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Integrating housing policy, settlement planning and disaster management

From the AHURI Inquiry: Inquiry into housing policy and disasters: better co-ordinating actors, responses and data

Authored by

Annette Kroen, RMIT University
Emma Barnes, UNSW
Chris Hartley, UNSW
Jago Dodson, RMIT University
Andrew Butt, RMIT University
Hal Pawson, UNSW

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Acronyms and abbreviations used in this report

AHURI	Australian Housing and Urban Research Institute Limited
AHO	Aboriginal Housing Office (NSW)
AIDR	Australian Institute for Disaster Resilience
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BMM	Building Ministers Meeting
BMO	Bushfire Management Overlay
COMDISPLAN	Australian Government Disaster Response Plan
DCJ	Department of Communities and Justice (NSW)
DEECA	Victorian Department of Energy, Environment and Climate Action
DELWP	Victorian Department of Environment, Land, Water and Planning
DEMCs	District Emergency Management Committees (WA)
DFES	Department of Fire and Emergency Services (WA)
DFFH	Victorian Department of Families, Fairness and Housing
DJCS	Victorian Department of Justice and Community Safety
DOT	Victorian Department of Transport
DPHI	Department of Planning, Housing and Infrastructure (NSW)
DRR	Disaster Risk Reduction
DTP	Victorian Department of Transport Planning
EMMV	Emergency Management Manual Victoria
EMPLAN	State Emergency Management Plan (NSW)
EOCON	Emergency Operations Controller (NSW)
ERV	Emergency Recovery Victoria
KI	Key informant
LAHC	Land and Housing Corporation (NSW)
LEMA	Local Emergency Management Arrangements (WA)
LEMC	Local Emergency Management Committees (NSW, WA)
LSIO	Land Subject to Inundation Overlay
MAV	Municipal Association of Victoria
NASHH	National Agreement on Social Housing and Homelessness
NCC	National Construction Code
NCM	National Coordination Mechanism
NCOSS	NSW Council of Social Services
NDRRF	National Disaster Risk Reduction Framework
NEMA	National Emergency Management Agency
NERAG	National Emergency Risk Assessment Guidelines
NGO	Non-Government Organisations
NSW	New South Wales

NSWRA	NSW Reconstruction Authority
REMC	Region Emergency Management Committees (NSW)
RQ	Research question
SAHF	Social and Affordable Housing Fund (NSW)
SBO	Special Building Overlay
SEMC	State Emergency Management Committee (NSW, WA)
SEMP	State Emergency Management Plan (VIC)
SERCON	State Emergency Recovery Controller (NSW)
SERM Act	State Emergency and Rescue Management Act 1989
SES	State Emergency Service
SRCC	State Recovery Coordination Committee (VIC)
UNISDR	United Nations International Strategy for Disaster Reduction
VIC	Victoria
VPPs	Victoria Planning Provisions
WA	Western Australia
WALGA	WA Local Government Association
WAPC	Western Australian Planning Commission

Glossary

A list of definitions for terms commonly used by AHURI is available on the AHURI website ahuri.edu.au/glossary.

Executive summary

Key points

- Integrating housing policy, settlement planning and disaster management is crucial. Disasters caused by natural hazards typically have major impacts on housing, while settlement planning can influence exposure to disasters and the scale of their impact.

- Coordinating and integrating housing, planning and disaster management in Australia has improved in the last decade, but further standardisation and development is required.

- Relevant Australian agencies are improving their approaches to housing-related disaster management, but there needs to be greater priority given to disaster risk reduction in housing policy. Disaster risk reduction and preparedness are being increasingly considered in land use planning, though tensions can arise with economic and development goals.

- Planning and housing decisions must be supported by clear appreciation of disaster risks. Relevant government agencies need to improve data sharing, harmonise data use and communicate more effectively with the public about risks identified through data analysis.

- While recovery processes need to respond to each specific disaster situation, developing standards in advance of a disaster would accelerate recovery. This may include creating lists of suitable and available temporary housing types.

- Local governments often require additional resources to be able to respond appropriately to housing and planning requirements in the recovery phase.

- Including local communities in disaster preparedness and response helps shape recovery approaches that meet the needs of impacted communities. This includes making disaster risk data publicly available. Community engagement also improves understanding and acceptance of risk reduction measures.

Key findings

The integration of housing policy and settlement planning with disaster risk reduction, preparedness, response and recovery is essential. This is because housing is typically heavily impacted during disasters, housing remediation is an essential element of recovery and settlement planning influences the location of housing.

This research has been conducted to improve understanding of the role of housing policy and settlement planning in disaster preparedness and recovery. It focuses on institutional arrangements, planning coordination and disaster response, particularly at state and territory government levels, but also considers the Australian Government, local government and broader stakeholders where relevant. The research examined the extent to which coordination occurs between housing policy, settlement planning and disaster management, and where coordination gaps or barriers exist.

How effectively are housing policy, settlement planning and disaster management integrated in Australia?

Relevant Australian agencies are developing more effective approaches to disaster management. State emergency management and recovery agencies generally coordinate disaster preparedness, response and recovery, marshalling contributions from other government bodies and external stakeholders. This is also partly true in disaster prevention. While there is established good practice in this field, disaster prevention knowledge and activities need to be better integrated within housing and planning agencies on a day-to-day basis. Formal interaction occurs through state emergency management planning and through fire agencies acting as referral agencies for planning.

Australian housing agencies are experienced in disaster preparedness, response and recovery, particularly in providing emergency accommodation and, to some extent, temporary housing during recovery. Settlement planning agencies are experienced in disaster risk reduction, disaster preparedness and disaster recovery. They steer development away from high-risk areas; undertake risk assessment for urban development; implement suitable overlays; and oversee planning processes and permits in the recovery phase.

There is a need to give greater priority to disaster risk reduction in housing policy. For example, climate change impacts and disaster risk need to be considered in housing strategies, particularly for the location of housing. In settlement planning policy, agency coordination could be extended in the recovery phase and deepened for disaster risk reduction. While risk reduction is strongly embedded in processes relating to bushfire risk, it is less clearly defined and regulated in the management of other natural hazards. Streamlining processes and policies which support households to move away from risk areas (known as 'managed retreat') could support recovery, as could compensation (or 'buy-back') schemes.

Barriers to the integration of housing policy, settlement planning and disaster management

The differing work cultures and objectives of disaster management, housing policy and settlement planning agencies create obstacles to integration and coordination. Another regular problem is the loss of institutional knowledge that can result from frequent organisational restructuring and the widespread use of fixed-term contracts. The findings of this research agree with previous similar studies.

Insufficient prioritisation of disaster risk by housing and planning agencies is another barrier to policy integration. This can be caused by a lack of understanding or awareness of the risk, such as where there is a lack of data or where interaction with hazard agencies is infrequent.

The effectiveness of disaster management crucially depends on the quality and availability of data, such as flood risk studies and dwelling impact assessments. Poor quality data were identified as important barriers to meaningful integration of housing policy and settlement planning with emergency agency activities. Participants in this research reported that, even within state government, the data on which risk assessment should be based are sometimes unclear or unavailable. Participants also reported that standardised approaches are not always applied to data used for risk assessment, such the preferred climate change scenario to use in flood risk assessments. As a result, risk assessment judgements can vary.

Finally, a lack of necessary resources often prevents local governments from responding sufficiently to a community's housing needs during the disaster recovery phase. In particular, problems often arise in relation to the time required to issue planning and building permits for dwelling repair or replacement. Smaller councils sometimes lack sufficient resources to update planning schemes regularly or with up-to-date hazard risk assessments, resulting in less timely disaster preparedness.

Scope for improved integration between housing policy, settlement planning and disaster management

There is significant scope for improving the integration of housing policy, settlement planning and disaster management. At a high level, integration could be improved by establishing clear policy and planning responsibilities, clarifying political priorities and taking a whole-of-government approach.

Enhanced institutional coordination to strengthen housing policy and settlement planning in disaster prevention, mitigation, preparedness and response could include adding disaster themes to relevant housing and planning legislation and policy frameworks. Increased and improved communication and collaboration between housing, planning, emergency and disaster agencies could be established through secondments and working groups. This could be organised by the agencies themselves, with emergency and disaster agencies coordinating activity. Clarifying housing and planning agencies' responsibilities in the different disaster phases would also support effective coordination.

The development of clear policy priorities and frameworks would help integrate disaster and risk approaches into housing and planning policy. Housing policies and strategies need to consider disaster risk more directly and explicitly. Clearer policy positions and specific regulations about priority criteria for urban development and disaster risk could help inform planning decisions. Improved data availability and harmonisation could support planners in making firmer decisions about limiting urban development.

Evaluation of housing experiences and planning outcomes from previous disasters would support further improvements and streamlined processes. This already occurs to some extent through formal statutory inquiries into disasters. A standardised evaluation of the experiences of housing and planning agencies would provide more focused insights.

Policy development options

This research confirms that there is considerable scope for improved integration between housing policy, settlement planning and disaster management in Australia. Our analysis suggests there is a need to raise disaster risk awareness in housing and planning agencies, with risk reduction prioritised and integrated more clearly into housing and planning policy.

An overview of policy development options is given in Table 1.

Table 1: Overview of key policy options

Consideration	Policy Options
Housing	
Disaster risk reduction	• Principles and measures withing housing policy which increase the resilience of housing to natural hazards
Temporary housing	• Evaluation of temporary housing programs • Inventory of adaptable temporary housing • Clear responsibilities for housing recovery, including improved coordination between emergency and temporary accommodation authorities • Responsive strategies for worker accommodation
Support for homeowners and renters	• Support for all homeowners to assist rebuilding • Particular support for renters
Planning	
Disaster risk reduction	• Clearer priorities, rules and criteria for disaster risk reduction in urban development decisions • Strategies, policies and programs for managed retreat and buy-back • Policies to limit settlement extension into risk areas
Land use planning and zoning	• Requirement for comprehensive hazard-risk land use plans (local to regional level) • Requirement for place-based strategies (local level) • Establishment of additional referral agencies for natural hazards
Post-disaster	• Strategies for streamlined planning processes and risk assessment
Building standards	
Implementation	• Improved communication of standards and the rationales for those standards
Incentives	• Incentives for building or retrofitting existing homes to meet or exceed standards
Data, information and evaluation	
Data	• Database with relevant government data and analytics that is accessible to all government agencies and the public (federal and state and territory governments) • Harmonising data, including defining datasets and assumptions used for risk assessments (federal and state and territory governments)
Information	• Publicly available information about hazard risk • Increase dissemination and awareness of data, such as mandating information provided during property sales
Evaluation	• Regular arrangements for evaluating recovery experiences with a focus on planning and housing decisions
Governance	
Institutional knowledge	• Structures to retain and improve institutional knowledge, such as regular exchange, multi-disciplinary teams, ongoing contracts
Responsibilities between tiers of government	• Organising responsibilities between different tiers more coherently

Consideration	Policy Options
Local government	• Support programs for local government, such as additional staff or streamlined planning processes for recovery, support for regular planning framework and hazard risk updates
Funding	• Policies supported by funding, such as specific funds for managed retreat policies
Community	• Promote community engagement, such as on land use plans or available data about hazards
	• Include community, community organisations and service providers in disaster risk reduction, preparedness and recovery
Insurance	• Check cooperation between insurance industry and federal, state and territory governments to reduce premiums where building standards are reached or surpassed, and for joint establishment of temporary villages
	• Add building back 'somewhere better' to insurance options

Source: Authors

The study

This research is part of a wider AHURI Inquiry *Housing policy and disasters: better co-ordinating actors, responses and data.* The project investigates the role of housing policy and settlement planning in disaster prevention, preparedness and response. It focuses on government responsibilities, particularly state and territory governments, institutional arrangements and coordination mechanisms.

Globally and in Australia natural hazards are becoming more frequent and intense due to climate change impacts, with the potential to trigger disasters. Housing damage or destruction leads to disruption of human lives and community dynamics; homelessness or reliance on temporary shelter; and costly repairs or rebuilding.

Disaster risk to housing is a function of building design and settlement planning (such as land use or town planning resulting in the siting of new residential development either within urban areas or beyond their boundaries) and influenced by wider policy and institutional frameworks for disaster prevention and response. There is a need for integration of housing policy, settlement planning and disaster management. This integration exists in some areas of disaster management but needs further normalisation and improvement.

There is a limited Australian housing research base on disaster prevention, preparedness and response. In contrast, settlement planning and its relation to disaster risk has been studied in more detail. The growing grey literature on disaster preparedness and response, particularly commissions of inquiry reports, identifies integration problems with some references to planning but rarely to housing policy. To respond to this gap, this research investigates the current state of policy integration between housing policy, settlement planning and disaster preparedness and response in New South Wales, Victoria and Western Australia. This research also investigates the understanding of the housing, planning and disaster management sectors, and barriers and enablers for improved integration.

The three main research questions addressed by this research are:

- What are Australia's current housing policy and settlement planning institutional and coordination arrangements in relation to disaster prevention, preparedness and response, at the federal, state and territory and local scales?

- What are current gaps and future potential for housing policy and settlement planning institutional and coordination arrangements to improve Australia's disaster prevention, preparedness and response, at the federal, state and territory and local scales?

- What housing policy and settlement planning policy development options, including institutional coordination arrangements and implementation pathways, could improve Australian disaster prevention, preparedness and response, at the federal, state and territory and local scales?

The research used a mixed methods approach. We reviewed academic and grey literature on housing policy, settlement planning and disaster prevention, preparedness and response. We focused on institutional arrangements and policy coordination frameworks. We undertook institutional and policy mapping of current arrangements and frameworks for the coordination of housing policy, settlement planning and disaster management.

Our framework mapping included key organisations, statutory requirements and principal policy frameworks at the Australian Government and state government levels (concentrating on Victoria, New South Wales and Western Australia). Based on this analysis, case study research was undertaken across the three states, comprising document analysis and stakeholder interviews. For each state, the focus was on their experience of specific hazards. However, all case studies assessed the general integration and coordination of housing policy and settlement planning with disaster prevention, preparedness and response efforts and subsequent integration efforts, rather than solely focusing on the respective hazard type.

1. The integration of housing policy, settlement planning and disaster management

- **Australia is prone to natural hazards, with a high likelihood of repetition in hazard type and distribution.**

- **Natural hazards have the potential to damage or destroy housing, leading to the disruption of human lives.**

- **Disaster risk to housing is a function of building design and settlement planning and is influenced by wider policy for disaster prevention and response.**

- **Integration of housing policy, settlement planning and disaster management needs to be improved.**

- **There is a lack of research on systematic engagement between housing policy, settlement planning and disaster management.**

- **This research investigates current policy integration between housing policy, settlement planning and disaster management; the understanding sectors have of each other; and barriers and enablers for improved integration.**

Australia is prone to natural hazards with the most common being bushfires, floods, storms and cyclones. With climate change many natural hazards will become more frequent and intense with the potential to trigger disasters. A natural disaster is generally declared when the impacts of a natural hazard lead to serious disruption and result in death, damage to property or environmental losses, and require a government response to facilitate recovery.

Globally, and in Australia, impacts and losses due to natural hazards are increasing. Several factors amplify impacts and losses: population growth, concentration of population in urban areas, increased settlement in vulnerable areas (such as coastal zones, flood zones and peri-urban areas), improved standards of living (leading to higher economic losses), and the intensification and accumulation of extreme weather events (Australian Institute for Disaster Resilience [AIDR] 2023).

While disaster severity is often described in terms of loss of human life, the intensity and scale of destruction is commonly measured in damage to housing. Floods, bushfires and cyclones all have the potential to damage or destroy housing. This leads to disruption of human lives, homelessness or reliance on temporary shelter, plus the need to organise and finance rebuilding. Disaster risk to housing is a function of building design and settlement planning and is influenced by wider policy and institutional frameworks for disaster prevention and response.

Housing policy, settlement planning and disaster preparedness and response are currently not well coordinated across Australian governments. This reflects broader weaknesses in national housing policy and settlement planning coordination (PIA 2018). However, with an increasing number of large-scale disasters, the awareness of the need for coordination and the interdependencies between housing, settlement planning and the disaster cycle is growing.

This research has been conducted to improve the understanding of the role of housing policy and settlement planning in disaster preparedness and recovery. It focuses on institutional arrangements and coordination at the state and territory government level. Australian Government, local government and broader stakeholders are considered where relevant. The findings should assist researchers, policymakers and practitioners to better understand how housing and planning policy frameworks and institutions can be integrated with disaster preparedness and response policies, frameworks and practices.

The research examined current policy integration in New South Wales (NSW), Victoria and Western Australia (WA), the sectors' understanding of each other, and barriers and enablers for improved integration. It contributes to academic and policy knowledge of the intersection, integration and coordination of housing policy, settlement planning and disaster preparedness and response, with the aim of making Australian housing more resilient to future disasters.

The three main research questions addressed by this research are:

- What are Australia's current housing policy and settlement planning institutional and coordination arrangements in relation to disaster prevention, preparedness and response, at the Australian Government, state and territory governments and local government levels?

- What are current gaps and future potential for housing policy and settlement planning institutional and coordination arrangements to improve Australia's disaster prevention, preparedness and response, at the Australian Government, state and territory governments and local government levels?

- What housing policy and settlement planning policy development options, including institutional coordination arrangements and implementation pathways, could improve Australian disaster prevention, preparedness and response, at the Australian Government, state and territory governments and local government levels?

This report focuses on the state and territory government level of housing policy, settlement planning and disaster preparedness. Where relevant, coordination opportunities with other government levels and the private sector are highlighted, plus activities that are most appropriate to those stakeholders.

1.1 Policy context

Coordination of institutional responsibilities is a major theme in disaster management policy and public debates (Carayannopoulos 2017). However, housing policy is rarely mentioned in these discussions. Settlement planning is discussed to a broader extent, particularly in relation to planning for bushfire-prone areas and most recently in relation to building on flood plains.

1.1.1 Housing and planning in the disaster management cycle

When considering the integration of housing policy, settlement planning and disaster management, it is useful to look at the phases of disaster management and associated actions, and where different policy areas overlap or should be integrated.

Figure 1 presents the types of housing and planning actions related to the distinct phases of the disaster cycle.

Figure 1: Housing and planning in the disaster management cycle
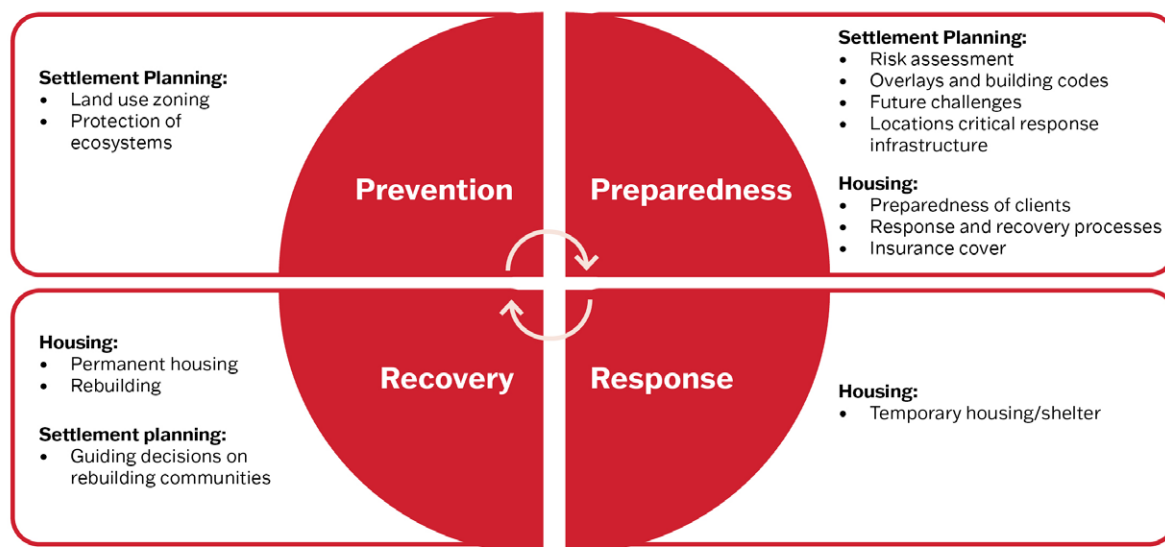
Source: Authors

Disaster management is generally divided into four phases:

- **prevention phase**, also called 'disaster risk reduction' or 'mitigation', aims at avoiding or decreasing the impacts of a hazard. This is also the phase in which high-risk areas may be excluded from urban development so that less infrastructure and fewer people are impacted by a hazard.

- **preparedness phase** refers to tools or knowledge which increase the chances of survival in a disaster and minimise financial and other losses.

- **response phase** aims to reduce the impact of a disaster and prevent further suffering and financial and other losses.

- **recovery phase** begins after the immediate response has ended. It aims to return victims' lives to 'normal' following the impact of disaster. As the recovery phase can take months or even years, sometimes a distinction is made between early and later recovery phases (AIDR 2023; Coppola 2015).

In general, land use or settlement planning has its strongest role in the prevention and preparedness phases. This is because land use zoning can preclude development in high-risk areas or appropriately influence the type of development that can occur. Settlement planning can also support the protection of ecosystems, which can reduce the intensity and likelihood of landslides, flooding or other hazards.

In the preparedness phase, settlement planning may include risk assessment of areas and subsequent development overlays (such as a bushfire management overlay), building standards that require certain building characteristics, and specific locations for critical response infrastructure. The need to consider future challenges and likely changes for land use plans, such as rising sea levels, is also part of disaster preparedness.

Housing plays a strong role in the response and recovery phases, because houses are often damaged or destroyed when disasters occur. This leads to the need for temporary shelter and housing, repair of existing housing, or the building or finding new permanent housing (either by rebuilding in the same area or building in, or moving to, a different area). Broader policy decisions and the broader housing market also play into this, as the ability to find temporary and permanent housing is affected by the overall housing market in impacted areas.

1.1.2 Governance structure of housing, planning and disaster management

While there is a need for integration and coordination of housing policy, settlement planning and disaster management, there is only a moderate level of integration between these areas in Australia. The clearest coordination is between housing and disaster preparedness, response and recovery, and settlement planning and disaster prevention and preparedness. Responsibilities in the response phase are noted in state and local emergency plans, which are typically required by legislation. However, responsibilities for and coordination of prevention, preparedness and recovery are often less clear and change regularly due to restructuring of agencies and changes in government policies regarding agency mandates.

Housing and planning

Responsibilities for housing policy, settlement planning and disaster management are distributed across the three tiers of government in Australia. The states and territories are the main stakeholders for housing and planning policy and practice, while local governments are often the implementation authorities (Dodson, de Silva et al. 2017). Similarly, disaster management agencies, processes, stages and policy frameworks also tend to be organised at state, territory and local government level. However, Australian Government responsibilities have recently been expanded through the establishment and strengthening of national bodies like the National Emergency Management Agency (NEMA).

