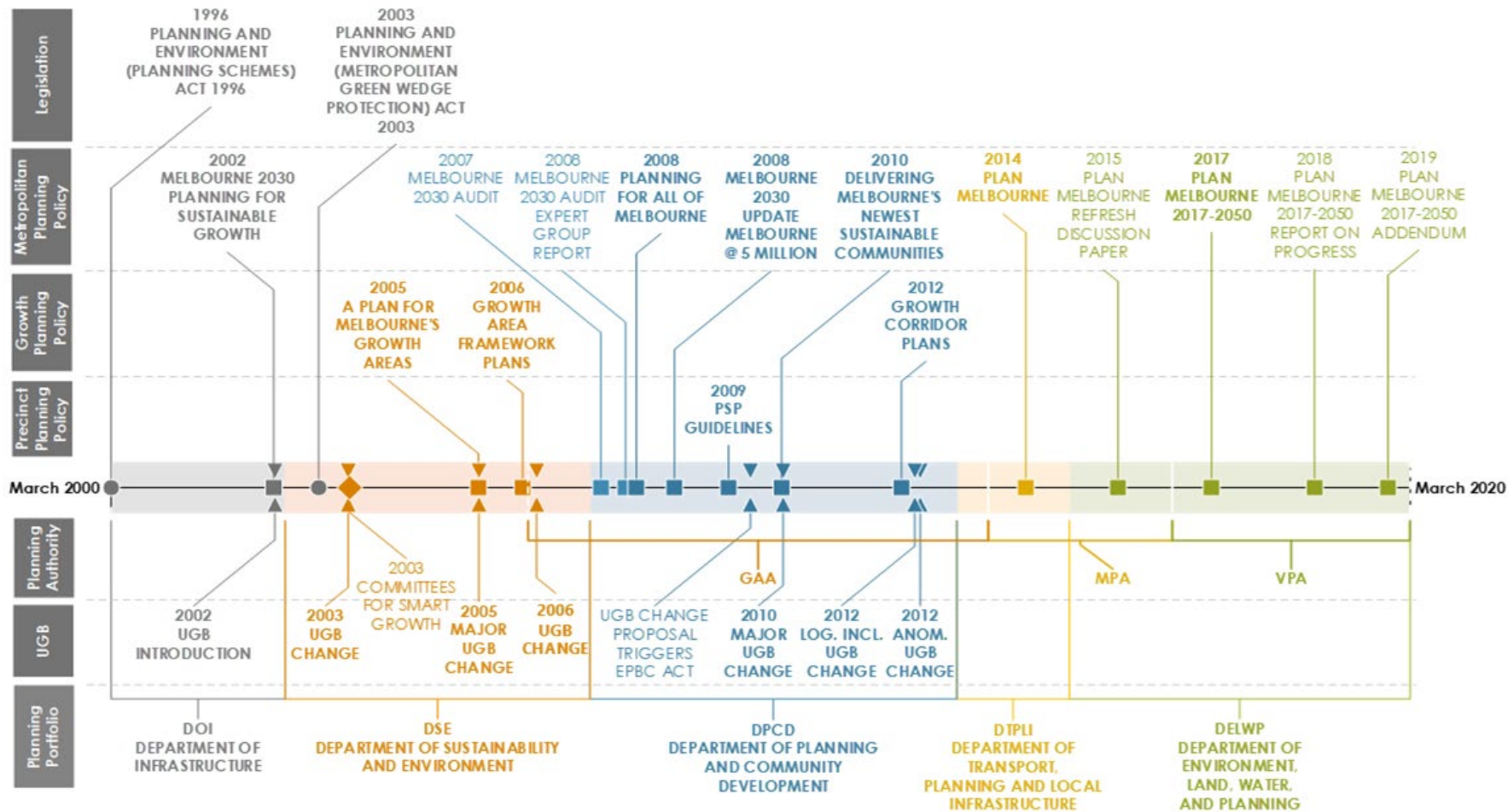


EXISTING SETTLEMENTS





TIMING OF RISK ASSESSMENT & "PNR"