Thus, for housing and settlement planning, most policy, planning, implementation and operational responsibility sits with state, territory and local government. Fiscal support is typically a state, territory or Australian Government responsibility, because these levels of government have the greatest fiscal capacities. Each state and territory government has its own housing policies and programs, planning systems and legislation. Local governments are responsible for land use planning at the local level and their involvement in housing policy is principally through urban planning and development approvals.

The role of Australian Government in housing and planning – including those aspects related to disaster management – is strongly constrained by the terms of the *Australian Constitution* (1901). Section 51 specifies the areas of national government competence, which do not include housing or urban issues. Thus, the Australian Government can legislate on these issues only if they can be framed to fall under its designated powers. For example, the Australian Government's constitutionally granted power over foreign affairs has been used to underpin housing legislation because it is a federal responsibility to ensure that Australia honours its international treaty obligations on human rights, including the right to secure housing. The Australian Government may also make grants to the states and territories under the Constitution for any purpose, such as housing services or programs or disaster management capability, via state authorities. Through these types of grants, the Australian Government can influence state, territory and local policies.

Historically, the Australian Government has sought to exert some influence over housing policy via successive Commonwealth State Housing Agreements (the latest of which is the *National Agreement on Social Housing and Homelessness* (NASHH) of 2024). Under these agreements, operating continuously since 1945, the Australian Government makes annual payments to state and territory governments to help meet the cost of housing and homelessness services. State and territory governments, for their part, agree to have regard to policy priorities jointly agreed with the Australian Government and included in the Agreement. These priorities have recently tended to focus largely on the management of social housing and homelessness services. In principle, the NASHH and similar frameworks could provide a vehicle for the Australian Government to influence state and territory social housing and homelessness services which are specifically relevant to disaster management. However, this avenue has yet to be pursued.

A potentially significant new mechanism through which the Australian Government might in future seek to exert influence on housing matters directly relevant to this report is the *National Housing and Homelessness Plan* (NHHP). The NHHP is an initiative pledged by the current government and anticipated for release in 2024. While the document remains unpublished at the time of writing, an Issues Paper was released in 2023 and intended to provide the foundation for the NHHP development process. It is notable that the Issues Paper included a section titled 'The impact of climate change and disasters on housing security, sustainability and health' (Department of Social Services 2023). By implication, the NHHP's scope might therefore extend to disaster-related topics including housing insurability, housing structural resilience and emergency housing provision following extreme weather events.

In this developing federal housing policy context, it is worth noting the *State of the Housing System* report recently released by the National Housing Supply and Affordability Council (2024). This report included climate change as a complex risk factor affecting housing through direct physical risk, indirect pricing effects and wider impacts on the finance and insurance sectors. The report also noted the contribution of natural disasters to homelessness, such as the 8,000 people housed in emergency accommodation following the 2022 NSW floods who are not included in official homelessness counts (National Housing Supply and Affordability Council 2024: 121). The report did not include disaster preparedness or response in its set of 10 recommendations for policy development.

Another forum that provides scope for the Australian Government to influence aspects of housing delivery is the Building Ministers Meeting (BMM). The BMM brings together the Australian Government's Minister for Industry and Science and Minister for Resources, as well as a nominated minister from each state and territory government. This liaison mechanism is officially charged with 'oversee[ing] policy issues affecting Australia's building and construction industries' [and] 'ensur[ing] Australia's buildings are fit for the changing climate' (Department of Industry, Science and Resources 2024). As such, matters in scope for the BMM include residential building standards, an aspect of which is physical resilience in the face of disasters like bushfires.

The current Australian Government (elected in May 2022) has shown renewed interest in urban planning with the establishment of a Cities and Suburbs Unit, the commitment to develop a National Urban Policy and the establishment of an Urban Policy Forum to advise on the national urban policy agenda (DITRDCA 2024). A draft National Urban Policy was published in May 2024 and, as of September 2024, submissions are under review. The draft Policy's suggests that one of the five goals for Australia's urban development is to be 'Resilient'. According to the draft Policy, factors that influence resilience include 'climate-resilient infrastructure and planning frameworks', and 'diverse ecosystems and appropriate land-use policies' (Commonwealth of Australia 2024: 19). Furthermore, the Australian Government influences settlement planning by funding nationally relevant infrastructure projects.

Disaster management

Disaster management in Australia is organised at multiple levels, involving various government agencies, emergency services and community organisations. There are many relevant organisations and stakeholders. As with housing policy and settlement planning, the state and territory governments have primary responsibility. Each state and territory has its own emergency management agencies or departments responsible for disaster management. These agencies coordinate disaster preparedness, response and recovery efforts within their respective regions, implementing national and state frameworks and strategies. The agencies vary in name and structure depending on the state or territory but generally include organisations like emergency management agencies, recovery agencies, state emergency services (SES) and fire and rescue services, as well as police, ambulance, health and medical services. Policy frameworks and structures also differ between the states and territories (AIDR 2023, Commonwealth of Australia 2022).

Local government implements emergency plans and assists communities during disasters, often as first responders. It also liaises with higher-level agencies for additional support with response and recovery activities when needed. Local government is also responsible for risk assessments for land use planning to reduce hazard risk, education and awareness measures, and continuing general services during emergencies (such as waste collection, pollution control, water provision, wastewater treatment and stormwater drainage) (AIDR 2023).

Table 2 provides an overview of the key organisations for housing policy, settlement planning and disaster management with a focus on the Australian Government and state and territory governments, as well as organisations outside government.

Table 2: Key housing policy, settlement planning and disaster management organisations

Governance level	Disaster	Housing	Planning
Australian Government	Minister for Emergency Management Department of Home Affairs NEMA Australia-New Zealand Emergency Management Committee	Minister for Housing and Homelessness Department of Social Services Housing Australia Building Ministers Meeting	Minister for Infrastructure, Transport, Regional Development and Local Government Department of Infrastructure, Transport, Regional Development, Communication and the Arts
State and territory governments	Emergency management agencies Recovery agencies Police services Ambulance services Medical services Fire services Environment departments	Housing agencies (named and organised differently in each state and territory)	Planning agencies (named and organised differently in each state and territory)
Local governments	Environment areas	Housing areas	Planning and transport areas
Outside government	Responding organisations, e.g. Red Cross, Salvation Army Not-for-profit organisations, e.g. Disaster Relief Australia, community housing providers, tenants unions Volunteer organisations, e.g. SES, Rural Fire Service Community and Indigenous Groups Peak bodies, e.g. Australian Council of Social Service, Australian Local Government Association Utilities and infrastructure providers and critical infrastructure owners and operators Business and industry including the design, building, construction and insurance industries Landowners and landholders Natural resource management bodies		

Source: Authors, based on Australian Institute for Disaster Resilience (2023) and department websites

As noted previously, the role of the Australian Government is limited by the terms of the Australian Constitution. However, the Royal Commission into National Natural Disaster Arrangements (Australian Government 2020b) recognised a growing need for the national government to support and complement state and territory arrangements. The Royal Commission recommended the establishment of an enduring agency to provide national coordination and develop and deliver national policy, programs and funding for disaster risk reduction and resilience building (Recommendation 3.5). In 2022, the Australian Government established NEMA, which provides end-to-end oversight of risk reduction, preparedness, response and recovery. NEMA combines the previous National Recovery and Resilience Agency and Emergency Management Australia. It maintains a range of response plans that can support state and territory governments and international partners responding to an emergency. As with housing policy and planning, the Australian Government influences activities through funding, such as the Disaster Ready Fund for disaster risk mitigation initiatives.

1.1.3 Key legislation, plans and policy in housing, planning and disaster management

This section presents the key policy frameworks and legislation for disaster management, housing and planning as background for the following chapters. The contents of these frameworks and legislation differ between the states and territories, and also between different local governments. However, there are some broad commonalities as outlined in Table 3.

In general, states and territories' disaster frameworks include state emergency management legislation, state emergency management plans, state emergency response plans, state emergency recovery plans and hazard-specific legislation. For housing, relevant frameworks include housing legislation, residential tenancies legislation and housing strategies. For planning, planning legislation, planning provisions and strategic plans form the basis of policy.

At the local government level, relevant plans include emergency plans, climate plans, resilience plans, housing strategies and planning and transport strategies, as well as community plans.

At the federal level, the underpinning strategy for Australia's approach to emergency management is the **National Strategy for Disaster Resilience** (COAG 2011). This strategy provides high level guidance on disaster management to the Australian Government, state, territory and local governments, business and community leaders and the not-for-profit sector. The strategy promotes a whole-of-government approach and emphasises that disaster resilience is a shared responsibility of governments, communities, businesses and individuals. It also emphasises the need for a greater focus on prevention, preparedness and building capability.

The **Sendai Framework for Disaster Risk Reduction** 2015—2030 was adopted by Australia and other members of the United Nations at the third United Nations World Conference on Disaster Risk Reduction. By acceding to this framework, Australia recognises the importance of not only managing disasters, but also managing disaster risk. The Sendai Framework was implemented in Australia in 2019 by the National Disaster Risk Reduction Framework (NDRRF). Most state and territory governments have also established their own frameworks, policies and strategies to implement the objectives of the Sendai Framework (Commonwealth of Australia 2022).

The **National Disaster Risk Reduction Framework** (Department of Home Affairs 2018b) was released in 2019. It sets out the 2030 vision for disaster risk reduction in Australia and provides the basis for a policy reform agenda around disaster risk reduction taking a whole-of-society, systems and values-based approach. The framework was co-designed by all states and territories, local government, and key private sector representatives. It outlines a collaborative approach to proactively reducing current and future disaster risk. The NDRRF is aligned with the first three priorities of the Sendai Framework: 1) understanding disaster risk; 2) strengthening disaster risk governance to manage disaster risk; 3) investing in disaster risk reduction for resilience. It is operationalised through National Action Plans. The Second National Action Plan, released by NEMA in August 2023, presents outcomes and national actions.

The **Australian Disaster Preparedness Framework** (Department of Home Affairs 2018a) is a guideline for all jurisdictions to develop capabilities to effectively prepare for and manage severe to catastrophic disasters. The framework informs the strategic governance, policy and investment required for disaster preparedness arrangements across the government, private, non-government, community and international sectors. The fourth Sendai Framework priority 'Enhancing disaster preparedness for effective response and to 'build back better' in recovery, rehabilitation and reconstruction' is considered as being addressed through this framework (Commonwealth of Australia 2022).

The **Australian Disaster Recovery Framework** (Community Outcomes and Recovery Subcommittee 2022) outlines principles and arrangements for effective and coordinated recovery, including all stages of recovery and pre-disaster recovery planning. It provides guidance on recovery for planners and practitioners and describes mechanisms for coordination and collaboration between recovery stakeholders.

The **Australian Government Crisis Management Framework** (Department of the Prime Minister and Cabinet 2023) 'outlines the Australian Government's approach to preparing for, responding to and recovering from crises'. It gives guidance to ministers and senior officials on their respective roles and responsibilities, with a focus on near-term crisis preparedness, immediate crisis response and crisis recovery arrangements. The framework underpins other crisis plans maintained by NEMA.

One of the emergency response plans maintained by NEMA is the **Australian Government Disaster Response Plan** (COMDISPLAN) (Australian Government 2020a). COMDISPLAN guides the Australian Government's provision of non-financial assistance to states and territories in an emergency or disaster.

Table 3: Key frameworks and legislation for housing policy, settlement planning and disaster management

Legislation, plans, policy	Disaster	Housing	Planning
Australian Government	National Strategy for Disaster Resilience	National Agreement on Social Housing and Homelessness	National Urban Policy (draft)
	National Disaster Risk Reduction Framework	National Housing and Homelessness Plan	City Deals
	Australian Disaster Preparedness Framework		
	Australian Disaster Recovery Framework		
	Australian Government Crisis Management Framework		
	Emergency response plans		
	Australian Government Disaster Response Plan		
	National Coordination Mechanism		
	National Emergency Declaration Act 2020		
	National Emergency Risk Assessment Guidelines		
	Critical Infrastructure Resilience Strategy		
	Disaster Recovery Funding Arrangements 2018		
State and territory governments	State emergency management legislation	Housing legislation	Planning legislation
	State emergency management plans	Residential tenancy legislation	Strategic plans
	State emergency response plans	Housing strategies	Planning provisions
	State emergency recovery plans		
	Hazard-specific legislation		
	Climate change adaptation plans		
Local government	Climate plans	Housing strategies	Planning and transport strategies
	Resilience plans		
	Emergency plans		

Source: authors

The **National Coordination Mechanism** (NCM) is a tool for national management of the consequences of complex crises. It is in place to assist in emergencies that are beyond the resources available within an impacted state or territory. The NCM brings together a broad range of stakeholders and provides a forum for non-government stakeholders to liaise directly with state and territory government representatives and key Australian Government departments. It operates as a collaboration, coordination and communication model to unify efforts to stabilise or mitigate the impacts and consequences of a crisis or disaster.

As discussed previously, the **National Agreement on Social Housing and Homelessness** is the principal funding agreement for the states' and territories' social housing and homelessness sectors. To receive funding under the NASHH state and territory governments need to have publicly available housing and homelessness strategies and contribute to improved data collection and reporting.

The **National Housing and Homelessness Plan** is a pre-election commitment of the current Australian Government. The plan is expected to set out a 10-year national vision encompassing the responsibilities of different levels of government to help guide future housing and homelessness policy. It is expected that the plan will be released in 2024.

The Government has also committed to deliver a new **National Urban Policy** to address urgent challenges facing major cities, such as equitable access to jobs, homes and services, impacts of climate change and decarbonisation. At the time of writing the National Urban Policy was in draft stage and under review after inviting submissions.

City Deals were a program of the previous Australian Government. They are agreements between all levels of government to achieve transformative outcomes for Australian cities. The current Government has committed to honour the deals already signed but will not establish new ones.

1.1.4 Summary

This section has reviewed the national policy context for housing, planning and disaster management. The review demonstrates that there is a large and expanding disaster management policy and institutional framework operating across federal, state and territory, and local jurisdictions. This framework and corresponding governance structures are constantly evolving, with new elements and adjustments being undertaken regularly. The section has presented a broad overview of the current situation to illustrate the policy context. A more detailed presentation of the disaster management governance and policy structures can be found in *Australian Emergency Management Arrangements* (AIDR 2023) and *Australia's national midterm review of the Sendai Framework for Disaster Risk Reduction 2015—2030 Report* (Australian Government 2022).

The national policy and governance landscape is an important basis for the policies and frameworks of states and territories because they respond to and implement objectives and actions of the national documents. However, as integration between housing policy, settlement planning and disaster management is currently not clearly elaborated or constituted at the national level, there is no coherent model or paradigm to follow on the state level. While there are extensive housing policy and planning frameworks, these are not particularly focused on disaster preparedness or management, and not well articulated within the disaster management frameworks. However, it must be acknowledged that on the national level the Issues Paper for the National Housing and Homelessness Plan included a section on impacts of climate change and disasters. The recent State of the Housing System report also included climate change as a risk factor affecting housing, and the draft National Urban Policy also included 'Resilient' as one of its five suggested overarching goals. Thus, there are clearly opportunities for greater connection between these domains, which are acknowledged in draft national policies and plans and which this research addresses.

1.2 Existing research

There is an absence in the literature of systematic engagement between housing policy, settlement planning and disaster management. As detailed below, the Australian housing research base on disaster prevention, preparedness and response is very limited. The disaster management research literature only occasionally addresses housing policy. This research knowledge gap seems mismatched with the increasing policy and practice needs related to housing and disaster management. Similarly, the growing grey literature on disaster preparedness and response, including successive reports and commissions of inquiry into specific disaster case studies (Australian Government 2020b; VBRC 2010; O'Kane and Fuller 2022), identifies integration problems of policies and agencies, but infrequently refers to housing policy. The exception to this is the area of housing recovery, which has been the topic of various studies (Corbin 2017; Diaz, Behr et al. 2022; Safapour, Kermanshachi et al. 2021; Sapat 2016).

In contrast, settlement or land use planning and its relation to disaster prevention, preparedness and response has been studied more intensively in the Australian research literature (March, Nogueira de Moraes et al. 2020; Ruane, Swapan et al. 2020). Settlement planning has also been identified as a key practice to address disaster risks (AIDR 2020).

Table 4 provides an overview of the number of publications included in the literature review, including how many were focused on the Australian context, and the date range. The following sections give a brief overview of the central literature regarding housing, planning and disaster management.

Table 4: Publications included in literature review

Topic area	Publications included in literature review	Date range
Housing and disaster*	12 (3 with a focus on Australia)	2009—2023 • 2009—2012: 2 publications • 2013—2017: 3 publications • 2018—2023: 7 publications
Planning and disaster	17 (12 with a focus on Australia)	2011—2023 • 2011: 1 publication • 2013—2017: 6 publications • 2018—2023: 10 publications
Disaster management	19 (15 with a focus on Australia)	2013—2023 • 2013—2017: 9 publications • 2018—2023: 10 publications
Grey literature	25 (all Australian)	2010—2022 • 2010—2012: 9 publications • 2013—2017: 9 publications • 2018—2022: 7 publications

More publications exist on housing recovery, and this topic is covered in detail in AHURI report on 'Enhancing housing recovery policy and practice for improving community resilience to future disasters'. Publications on Australian housing policy in general were also considered.

Source: Authors

1.2.1 Housing literature

This project focuses on prevention, preparedness and response, with relevant literature on recovery taken into account.

The main contributions to Australian housing research literature on disaster prevention, preparedness and response have been by Jacobs and Williams (2011) and Williams, Jacobs et al. (2009). These researchers examined state housing authority disaster preparation and response, with international comparisons. These studies highlighted the complexity of tasks that housing agency staff have to deal with when responding to an emergency, and tensions between enabling locally based decisions and maintaining central control. Tensions between human welfare and technocratic demand also confront housing agencies. Responding to these tensions requires minimisation of bureaucratic procedures, and also dissemination of accurate and up-to-date information on tenants and properties. Jacobs and Williams (2009: 190) argue that 'a strong chain of command and (…) a system of procedures and protocols which has been prepared in advance and is widely understood by all the operatives' can reduce the scope for conflicts. This includes, for example, templates and toolkits that have been prepared in advance. Two other important points that the authors make are the importance of retaining institutional knowledge despite high staff turnover, and the question of the consequences of a changing social housing sector in Australia where community housing associations take on a larger role in providing and managing affordable housing stock.

More generally, Australia's multi-level governance of housing influences the outcomes of housing policy, as described in the previous section (Dodson, de Silva et al. 2017; Pawson, Milligan et al. 2020; Troy 2017). The main points made by studies examining Australia's housing governance regimes include the ambiguity of responsibilities between state and territory governments and the Australian Government, which impacts the delivery of housing and housing programs. The fragmentation of responsibilities for social housing and homelessness programs, Indigenous housing and urban policy has a similar impact. It is also argued that housing agencies have mostly been occupied with housing production and program management, and less with policy making and coordination across and between tiers of government. This has led to missed opportunities to improve both housing sector performance and value for money from government expenditure (Dodson, de Silva et al. 2017).

Other work, primarily in the United States (US), has focused on the impact of disasters on residents and the way in which disasters tend to exacerbate pre-disaster social and housing inequalities (Lee and Van Zandt 2019; McCarthy and Friedman 2023). With only limited Australian literature on this topic (Li, Toll et al. 2023 being one exception), literature from the US is relevant for the Australian context, given the similar governance and economic structures. One particular focus in this literature is the difference between renters and homeowners. Studies point out that in the pre-disaster phase 'housing policy needs to give more consideration to increasing— or at least maintaining—the amount of affordable housing stock, as well as improving the physical condition of those types of buildings' (Lee and Van Zandt 2019: 163). Overall though, the literature on housing policy and disaster management is underdeveloped. For example, while decisions about the location of public housing are highly relevant to housing policy, the impact those decisions have on hazard exposure is not discussed in the housing literature.

1.2.2 Planning literature

Settlement or land use planning and its relation to disaster prevention, preparedness and response has been addressed more intensively than housing policy in the Australian research literature, particularly regarding prevention and bushfire (Alexandra 2020; Buxton, Haynes et al. 2011; Gonzalez-Mathiesen and March 2018; March, Nogueira de Moraes et al. 2020; Maund, Maund et al. 2022; McGregor, Parsons et al. 2022; Ruane, Swapan et al. 2020).

Planning has been identified as crucial for reducing disaster risks (AIDR 2020; UNISDR 2005), because it can: inform the prohibition or avoidance of certain land uses in high-risk areas; direct new development to suitable locations; and influence the design of subdivisions, houses and materials, vegetation clearing and access for fire fighters (March, Nogueira de Moraes et al. 2020; Rowley 2023). However, the literature points out that in practice decisions to prohibit certain uses are often not made because of competing priorities, pressure from politics (and developers) or because disaster risk is not a high priority in the decision-making process (Buxton, Haynes et al. 2011; March, Nogueira de Moraes et al. 2020; Maund, Maund et al. 2022; Ruane, Swapan et al. 2020). Planning decisions are based on different objectives and priorities, such as economic, environmental and social goals, so in each decision certain objectives must take precedence. Competing priorities might include, for example, tensions between social and environmental considerations, such as between the social need for disaster victims to rebuild (de Vet & Eriksen 2020) and the environmental need to preserve biodiversity and native vegetation (Kornakova, March et al. 2018). Decisions about prohibiting certain uses or introducing new standards in existing urban areas are considered the most difficult to implement and enforce because a greater number of residents and businesses will be impacted by them, and because existing land uses will seem contradictory to the new regulations (Rowley 2023). For example, prohibiting building on an empty lot between two existing buildings in an area that is at risk of coastal inundation might be considered unreasonable by sections of the community.

The need for policy integration and collaborative approaches across sectors—a key focus of this report—has previously been highlighted in the planning and disaster literature and in policy literature (AIDR 2020; Department of Home Affairs 2018b). However, Ruane, Swapan et al. (2020), examining the integration of bushfire disaster risk reduction with settlement planning in Western Australia, found that while stakeholders were supportive of policy integration, diverging worldviews and sectorial responsibilities presented a challenge. For example, the different objectives of the sectors mean different priorities and different risk tolerances. The fire and emergency sector's main objective is to protect life and property, with a distinctly hierarchical institutional structure that is not conducive to an integrated policy approach. In contrast, the objective of land use planning is to coordinate urban development and the spatial distribution of different land uses according to a set of priorities. Ruane, Swapan et al. (2020) recommend rule-based mechanisms that establish a legal framework for integration to overcome different worldviews and policy goals and achieve better integration.