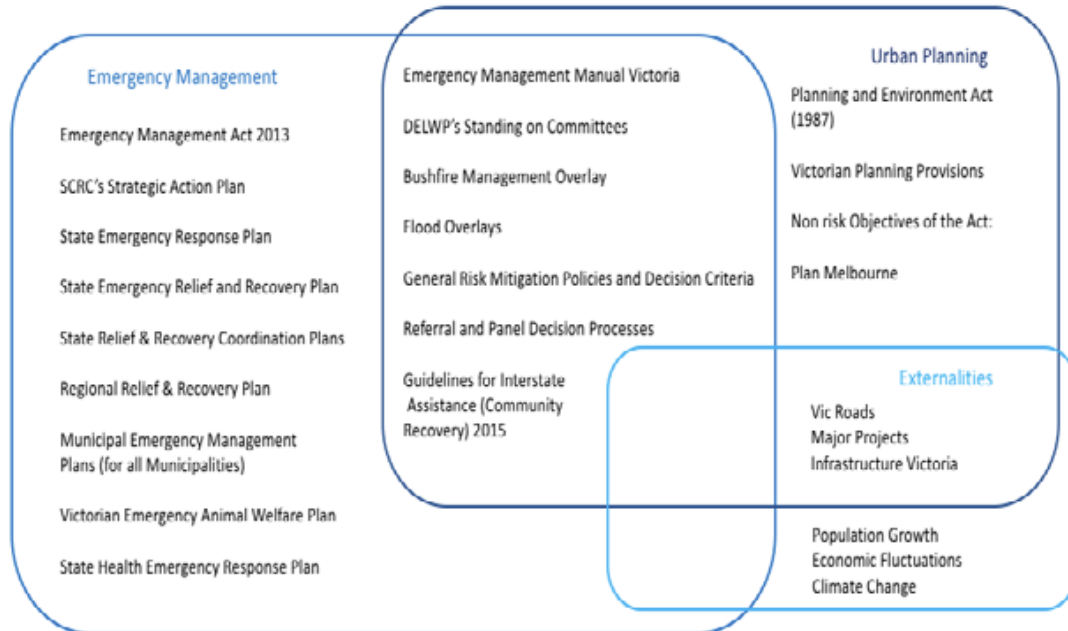
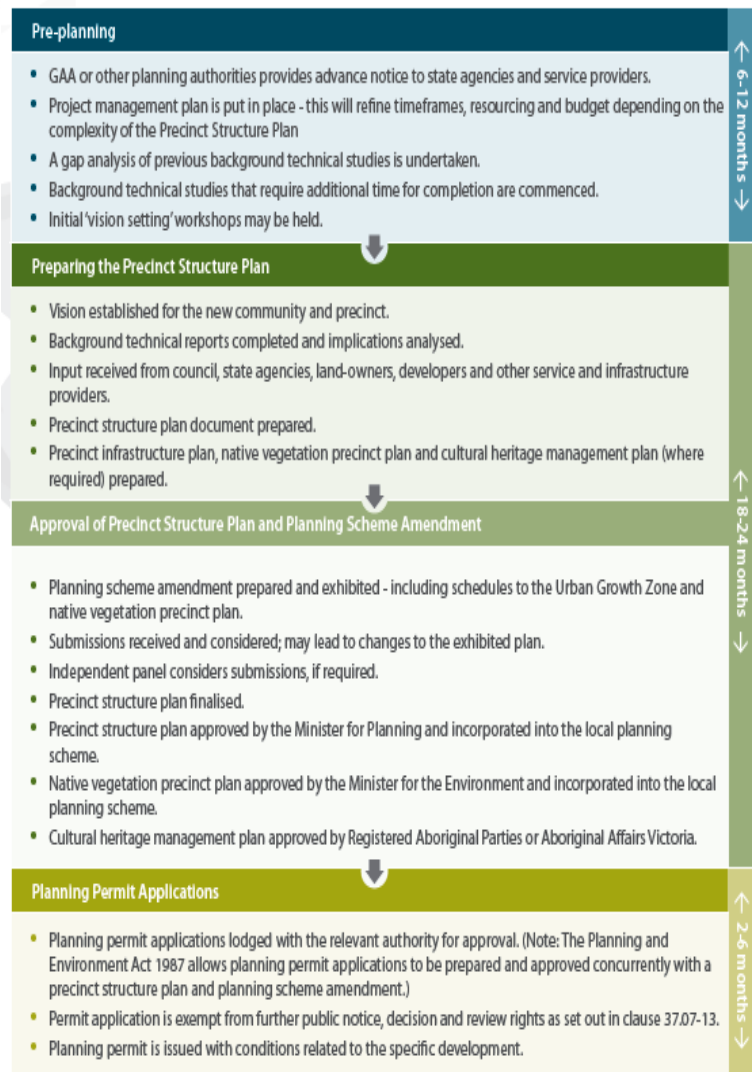
Source: [2009]

Source: [2009]

LEGEND

- REFERENCE DOCUMENT (REPORT/PLAN)
- ▼ URBAN GROWTH BOUNDARY (UGB) CHANGE
- LEGISLATION INTRODUCED/AMENDED
- ◆ TEMPORARY ORGANISATION INTRODUCED
- GAA: GROWTH AREAS AUTHORITY
- MPA: METROPOLITAN PLANNING AUTHORITY
- VPA: VICTORIAN PLANNING AUTHORITY

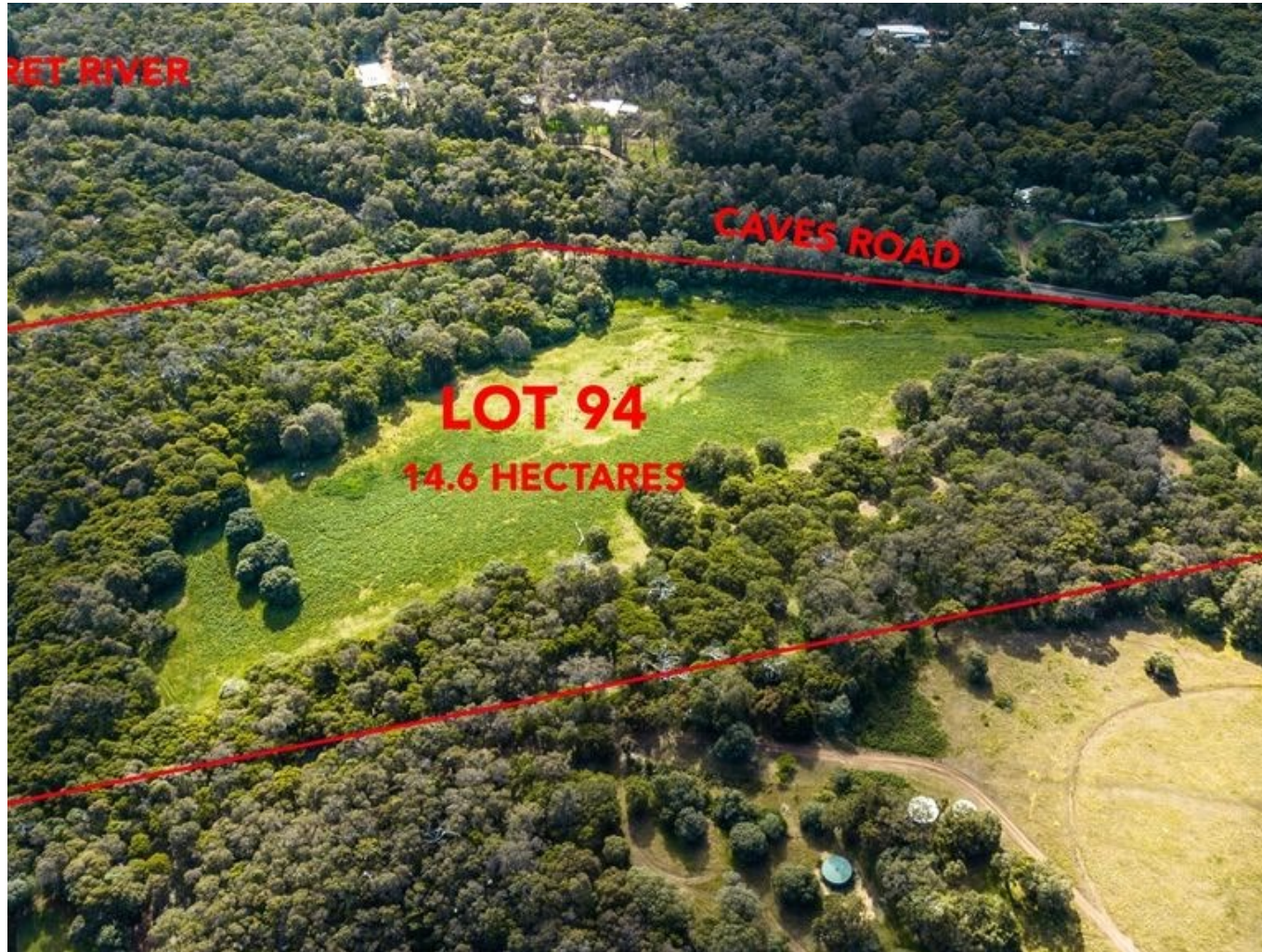
Figure 2: Planning Process Flowchart



HUMAN BEHAVIOUR



HUMAN KNOWLEDGE



HUMAN KNOWLEDGE (2)