As implementation and enforcement of land use planning generally happens through local governments, their capacity and willingness to consider natural hazards in settlement planning and policy integration is also relevant, as highlighted in the literature (Kornakova, March et al. 2018; McGregor, Parsons et al. 2022; VBRC 2010). This includes barriers like financial constraints and work overload (AIDR 2020), as well as the lack of bushfire planning expertise in local government planning (Kornakova, March et al. 2018). McGregor, Parsons et al. (2022) investigated the capacity of Australian local governments to plan for natural hazards and concluded that, while many councils have satisfactory or good hazard planning provision, there is great variation in capacity. Therefore, it is unlikely that the 'strategic intent for land use planning as a DRR mechanism will be successful in many places without first addressing the fundamentals of place-based council capacity, planning skills and governance arrangements' (McGregor, Parsons et al. 2022: 264). Nevertheless, it is argued that councils with good hazard planning provisions can be well-positioned to participate in, or even lead, land use planning for disaster risk reduction.

Overall, knowledge and implementation regarding integration remains underdeveloped (Gonzalez-Mathiesen and March 2018; Ruane, Swapan et al. 2020), and clearer legal frameworks and increased interactions between sectors are considered necessary to improve policy integration between land use planning and disaster risk reduction.

1.2.3 Disaster management literature

There is extensive literature on disaster preparedness, response and recovery. As disasters require multi-agency response involving different tiers of government, the coordination of institutional responsibilities is a major theme of disaster management research and grey literature. This body of work includes successive reports and commissions of inquiry into disaster case studies (Australian Government 2020b; Carayannopoulos 2017; Oloruntoba, Sridharan et al. 2018; VBRC 2010). This literature seeks to improve policy and practice, as governments reconsider their approaches to disaster preparation and response following recent failures in coordination and integration. As mentioned previously, housing policy rarely appears in this literature other than in discussions of housing recovery coordination. Integration of disaster management with land use planning (Ruane, Swapan et al. 2020; Serrao-Neumann, Crick et al. 2015) and climate change adaptation (Forino, Von Meding et al. 2018; Howes 2016; Howes, Tangney et al. 2015; Raikes, Smith et al. 2022) are two major areas discussed. Howes, Tangney et al. (2015) highlight two major obstacles to improving integration of disaster response across government in Australia. These are the high workloads and resource constraints in government organisations, and Australia's existing multi-level governance structure. The latter can lead to interjurisdictional disputes, jurisdictional self-interest, mistrust and duplication (Buchtmann, Wise et al. 2023; Howes, Grant-Smith et al. 2012). The authors point out that Australian system of government is not designed for integrated responses across the three tiers of government, but rather for the delivery of specific responsibilities at each level.

The literature shows that coordination of disaster management across levels of government, and with non-government stakeholders, needs to be improved, so as to use scarce public resources efficiently (Howes, Tangney et al. 2015). As an example, the 2019—20 bushfire season exposed significant gaps in responsibilities between state and territory governments and the Australian Government. The Royal Commission into National Disaster Arrangements (Australian Government 2020b) highlighted the complexity of national arrangements for coordinating disaster management, with a large number of frameworks, committees and stakeholders. The first steps in reconsideration of the disaster management environment are becoming evident (Ahmed and Ledger 2023). Overall, the literature points to a good foundation for multi-level and multi-agency coordination in the disaster management sector (Howes, Grant-Smith et al. 2015).

Another growing topic in the disaster literature is an increased focus on building community resilience and reducing community vulnerability in the preparedness phase (Raikes, Smith et al. 2022). The concept of vulnerability is based on an appreciation that everyone can be vulnerable to the impacts of disasters, but that there are conditions that increase an individual or community's susceptibility (Raikes, Smith et al. 2022). Thus, disasters often highlight and exacerbate existing systemic social and economic inequalities. Undertaking post-disaster planning in the pre-disaster phase is a disaster management approach that can take vulnerabilities into account. This approach offers the opportunity to improve preparedness for future disasters by identifying priority areas, such as vulnerable neighbourhoods or regions that need programs to boost their adaptive capacity and services (Serrao-Neumann, Crick et al. 2015). Taking vulnerability into account enables resilience to be built and moves away from hazard-focused policy (Buchtmann, Wise et al. 2023). This is important because it supports more systemic thinking about disaster risk, and because decreasing community risk and vulnerability is as important as managing the actual impact of natural hazards. It also allows stakeholders to identify and respond to issues in the pre-disaster stage which could otherwise be compounded in the response and recovery stages (Ahmed and Ledger 2023). This is where housing agencies may be able to contribute to disaster management, particularly in relation to preparedness and mitigation. The forthcoming AHURI report by Heffernan, Vahanvati et al., *Enhancing housing recovery policy and practice for improving community resilience to future disasters* examines ways of incorporating communities into housing recovery and reconstruction to increase community participation and reduce vulnerability.

1.2.4 Summary

This section has discussed the literature on housing policy, settlement planning and disaster management. The discussion has demonstrated that the housing literature has paid very limited attention to disaster management questions in the Australian context and, at best, moderate attention in the international context. The planning literature has considered disaster management in greater detail, but it remains generally underdeveloped. In contrast, while the disaster management literature has on occasion paid attention to housing, this has largely been focused on impact and recovery rather than preparedness. Across housing policy, planning and disaster management there is also a general weakness in theoretical and conceptual development. This research can therefore play a constructive role in providing a better understanding of the links between housing policy, planning and disaster management.

1.3 Research questions and methods

This research responds to the following overall Inquiry research question:

How can institutional coordination strengthen housing policy and settlement planning in disaster prevention, mitigation, preparedness and response? (Inquiry RQ A)

The project further responds to the research project questions:

- What are Australia's current housing policy and settlement planning institutional and coordination arrangements in relation to disaster prevention, preparedness and response, at the Australian Government and state, territory and local government levels? (Project RQ1)

- What are current gaps and future potential for housing policy and settlement planning institutional and coordination arrangements to improve Australia's disaster prevention, preparedness and response, at the Australian Government and state, territory and local government levels? (Project RQ2)

- What housing policy and settlement planning policy development options, including institutional coordination arrangements and implementation pathways, could improve Australian disaster prevention, preparedness and response, at the Australian Government and state, territory and local levels? (Project RQ3)

The remainder of this report sets out the response to these research questions.

1.3.1 Literature review

The research is based on a literature review of academic and grey literature on housing policy, settlement planning, and disaster prevention, preparedness and response with an emphasis on institutional arrangements, policy coordination frameworks and theoretical and conceptual approaches. This literature review informs the empirical research. The review focuses on literature in the Australian context, though international literature is taken into account where relevant. The project scope did not include a strong focus on learnings from other countries. However, this could be a beneficial topic for further research.

The review of the housing and planning research literature focuses on literature investigating governance and policy integration, and housing and planning policies relevant to disaster preparedness and response. The review of the disaster management literature centres around literature investigating governance, policy integration, coordination of agencies and actors, and disaster policy frameworks relevant to housing and planning. The literature review also incorporates theories of governance and of policy integration and coordination.

Major national and state frameworks for housing policy, settlement planning and disaster preparedness and response released since 2010 are also included in the literature review, contributing to institutional and policy mapping. This includes, for example, the review of formal commissions of inquiry into major disasters since 2010, such as the Royal Commission into National Natural Disaster Arrangements from 2020.

1.3.2 Institutional and policy mapping

The aim of the institutional and policy mapping is to identify and visualise the institutional and policy environment for the coordination of housing policy, settlement planning and disaster preparedness and response. The focus of this mapping exercise is the federal and state level (concentrating on Victoria, New South Wales and Western Australia). However, local government arrangements are considered where relevant. The mapping contributes to the multi-level framing of the overall Inquiry.

The mapping presents the set of institutional arrangements and policy frameworks currently operating in housing policy and settlement planning in relation to disaster preparedness and response at the national scale and for Victoria, New South Wales and Western Australia. It includes the key organisations at federal and state/territory levels. It also includes the principal policy frameworks within the three policy domains of housing policy, settlement planning and disaster preparedness and response.

1.3.3 Case studies and stakeholder interviews

The case study research is based on the institutional and policy mapping exercise in the three case study jurisdictions, and comprises document analysis and stakeholder interviews. Within these states the focus is on their experience of specific hazards. In New South Wales the focus is on flooding events, such as the Hawkesbury-Nepean Valley floods of March 2021 and Lismore floods of 2022. In Victoria, the experience with bushfires, such as the 2009 'Black Saturday' and 2019—20 'Black Summer' is the main focus. In Western Australia, the emphasis is on cyclones, such as Cyclone Seroja in 2021. However, all case studies assess the general integration and coordination of housing policy and settlement planning with disaster prevention, preparedness and response efforts and subsequent integration efforts, rather than only focussing on the respective hazard type. Where relevant, the specific hazard experiences are highlighted in the following analytical chapters.

The project further focuses on the state government level and the integration and coordination between different state agencies. This focus is based on the central responsibility of state government for housing, planning and disaster management, including emergency management plans that incorporate coordination tasks. At the local government level, integration and coordination structures as well as responsibilities are highly variable, while at the federal level responsibilities for housing, planning and disaster management are more high level and coordination between these portfolios is less clear. Relevant coordination and integration efforts and policy and institutional arrangements of the Australian Government and local governments, non-government organisations or the private sector are identified and discussed where relevant. While coordination and partnerships with the private sector, such as with builders, developers and financial institutions are important, they are not a focus of this research. These interrelationships are analysed in two other forthcoming research reports connected to the overarching inquiry: *Enhancing housing recovery policy and practice for improving community resilience to future disasters* by Heffernan, Vahanvati et al. and *Improving coordination of data and actors for disaster-responsive housing and safer communities* by Perugia, Babb et al.

The research involved 27 interviews with key informants in the housing policy, settlement planning and disaster prevention, preparedness and response domains: seven in New South Wales, 10 in Victoria, and 10 in Western Australia. Examples of agencies interviewed are the NSW Reconstruction Authority, Lismore City Council, Emergency Recovery Victoria, Emergency Management Victoria, Department of Families, Fairness and Housing Victoria, Department of Transport and Planning Victoria, Country Fire Authority, Master Builders Association, Department of Fire and Emergency Services WA, Department of Planning, Land and Heritage WA, Department of Communities WA and the Western Australian Local Government Association (WALGA). The interviews centred on the experiences of interviewees, key issues, gaps and opportunities for improvement in integration, coordination and harmonisation. As interviewees came from diverse backgrounds and worked in different areas, the interviews often had different foci. For example, an interviewee working in the housing sector would generally focus on housing recovery topics rather than on planning or emergency management. That said, some interviewee's role overlapped different sectors. This is illustrated in Table 5, which presents the sectors of organisations and the roles of interviewees.

Table 5: Sectors and roles of interviewees

State	Sector of organisation	Role of interviewee
Victoria	Emergency management (3)	Emergency management (2)
	Emergency recovery (3)	Emergency recovery (2)
	Housing (1)	Emergency recovery and housing (2)
	Planning (1)	Emergency management and planning (2)
	Energy, environment and climate action (1)	Planning (1)
	Building industry (1)	Sustainability, planning, housing (1)
WA	Emergency management (3)	Emergency management (1)
	Planning (2)	Emergency management and housing (2)
	Housing (3)	Emergency management and planning (3)
	Local government (1)	Housing (1)
	Regional development (1)	Planning (2)
		Regional development, recovery and planning (1)
NSW	Emergency recovery (5)	Emergency recovery and housing (3)
	Local government (1)	Emergency recovery, housing and planning (1)
	Not-for profit community organisation (1)	Planning (1)
		Community development and housing (1)
		Emergency recovery, prevention and preparedness (1)

Note: Numbers in brackets are the number of interviewees from the sector and with that role profile
Source: Authors

Interviews with informants were undertaken according to national guidelines on the ethical conduct of research and approved via relevant procedures at RMIT University, UNSW and Curtin University. Informants were provided with assurance of confidentiality and anonymity and are referred to in this research by reference codes only. No information identifying informants is included in this report and any information should not be imputed to any individual within the housing, planning or disaster management sectors.

The research focused on housing policy and settlement planning. While infrastructure systems and networks play a vital role in making the built environment work and also in disaster management, they are not a focus of this report. This would be an area for further research. Similarly, the research did not analyse the costs or cost-effectiveness of identified policy actions, which would also be an area for further research.

2. The role of housing and planning in disaster risk reduction

- Settlement planning has a central role in reducing disaster risks.

- The ability of housing to survive to natural hazards needs to be considered more strongly in policy.

- Land use zoning and design controls can avoid urban development in high-risk areas, meaning fewer people and less infrastructure are at risk.

- The built form affects disaster risk. More compact urban development can avoid urban expansion into higher risk areas.

- Tensions between disaster risk reduction outcomes and environmental, social and economic development outcomes influence planning decisions.

- Managed retreat, involving moving housing and settlements away from very high-risk areas, is an important planning tool for disaster risk reduction.

- Decisions for managed retreat are difficult to make and need to be communicated extremely well.

2.1 What is disaster risk reduction in relation to housing and planning?

Disaster risk reduction aims to either avoid the occurrence of a hazard, or decrease the impact of a hazard. As discussed in Chapter 1, housing policy does not have a strong role in disaster risk reduction. The main impact housing policy has on disaster risk reduction lies in decisions about the location of housing, particularly public housing because government decides where that is located. Nevertheless, housing policy can consider the overall resilience of housing to hazard risks, particularly in the context of climate change.

Settlement or land use planning has been identified as crucial for reducing disaster risks (AIDR 2020; UNISDR 2005). This is because it can prohibit or avoid certain land uses, including housing, in high-risk areas, can direct new development to suitable locations and can influence design of subdivisions, housing design and materials, vegetation clearing and access for fire fighters (March, Nogueira de Moraes et al. 2020; Rowley 2023). All these measures mean that less infrastructure and fewer people are impacted by a hazard. Planning can also support the protection of ecosystems, which can reduce the impact of a hazard. Natural ecosystems can serve as buffers against disasters. For example, wetlands or forests can help avoid landslides or flooding.

The need to integrate disaster risk reduction into settlement planning, including mobility, economic development and environmental strategies, is thus acknowledged in the research literature and the planning profession (March, Nogueira de Moraes et al. 2020; PIA 2015). However, as the literature emphasises, prohibition of certain uses in high-risk areas is often not undertaken. Reasons often cited in the literature are: competing priorities, political and developer pressures, planning not being employed to manage natural hazard risks, and disaster risk not being a central priority of the decision-making process (Buxton, Haynes et al. 2011; March, Nogueira de Moraes et al. 2020; Maund, Maund et al. 2022; Ruane, Swapan et al. 2020).

Planning decisions are, of course, based on different objectives and priorities—such as economic, environmental and social goals. In each decision, certain objectives must take precedence over others. Unless there is regulation that requires the prioritisation of particular objectives, decisions will be made based on consideration of all aspects, weighing up different consequences. Competing priorities might include tensions between social, risk and environmental considerations. An example is a situation where disaster victims want to rebuild but an overall risk assessment suggests that not rebuilding could be the better long-term option (de Vet and Eriksen 2020). Another example is where removing vegetation could decrease fire hazard risk, but would negatively impact on the preservation of biodiversity and native vegetation (Kornakova, March et al. 2018).

Decision-making and priorities also differ between new and existing development in risk-prone areas. Decisions about prohibiting certain land uses or introducing new standards in existing areas can be very difficult to implement and enforce. This is because more residents and businesses will be impacted by these decisions, and existing land uses may contradict the new regulations (Rowley 2023). For example, prohibiting building on an empty lot between two existing buildings in an area at risk of coastal inundation might be considered unreasonable by sections of the community.

Overall, disaster risk reduction in relation to housing and planning is largely about avoiding certain land uses in certain areas (such as residential development in high-risk areas), and potentially supporting other land uses in those areas (such as protection of ecosystems).

The next sections provide more detail about the way in which planning and housing policy can contribute to disaster risk reduction, how integration between settlement planning and disaster risk reduction currently works, and what this means for policy development.

2.2 Land use decisions

Decisions about land uses in areas where natural hazards occur can influence the risk of disasters, and the exposure to that risk. From a disaster or hazard management point of view, many areas earmarked for development would be better left undeveloped, and it would be better if existing or so-called 'legacy settlements' were not developed further (interviewees VIC-KI 5, WA-KI 1, WA-KI 3). However, as also acknowledged by staff of hazard agencies, it is not possible to reverse or proscribe development in all areas of hazard risk. For example, approximately 90 per cent of Western Australia is identified as bushfire-prone (interviewees WA-KI 3, WA-KI 5, WA-KI 6). Furthermore, risk areas are often sought after for tourism and leisure due to their proximity to nature. In other words, people come to these areas precisely because they are natural areas away from urban development. This means that the risk from a hazard, such as bushfire or flooding, could be higher, and escape routes fewer. Thus, when considering economic and social outcomes, decisions to prohibit further development or to retreat are difficult to make.

Integration of the work of hazard and planning agencies in relation to land use planning and disaster risk reduction was considered as evolving and improving by interviewees.

> On both sides there's a lot of acknowledgement that the two should talk to each other but (…)
> I think there's still a lot to go in terms of actual integration (…) Both sectors speak different
> languages. (interviewee VIC-KI 5)

There is an acknowledgement that greater integration and awareness are still necessary, but that these have improved. For example, there are clearer requirements for taking disaster risk into account when planning, and partly due to the increased occurrence and scale of recent disasters. Overall, awareness of the need to improve planning processes and decisions regarding natural hazards has increased (interviewees VIC-KI 7, WA-KI 2, WA-KI 8). However, policies for adaptation to and mitigation of climate change were mentioned as still evolving, in the context of planning and the disaster management cycle (interviewees VIC-KI 2, WA-KI 2).

Regard the integration of land use decisions and disaster risk reduction, there are regulations that mandate the consideration of hazard risks in planning decisions, such as the *Western Australian State Planning Policy 3.4 - Natural hazards and disasters* which aims to 'include planning for natural disasters as a fundamental element in the preparation of all statutory and non-statutory planning documents'. Regulations for bushfire are particularly well established and in most states fire agencies are referral agencies for new development in bushfire-prone areas. This has an impact on land use decisions. Interviewees stated that fire agencies' recommendations are generally acted upon (interviewees VIC-KI 5, WA-KI 3). Furthermore, bushfire protection measures are understood by the sector and well embedded by now, although some planning proposals still lack a sufficient consideration of bushfire risk (interviewee VIC-KI 5).

For other hazards, such as flooding or coastal erosion, regulations are less developed or clearly defined. For cyclones and earthquakes, regulations are mostly about building standards rather than land use decisions, as their potential impacts are geographically broad and not tied to specific high-risk areas. In Victoria, the consideration of climate change impacts is also mandated in the Victoria Planning Provisions (VPPs), including changes to hazards (Clause 13.01-1S on Natural Hazards and climate change).

Where specified in the regulations, planning authorities need to give due regard to natural hazards, whether there are referral agencies or not. However, giving 'due regard' to natural hazards is considered insufficient by some interviewees, because it refers to considering the risks of natural hazards together with all other planning aspects. In the view of some interviewees, the need for consideration of natural hazards should be more binding, as is the case for bushfire planning (interviewee WA-KI 1). Interviewees pointed to Queensland where regulations are stronger in this regard. On the other hand, another interviewee pointed out that the specific attention to fire in planning regulations is already highly unusual, because generally different considerations need to be weighed against each other and a balanced decision made (interviewee VIC-KI 7). The reason for the specific emphasis on bushfire risk lies in its high-risk to life and property. The question thus arises about whether other natural hazards need to be treated the same way.

The requirement to consider natural hazards as a priority would also enable planners to make more 'courageous' decisions to limit development in risky areas. Land use decisions are often difficult as there can be a tension between good outcomes for disaster risk reduction, and those for economic outcomes (such as land for businesses), social outcomes (such as land for housing) and also environmental outcomes (such as retention of native vegetation) (interviewee WA-KI 3). At present, because of pressure for development to match population growth and support economic growth and housing supply, decisions that refuse or limit development can be difficult to make and communicate. This tension is exacerbated by the existing context where planning is often depicted as a barrier to new residential or industrial development. Clearer rules for prioritisation of planning considerations could help in this regard.

One interviewee from a hazard agency suggested it may be beneficial for emergency management or hazard agencies to develop in-house planning policies so that consistent responses to planning proposals could be given (interviewee WA-KI 3). These policies could also be referenced by planning agencies when preparing plans. Bringing together multi-disciplinary teams was also seen as important. An interviewee at a fire agency mentioned the importance of having planners, urban designers and emergency management personnel in the team that comments on planning proposals. This was seen as necessary to support all relevant staff to understand the planning system and give impactful and useful advice (interviewee VIC-KI 5). Having staff with an emergency or disaster management background in planning and housing agencies was also seen as important, as it supports planners and housing staff to understand how disaster management works.

In relation to planning for disaster risk reduction, one interviewee suggested that decisions on land uses and mitigations are often fragmented and are 'individual decisions by individual authorities in the absence of a strategic [hazard-risk aware] land use plan' (interviewee VIC-KI 1). These individual authorities include planning agencies, water catchment authorities and emergency management agencies. This interviewee suggested that developing 'a township risk strategy that is tenure blind, all hazards, all emergencies focused' would be useful to improve land use decisions which relate disaster risk.

A comprehensive disaster risk strategy is sometimes prepared after a disaster when a community affected becomes conscious of risk. However, this may not be the best time to take a strategic approach as the community may be traumatised and living in temporary accommodation some distance away from the town. Introducing a requirement to prepare integrated disaster risk land use plans could therefore be a useful policy reform. The approach could be similar to the disaster adaptation plans mentioned by the NSW Independent Flood Inquiry of 2022. These plans are now being implemented in areas such as the Hawkesbury-Nepean Valley (NSW Government 2024a).

The ability of smaller councils to develop disaster risk land use plans, and keep them up to date with changing risk assessments, would need to be considered. As one interviewee from Western Australia mentioned, smaller local councils already struggle to renew their planning frameworks every five years (interviewee WA-KI 4). For this reason, the Western Australian requirement to renew planning frameworks every 10 years is proposed to be reviewed. However in the context of disaster risk mapping, 10 years is a very long time, and plans would quickly be out of date. If the timeline for renewing planning frameworks is changed, it may therefore be necessary to require updates to frameworks as new insights into hazard risks emerge.

Interviewees also noted a lack of data sharing between government agencies, as well as inconsistent use of data and databases. They thought it would be beneficial if more data were publicly available—and if that data were communicated more clearly. This will be covered in more detail in Chapter 3.2.