Royal Commission
into National Natural Disaster
Arrangements

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AUSTRALIAN INQUIRIES INTO NATURAL HAZARD EVENTS

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

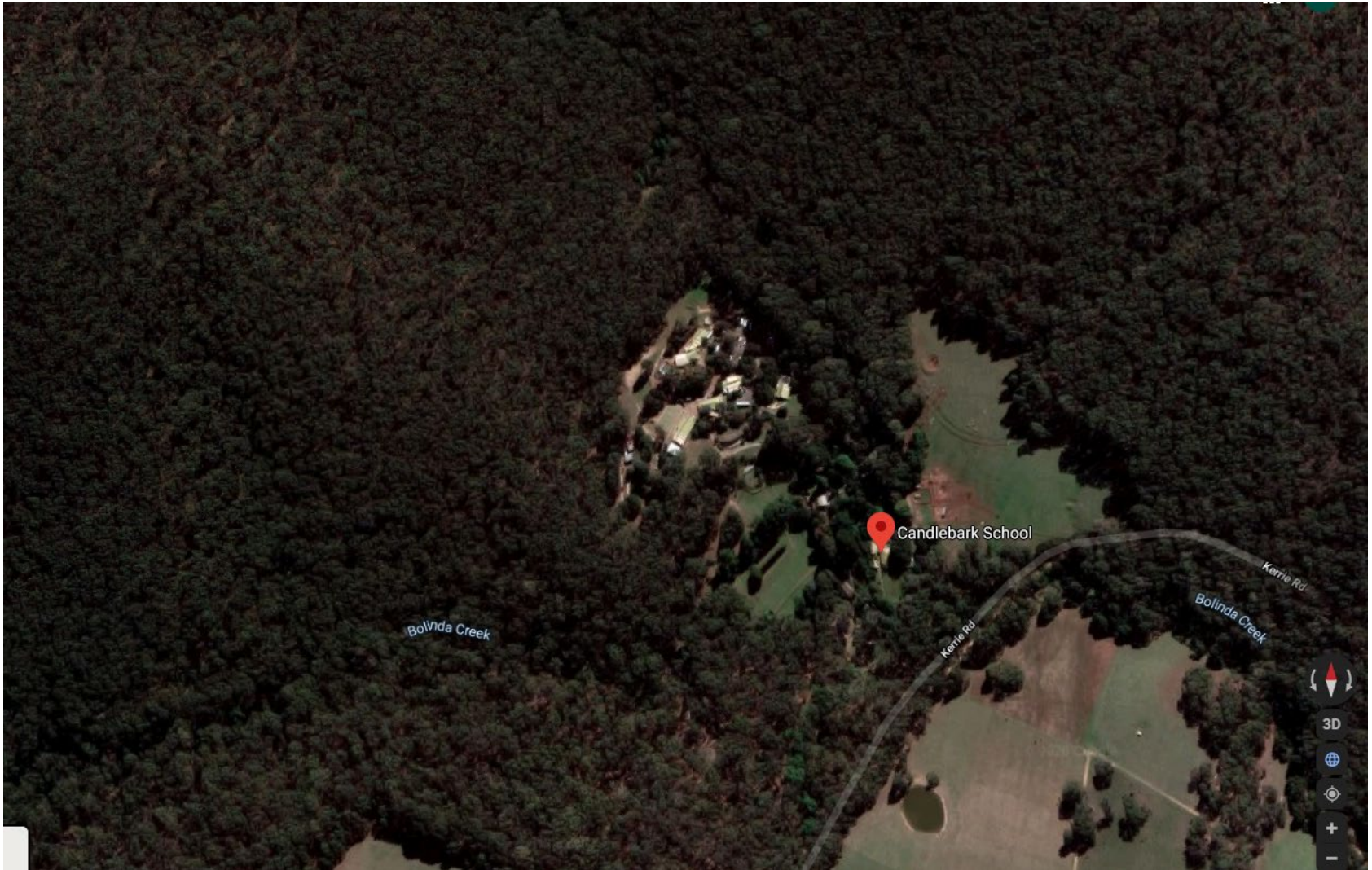
Alan March¹, Leonardo Nogueira de Moraes¹, Graeme Riddell², Stephen Dovers³, Janet Stanley¹, Hedwig van Delden^{2,4}, Ruth Beilin¹, Holger Maier²

¹The University of Melbourne, ²The University of Adelaide, ³Australian National University ⁴Research 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 & implementation 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 <i>in situ</i>					
<i>In situ</i> reduction or increased resistance <i>in situ</i>					
Improve response					
Improve recovery					

Land Use Planning for Disaster Resilient Communities



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

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

URBAN PLANNING DIAGNOSTICS