2.3 Managed retreat and buy-back schemes

Managed retreat, also called 'planned retreat', 'strategic relocation' or 'resettlement', refers to relocating households or whole settlements from high-risk to lower risk areas, either pre-emptively or after a disaster (Forsyth and Peiser 2021). The Canadian Taskforce on Flood Insurance and Relocation (2022: 10-11) defines managed retreat as 'the purposeful movement of people, buildings and infrastructure out of areas where there is a high likelihood of incurring severe and/or repetitive damage as a result of a hazard'. As the name suggests, buy-back schemes offer to buy back land in high-risk areas. However, the management of resettlement is often not included in these schemes.

Managed retreat and buy-back schemes are connected to settlement planning, as they involve decisions and regulations about land use. This includes decisions and regulations about where—and where not to—rebuild. It also includes decisions about where and when to start removing infrastructure and buildings, and also where to relocate communities, if whole communities are to be resettled. These schemes are disaster risk reduction measures because they remove infrastructure and people from high-risk areas (Canadian Taskforce on Flood Insurance and Relocation 2022). Natural hazards for which managed retreat and buy-back is considered include flooding, coastal erosion and sea level rise, earthquakes, drought and heat (Young and Essex 2020). For cyclones and bushfires, retreat is considered less often, due to their less predictable and less recurrent geographic impact.

Due to the psychological and emotional impact on households who may lose their communities, attachment to place and cultural heritage (Stanley, Heffernan et al. 2024), managed retreat is often politically controversial and rarely a preferred option (Hino, Field et al. 2017). In order to maintain community cohesion, moving whole settlements, or at least a large part of a community, to the same area is increasingly attempted (Cruwys, Macleod et al. 2023). As the process is an 'inherently social activity' (Vanclay 2017: 18), it is vital that decisions are discussed and made at community level, and not just seen as a technical planning exercise.

Managed retreat is most commonly considered or implemented only after a disaster has struck. Reasons for this include greater risk awareness and re-evaluation of risk after a disaster. Other reasons include the need for impacted households to decide about rebuilding or relocation, the need for investment in (re-)construction, and the often heightened political awareness (Gibbs 2016; Hino, Field et al. 2017). However, time pressure is high in recovery settings, which means that it is particularly difficult to aim to resettle whole communities rather than buy back individual lots.

Discussing and enabling managed retreat pre-disaster has the advantage that options can be discussed with more time and community input and that there is more time to find suitable land (Kreller and Graham 2018). However, risk awareness and willingness to move might be lower, and political interest in discussing such a contentious issue might also be low.

Planners contribute to, and help implement, decisions about the suitability of areas for development and re-occupation. Planning processes also identify suitable land for resettlement outside impacted areas and prepare and approve subdivisions to enable resettlement. These processes can be difficult in post-disaster situations because relocation needs to be organised quickly, and land close to existing communities and of sufficient size may not be easy to find (interviewee NSW-KI6).

Planning regulations themselves can hinder the timely preparation of land. For example in Grantham, a small town in Queensland of 370 residents, populations of flood-affected areas were resettled after flash floods in 2010 and 2011. To achieve this, the Queensland Government streamlined planning regulations by designating Grantham as a reconstruction area. This enabled local government to conclude the planning and permit process in four months, rather than the usual two to three years. The designation of resettlement land also had to be changed to allow residential development (Sipe and Vella 2014). This shows that streamlining of planning processes can be necessary post-disaster when seeking to achieve managed retreat in a short timeframe.

To support the resettlement of communities before or after a disaster, planners could develop a database of suitable land. However, with current growth pressures and the desire for further urban development, it may be difficult to reserve land for resettlement. Another option could be the introduction of policies for streamlined post-disaster resettlement planning. If this approach were adopted, it would be necessary to ensure that basic planning requirements are not omitted to speed up a resettlement process. It would also be important to ensure that resettlement does not lead to more dispersed urban growth into natural areas, further changing the natural environment and potentially increasing hazard risk (Forsyth and Peiser 2021). Finally, it may be valuable to develop an agreed approach to buy-backs so the process does not need to be re-established for every new disaster (interviewees VIC-KI 2, WA-KI 1). While every disaster and every high-risk area are different, the introduction of a general framework could help with setting up buy-back schemes more quickly following disasters.

Victoria and Western Australia have used buy-back schemes only on an ad-hoc basis for individual disasters. In New South Wales and Queensland, state governments have committed to a Resilient Homes Fund in cooperation with the Australian Government. The fund provides for retrofitting and raising homes, as well as for buy-back offers for homes that are of risk of severe and frequent flooding (see text box).

The Resilient Land and Resilient Homes programs in New South Wales

In response to the Northern Rivers floods in 2022, the NSW Reconstruction Authority implemented two programs, Resilient Land and Resilient Homes, to deliver better housing outcomes for residents.

The Resilient Land program aimed to provide safer places for people to live across the Northern Rivers by providing new home and land options, as well as support to relocate existing homes. Participants in the Resilient Homes program who accepted a buy-back were given the first opportunity to purchase new land and homes before packages were put on the open market.

Stakeholders in New South Wales, although generally supportive of the buy-back concept, have highlighted numerous shortcomings in the implementation of the 2022 scheme (NSW-KI3, NSW-KI5). These shortcomings include the fact that the program is still incomplete as of 2024, that there were insufficient community consultation and communication, as well as inconsistencies in buy-back and retrofitting processes. Stakeholders in Lismore pointed out another limitation. They note the scheme failed to identify new land for buy-back, instead focusing on areas previously earmarked by Lismore City Council (NSW-KI3). While there have been instances of buy-backs among Lismore residents, concerns have been expressed about inconsistent processes and communications. It has been noted that communications were outsourced to Service NSW, resulting in frustration for flood-affected residents who received unclear information.

Stakeholders also raised concerns about a lack of transparent criteria and options for relocation, which it is believed led to population loss and neighbourhood fragmentation. Settlement planning stakeholders mentioned the importance of enabling clustered relocations, with community members relocating within specific streets or suburbs to preserve local social connections. This approach is outlined in the Lismore Growth and Realignment Strategy 2022. The lack of realisation of such strategies has exacerbated the issue of relocation 'checker boarding' within affected areas (NSW-KI 3). Another issue raised by stakeholders was the task of facilitating the transition of individuals from the 'lowest value real estate areas and provide new housing for them at a price point that's affordable' (NSW-KI 6).

As a result of these issues, settlement planning stakeholders advocated for more streamlined processes for relocating residents, such as direct land swaps, to ensure residents could make informed decisions without added stress and financial loss. As summarised by a stakeholder from New South Wales:

> *What we advocated for from the beginning was a direct land swap. If you're going to buy [properties] back, just give them a piece of land here, there or somewhere in the same area and then through a concierge service facilitate them picking up and moving or whatever the options are (…) So, people get the right outcomes, and people aren't making decisions under stress and then getting ripped off or spending the money of [buy-backs] (NSW-KI 3).*

Despite these challenges, stakeholders emphasised the importance of proactively relocating residents from flood-prone areas.

Preparing for managed retreat can include identifying areas where, after a disaster or at point in time (such as when coastal erosion has reached a certain point), no development will be allowed. Some stakeholders did not support this strategy, believing it could impact the social cohesion of communities and insurability of buildings. Others believed that such policies would be useful so as to be better prepared, reduce disaster risk, provide certainty to communities and integrate managed retreat within settlement planning (interviewees VIC-KI 2, VIC-KI 4, WA-KI 1). For example, Suncorp Group and Natural Hazards Research Australia (2023: 22-23) suggest development of 'a national map of priority natural hazard risks and exposures – reflecting an agreed view across all levels of government about the location of risks' and updating the map over the longer term 'to indicate which zones should be subject to future (…) resilience upgrades funding, or funding for assisted relocations'. Overall, there is agreement that buy-back policies or managed retreat should not be done on an ad-hoc basis but be based on a pre-defined framework.

2.4 Built form and housing policy

The form of buildings can influence disaster risk. For example, more compact development with higher densities, particularly in metropolitan areas, can reduce growth into peri-urban areas which are often at higher bushfire risk (interviewee WA-KI 1). Limiting urban expansion would mean that fewer people and buildings are exposed to disaster risk. The NSW Independent Flood Inquiry 2022 recommended 'prioritis[ing] and incentivis[ing] new development in safe areas, noting this will often mean encouraging first home buyers to choose homes in appropriate density developments, including high-rise developments, through siting such new developments in locations with desirable attributes (near train stations, parkland, shopping centres, etc.)' (O'Kane and Fuller 2022: 293).

Built form also influences the location of residential development, its proximity to risk areas and the way in which natural hazards (such as fire or flood) spread. In addition, it can affect the impact of extreme heat and and the preconditions for evacuation routes. To help manage risk, particularly in existing settlements that are at high-risk, resilience programs could be developed where planners consider built form and design place-based strategies (interviewee VIC-KI 2). For new developments, hazard risks should be considered in the development of built form from the outset.

Decisions about the location of public and community housing can also reduce disaster risk. For example, some community housing providers incorporate asset risk assessments into their consideration of development locations and decide not to build if natural hazard risks are too high. These providers believe they have a responsibility for their residents, and also consider the risk to their investments (personal communication from Community Housing Provider). However, these considerations are not necessarily fundamental when housing policies are decided. For example, Victoria's Housing Statement is largely focused on supply and does not mention disaster risk or climate change adaptation. However, it seems that the impact of climate change and disasters on housing security may be considered on a national level in the forthcoming National Housing and Homelessness Plan (see Section 1.1.2). Overall, a holistic strategy to improve the resilience of housing to all natural hazards in the face of climate change is needed at state and territory government level.

2.5 Policy development implications

Overall, there is a need to better take into account the impact of natural hazards and the risk of disaster when planning for urban expansion. Clearer regulations acknowledging the need for planning for disaster risk reduction would assist planners in making firmer decisions about locations to avoid building upon. Planners, as well as politicians and the community, need a good understanding of disaster risks to support decision making. For this it is necessary to improve databases, decide which databases and modelling to use (i.e. to use the same data), and improve data sharing between government agencies. It is also important to make the data available and communicate their meaning to the public and particularly to impacted communities (see also Chapter 3).

While there is no strong role for housing policy in disaster risk reduction, there is still a need for housing policy to consider disaster risk more clearly. For example, Victoria's current Housing Statement does not include a reference to disaster risk or the impacts of climate change, and focuses largely on housing supply. While housing supply is a significant issue in Australia, the resilience of housing to natural hazards and climate change impacts is also crucial. State and territory government strategies to improve the resilience of housing to all natural hazards should be developed and integrated into housing policy. These strategies should include consideration of the location of public, community and private housing.

The interviews showed there needs to be greater integration between the work of hazard and planning agencies. There was, however, recognition that integration has improved in recent years. There have also been improvements to planning for bushfire risk and work on including hazard risk more clearly in planning decisions. These improvements are seen to be driven by insights from Royal Commissions and other inquiries, as well as the increased occurrence and scale of disasters.

Specific policy development opportunities for settlement planning include:

- Improving the integration of planning and natural hazard objectives by:

  - Requiring the development of comprehensive and strategic hazard risk land use plans, potentially including designating areas considered unsuitable for urban development. These plans would need to be updated regularly to incorporate evolving climate change and hazard risk predictions.

  - Developing state hazard planning policies. Hazard agencies could develop their own planning policies, which could then be considered by planners in the development of land use and settlement plans. This would ensure consistent responses by hazard agencies in their comments on planning proposals.

  - Providing clearer rules about prioritisation of disaster risk in planning decisions. For example, state planning policies could emphasise the need to take all hazard risks into account, as has already happened regarding bushfire.

  - Encouraging multi-disciplinary teams within state agencies that work across hazard, emergency management, planning and housing areas.

- Developing policies and frameworks for managed retreat and buy-back schemes which can be used pre- and post-disaster. This includes adopting some of the approaches used by the Resilient Homes Fund in New South Wales and Queensland, acknowledging the problems identified with these programs. It could also include:

  - Clarifying the ways in which planning processes can be streamlined post-disaster —without omitting important steps or supporting population dispersal.

  - Developing a database of suitable resettlement land.

  - Developing risk maps to identify land that is 'due for retreat'.

  - Identifying how to include the community in decision making, particularly post-disaster.

- Designing place-based strategies regarding urban form to manage risk in settlements. These could be developed by local government planners as part of resilience programs, particularly in settlements that are at high-risk.

- Avoiding continued growth on the fringes of metropolitan areas by supporting more compact urban development.

3. The role of housing and planning in disaster preparedness

- The preparedness phase of the disaster management cycle is an ongoing process of improving disaster response, including developing strategies, plans and procedures.

- In housing policy, disaster preparedness includes developing emergency accommodation processes, readying housing stock and providing information for public housing residents.

- In settlement planning, disaster preparedness includes assessing risk and creating development overlays and building standards.

- Formal interaction between agencies and stakeholders is driven by emergency management plans. These plans set out the roles of different organisations during emergencies.

- Risk assessment could be enhanced through improved data sharing; more consistent and frequently updated data; and cooperation between government and the insurance sector.

- Publishing and communicating risk assessments could also support improved decision-making and make communities more aware of risks.

- Community support for more rigorous building standards could be strengthened through better communication; introduction of some flexibility; and incentives like decreased insurance premiums.

- Within government, there is a tension between disaster preparedness and efficient use of resources. This impacts areas including planning for road networks and housing markets.

3.1 What is disaster preparedness in relation to housing and planning?

The preparedness phase of the disaster management cycle aims to increase the resources and knowledge needed to lessen vulnerability, enhance responses to natural hazards, and minimise direct and indirect costs and other losses. This phase, together with the prevention phase, is of particular importance because issues that are not identified pre-disaster may be compounded in the response and recovery phases (Ahmed and Ledger 2023).

A large part of housing agencies' disaster role during this phase focuses on ensuring the preparedness of public assets. This includes ensuring compliance with building standards and making buildings resilient against natural hazards like heatwaves. Housing agencies are also responsible for supporting the preparedness of public housing residents, for example by providing information, running drills, creating information channels and developing decision-making structures for response and recovery (McCarthy and Friedman 2023). Furthermore, housing agencies can promote the need for residents to have adequate insurance cover, in cooperation with disaster management agencies, insurance providers and financial institutions.

Jacobs and Williams (2011: 190) examined state housing authority disaster preparation and response, and recommended developing 'a strong chain of command and (…) a system of procedures and protocols which has been prepared in advance and is widely understood by all the operatives'. This includes, for example, preparing templates and toolkits. Furthermore, establishing relationships with building contractors, owners of hotels, motels and caravan sites and other relevant stakeholders is considered beneficial. The retention of institutional knowledge, despite high turnover of staff, is also important.

Disaster preparedness is supported by improving the physical conditions of existing and new public and affordable housing stock, as tenure type and socio-economic status influences vulnerability (Lee and Van Zandt 2019). Taking vulnerability into account in disaster preparedness enables building resilience and moves away from a hazard-focused policy approach (Buchtmann, Wise et al. 2023). This is where housing agencies can particularly contribute to disaster management. For example, preparedness could be improved by identifying priority areas, such as vulnerable neighbourhoods, that need programs and services to boost their capacity to adapt to disaster risks (Serrao-Neumann, Crick et al. 2015).

More generally, the literature notes that in recent decades Australian housing agencies have been mostly occupied with housing production and program management and less with policy making involving innovation and coordination (Dodson, de Silva et al. 2017). Disaster preparedness is not usually considered a core concern of housing agencies. As such, disaster preparedness is rarely incorporated into policy development.

The role of settlement planning in disaster preparedness includes making decisions about risk assessment and subsequent development overlays and preparing design controls and building standards. It also includes identifying locations for critical response infrastructure like emergency shelters and evacuation routes (AIDR 2020). While building codes are not strictly the responsibility of planners, their decisions about zoning and overlays (such as Bushfire Management Overlays and Bushfire Attack Level assessments) do influence where building codes and standards are applied. Building standards are a particularly important tool for managing risk in existing areas. As settlement planning focuses on the longer term, has to anticipate future challenges, such as climate change projections and their impact on weather patterns or sea levels. As these changes often affect existing development, decisions about prohibiting certain uses or introducing new standards need to be made. Implementation and enforcement in existing urban areas can be more challenging due to the impact on communities and their resistance (Rowley 2023).

3.2 Risk assessment, data and public awareness

Risk assessments, including climate change projections and assessments of flooding and bushfire risk, are an essential disaster preparedness tool. Depending on the level of risk identified in an assessment, development can be prohibited entirely, or allowed with additional requirements or restrictions. One way to enact these restrictions is through an overlay. Examples of overlays in Victoria include Bushfire Management Overlays (BMO) and flood overlays like Special Building Overlays (SBO) and Land Subject to Inundation Overlays (LSIO). In areas with a BMO or areas that are mapped as bushfire-prone, building applications need to be assessed for their Bushfire Attack Level (BAL). There are six BAL categories, based on the risk of exposure to ember attack, radiant heat and direct flame. Buildings need to adhere to certain planning and building standards based on their BAL, as specified in Australian Standard AS 3959:2018 *Construction of buildings in bushfire prone areas*. In areas with a BMO, additional planning requirements for bushfire protection need to be met, such as defendable space, water supply, access and ongoing vegetation management. Overlays and their specific functions differ between different states.

There are reservations about these overlays and the corresponding requirements. One issue mentioned in interviews was that BALs are not easily understood by residents, often rendering their acceptance low. However, awareness of and information about BAL assessments has improved in recent years. Maps and tools that can be used to understand property risk levels are also more readily available. Nonetheless, as noted in interviews, the assessment process is not easy to understand and residents may feel that decisions about the BAL of their property are arbitrary, particularly if assessment criteria change.

> *For example, in some areas, local government going out and engaging a private contractor consultant to come in and do the BAL rating, and then once they've done that, they provide that to CFA and CFA says, we don't agree with it. That should not be something that happens, but it does. (interviewee VIC-KI 1)*

In addition, differences exist in application and approval process between states, which supports a sense of arbitrariness (de Vet and Eriksen 2020). Like BAL assessments, other overlays and planning requirements may not be easily understood by residents.

There are other tensions about the assessment of disaster-prone areas being either too cautious or not cautious enough. For example, the assessment of bushfire-prone areas in Western Australia is currently under review, as the assessment criteria are generally thought to be too cautious—or at least insufficiently fine-grained. For example, areas close to a small urban park might have been assessed as having the same risk as a property next to a state forest (interviewee WA-KI 5). Similarly, recent floodings in Western Sydney and Melbourne have shown that floodplain overlays may not have been cautious enough. There are two key reasons for poor decisions in risk assessment. One is the previously discussed growth or development pressure, where decisions may be made in favour of development over disaster risk. The other reason is poor availability of data.

Interviewees noted a lack of data sharing between government agencies, a lack of knowledge about available data and inconsistent use of data (interviewees VIC-KI 1, VIC-KI 4, VIC-KI 10, WA-KI 5, WA-KI 8).

> *There isn't a collective cultural consciousness about the information that is readily available and has been executed. That is a major issue, that we [in state government] don't have standardised access to the same information, because we don't even know…We know what we should have, but we don't know what we [as state government] actually have. (interviewee VIC-KI 6)*

Interviewees also believed it would be beneficial if more data about risk were publicly available—and if that data were communicated more clearly to improve awareness and understanding of risks. (The report on the *Improving coordination of data and actors for disaster-responsive housing and safer communities* looks at data coordination in more detail).

Data availability and responsibility are different for bushfires and floods—the two main natural hazards relevant to land use planning. Bushfire mapping and risk identification are largely coordinated at the state government level in Western Australia, Victoria and New South Wales. As previously explained, in these states land is identified as bushfire-prone and bushfire management overlays are determined. In contrast, flood mapping in Victoria and New South Wales is largely undertaken by catchment authorities or local councils, rather than at state government level. In Western Australia, the state government's Department of Water and Environmental Regulation produces floodplain mapping.

An important issue here is that there is no standardised process assessing for flood risk —and different projections can be used. For example, the impact of climate change on flooding can be judged differently in different assessments (Insurance Council of Australia 2022). Also, some (mostly older) maps are largely based on historical data and therefore do not take the impact of climate change into account. There is no consistent assessment of risk if different underlying assumptions are used and this in turn impacts on the consistency and coherence of planning and land use decisions. Interviewees also mentioned that integration of flood risk mapping into planning schemes can take a long time. A risk assessment may therefore be outdated by time it is integrated into planning controls, because of accelerating changes in hazard risk due to climate change and ongoing urban development.

> There's a range of what's called flood studies going on, they take several years to conduct and then the idea is that they inform the planning laws and the planning laws are updated, but that process is very long-winded, and there's always a tussle between state and local government about the risk of not doing something about these new studies or doing something about them. (interviewee VIC-KI 4)

Mapping flood risks and integrating mapping into planning is, however, evolving in response to the large floods in many Australian states in recent years.

Having consistent data and risk assumptions is crucial for making comparable and evidence-based decisions. As one interviewee mentioned, many land use planning decisions are based on relative risk assumptions about the likelihood of flooding and the costs or consequences of preventing urban development based on past observations. However, simulations which model bushfire behaviour or other natural hazards would be more suitable instruments, as they can embed climate change projections and specific geographic scenarios more easily (interviewee VIC-KI 2).

To support the use of consistent risk assumptions and underlying data, it might be necessary for either state and territory governments or the Australian Government to provide databases that can be used in government risk assessments and made publicly available. As one interviewee stated, there is a need for an agreed federal or state government climate change model 'to adequately and reasonably inform what the collective risk profiles of people in a flood overlay are' (interviewee VIC-KI 6). There is also a need for agreed risk acceptance. Interviewees emphasised the need for a centralised repository of all spatial data, which is free for all government agencies to use. More consistent risk assessments might reduce overall time taken for planning decisions because appeals based on differing risk assessments would become less common.

Interviewees generally cited the lack of public information and public awareness of risks as a crucial issue. However, some interviewees referred to the risk that properties might lose value and require higher insurance premiums if risk assessments are made public—or that residents or policy makers might perceive this as likely (interviewee VIC-KI 2). Another interviewee thought it unlikely that the publication of data would influence insurance rates, as insurance companies are already aware of risks via their own modelling (interviewee WA-KI 1). There remains, however, a risk of properties decreasing in value. The consideration here might be about what is considered more important—increasing understanding of the scale of risk to properties versus upholding the value of properties. In other words, how does society benefit from withholding risk assessment data?

The most common position in the disaster risk sector is that risk assessments need to be made public.

> I think sometimes the best way to do that is by actually presenting the modelling directly to the community and (…) regardless of how the political risk (is) with presenting that data, I think it needs to be presented to bring the community along, to start to have informed conversations. (interviewee VIC-KI 2)

With recent flooding events and questions by property owners about why they were allowed to build in flood prone areas, the need for public availability of information seems strong (interviewee VIC-KI 1). Interviewees suggested different ways of making data available, such as requiring real estate agents to provide information. Others suggested making maps publicly available or providing star ratings similar to energy efficiency ratings for houses (interviewees VIC-KI 4, WA-KI 1). Some interviewees referred to Queensland where some disaster risk maps are publicly available, particularly for flooding and repeat events (Queensland Reconstruction Authority 2024).

Insurance companies are another important set of players in risk assessment and data sharing. Interviewees mentioned that it would be highly beneficial for state and territory government actors to understand the risk profiles and assessments used by insurance companies, and to integrate them into government work (interviewee VIC-KI 6). This would help with development a shared understanding of risks. Enabling insurance policy holders to understand their risk profiles and assessments would also help in a more practical way, as it could enable homeowners to build their homes (back) to a standard that would reduce their insurance premiums. For example, there could be an option for improvements to the fire resilience of a building to decrease insurance premiums (see also Section 3.3) (interviewees VIC-KI 2, VIC-KI 4).

Sharing information could also assist with the harmonisation of risk profiles within the insurance industry. There may currently be large disparities in the insurance premium charged by different companies for the same property, depending on the assumptions and level of risk aversion built into risk assessments (interviewee VIC-KI 6). This harmonisation process would need to be negotiated and coordinated by the Australian Government.

3.3 Building standards and insurance cover

Building standards and codes are part of disaster preparedness and risk reduction as they influence the way in which buildings withstand natural hazards. In the context of bushfires, building codes can require the use of shutters and less flammable materials, as well as appropriate setbacks between buildings and vegetation. Raising buildings, and power points inside buildings, are measures which can be required in the context of flooding. For cyclones, requiring specific roof cladding and window shutters can make buildings more resistant to cyclone, while there are seismic designs for use in earthquake prone areas.

Building standards are regulated by the Building Code of Australia (BCA), published as Volumes 1 and 2 of the National Construction Code (NCC). The BCA contains technical provisions for the design and construction of buildings and other structures. Topic areas include structural adequacy, fire resistance, access and egress, energy efficiency, and provisions for the health and amenity of occupants (Australian Building Codes Board 2022). While building standards are not strictly within the remit of planning or housing policy, risk assessments undertaken for settlement planning nevertheless influence the standards which need be adhered to. Housing agencies need to observe building standards for their public housing assets.

Because greater resilience to hazards often adds to the cost of a building, there is a tension between cost and safety when setting building standards. Increased costs can create resistance to new building standards, particularly if the need for them or their advantages are not immediately obvious or if they change often (de Vet and Eriksen 2020, interviewee VIC-KI 1). Even though standards have to be legally enforced, it is important to also communicate the reasons for standards and their impact on risk so that people understand why they are necessary.

I think it's about engaging more with communities to actually explain these things to them in a way that they actually understand them and can see the benefit to them of doing it. (…) A lot of people simply don't understand it. That's the biggest problem. (interviewee VIC-KI 1)

Furthermore, residents of existing buildings need to be aware of standards to understand the impacts on insurance cover and building costs, should they need to rebuild after a disaster. As they implement standards and need to explain them to their customers, it is also vital to educate builders about the advantages of new standards (interviewee VIC-KI 11). If builders uphold and explain requirements, their implementation will be more effective. While standardised products can potentially decrease costs, due to economies of scale, there also need to be opportunities for alternate building solutions and products. This avoids over-reliance on products that may be in high demand after a disaster and offers owners the opportunity to develop their own designs. Currently, developing your own design is possible, but involves a considerable amount of work and can make building permits and insurance assessments more difficult (de Vet and Eriksen 2020). Therefore, options that achieve better resilience through building standards should be considered.

Education regarding heat resistant and energy efficient housing may be particularly important. While the need for resilience against hazards that can destroy homes is easily comprehensible, the need for resilience against extreme heat events is less obvious because these events do not necessarily cause building damage. However, extreme heat can be life threatening, and with the added risk of power outages during heat events, it is necessary to build houses that stay sufficiently cool without air-conditioning (Committee for Sydney 2024). To drive change, legislation might be necessary (interviewee WA-KI 1), however better education and information are vital to improve acceptance of building requirements.

As mentioned above, insurance premiums are related to building standards. This is because a building's characteristics may improve its resilience against hazards, increasing the likelihood the building will withstand a disaster and require fewer repairs. It has been suggested that insurance companies could support preparedness and improve building resilience by lowering insurance premiums for customers who build or retrofit above minimum standards (interviewees VIC-KI 2, WA-KI 4). Retrofitting is of particular importance because existing houses do not need to be adapted to new building standards, unless changes are made that require a planning permit. As retrofitting decreases the risk of buildings being destroyed or damaged, retrofits would be in the interest of insurance companies. Retrofitting would also be in the interest of government because it often acts as the 'insurer of last resort', providing rebuilding support to owners of underinsured or uninsured properties.

Providing government subsidies to homeowners for the retrofitting of houses would have equity implications. However, while subsidies would benefit homeowners and potentially increase the value of their properties, it would also benefit renters living in retrofitted buildings and save state and territory government expenditure if repair and rebuilding is reduced after a disaster. As one interviewee put it: '[housing has] a role to promote insurance, not only to mitigate increased cost to [the state] but also because it gets people better outcomes and they're better supported' (interviewee VIC-KI 10). Thus, supporting retrofitting in high-risk areas could be considered, through insurance companies, government or cooperation between the two sectors.

3.4 Emergency management plans and resource capacity

Emergency management plans guide the formal interaction between housing and disaster management and, to some extent, settlement planning and disaster management. These plans are concerned with operations and responsibilities during an emergency. They focus mainly on disaster response but can also refer to recovery—though the latter is mostly specified in specific recovery plans (for example, NSW Recovery Plan 2023).

In Australia, all state and territory governments prepare emergency plans. At the national level, the National Emergency Management Agency (NEMA) maintains emergency response plans, based on the Australian Government Crisis Management Framework. One of the key emergency response plans maintained by NEMA is the *Australian Government Disaster Response Plan* (COMDISPLAN) (Australian Government 2020a), which guides Australian Government provision of non-financial assistance to states and territories in an emergency or disaster. Local governments also prepare emergency plans, as do regional and district emergency committees (AIDR 2023).

State emergency plans determine the responsibilities of different agencies during a disaster. In Victoria, the Emergency Management Commissioner is required to prepare a State Emergency Management Plan (SEMP) in alignment with the Emergency Management Act 2013. The NSW State Emergency Management Plan (EMPLAN) is governed by the State Emergency and Rescue Management Act 1989 (SERM Act) and outlines the approach to emergency management, governance and coordination arrangements, and roles and responsibilities of agencies (NSW Government 2023b). In Western Australia, the State Emergency Management Plan describes emergency management arrangements based on the Emergency Management Act 2005 and Emergency Management Regulations 2006. The State Emergency Management Plan identifies the roles and responsibilities of public authorities and other relevant organisations (State Emergency Management Committee 2024). For further details on regulations and plans in these states see Appendices 1 and 2.

Housing and planning agencies are involved in developing these emergency plans and have specified responsibilities. However, *settlement* planning is generally not involved in the response to disasters, and the responsibilities of planning agencies relates more to buildings and infrastructure. The involvement of housing departments is focused particularly on emergency accommodation and financial assistance, as will be detailed in Chapter 4.

A tension emerged in the interviews between the objectives of disaster preparedness and of efficiency—or, in other words, between the need for government to prepare for disaster and to manage the cost of infrastructure and assets. Road network contingency provides a relevant example of this tension. If a settlement has only one road in and out, its residents are at higher risk in an emergency. This lack of local roads affected Mallacoota during the 2019–20 bushfires. Similarly, if a region has only a few roads, it may become disconnected if those roads are all inaccessible. This affected the Northern Rivers region during the 2022 flood, and the Far North District in New Zealand in February 2023 following Cyclone Gabrielle. However, developing and maintaining road networks is expensive for government and may not be deemed efficient or prudent expenditure where roads are not needed under normal circumstances. In addition to road networks, telecommunication networks and structures also need back-up options and improved resilience and connectivity (Speidel 2023).

The housing market can also influence the provision of emergency accommodation and temporary housing in the recovery phase. Interviewees in all three states mentioned that tight housing markets in impacted areas makes it more difficult to find suitable accommodation (interviewees VIC-KI 10, WA-KI 9, NSW-KI 3). The rental market was highlighted as having particularly limited availability in regional areas, which impacts the ability to find emergency and temporary housing.

Some of these shortages could be overcome with mobile housing set up in impacted areas (see the forthcoming AHURI report *Enhancing housing recovery policy and practice for improving community resilience to future disasters* by Heffernan, Vahanvati et al. for more information on these options). The existence of a more relaxed housing market would also contribute to preparedness by creating capacity absorb additional housing demand during and after a disaster. However, a housing market with high vacancy rates could be considered an inefficient use of infrastructure and buildings. This means that governments, particularly state and territory governments and the Australian Government, need to decide the amount of 'superfluous' resource capacity desirable or necessary to improve disaster preparedness. The need to improve disaster preparedness also needs to be balanced against the desire for lower government expenditure and efficient, maximal use of infrastructure and services.

3.5 Policy development implications

Settlement planning is involved in disaster preparedness through risk assessment processes, which influence building standards and decisions about land uses. As with disaster prevention, planners, politicians and the community need a good understanding of risks to make good decisions about disaster preparedness.

Improving the understanding of risk means improving the quality and availability of data and deciding which databases and modelling to use. Options include having agencies use the same databases, improving data sharing between agencies, and making data publicly available. Relevant data includes both modelling of risks for the larger landscape and more fine-grained assessment of impacts on an individual lot or area.

In the case of flooding, there are currently no consistent rules for preparing climate projections. The application of consistent data could improve and harmonise flood risk assessment. The use of consistent rules would also reduce the potential for risk assessment appeals, thus accelerating decision making. This is important as incorporating studies into planning schemes can take some time, resulting in assessments being out of date by the time they are integrated into planning schemes—particularly for flooding.

However, delays in updating planning schemes are not only due to appeals or differing studies. There is also a lack of local government resources to undertake integration, and possibly also a lack of prioritisation.

There needs to be better information within government about the risk assessments and spatial data available, as this is not always transparent. A consolidated database for all state and territory government agencies would be helpful. This database could list the data available and, where no data privacy concerns exist, give access to the data. Initiatives like Digital Twin Victoria are a promising start but need to be developed further and resourced better.

Beginning a process of working with insurance companies to understand risk profiles would help support households to take actions to decrease their risk and insurance premiums. Making data publicly available and communicating data more clearly would also assist the public in better understanding risks and measures to decrease risks. This could include making maps of risk assessment public, as is done in Queensland, or requiring information be made available when or before a property is purchased. For further recommendations on data, see the report from the project on *Improving coordination of data and actors for disaster-responsive housing and safer communities.*

Improving explanations of how standards like BAL levels are determined could improve their acceptance. Improved communication of why standards are necessary, including to builders, could also improve acceptance. Increasing options for property owners to undertake improvements themselves could be investigated, as well as use of alternative materials or appliances to make adherence to standards easier and to avoid an overreliance on specific products. It is also worth exploring incentives for owners to retrofit their buildings where they are not legally required to do so, such as where overlays or standards are implemented after a house is built, as well as incentives for building to a quality higher than the standards. These incentives could include a reduction of insurance premiums due to the lower risk of a building being destroyed or damaged by a hazard, or possibly financial incentives from government.

Finally, there is a need for decisions about how much 'additional' capacity is desired or needed for different types of infrastructure, assets and services to facilitate disaster response and recovery. For housing policy makers, this includes decisions about the desired level of flexibility in the housing market, particularly the rental market, and the way in which this flexibility can be achieved. For settlement planners, this question relates to the capacity of infrastructure, such as roads and emergency and evacuation centres.

4. The role of housing and planning in disaster response

- The response phase of the disaster management cycle occurs immediately after a disaster has struck.

- Settlement planning is generally not involved in the response phase.

- Housing agencies have a strong role in the response phase as they coordinate emergency shelter and look after public housing tenants and assets.

- Often, housing agencies also provide welfare services and financial assistance during this phase.

- Providing emergency accommodation has become more challenging in recent decades as the housing market has become tighter and more people are experiencing housing vulnerability.

- Cooperation between emergency accommodation and temporary housing services is challenging due to fluctuating responsibilities for temporary housing services.

4.1 What is disaster response in relation to housing and planning?

The response phase of the disaster management cycle commences when a disaster happens and generally has a relatively short time span. This phase may only last a few days or weeks, depending on how long the disaster continues. The aim during the response phase is to reduce the impact of a disaster to prevent further suffering and financial and other losses. The response phase can overlap with the recovery phase, but the former is generally thought to be more immediate. Recovery begins after the immediate response ends and aims to return victims' lives to a normal state following the impact of disaster (AIDR 2023; Coppola 2015).

Settlement planning is generally not involved in the response phase. In contrast, housing agencies have a strong role in this phase in providing emergency shelter and looking after public housing tenants and assets. Often the responsibilities of housing agencies in the response phase include arranging emergency shelter for displaced households, connecting affected households with welfare services and administering emergency financial assistance.

The provision of welfare services and administration of financial assistance are not necessarily related to housing. However, housing functions are often located in the same department or agency as welfare and community-related services, so these areas frequently overlap. For example, these functions are co-located in the Department of Communities in Western Australia and the Department of Families, Fairness and Housing in Victoria. While the focus in the response phase is on providing emergency accommodation and preventing homelessness, some of the emergency accommodation may also serve as temporary accommodation in the initial recovery phase.

In Australia, studies have highlighted the complexity of tasks facing housing staff during the response phase and the tensions between enabling locally based decisions and maintaining central control (Jacobs and Williams 2011; Williams, Jacobs et al. 2009). There are tensions between the goal of ensuring the welfare of residents and the need to provide accurate and up-to-date information on tenants and properties. While the former depends on fast responses, rapid dissemination of information and the minimisation of bureaucratic procedures, the later often depends upon more technocratic processes. While there have been no recent studies on this aspect of disaster response, it is likely these tensions still exist. However, some responsibilities of housing agencies will have moved to community housing providers, which have taken a larger role in providing and managing affordable housing stock over the last decade.

Housing studies in the US highlight the need to look at tenure status during the response and recovery phases of disaster management, finding that tenure status influences vulnerability to disasters (Lee and Van Zandt 2019; McCarthy and Friedman 2023). Overall, renters are found to be more vulnerable to disasters than homeowners, with subsidised renters the most vulnerable of all. A reason for renters' greater vulnerability is the lower quality of rental housing, which is likely to be older, less well built and less well maintained than owner-occupied housing. Renter households are also more likely to be low-income and to have lower insurance cover—or no cover at all. This further increases vulnerability and the impact of property loss (Lee and Van Zandt 2019).

A particular focus on renters is therefore required in the response and recovery phases. Furthermore, due to high demand for emergency and temporary housing, the availability of rental properties decreases after disasters, while rents often increase (Davlasheridze and Miao 2021). In Australia, this dynamic is currently exacerbated by the tight housing market overall, which means fewer housing vacancies in metropolitan and regional areas.

4.2 Emergency shelter and accommodation

In Australia, state housing departments are generally responsible for the provision of emergency shelter (that is, accommodation for approximately four weeks), acting either in a support role to local councils or emergency agencies, or as the main provider. For example, the Victorian Department of Families, Fairness and Housing (DFFH) arranges 'emergency shelter and accommodation for displaced households when requested by councils' (Victorian SEMP). The WA Department of Communities is responsible for managing emergency accommodation (WA Government 2023a). In New South Wales, the Department of Communities and Justice generally provides emergency accommodation, but Resilience NSW (now the Reconstruction Authority NSW) previously provided emergency accommodation for disasters (NSW Government 2024c).

State government housing departments are often also responsible for other welfare services, such as emergency financial assistance (Victoria and Western Australia), food provision, support services, and registration and reunification (Western Australia). However, in New South Wales, responsibility for these functions lies with the Reconstruction Authority.

While the focus in the response phase is on providing emergency accommodation and preventing homelessness, it is possible that the identified accommodation may also be suitable as temporary accommodation during the initial recovery phase. There can, however, be difficulties in moving from one phase to the other. For example, one Western Australia interviewee mentioned that two different sections of the Department of Communities look after emergency accommodation and temporary housing, and that there is not significant collaboration between them due to their different work foci (interviewee WA-KI 9). Emergency accommodation is the responsibility of the welfare services section, which focuses on locating emergency accommodation for victims of family violence and similar situations. Temporary housing is, meanwhile, the responsibility of the department's assets team.

This division of work is similar in other state housing departments. In the Victorian DFFH, for example, emergency accommodation after a disaster is managed by the area responsible for welfare services rather than the disaster management group. Furthermore, the responsibility for temporary housing after disasters is not always assigned to the housing department. For example, the NSW Reconstruction Authority has this responsibility rather than the Department of Communities and Justice. In Victoria and Western Australia, responsibilities have moved among agencies between disasters (interviewees VIC-KI 4). This means there can be knowledge gaps about the agency responsible for temporary housing.

This sort of variation complicates cooperation between agencies – or divisions within agencies – with responsibility for emergency accommodation and temporary housing. This is also true for other stakeholders, such as local councils and community organisations, involved in preparing for or providing emergency accommodation and temporary housing. Cooperation between services would be of great value, particularly as emergency accommodation is generally intended to be provided for only three to four weeks, during which time the objective is to find other accommodation.

Two key challenges mentioned in the interviews were the general housing shortage and tight housing market, and that:

> *A lot more of our community requires support when housing is impacted, whereas (…) 15 years ago [it] would've been quite rare to need to support [the community and] the community would almost be in a position to support each other during an emergency. (interviewee VIC-KI 8)*

Because the housing market is tight overall, with fewer vacancies and more households experiencing housing vulnerability, it is harder to find appropriate emergency and temporary accommodation. An emergency can more easily tip a household into homelessness (interviewee VIC-KI6, WA-KI 9). Stakeholders from the Northern Rivers region the observed that the area was already experiencing heightened housing demand prior to the 2022 floods, with a pre-flood rental vacancy rate of 0.3 per cent and long waiting times for social housing. The flooding further compounded this issue, leading to the dual impacts of an escalation of housing need and an extension of the waiting period for people already on the social housing list (interviewee NSW-KI 3). Furthermore, the cost of emergency accommodation can be quite high, as there is a smaller pool of accommodation to select from.

4.3 Policy development implications

The tight housing market is impacting the vulnerability of households to disasters and the ability of governments to provide emergency accommodation. This means that in the pre-disaster phase 'housing policy needs to give more consideration to increasing—or at least maintaining—the amount of affordable housing stock, as well as improving the physical condition of those types of buildings' (Lee and Van Zandt 2019: 163).

In Australia, these challenges are exacerbated by longstanding issues, notably the diminishing availability and quality of social housing. These issues have persisted and intensified over several decades (Pawson and Lilley 2022; Pawson and Martin 2023). While the current Federal Government has taken some significant steps toward improving housing supply, the magnitude of the country's housing challenges means that more measures will be needed (Pawson 2023).

Recommended methods of increasing the supply of social and affordable housing are detailed in reports by Pawson and Lilley (2022), Pawson and Martin (2023) and Martin, Lawson et al. (2023). Improving cooperation between agencies responsible for emergency accommodation and temporary housing would also be beneficial, and would improve the experience for impacted households. This includes improving data sharing, clarifying lines of communication and creating well-defined responsibilities. Currently, a lack of clarity and stability in responsibilities for temporary housing make such cooperation challenging.

It may also be beneficial to differentiate between emergency accommodation for welfare-related situations (such as family violence) and for disaster-related situations. Differentiating between the needs of renters and homeowners could also be useful, as the vulnerabilities and requirements of these groups can differ. Similarly, taking households' cultural needs into account is important. This might not always be possible in the response phase, but becomes more significant in the longer recovery phase.

5. The role of housing and planning in disaster recovery

- The recovery phase of the disaster management cycle aims to support impacted households return to a normal housing state. This phase can take months or years, depending on the damage caused by the disaster.

- Coordination between housing and disaster management agencies during this phase relates mainly to finding interim accommodation and permanent housing, as well as providing financial assistance.

- The role of settlement planning in the recovery phase is largely related to planning processes, such as permits, and potential managed retreat or buy-back schemes.

- Planning requirements can slow down the rebuilding or provision of temporary housing. There is a need to investigate where greater flexibility or acceleration is possible.

- Renters in the private market are often ineligible for support programs, as these are designed to assist homeowners or public housing tenants.

- Information needs to be easy for households to understand and to assist with decisions about rebuilding.

- Insurance companies could support relocation of households by allowing building back 'somewhere better'.

- Evaluation of temporary housing programs can inform future disaster preparedness, response and recovery.

5.1 What is disaster recovery in relation to housing and planning?

The recovery phase begins after the immediate response has ended. It aims to return victims' lives to a normal state following a disaster and its consequences. The recovery phase can take months or years, depending on the level of damage in an area overall and to individual homes (AIDR 2023; Coppola 2015). While some people may be able to move back to their homes after a few months, others might still be living in 'temporary' housing 15 years later.

As housing is often a major component of impacted infrastructure, housing policy has a significant role in facilitating post-disaster recovery. Temporary accommodation is necessary for impacted households for at least the first phase of recovery. Households also need to find or build new permanent housing, whether in the same area or a different location (Bourova, Ramsay et al. 2022; Corbin 2017; Diaz, Behr et al. 2022; Mueller, Bell et al. 2011; Safapour, Kermanshachi et al. 2021; Sapat 2016).

In Australia, state housing authorities generally coordinate recovery efforts between government agencies, non-governmental organisations, and communities. However, in some states, recovery agencies lead coordination, as the Reconstruction Authority does in NSW. The agency coordination role typically includes allocating funds for rebuilding damaged or destroyed homes and providing financial assistance to affected homeowners. It sometimes also includes coordinating with insurance agencies to expedite claims. In addition, as housing agencies are generally responsible for delivering and managing social housing, they have a particular responsibility to residents of social housing. These agencies also need to repair damaged public housing assets.

Settlement planners guide decisions on how to rebuild communities and infrastructure—and advise whether rebuilding should occur in high-risk areas. Where rebuilding is inadvisable, potential activities include government buy-backs of properties and land swaps which enable impacted households to build in other areas. Settlement planners also set rebuilding policy and regulations, and potentially enable policy exemptions to facilitate rebuilding or temporary accommodation. In addition, state and territory planning agencies provide advice and information to councils and other stakeholders and facilitate rehabilitation of cultural and heritage sites (Emergency Management Victoria 2024b).

A more extensive analysis of housing recovery is provided in the AHURI project *Enhancing housing recovery policy and practice for improving community resilience to future disasters* by Heffernan, Vahanvati et al. (forthcoming).

5.2 Moving from temporary to permanent housing

5.2.1 Temporary housing

Temporary housing is needed in the first phase of recovery and may be needed for months or years, depending on the decisions of impacted households and insurance companies, applicable planning processes and extent of damage to housing and property. While households should be able to move quickly to permanent housing, this is not always possible. Indeed, the international literature demonstrates that temporary housing is rarely temporary, instead usually needing to be used for years at a time (Sanderson, Sharma et al. 2014). This is because it takes time to rebuild permanent housing, both gaining building approvals and actually rebuilding. In fact, temporary housing is defined as a 'place where the survivors can reside temporarily, usually planned for six months to three years, returning to their normal daily activities' (Félix, Branco et al. 2013: 137). Therefore, the quality of temporary housing, its suitability for different cultural, geographic and demographic contexts, and its proximity to the impacted location and existing community, are all vital elements in a positive recovery process.

As mentioned in Section 4.2, responsibility for the provision and coordination of temporary housing is not always clear. In Victoria and Western Australia, responsibility for temporary housing has moved between different agencies over time.

From an emergency management perspective in WA, there has been a gap in terms of clarity as to which agency owns responsibility for medium to long-term accommodation options after an emergency. (…) With [the] Wooroloo [bushfire] and [the] Seroja [cyclone], it was Department of Communities informed, but Department of Fire and Emergency Services and local government led in terms of the longer meeting accommodation. (interviewee WA-KI 9)

These changes make a consistent and coordinated approach difficult. In contrast, in New South Wales responsibility for temporary housing now lies clearly with the Reconstruction Authority. Local housing services and welfare providers support state governments with the coordination of temporary housing, often acting as case managers and service navigators within local communities.

A particular issue mentioned in the interviews was the provision of temporary housing to renters (interviewees VIC-KI 6, VIC-KI 10, WA-KI 9). Renters in the private market often find it harder to find temporary housing because they do not qualify for most support programs, which are either for owner occupiers or for renters in public housing. For example, it was noted that in Victoria an owner-occupier can live in a caravan on their property while they rebuild. However, renters have to find rental accommodation— in a very constrained rental market greatly physically affected by the disaster (National Housing Supply and Affordability Council 2024)—and usually cannot live in a caravan on the property where they lived before (interviewee VIC-KI 6). Difficulties faced by renters are to some extent based on the difficulties of 'renting out' a caravan. They may also be due to the owners of a rental property not wishing to rebuild immediately. Impacted renters therefore need more support with temporary housing arrangements, ideally close to their communities. Similar issues have been highlighted in studies in the US (Lee and Van Zandt 2019; Zhang and Peacock 2010).

As discussed earlier, supporting landlords after a disaster is considered politically difficult as could be seen to be subsidising private investment rather than supporting households to resume their lives. However, as there is currently a low supply of rental properties in most regional areas, particularly after a disaster, consideration needs to be given to supporting the rebuilding of rental properties. This would allow renters to normalise their lives as soon as possible after a disaster (interviewee VIC-KI 6).

Interviewees stated that funding, and sometimes responsibility, for temporary accommodation is incident-driven, and that there is no best practice or strategy for providing temporary housing. Some interviewees suggested building an evidence-base through evaluation of past disasters, as well as providing funding between events so that capacity to respond is maintained (interviewee VIC-KI 10). An interviewee from the Victorian DFFH noted the agency is looking into developing a list of temporary housing types and the circumstances where they would fit best (interviewee VIC-KI 10). Such a list, together with the provision of some moveable temporary accommodation like pods or humanihuts, could support preparedness and improve provision of temporary housing. The temporary housing list would need to consider the complex needs and cultural requirements of some households. To understand these needs, community services and community housing providers could be asked for their experience, as these sectors are often involved in recovery processes and the provision of culturally appropriate temporary housing (interviewee WA-KI 2).

For some disasters, such as the Rochester floods and the Northern Rivers flood of 2022, temporary villages have been set up by government (see text box). These villages are generally for uninsured households, with insurance companies providing temporary accommodation for insured households. Temporary villages provide the advantage that, if a suitable location can be found, they can be set up close to previous housing. They also enable an impacted community to stay closer together, rather than being dispersed and losing contact. However, these villages are suitable only for the first phase of recovery. After this phase, households will need to move back to their properties or to semi-permanent accommodation to support their recovery to more 'normal' every-day life. Also, at some point government funding for temporary accommodation ceases. As temporary villages seem to be a good initial solution for a large proportion of impacted households, one interviewee suggested there could be synergies between temporary villages set up by government and by insurance companies (interviewee VIC-KI 3). Such accommodation could potentially be implemented as a collaboration between government and insurance companies—and in the same location, so the community is housed together.

See the final report from the project *Enhancing housing recovery policy and practice for improving community resilience to future disasters* for more details on temporary housing.

Experience with temporary housing pods in the Northern Rivers region

In the 2022 Northern Rivers floods, the Housing Taskforce (part of the NSW Reconstruction Authority) was responsible for providing temporary accommodation for people affected by the floods. The Housing Taskforce worked with the local councils to identify areas to establish temporary accommodation. This temporary accommodation for residents whose homes were uninhabitable took the form of caravans and 'pod villages' of demountable homes of various varied sizes.

Originally the NSW Government committed to delivering over 2,000 housing pods to house flood victims in Northern NSW (Ross and MacKenzie 2022). At the start of 2024, 'there were just over 1,800 residents in temporary pod accommodation. There are 11 sites and about 550 pods' (NSW-KI6). Stakeholders raised the issue of delays and lengthy processes in identifying suitable land to locate the pod villages, 'It hasn't been a great or quick response from the community's point of view' (NSW-KI3).

Many of the residents in the pod villages are renters from lower socio-economic areas and the issues of housing accessibility and affordable housing were raised by interviewees.

The housing pods were managed by community housing providers as private rentals without support services in place. This was identified as a particular limitation of the system, with considerable issues regarding drug and alcohol use, and behaviour emerging in the pods villages (NSW-KI5).

5.2.2 Decision making

An important part of the recovery process, particularly in moving from temporary to permanent housing, is the decision made by an impacted household about whether to rebuild. This is a difficult decision, particularly for households traumatised by the disaster experience. It is not always easy for households to understand how insurance payouts and rebuilding work, how building requirements impact rebuilding, or how to sell a property if not rebuilding.

The role of housing agencies and settlement planning in individual household decisions is limited. Nonetheless, agencies are important in giving households relevant and easy to understand information. This can include information on building requirements, buy-back schemes or resettlement through land swaps (if offered).

Two ways of providing information to households were mentioned in the interviews. One option was the so-called roadshows or one-stop community information hubs. These are information events or a point of contact where relevant stakeholders are available to answer questions from impacted households and businesses. Stakeholders may include insurance companies, emergency management agencies and the Master Builders Association, and could potentially include planning departments where relevant (interviewee WA-KI 1). Another option is to support case workers who can advise impacted households. These workers are often a household's most regular point of contact, and a trust relationship can be built (interviewee VIC-KI 4). Case workers could be supported through a brief program in which they are given a general understanding of options available to households, alerted to red flags about offers from insurance or building companies, and shown where further 'neutral' information is available. Additionally, flyers with relevant information and contact points could be developed for case workers to distribute to households. However, case workers generally only work with households that qualify, and have applied, for government support. It is thus necessary to think about ways to reach other households and support their decision-making.

5.2.3 Rebuilding

If impacted households decide to rebuild, and planning controls allow them to do so, households need to adhere to relevant building standards. A new house may cost more to construct than the previous house, as requirements may have changed (de Vet and Eriksen 2020; National Housing Supply and Affordability Council 2024). Building costs have also increased due to higher material costs and material shortages, particularly in recent years. The concept of 'building back better' means a new building will be better equipped to withstand disasters, and communities and infrastructure will be more resilient. Again, the project *Enhancing housing recovery policy and practice for improving community resilience to future disasters* has a stronger focus on housing recovery and its forthcoming final report will provide more detail.

There are tensions between supporting households to build back quickly, requiring improved building quality and mandating risk assessment of properties and surrounding areas. In the case of the Victorian bushfires in 2009, these tensions led to many owners receiving permission to build back without meeting the requirements of the Bushfire Management Overlay (Rowley 2023). However, as the overlay requirements are intended to improve the disaster resilience of buildings this is an ambiguous, if not to say misleading, decision. Nevertheless, there may be some opportunities to adapt building codes to allow for more flexibility in material and design or in other approaches used to improve resilience (de Vet and Eriksen 2020).

Homeowners recovery and resilience grant in Western Australia

The WA Government decided to give all eligible homeowners funds towards repair and rebuilding efforts following Cyclone Seroja in 2021, the Kimberley Floods in 2022—23 and Cyclone Ilsa in 2023 (Department of Fire and Emergency Services 2024b). While for Cyclone Seroja the Homeowners Recovery and Resilience Grant was only available to insured households, this was changed for the Kimberley floods and Cyclone Ilsa. The thinking behind this was that being uninsured was not always a choice of households but could simply be due to low income. '[These households] completely fell through the cracks because the income off the farm was more than the threshold for the real emergency payments (…) but they're not rich enough to insure that property either, so that [resilience and recovery grant] support wasn't available.' (WA-KI 1). An eligible applicant can apply for one or both types of reimbursement grants to a maximum of $50,000.

The availability of the grant means that uninsured or underinsured households are more likely to be able to build back, and that households with sufficient insurance were potentially able to build back above building standards. While this financial support has the potential to fast-track rebuilding, there are two caveats. It is a subsidy for homeowners and therefore does not support the equitable recovery of renters. In addition, depending on the scale and frequency of future disasters, this kind of support could become very expensive for the Western Australian Government.

A central and well-known issue for rebuilding is that there is already a shortage of builders and workers in regional areas. In recent years, this situation has been exacerbated by a general shortage of builders across Australia (National Housing Supply and Affordability Council 2024). In addition, due to constrained housing markets in disaster-impacted areas, there is typically little or no temporary accommodation for workers (interviewees VIC-KI 6, VIC-KI 11, WA-KI 1, WA-KI 8). The lack of accommodation slows down rebuilding processes due to the difficulty in finding workers. Government could potentially fast-track rebuilding processes by establishing or supporting the establishment of temporary worker accommodation. This occurred after the Kimberley floods, where the Temporary Workers Accommodation Program supported recovery-related workers. The project was jointly funded by the Northern Territory Government and Australian Government through the *Commonwealth-State Disaster Recovery Funding Arrangements* (Department of Fire and Emergency Services 2024c). It has been noted that a similar program has occurred in Victoria (interviewee VIC-KI 6). Temporary accommodation used for recovery workers could later be used for other purposes, such as affordable housing, tourism or retirement homes (interviewee WA-KI 4). Developing a strategic approach to worker accommodation during recovery is a useful area for housing policy to become involved.

5.3 Planning processes

5.3.1 Managed retreat and buy-back policies

Managed retreat and buy-back policies have already been discussed in Section 2.3 as a disaster risk reduction strategy. Often, these strategies are part of the post- rather than pre-disaster phase. As noted previously, in managed retreat a decision is make not to redevelop an area because the disaster risk is considered to be too high. Buy-back schemes involve offers to buy or swap land where rebuilding is not the preferred option. Managed retreat or relocation can be supported by policies which streamline planning processes for post-disaster resettlement. However, any streamlining of planning provisions would need to ensure that central requirements, such as environmental regulations and assessments, are not overridden and that resettlement does not lead to dispersed urban growth into natural areas. Managed retreat could also be supported by the preparation of a database of land suitable for development so that rebuilding processes could be started quickly after the initial disaster response (see Chapter 2).

Similarly, the pre-preparation of policies supports the faster development of buy-back programs post-disaster, so that impacted households can be offered a buy-back or land swap quickly. While every disaster and every high-risk area is different, a general framework could be developed. Currently, Victoria and Western Australia have used buy-back schemes on an ad-hoc basis only. New South Wales and Queensland have committed to a Resilient Homes Fund, which is not tied to a specific disaster. Part of the Fund is planned to be used for buy-back offers for homes at risk of severe and frequent flooding—though stakeholders in New South Wales have reported delays in buy-back offers and in finding suitable land for relocation.

Potential tensions exist between the objective of allowing temporary housing on impacted properties as soon as possible, so that households can move back for the rebuilding process, and the process of decision-making about whether land continues to be suitable for building.

> You rush a temporary house onto a site, (…) in some ways you flag that it's okay that further future development of this site is reasonable. Then you run into that (…) question about what houses should go back where and how. And if you [allowed] a temporary house on it really, really quickly, it makes it even (…) more difficult to make those hard decisions. (interviewee VIC-KI 5)

Decisions about the appropriateness of land for rebuilding need to be made as early as possible, to avoid temporary homes being established on land that is later considered unsuitable for development. As discussed in Section 2.3, preparing a map which identifies land where managed retreat is desirable can help with these decisions. However, some stakeholders fear an impact on property values and community cohesion if such maps were publicly available.

Managed retreat or buy-back schemes could also be supported by the insurance industry allowing people to rebuild on another property ('somewhere better') instead of only on the insured property ('build back better') (Suncorp Group and Natural Hazards Research Australia 2023)—or possibly even supporting appropriate house design replication (de Vet and Eriksen 2020).

5.3.2 Local planning processes

In the recovery phase local governments receive a multitude of building and planning applications. This means their regular staff resources are often overwhelmed by the number of applications. This is particularly the case after flooding events, which typically impact more homes, although a larger number of homes are destroyed by bushfire and other hazards. Bushfires often have the greatest impact in remote areas with fewer houses because the main defence focuses on towns where there are more buildings and people at risk. In contrast, towns built close to rivers which flood cannot be easily defended (interviewee VIC-KI 3).

The overloading of staff with building and planning applications after a disaster leads to longer processing times, at a time where fast assessments are needed to enable impacted households to rebuild quickly. One interviewee mentioned that local governments sometimes receive support for additional staff from state and territory governments after disasters. However, even with this additional support resources are often insufficient (interviewee VIC-KI 3).

During 'normal' times, planning permit approval takes approximately six months. However, with a high number of applications and potential for increased building requirements, planning processes after a disaster are likely to take longer. This impedes recovery processes and leads to frustration. As with planning processes for community relocation, planning processes for rebuilding or repair could be streamlined. This was done in Victoria after the 2019–20 bushfires through use of Clause 52.10 of the planning scheme. This clause allows for exemptions from some parts of the planning permit process, such as requirements for notice and review. Conversely, an interviewee noted that the need to get assessments and permits, such as bushfire assessments and building permits, prolonged the process of establishing temporary housing in Western Australia (interviewee WA-KI 9).

Regulations for temporary homes are another planning issue during recovery. Interviewees from Western Australia made particular reference to regulations for setting up campervans as homes on private land. To enable this use, a permit generally needs to be renewed every six months, which increases the bureaucratic burden for impacted households. However, with ministerial approval the validity of permits can be extended to two years (interviewees WA-KI 1, WA-KI 9). In other states, such as New South Wales, the approach has been simplified and there is an automatic extension of permits for two years, with further extensions possible. Requiring permits for temporary homes can also increase the time before households can move back to their properties, as well as intensifying the bureaucratic burden. In Victoria, new rules were introduced in response to the 2019–20 bushfires. Clause 52.07 of the Victorian Planning Provisions now allows people to set up temporary dwellings on their land after an emergency, without a planning permit.

Overall, there needs to be a balance between streamlining processes and ensuring that higher resilience standards are adhered to. This includes taking into account that temporary accommodation is unlikely to withstand natural hazards well. The longer term use of temporary accommodation could make households more vulnerable to subsequent natural hazards, which is obviously a concern in hazard-prone areas.

5.4 Policy development implications

In the recovery phase, **housing policy** priorities should include improving support for private renters, improving understanding of the types of temporary housing suitable for different contexts, and developing strategies for temporary housing provision. They should also include the development of strategies to support rebuilding and resettlement, and provision of temporary worker accommodation.

Specific policy development opportunities include:

- Supporting renters and other vulnerable groups in their access to temporary housing and assistance after disasters, enabling them to have the same levels of support as homeowners. For example:

    - Providing temporary housing in-situ or at least close to renters' previous homes, such as in caravans, as is done for homeowners

    - Supporting programs which provide caseworkers and workers trained in trauma-informed approaches

    - Incentivising landlords to rebuild if feasible, potentially through cheap credits such as low interest rates, supported by the Reserve Bank. Further financial support could be seen as problematic as it is a subsidy for private investment.

- Evaluating temporary housing programs to inform future disaster recovery programs. This could include:

    - Developing best practice examples of temporary housing, including information on the speed, ease of deployment, suitability and community perspectives of different housing types. This information exchange could be organised by the states, by the federal government, or via intergovernmental collaboration.

    - Evaluating best practice and appropriate options for different cultural and demographic contexts. This could be done by working with community service providers and documenting their experiences.

- Providing some financial support to all impacted homeowners to improve their ability to kickstart rebuilding and to 'rebuild better'. While such programs could be costly, particularly with increases in the occurrence of disasters and number of households impacted, households that have not rebuilt or resettled contribute to already tight housing markets and high rents in impacted areas.

- Developing strategies and supporting worker accommodation during rebuilding. State and territory governments could provide temporary worker accommodation, reusing buildings for other purposes once they are no longer needed as accommodation. Again, this would come with costs to state and territory governments, but could be considered an efficient investment given the potential to help ease housing market pressures.

Settlement planning implications include the need for more flexible planning requirements for temporary housing, and potentially also for rebuilding of housing, as well as frameworks for buy-back schemes and possible resettlement. This includes:

- Streamlining of, and changing timelines for, planning processes. For example, planning exemptions could be granted for caravans located on residential properties, and the length of time for which caravans are allowed could be extended. Temporary housing could also be exempted from the need to prepare bushfire assessments. However, requirements for buildings and bushfire assessments should not be weakened overall, as these requirements ensure the safety of residents.

- Assessing opportunities to be more flexible about building material specifications.

- Streamlining assessments of whether housing should be rebuilt or relocated, to assist households in decision making and speed up decisions about temporary housing and rebuilding. This could include the preparation of state maps showing areas where managed retreat is desirable, which could be drawn upon in the recovery phase.

- Supporting local government through provision of additional planning staff.

- Developing policies so that, where appropriate, buy-backs or land swaps can be offered quickly.

- Developing easy-to-understand information on building requirements and on buy-back and relocation schemes, where applicable.

In relation to **insurance companies**, policy development implications include:

- Encouraging insurance policies that support relocation by allowing policy holders to build back 'somewhere better', rather than only allowing rebuilding on the insured land.

- Assessing opportunities for state and territory governments and insurance companies to cooperate in the deployment of temporary villages. This would enable insured and uninsured households to be located together, close to their community and their impacted properties.

6. The role of disaster agencies in housing and planning

- Hazard and emergency management agencies play a role in housing and planning by acting as referral and coordination agencies. This includes the important role of coordinating emergency management plans.

- Currently, only bushfire agencies act as referral agencies. It could be useful to include referral agencies for other natural hazards within planning systems.

- Disaster management agencies could be included more explicitly in planning decisions, particularly in relation to disaster risk reduction.

- Multi-disciplinary teams facilitate the work of referral agencies.

- There needs to be more 'hazard thinking' in housing policy, particularly in relation to housing statements and the location of new supply.

Previous chapters have primarily described the roles housing and planning agencies play, now and potentially in the future, in the different phases of the disaster management cycle. This chapter adds a brief overview of the role hazard and emergency management agencies play in core housing and planning tasks. It focuses particularly on the roles these organisations play as 'referral agencies' for planning permits and coordinating agencies for state emergency management plans. The chapter also considers the role hazard and emergency management agencies play in housing response and recovery in some states and territories.

6.1 Hazard agencies as referral agencies

As mentioned in Section 2.2, in most states and territories fire agencies are 'referral agencies' for new development in bushfire-prone areas. This means agencies provide expert advice to councils on bushfire protection and make recommendations on whether planning permits should be granted. The referral of applications to fire agencies means bushfire considerations are given weight in planning processes. It also means that comments by fire agencies are generally taken on board in planning decisions (interviewees VIC-KI 5, WA-KI 3).

For hazards other than bushfire, there are generally no specific referral agencies. Planning authorities still need to give regard to natural hazards, but do not need to refer applications to other agencies for expert advice. The Royal Commission into National Natural Disaster Arrangements underlined the importance of considering all hazards in planning decisions. It recommended 'Mandatory consideration of natural disaster risk in land use planning decisions: state, territory and local governments should be required to consider present and future natural disaster risk when making land-use planning decisions for new developments.' (Australian Government 2020b, Recommendation 19.3).

As discussed previously, multi-disciplinary teamwork is important in many phases of disaster management. One interviewee emphasised the importance of this teamwork for referral agencies, as it ensures hazard and emergency organisations have a good understanding of the planning system. Multi-disciplinary teamwork also helps promote understanding of the way in which new development may impact natural hazard risk—and vice versa. Interviewees underlined that this is:

> critical to be effective that we have enough planners that speak the language of the system, and (…) ensure that the organisation has credibility in what we do within the planning system. (interviewee VIC-KI 5)

6.2 Emergency management agencies as agency coordinators

In Australian states and territories, emergency management agencies generally have the role of coordinating state emergency management plans. As noted previously, in Victoria the Emergency Management Commissioner is required to prepare the SEMP, which details of the roles and responsibilities of agencies in relation to emergency management. The Emergency Management Commissioner leads Emergency Management Victoria, a statutory entity which supports the Commissioner to 'lead and coordinate emergency preparedness, response and recovery across Victoria's emergency management sector in conjunction with communities, government, agencies and business' (Emergency Management Victoria 2024a). The Emergency Management Commissioner has responsibility for coordination before, during and after major emergencies. This includes managing the consequences of an emergency and the subsequent recovery, as well as coordinating with housing and planning agencies.

In New South Wales, the Reconstruction Authority (NSWRA) is responsible for creating and implementing the State Disaster Mitigation Plan. The purpose of this plan is to set out the NSW Government's strategies to reduce the impact and cost of natural hazards. Emergency management arrangements are detailed in state, regional and local emergency management plans and recovery plans. The State Disaster Mitigation Plan and place-based and community-centric disaster adaptation plans (currently being developed) are intended to help consider emergency and recovery arrangements in strategic land use and infrastructure planning. They complement the framework of state, regional and local emergency management plans and recovery plans (NSWRA 2024). NSWRA is also responsible for coordinating housing recovery and response.

Disaster management agencies have other coordination roles. For example, Emergency Recovery Victoria works closely with all levels of government, industry and impacted communities to ensure recovery programs are delivered effectively. It also provides advice to agencies and government on recovery investment proposals. Emergency Recovery Victoria's approach to recovery identifies five 'lines' of recovery (see also Appendix 1). In relation to housing and planning the 'people and wellbeing' and 'building and infrastructure' lines are relevant. The 'people and wellbeing' line of recovery is led by the DFFH, with one of the intended recovery outcomes being, 'People have timely access to a safe, stable and secure home'. The 'buildings and infrastructure' recovery line is co-led by the Department of Energy, Environment and Climate Action and the Department of Transport and Planning. Intended recovery outcomes include: 'Utilities and transport routes are restored and strengthened'; 'Public infrastructure is resilient and supports recovery'; and 'Residential, commercial and agricultural property is rebuilt and improved'.

Western Australia's recovery agencies are managed by the State Recovery Coordination Group, which develops and monitors a state recovery plan, assesses requests for assistance and helps implement local recovery plans. The group also identifies a lead authority in every recovery environment, advises the government, and coordinates state level financial arrangements. Hazard management agencies are required to include recovery arrangements in State Hazard Plans (WA Government 2023b).

6.3 Gaps

Some areas where disaster agencies or disaster thinking should play a more prominent role in housing policy and settlement planning were highlighted in the interviews. For example, one interviewee pointed out that Victoria's Housing Statement does not mention the management of climate change or natural hazards, nor does it indicate where housing should be located (interviewee VIC-KI 2). Federal housing policy, like the NHHA, currently ignore the significance of disaster management. However, the recent *Issues Paper for the National Housing and Homelessness Plan* highlights the imperative to integrate climate change and disaster considerations into policies guiding housing security, sustainability and health (Commonwealth of Australia 2023). Similarly, the National Housing Supply and Affordability Council has recently referred to the consequences of climate changes and climate-related disasters (National Housing Supply and Affordability Council 2024).

Interviewees also mentioned that, because it is a coordinating agency and not a referral agency or similar, Emergency Recovery Victoria does not have a way to formally influence planning decisions (interviewee VIC-KI 3). This gap was not emphasised. However, it could be useful to consider whether recovery and other disaster management agencies should have some input into planning decisions, particularly in relation to risk reduction. This could, for example, include input into the integrated disaster-risk land use plans highlighted in Section 2.3, which would be similar to NSW's State Disaster Mitigation Plan and local disaster adaptation plans. Notably, the NSWRA is currently prioritising the development of regional disaster adaptation plans for the Hawkesbury-Nepean Valley and the Northern Rivers to address flood risk in these areas.

6.4 Policy development implications

Hazard and emergency management agencies play a role in housing and planning by acting as referral and coordination agencies. This includes the important role of coordinating emergency management plans. Currently, only bushfire agencies act as referral agencies, and it could be useful to establish referral agencies for other natural hazards. Similarly, disaster management agencies could be included more explicitly in planning decisions, particularly in the context of disaster risk reduction.

As pointed out in relation to Victoria's Housing Statement, there needs to be more hazard thinking in housing policy, including climate change adaptation. This is particularly important when considering locations for new housing supply.

7. Integration and coordination between housing, planning and disaster management

- Emergency management plans clarify responsibilities for disaster response. There is also coordination between planning and hazard agencies for disaster risk reduction and preparedness.

- Clearer rules and responsibilities are needed to improve integration and coordination between agencies. For example, responsibilities for housing recovery change relatively frequently in some states.

- Time-limited staff contracts and ongoing restructuring in state government departments makes it more difficult for institutional knowledge to be retained.

- Differing work cultures and objectives hinder the preparation and delivery of joint strategies, particularly in disaster prevention.

- Increasing communication between agencies and clarifying political priorities and frameworks will assist integration. It will also support governments to make sensible, but potentially unpopular, decisions.

- Agreed priorities need to be translated into funding, such as for buy-back schemes.

- Local government resource constraints result in delays in integrating risk assessments into planning schemes, as well as in issuing planning permits after a disaster.

- Housing agencies have significant experience in emergency response, but need greater focus on disaster reduction.

- Disaster recovery evaluations need to expand the evidence base to include settlement planning and housing.

This chapter summarises insights on the integration and coordination between housing policy, settlement planning and disaster prevention, preparedness and response. It also considers barriers and gaps, as well as opportunities for further improvement. While the focus is on state and territory government, some thoughts are provided on the role of local government, as well as on integration between state and territory government, local government and the community.

7.1 State and territory government level

7.1.1 Institutional knowledge

As noted in other studies (Howes, Tangney et al. 2015), retaining knowledge and experience in state and territory government agencies can be a challenge. Interviewees indicated this is due to ongoing restructuring and the large number of time-limited employment contracts, particularly for emergency agencies but also for housing and planning agencies. For example, many contracts at ERV are time limited and ERV, DFFH and DTP in Victoria have all experienced, or are experiencing, restructuring. This restructuring results in changes to responsibilities and contact people. It can also mean new team members need to familiarise themselves with regulations, cooperation structures and so on (interviewees VIC-KI 3, VIC-KI 4). In addition, when disasters occur often 'surge staff get hired who are new to the industry' (interviewee VIC-KI 4). This creates another barrier to the continuity of knowledge and development of strategy.

As noted previously, the NSW Reconstruction Authority was established in 2022. This agency is based on a previous institution called 'Resilience NSW'. As a result, interviewees noted that issues of staff retention and turnover were less relevant. However, the restructure of the NSWRA resulted in changes to the responsibilities of individual staff, as well as to the organisational structure and the distribution of responsibilities across the organisation.

The development of clear and overarching frameworks and strategies, with transparent records of their development, could assist in decreasing dependence on the knowledge of individual staff members. It would also be beneficial to offer ongoing positions rather than fixed-term contracts. Organisational restructures can be necessary, but their coordination could be improved and responsibilities clarified. Restructuring that extends for a longer timeframe can obliterate responsibilities, demotivate staff, and mean that institutional knowledge gets lost.

7.1.2 Clear responsibilities

Clarifying responsibilities for disaster management assists in coordination and implementation. It enables lead agencies to confidently develop strategies in their areas of responsibility and also supports other agencies understand responsibilities for each task. This is not to detract from the shared responsibilities and multi-level governance that are an important part of thinking about disaster resilience (UNISDR 2015). However, even where responsibilities are shared there is a need for clear understanding of agency responsibilities and task leads.

Interviewees noted a lack of clarity in responsibility for temporary housing in the recovery phase of a disaster. This area of responsibility has moved back and forth between agencies, and has not been clearly defined in Victoria and Western Australia. In New South Wales, responsibility for emergency housing moved from Resilience NSW to the Department of Communities and Justice in a relatively short timeframe. In Victoria, one interviewee stated that:

> …there's no real housing recovery or housing response agency, and the buck just keeps getting passed around. (…) part of the issue with regard to policy at the moment is no one really owns it in Victoria. (interviewee VIC-KI 4)

This interviewee thought that a clear housing recovery framework would help improve implementation and enable the evaluation outcomes to inform housing recovery programs.

The establishment of agencies such as ERV, Emergency Management Victoria and NSWRA is commendable. These agencies are responsible specifically for emergency management or disaster recovery and therefore have clear have clear tasks, including coordination. In Western Australia, responsibility for coordination sits with DFES as Hazard Management Agency for natural hazards. Having specific agencies responsible for the recovery phase of disaster management enables a more focused approach and 'the business of government doesn't come to a standstill whilst we focus on large recovery areas and large recovery efforts' (interviewee VIC-KI 10). However, an understanding of disaster risk is still necessary in other agencies and all recovery efforts cannot simply be moved to recovery agencies.

7.1.3 Different work cultures and objectives

Research has found that different work cultures and objectives are a barrier to integration between the work of bushfire, planning and climate change adaptation agencies (Howes, Tangney et al. 2015; Ruane 2020). This difference in cultures and objectives has been mentioned by interviewees for this project. For example, one interviewee mentioned a certain 'frustration' emergency service agencies have with planning agencies, as the former would prefer a more cautious approach to settlement planning with more areas remaining undeveloped (interviewee VIC-KI 1). Another interviewee mentioned that land use planning should 'set up a world that provides resilience' rather than using bushfire or hazard planning as a tool for supporting new development, such as through fire breaks or levees (interviewee VIC-KI 5).

Agency differences in work cultures and objectives can impede understanding and the development of common strategies. Prime objectives for hazard agencies are, for example, saving lives and reducing risks to lives. The objectives of planning agencies, meanwhile, focus on supporting orderly growth, including finding space for urban development. For example, the Victorian Planning and Environment Act states that 'Planning is to anticipate and respond to the needs of existing and future communities through provision of zoned and serviced land for housing, employment, recreation and open space commercial and community facilities and infrastructure.' For housing agencies objectives include 'to maximise the opportunities for all people (…) to have access to secure, appropriate and affordable housing' (Housing Act 2001 No 52 NSW). These are different underlying objectives, which do not necessarily contradict each other but do influence the approaches and activities of the various agencies.

In addition, there may be different work cultures within agencies. For example, one interviewee mentioned that within the Department of Communities staff on the emergency side of housing have a background in child protection, whereas staff in the policy areas are more concerned with the supply of (affordable) housing. These different sections of the department also report to different Ministers.

It seems that settlement planning staff have been exposed to disaster management, and particularly to thinking about disaster reduction. Exposure to disaster reduction approaches appears lower in housing agencies, though there is considerable experience with emergency accommodation and to some extent recovery activities. However, staff experience with emergency accommodation may be unconnected to broader housing policy and may be focused in one area. In addition, housing agencies are not always responsible for managing the recovery phase of a disaster. Disaster risk reduction needs to be brought to the forefront in housing policy. For example, as previously noted, Victoria's Housing Statement does not mention disaster risk or adaptation to climate change.

As highlighted in other research, overcoming differences based on departmental backgrounds and work cultures is central to achieving better integration. Howes, Tangney et al. (2015) suggest that legislation is necessary to achieve more integration, including a clarification of priorities for decision-making. One example of this can be seen in Clause 13.02-1S of the Victoria Planning Provisions, which prioritises the protection of human life over all other policy considerations, albeit only in relation to bushfire planning. Similarly, one of the aims of the reform of the Western Australian planning system is to add natural hazards to the Planning and Development Act. This would give natural hazards a higher priority, and require the Planning Commission to consider them in whole-of-state planning (interviewee WA-KI 5).

Discussing decisions and working together across agencies and disciplines and would also help increase understanding and possibly result in some innovative solutions. It would, furthermore, support capacity building, as technical skills for quantifying risk or working with risk assumptions could be transferred. This returns to the theme of multi-disciplinary teams mentioned earlier. It also relates to increasing interaction between departments and agencies, such as through secondments and working groups at officer or lower management level. Workshops and capacity building courses for certain technical skills would also assist in bringing together different work cultures and sectoral knowledge.

7.1.4 Political decisions

As mentioned previously, decisions to prohibit development in certain areas can be politically difficult (interviewees VIC-KI 7, WA-KI 3, WA-KI 6). This is true both pre- and post-disaster.

> There's a reluctance of government to restrict rebuilding and [it's] politically very difficult. (interviewee VIC-KI 5).

Post-disaster, politicians are unlikely to want to communicate to traumatised communities that they may not be able to return to the place where their homes previously stood. Where development already exists, changes to regulation may be challenging to explain, particularly where communities or landowners are unlikely agree with those changes. Furthermore, if redevelopment is restricted, landowners would need to be compensated and supported to move elsewhere—potentially away from their existing communities. Places to relocate households may also be difficult to find if land prices are higher elsewhere.

While some of these decisions are made or recommended by state or territory agencies or local government departments, in most cases politicians approve the final decisions. Politicians may also be called on by community members to intervene in processes where restrictions are suggested by officials. The role of government employees is to provide evidence-based advice, but as the final decisions are made in political arenas, politicians are important stakeholders.

There are different political challenges in areas which were developed before a disaster compared with those which were undeveloped. For areas with existing or 'legacy' development, it is complicated to prohibit further building. Proponents will often question why development has previously been allowed, particularly in areas of infill and smaller-scale development close to existing settlements (Rowley 2023). In smaller towns, prohibiting development may be even more politically difficult because applicants and politicians often know each other (interviewee VIC KI 2).

In areas that were undeveloped before a disaster, there can be a desire for new building activity to progress the town economically or provide space for growth. There may also be tensions if landowners expect areas to be zoned for development. Again, in smaller towns where stakeholders know each other well, these tensions may make political decisions to prevent growth more difficult (interviewee WA-KI 3). The same can, of course, also be true for larger towns.

Establishing clear political priorities and frameworks for disaster risk reduction would help politicians and government staff make these potentially unpopular decisions. While clarifying political priorities is an important first step, for some activities prioritisation also needs to translate into funding. For example, buy-back schemes and land swaps need funding to be implemented. Providing financial incentives for the retrofitting of buildings to required standards would also need funding.

> Government does, as part of the Built Environment Climate Change Adaptation Action Plan, (…) have some directions (…) around things like buy-back, supporting that resilience of the built environment at a sector level. The reality is government's not funding any of those actions particularly in the fiscal environment at the moment. (interviewee VIC-KI 2)

Additionally, as mentioned in Section 3.4, it may be useful to keep extra capacity available in some categories of infrastructure. Having a more comprehensive road network or more relaxed housing market would make it easier to respond in a disaster situation. However, this extra infrastructure capacity would require additional investment.

The argument for putting funding into resilience initiatives such as these is that it saves money when a disaster hits. Investment in disaster risk reduction and preparedness is cost-effective because it helps avoid disasters or lower impacts, thus reducing spending on disaster response and recovery. The Productivity Commission (2014) found that Australian governments overinvest in post-disaster reconstruction and underinvest in mitigation. It was estimated that 97 per cent of Australia's disaster funding was spent on response and recovery, with only 3 per cent spent on mitigation and preparedness. Reconstruction is very expensive, and mitigation funding is 'cheap' in comparison, and the Commission recommended that support for mitigation should be increased. This argument is not often heard, as disaster risk assessment is based on probabilities and eventualities—and it could be that disaster does not strike. However, with the rising number of incidents and increasing strength of natural hazards, this argument is likely to gain in significance.

Nevertheless, there is currently more funding available for disaster response and recovery than for disaster reduction:

> *Funding is only delivered post event, and there's no funding between events necessarily to maintain a capability to respond or build an evidence base or even evaluate what does work through different incidents. (interviewee VIC-KI 10)*

7.2 Integration between state and local government

The focus of this report is the integration between housing policy, settlement planning and disaster management at state and territory level. However, local government also has a strong role in disaster management. It is the level of government closest to the community and in many cases the first responder (AIDR 2023, interviewee WA-KI 2). As such, the integration between housing, planning and disaster management on a local level is of interest, as is the coordination between state and territory governments and local government.

The critical point mentioned most frequently in interviews was that local government generally does not have sufficient planning capacity, particularly in the response and recovery phases. After a disaster has hit, the number of requests for planning and building permits increases sharply, for both repair and rebuilding. Councils cannot manage the number of requests with their normal staff complement. In some cases, local government receives assistance from state or territory government to hire additional planners. This enables councils to respond to increases in applications, but long backlogs have still been reported (interviewee VIC-KI 3).

> *Local government absolutely does have a role and has a function but doesn't have capacity. It has capacity day to day, but it actually doesn't have enough resources once you get these disasters occurring for the actual process then of the BAL rating process and any other planning process for building to progress building again after the event, it doesn't have the capacity to do that. (interviewee VIC-KI 1)*

Prevention and preparedness activities, such as making planning decisions and developing local emergency management plans, are more within the remit of the day-to-day activities of local governments. However, there can be limited capacity to manage activities in the prevention and preparedness phases, especially in smaller regional councils. These councils often do not have the in-house expertise, and many do not have dedicated housing, planning or emergency management staff (McGregor, Parsons et al. 2022). Planning strategies in these areas are often developed by external consultants and even the five yearly updates of planning frameworks are a challenge due to costs and capacity (interviewee WA-KI 4). The capacity and number of dedicated staff also influences the level of integration between housing, planning and disaster management at the local level. The level of integration differs between councils. While in some councils planners work closely together with emergency management, in others this collaboration does not occur. Local government associations, such as WALGA in Western Australia, support discussions about hazard risks and emergencies within and between councils and provide information and advice to local government (interviewee WA-KI 4).

It is therefore of central importance to clarify which elements of disaster risk reduction and preparedness should be the responsibility of local government, and which elements would better be the responsibility of the state or territory. This is an important question because there has been a steady erosion of the control and influence of local government over planning. Some planning powers have moved to the state, when local government is the level where many of those planning decisions should arguably be made (interviewee WA-KI 1). This is particularly the case in Western Australia, where local governments implement decisions made by state government agencies and the WAPC determines local planning strategies and structure plans.

Tasks like risk assessment might be better undertaken at the state and territory level to ensure a consistent approach, and because state and territory governments have greater resources. Undertaking risk assessment at the state and territory level would also enable the significance of the surrounding landscape to more easily be taken into account. This information might not be available at council level (interviewee WA-KI 3). Furthermore, determining risk levels within a consistent state-defined framework has the potential to remove or decrease the influence of local desire for development. Nonetheless, it would remain important for communication and collaboration to work well. For example, one Victorian interviewee noted that there had not been much communication or consultation about the Bushfire Management Overlay before its implementation.

> The state did bring in the bushfire management overlay. (…) Just brought it into the planning scheme, dropped it in. If you have any problems, we'll run review processes, but people didn't get really much of a chance to—didn't get a chance to review it before it came in, it was just dropped in. (interviewee VIC-KI 7)

Overall, it seems the Australian Government would be in the best position to lead or coordinate decisions about which data assumptions should be used to standardise risk assessment across the country and support data sharing and availability. State and territory governments could then lead studies and modelling of risk assessment, such as flood studies and bushfire modelling, and engage communities and local government in decisions about risk assessment. The role of local government would then be to integrate risk assessments into planning schemes in a timely manner and incorporate local knowledge.

Similar questions have arisen about responsibilities for decisions in the recovery phase. The Northern Rivers Reconstruction Corporation — now part of the NSW Reconstruction Authority — had been tasked with finding suitable land for relocation and making buy-back offers to eligible households. Interviewees reported that councils have not been sufficiently involved in decisions about relocation and buy-backs, and also that finding suitable land took too long.

> That's a frustrating thing where again, council's very much in a backseat role whereas the state has set up this authority or a bureaucracy to lead that and funded it and resourced it. Our role as council, it becomes this advocacy role trying to get inside the tent to put our case for the way we would like things to happen and where we would like to happen, but by the nature of that, we're much more reactive than being proactive off the front foot. (interviewee NSW-KI 3)

7.3 Delays in implementing policy changes

There are often delays in implementing policy changes after they have been adopted, both at state and territory and at local government level. Sometimes, large-scale disasters can bring forward changes as the need becomes more obvious. Often these changes are based on recommendations from Royal Commissions or other inquiries, demonstrating that evaluation of processes after a disaster is a useful exercise.

For example, following the 2009 Black Summer bushfires, the planning system in Victoria (and elsewhere) quite clearly changed requirements around settlement and building in bushfire-prone areas. Similarly, the 2022 floods in New South Wales and Victoria have had, or are likely to have, an influence on the planning system. For example, the NSW State Disaster Mitigation Pan outlines actions to reduce hazard exposure and vulnerability within strategic planning controls and building codes. These actions include developing a library of standard planning controls for all natural hazards for councils to apply. They also include developing frameworks, processes and tools to determine tolerable natural hazard risks for different development types and land uses. Other proposed actions are the inclusion of resilience to natural hazards in building codes, updating building standards to increase resilience to natural hazards, and embedding standards in legislation. These actions are set to take place between mid-2024 and 2026 (NSW Reconstruction Authority 2024).

While changes may be incorporated into policy relatively quickly, it may take longer for them to arrive in practice. For example, one interviewee said:

> *We are still seeing (planning) amendments come to us where the planners haven't really considered bushfire yet, (…) which I think, 10 years or however many years after policy changes is quite interesting. (interviewee VIC-KI 5)*

There is also frequently a lag between a new risk assessment being prepared and its incorporation into a planning scheme. This can lead to decisions being based on out-dated risk assumptions. One state government interviewee mentioned that there were 'something like 35 odd flood studies that have been around for up to 10 years, that aren't in the planning scheme yet' (interviewee VIC-KI 2). The interviewee cited resourcing issues as a reason for this delay, as well as a lack of prioritisation. Relatedly, Western Australia is considering changing the timeframe for the review of local planning frameworks to every 10 years, as many smaller councils have difficulties with the current five year review cycle (interviewee WA-KI 4). As up-to-date information is critical in understanding hazard risks, this change would be problematic. Increased resourcing at the local level, or state government assuming some council roles, could be a partial solution to this problem. Consistent risk assessment at the state level might also ease the integration of such assessments into planning schemes.

7.4 Learning from disasters

There are opportunities to learn from disasters and their response and recovery phases. This already occurs, and in some states structures have been put in place to ensure that evaluations of emergencies and disasters occur. For example, the Inspector-General for Emergency Management in Victoria is responsible for providing assurance to government and the community and fostering the continuous improvement of emergency management. The Inspector-General undertakes reviews, evaluations and assessments of Victoria's emergency management arrangements and the sector's performance, capacity and capability. This includes reviewing disaster response and recovery and monitoring the implementation of recommendations identified in reviews (State of Victoria 2023). A similar role exists in Queensland under the Disaster Management Act 2003.

In other situations when a large disaster has hit, ad-hoc inquiries or Royal Commissions may be established to understand shortcomings and successes in disaster response. Examples include the national review of the 2019–20 bushfires, the 2022 independent flood inquiry for New South Wales, and the Royal Commission into the Victorian 2009 bushfires.

Yet these inquiries generally do not specifically investigate housing policy or settlement planning. They focus on overall disaster response and recovery, and often on emergency management. Settlement planning is often taken into account, but only in relation to land use zoning and whether urban development should have been allowed in impacted areas. Structures should be in place in housing and planning departments to learn from the response and recovery phases and ensure that all improvements can be made across all four phases of the disaster management cycle. Learnings might include whether additional activities are necessary, activities need to be improved, and/or further coordination between agencies is necessary. Use of a consistent review framework would ensure efficiency and timeliness, and that evaluations respond to the same questions.

For example, one interviewee suggested evaluating the provision of temporary accommodation, including whether it is it suitable for all households (interviewee VIC-KI 10). They also suggested improving exchanges between states and territories to learn from each other's experiences, understand the types of temporary accommodation suitable each situation, and discover how the provision of temporary accommodation could be improved. The interviewee wished for more evidence building in this regard:

> *It's just a bit of a vacuum at the moment, I feel that (…) there's no investment for research or evidence building within the disaster recovery funding arrangements. (interviewee VIC-KI 10)*

Alternatively, housing and settlement planning could be added as regular topic areas to investigate in disaster evaluations.

7.5 Policy development implications

The integration and coordination of housing, planning and disaster policy have improved in recent years, as policy recommendations from inquiries and Royal Commissions have been implemented. Additionally, the need for improved disaster recovery, preparedness, prevention and response has become more obvious with the increased frequently of large-scale disasters.

As other research has also found, different work cultures and objectives and the loss of institutional knowledge remain barriers to integration and coordination. Furthermore, the integration of disaster thinking into areas such as planning and housing is slow because disasters and hazard events are still considered exceptional and unlikely to happen. Disaster thinking is, therefore, often not integrated into the day-to-day activities of agencies and governments. For example, while housing agencies have thorough experience of organising emergency housing, increased disaster risks and climate change impacts are often not considered in housing supply and location. For settlement planning, disaster risk reduction is incorporated into day-to-day activities due to legislative and other requirements, but decisions are sometimes based on out-dated risk information. Other objectives, such as urban growth and economic development, can also be prioritised.

Policy development opportunities to improve the integration and coordination of housing, planning and disaster management include:

- Where restructures of government agencies are necessary, they should be undertaken quickly. Ongoing restructuring impacts institutional knowledge, motivation of staff and effectiveness of agencies. Time-limited contracts should be the exception rather than the norm, as high turnover of staff impacts coordination efforts and effectiveness.

- In Victoria and Western Australia, clarification of the responsibility for housing recovery is necessary, including coordination between housing (DPC and DFFH) and disaster management (DFES and ERV). In New South Wales it seems that the current agency structure works quite well. There the Reconstruction Authority is responsible for housing recovery, with local housing services and welfare assistance providers supporting state government.

- Increasing exchange between housing, planning and disaster agencies would support staff to understand the differing objectives and work cultures within each agency. It would also improve coordination and the development of joint strategies. This exchange could be achieved through secondments and working groups at the officer or lower management level. The creation of multi-disciplinary teams is also important, as they provide an opportunity for the exchange of knowledge.

- The development of clear priorities and frameworks would assist in integrating disaster and risk thinking into housing and planning. The implementation of priority actions also needs to be funded. For example, funding is needed for buy-back schemes, land swaps and establishment of temporary housing stock, such as humanihuts. Funding for disaster risk reduction efforts is particularly crucial and will be cost-efficient in the long-term, as lowering the impact of natural hazards can avoid larger costs for response and recovery.

- To more clearly communicate political priorities, 'protection of lives' and 'mitigation and adaptation to climate change impacts' could be added to planning regulations. As noted previously, this has been done in Victoria in relation to bushfire planning. A requirement to manage the impacts of natural hazards could also be more clearly incorporated into the planning system, as is planned in Western Australia. These changes would help support sensible, but potentially unpopular, decisions to be made.

- It is imperative that future federal, state and territory housing policies and strategies proactively address the challenges caused the escalating impacts of climate change. A crucial first step would be conducting thorough risk assessments of housing developments to accurately identify areas susceptible to climate-related hazards. Subsequently, prioritising climate-resilient locations and strategically siting social housing in regions less prone to flooding and other climate-related disasters would become pivotal strategies.

- Establishing systems to evaluate and monitor disaster recovery would support improved housing and planning policy decisions. For example, more systematic evaluation could enable an evidence base about the suitability of temporary housing options to be developed. It could also enable integration and coordination with disaster prevention, preparedness and response to be improved.

- There is a need for a better and clearer division between the responsibilities of federal, state and territory, and local governments. This field is in a state of flux, as improvements are continuously made based on experiences with disaster response and recovery and changes in hazard and disaster risks. With the current knowledge, indications are that the:

  - Australian Government should lead or coordinate decisions about data assumptions to standardise risk assessment across Australia. It should also support data sharing and availability.

  - State and territory governments should:

    - lead studies and modelling for risk assessment, such as flood studies and bushfire modelling, to standardise risk assessments

    - undertake evaluations of disaster prevention, preparedness, response and recovery when a disaster has happened

    - engage communities and local government in decisions about risk assessment and the need for particular regulations

    - prepare policies for disaster recovery situations, such as streamlined planning processes and exemptions from certain regulations

    - support councils in their response to disasters, such as by assisting with additional planning staff.

- Local government should:

  - integrate risk assessment into planning schemes in a timely manner

  - improve coordination between local emergency management and planning

  - develop comprehensive strategic hazard risk land use plans.

- The local knowledge and expertise of councils needs to be integrated into disaster recovery, such as when relocating community members and identifying suitable land for rebuilding.

- Local government needs support from higher levels of government to undertake regular updates of planning schemes according to new risk assessment insights and to process building and planning permits after disasters. This support could include additional financial and staff resources, particularly during the recovery phase, as well as improved policies and streamlined processes.

8. Conclusions

In recent years, large-scale disasters have been occurring more frequently in Australia, with increased impacts. Reasons for this increase in frequency and impact include the intensification and accumulation of extreme weather events due to climate change, population growth, and concentration of population in urban and vulnerable areas (such as coastal zones, flood zones and peri-urban areas). The location of housing and other land uses plays a vital role in managing disaster risk and impact, as does the resilience of building designs. Integrating and coordinating housing policy, settlement planning and disaster prevention, preparedness, response and recovery is an urgent objective. This research has investigated the current state of policy integration in New South Wales, Victoria and Western Australia, the understanding between the different sectors, and the barriers to and enablers of improved integration.

8.1 Integrating housing policy, settlement planning, and disaster prevention, preparedness and response

This research sought to address the Inquiry research question: how can institutional coordination strengthen housing policy and settlement planning in disaster prevention, preparedness and response? The research sought to identify Australia's housing policy and settlement planning arrangements for disaster management. It also sought to identify current gaps and potential improvements to Australia's disaster prevention, preparedness and response. Finally, the research considers the housing policy and settlement planning options that could improve Australian disaster prevention, preparedness and response.

8.1.1 How effectively are housing policy, settlement planning and disaster management integrated in Australia?

State emergency management, recovery and hazard agencies coordinate disaster preparedness, response and recovery with other state government agencies and stakeholders, including housing and planning agencies. This is also true, to some extent, for disaster prevention. This coordination generally works well and the agencies have established good coordination processes. Formal interaction occurs through state emergency management planning and through fire agencies acting as referral agencies for planning applications. However, there are opportunities to improve disaster management knowledge and day-to-day 'disaster thinking' of housing and planning agencies.

Housing agencies are commonly involved in disaster preparedness, response and recovery. During the preparedness phase, responsibilities for disaster response are clarified with housing agencies and documented in emergency management plans.

A key responsibility of housing agencies during disaster response is the management of emergency accommodation. Housing agency responsibilities are also linked to the provision of financial assistance, as community and welfare authorities are often located in the same department. In the recovery phase, the provision of temporary housing and rebuilding of permanent housing is connected to housing policy. Broader policy decisions and the housing market context also play into the recovery process, as the ease of finding temporary and permanent housing is affected by the housing market in the impacted areas. However, housing recovery is not always the task of housing agencies. In Victoria and Western Australia, responsibility for housing recovery has moved between hazard agencies, housing agencies and local government. In New South Wales and Queensland, housing recovery is the task of a reconstruction authority rather than a housing agency.

Settlement planners are principally involved in disaster risk reduction, preparedness and recovery. The role of settlement planning in risk reduction is primarily in considering hazard risks and climate change impacts when preparing for urban development and steering development away from high-risk areas. This includes identifying the natural environments where it is particularly important to avoid hazard risks.

During the preparedness phase, planners conduct area risk assessments. These assessments can lead to the implementation of overlays, such as bushfire management or flooding overlays. These overlays affect building requirements and standards. In the recovery phase, statutory planning processes are the focus—particularly streamlining and accelerating processes to facilitate faster rebuilding. This includes assessing whether an area is suitable for building back, issuing permits for temporary housing, assessing and issuing building and planning permits for rebuilding, and possibly finding suitable locations for relocation. In this phase, managed retreat and buy-back schemes may come into play. To be implemented promptly, these schemes should be prepared pre-disaster. Relocation and buy-back schemes are sometimes the responsibility of reconstruction authorities, as is the case in New South Wales and Queensland.

In housing policy, there is a need to accord greater priority to disaster risk reduction, such as by considering climate change impacts and disaster risk in housing strategies. This work could include assessing locations in relation to hazard risks, adopting compact development strategies to avoid growing further into higher risk areas, and improving the resilience of housing stock. In settlement planning policy, coordination between planning and disaster management agencies could be extended in the recovery phase and deepened for disaster risk reduction. While disaster risk reduction practices are embedded strongly in bushfire planning, they are less clearly regulated for other natural hazards. Streamlining planning processes and policies for managed retreat and buy-back schemes could support recovery.

8.1.2 What are the barriers to the integration between housing, settlement planning and disaster management?

The research found that differing work cultures and objectives and loss of institutional knowledge are barriers to integration and coordination across agencies. This reflects findings previously reported in the literature. Loss of institutional knowledge can be caused by ongoing restructuring and having large numbers of staff on fixed-term contracts, as well as subsequent turnover of staff. These factors were noted in the interviews as barriers to integration.

The main goal for disaster agencies is to save lives, while the goals for planning and housing agencies are to enable urban development and support (affordable) housing supply. As such there can be conflicts between desired hazard and risk, economic development, and environmental and social outcomes, which can act as barriers to integration.

The limited consideration of disaster risk and potential impact is also a barrier in housing policy, and to some extent in planning. This thinking is not integrated into day-to-day activities of agencies and government. Generally, only divisions directly involved in emergency response or prevention, such as the divisions which provide emergency housing, have an awareness of disaster management. Community housing providers seem to consider the risk of hazards more explicitly, for example when deciding the locations of housing. Awareness is more prevalent in planning agencies due to legislative and other requirements to have regard to natural hazards. It also depends on the perceived risks in the urban and natural environments. For example, planners in bushfire-prone areas will likely be more risk aware than planners in an inner-city council of a large city.

In this context, additional barriers include limited official interaction between planning agencies and hazard and emergency management agencies that are not referral agencies; lack of cooperation between emergency accommodation agencies and agencies responsible for temporary housing; and in Western Australia and Victoria a lack of clear responsibilities for housing recovery activity.

Lack of data, knowledge about data availability, and data sharing were highlighted in the interviews as important barriers to housing, planning and disaster management coordination, confirming previous research. Interviewees reported that, even within state and territory governments, it is sometimes unclear which data is available for risk assessment. Access to data may also be unavailable. Thus, state and territory government planning and emergency management staff may be unaware of data they could use. Access to data in local government can also be difficult, because of costs involved with accessing or collecting data. Interviewees also suggested that increasing the public availability of data and improving its communication would improve the risk awareness of the general public.

Another reported issue was the lack of standardised approaches to the data used for risk assessment. This means that risk assessments can be different across agencies and localities. A connected issue is that not all councils and state agencies have staff with the technical skills to prepare risk assessments. If settlement planning is based on out-dated risk information, or out-dated or differing risk assumptions, there are consequences in the appropriateness of decisions. It is also confusing for the public and politicians, and does not add to credibility, if risk assessments for the same area arrive at different results.

Finally, the lack of resources in local government, particularly for the processing of planning permits, is a barrier to responding sufficiently to community needs in the recovery phase. This has also been noted in other studies. Smaller councils can also lack the resources and technical skills for disaster preparedness. For example, resources might not be sufficient to update planning schemes regularly or to feed risk assessments, such as flooding studies, into the planning system in a timely manner.

8.1.3 How can integration between housing policy, settlement planning and disaster management improve?

Integration of housing policy, settlement planning and disaster management can be improved through various actions, as highlighted in the sections on policy development options in this report. At a high level, establishing clear responsibilities, political priorities and a whole-of-government approach would improve integration. This section gives a brief summary of the most important activities. An overview of policy development options contained in this report is given in Tables 6-11, including references to the sections of the report where the options are discussed.

Table 6: Overview of policy options for housing

Housing considerations	Policy options
Disaster risk reduction	Including thinking on the resilience of housing to natural hazards will improve the contribution of housing policy to disaster risk reduction and preparedness. (See Sections 6.3, 6.4, 7.1, 7.5)
Housing market	Improving housing supply will assist in easing housing markets, improving conditions for temporary housing. (3.4, 3.5, 4.2, 4.3)
Temporary housing	Evaluating temporary housing programs will assist and improve future recovery efforts. (5.2, 5.4, 7.4, 7.5)
	Creating an inventory of adaptable temporary housing will help improve recovery by accelerating response times. (5.2, 5.4)
	Clarifying responsibilities for housing recovery, including improving coordination between emergency and temporary accommodation authorities, can support the recovery journey of households. (4.2, 4.3, 5.2, 5.4)
	Developing responsive strategies for worker accommodation can support rebuilding. (5.2, 5.4)
Support for homeowners and renters	Supporting all homeowners can assist rebuilding efforts, particularly for underinsured households which do not qualify for emergency support. (3.3, 5.2, 5.4)
	Providing particular support for private renters will improve their recovery journey and respond to inequalities. (5.2, 5.4)

Source: Authors

Priority actions (those actions that will have a strong effect and/or can be implemented in the comparative short-term) include the establishment of regular arrangements for evaluating recovery experiences, with a focus on planning and housing decisions. Evaluation of experiences in previous disasters will support further improvement in the management of disasters and streamlining of processes. Evaluation already occurs in part through inquiries into disasters, but a standardised evaluation by housing or planning agencies would provide a more focused result. For example, housing agencies could develop lists of suitable temporary housing types and their availability as a tool for the recovery phase.

Responsive strategies for worker accommodation and specific support programs for private renters are also priority actions. Housing agencies can be involved by developing or supporting programs to establish temporary accommodation for workers in impacted areas and providing appropriate support for renters.

Table 7: Overview of policy options for planning

Area	Policy options
Disaster risk reduction	Clarifying priorities, rules and criteria for urban development decisions would facilitate decisions about locations for building and retreat. (See Sections 2.2, 2.5)
	Developing strategies, policies and programs for managed retreat and buy-back would support faster deployment post-disaster based on agreed parameters, and could support disaster risk reduction. (2.3, 2.5, 5.3)
	Developing policies to limit settlement expansion into risk areas, such as compact development policies, would limit disaster risk. (2.4, 2.5)
Land use planning and zoning	Developing comprehensive hazard-risk land use plans (local to regional level) would improve coordination between different sectors. These could be similar to NSW Disaster Adaptation Plans. (2.2, 2.5)
	Implementing resilience programs that consider built form and designing place-based strategies to manage disaster risk would support local risk reduction and preparedness. (2.4, 2.5)
	Designating additional referral agencies for natural hazards would support regulated inclusion of hazard agencies in providing expert advice. (6.1, 6.4)
	Having a hazard-oriented planning policy developed by hazard agencies would ensure consistent feedback and could be considered in the development of land use plans. (2.2, 2.5)
Post-disaster	Streamlining planning and risk assessment processes would support faster rebuilding and relocation, while maintaining core planning requirements and avoiding population dispersal. (2.3, 5.3, 5.4)

Source: Authors

Another priority is to increase exchange between housing, planning and disaster agencies, such as through secondments and working groups at the officer or lower management level. This would improve cross-government understanding of agency objectives and work cultures and improve coordination and development of joint strategies. Capacity building, such as building technical skills in risk assessment, would improve understanding and coordination. Creating multi-disciplinary teams is also important. Further research could investigate specific systems, protocols and procedures for encouraging institutional coordination and integration in more detail.

Similarly, improving data sharing and harmonisation would improve integration and planning and housing decisions in relation to disaster risk, response and recovery. This topic is considered in more detail in the Improving coordination of data and actors for disaster-responsive housing and safer communities, which is part of the same AHURI Inquiry as this project.

Table 8: Overview of policy options for building standards

Area	Policy options
Implementation	Improving the communication of standards, and the rationale for their development, will improve acceptance and implementation. (See Sections 3.3, 3.5)
	Developing options for alternate building materials and enabling owners to undertake some improvements themselves would facilitate adherence to building standards and avoid an overreliance on specific products (3.3, 3.5)
Incentives	Creating incentives for owners to build or retrofit homes to a quality above the required standard could improve implementation. Incentives could include a reduction in insurance premiums or financial incentives from government. (3.3, 3.5)

Source: Authors

Development (or further improvement) of strategies for managed retreat and buy-back, as well as reasonable streamlining of planning processes and risk assessment, are priority actions which will improve integration in the recovery phase and can contribute to disaster risk reduction. Similarly, introducing hazard-risk aware land use plans will improve the consideration of natural hazards and disaster risk reduction in settlement planning.

Creating incentives for building or retrofitting homes to meet or exceed building standards will need cooperation between government and insurance companies. This could, however, have an important impact when a disaster occurs.

The need for, and feasibility of, implementing actions will depend on the governance structure in each state and territory. For example, in Western Australia and Victoria there is a need to clarify responsibilities for temporary housing, while in New South Wales this responsibility has been assigned to the Reconstruction Authority. Data availability and sharing practices also differ between the states, so different steps are necessary in each state. However, improving data availability and determining shared data assumptions should be considered at the federal level.

The policy options presented in the following tables therefore give a broad overview of the policy options for improving coordination and integration of housing policy, planning and disaster management and to improving disaster risk reduction, preparedness, response and recovery. They do not point towards specific steps that need to be taken in specific jurisdictions.

Not all policy options are equally easy or feasible to implement. There will be tensions and trade-offs for many policy options, as highlighted in the report. For example, there are tensions between disaster risk reduction outcomes and other land use planning outcomes, such as economic, social or environmental impacts. There are also tensions due to differences in risk assessments and in working cultures, as well as between the aims of accelerating rebuilding and assessing whether rebuilding is feasible at all.

Tensions and trade-offs also include questions of costs and priorities for funding. This includes providing support for impacted households to enable them to recover more quickly. Decreasing pressure in already tight housing markets would also contribute to disaster preparedness, but would come at considerable cost. This cost would be likely to escalate with further increase in disaster risk.

Increasing resource capacity and infrastructure redundancy (such as building more roads) is another trade-off to be considered. Investment in services and infrastructure would improve emergency response, but these resources would not be used efficiently outside of disaster situations and would also be expensive. Resolving these tensions requires clear priority setting. However, as investment in disaster risk reduction is more cost efficient than funding of disaster response and recovery, the former should be prioritised.

Table 9: Overview of policy options for data, information and evaluation

Area	Policy options
Data	Establishing a database with relevant government data and analytics, accessible for all government agencies and the public, will support consistent risk assessment, coordination and awareness. (state or federal level) (See Sections 2.5, 3.2, 3.5)
	Harmonising data use by defining risk assessment datasets and assumptions will improve consistency in risk assessments, lowering likelihood of appeals of decisions. (state or federal level) (3.2, 3.5)
Information	Increasing the availability and dissemination of information about hazard risk, such as through online maps or at the point of property sale, will support awareness and understanding of risk. (3.2, 3.5)
Evaluation	Establishing regular arrangements for evaluating recovery experiences, with a focus on planning and housing decisions, will support policy and practice improvements and can inform future disaster recovery programs. For example, this process could help develop an evidence base about the most suitable temporary housing options. (5.2, 5.4, 7.4, 7.5)

Source: Authors

As risk reduction activities assist in avoiding or decreasing loss of life, destruction of infrastructure and other impacts, disaster risk reduction is often considered the most impactful phase of the disaster cycle. Funds spent on disaster risk reduction can assist in avoiding the high costs of response and recovery and are thus more cost-effective. While this research has not investigated the costs of different actions, it is generally acknowledged that investment in disaster risk reduction and mitigation is more cost-effective (see for example Productivity Commission 2014). It is also a better outcome for society if suffering and loss can be avoided. Strengthening integration between housing policy, settlement planning and disaster management is therefore an important step to improve the development and outcomes of risk reduction measures.

Table 10: Overview of policy options regarding governance structures

Area	Policy options
Institutional knowledge	Establishing structures to retain and improve institutional knowledge, such as regular exchange, multi-disciplinary teams and ongoing contracts, would improve coordination within and between agencies. (See Sections 7.1, 7.5)
Responsibilities between tiers of government	Organising responsibilities between different tiers of government more coherently will improve implementation and avoid duplication. Suggested responsibilities are: • Federal government: coordinating data assumptions and availability • State and territory government: undertaking risk assessment and modelling, evaluations and engagement and preparing disaster recovery strategies • Local government: implementing assessments into planning schemes, preparing hazard-risk land use plans and feeding in local experience. (7.2, 7.5)
Local government	Establishing support programs for local government would support disaster risk reduction, preparedness and recovery. This could include additional staff or streamlined planning processes for recovery and support for regular update of planning frameworks and hazard risks. (5.3, 5.4, 7.2, 7.5)
Funding	Supporting policies with funding, such for buy-back schemes or establishing a stock of temporary housing options. Funding for disaster risk reduction efforts is particularly needed and will be cost-efficient in the long-term, as it avoids larger costs for response and recovery. (7.1, 7.5)

Source: Authors

State emergency plans and similar documents refer to the need for emergency, interim and permanent accommodation, and for housing agencies to be involved in the provision of this accommodation. However, there is often no mention of disaster management in housing legislation and policy. In this context, a clearer acknowledgement of the role of housing agencies in disaster management is important. This could be gained by adding requirements to consider disaster risk reduction, preparedness, response and recovery into relevant legislative and policy. These frameworks could also include criteria for housing agencies to consider, similar to those identified by Maund, Maund et al. (2022) for improving the consideration of bushfire risk in land use planning. These criteria are: location of housing (proximity to hazard); construction (improved building quality/standards); and demographic characteristics (knowledge about and prioritisation of vulnerable groups, ensuring their access to temporary housing and assistance in disaster recovery).

While they do not necessarily need to be the lead agencies for the provision of temporary housing, some housing agency involvement would be beneficial, given their responsibility for housing supply and, to some extent, homeowners and renters. Housing agencies could also set up structures to include community service providers, other community organisations and the community itself in recovery (and potentially also in reduction and preparedness). Moreover, improving cooperation between the agencies responsible for emergency accommodation and subsequent temporary housing would improve transition between these phases for impacted households. This includes improving data sharing, clarifying lines of communication and better defining responsibilities.

Table 11: Overview of policy options regarding non-government stakeholders

Area	Policy options
Community	Improving community engagement, such as on land use plans or data about hazards. (See Sections 2.3, 2.5, 3.2, 3.5)
	Including community, community organisations and service providers in disaster risk reduction, preparedness, and recovery activities. (5.2, 5.4)
Insurance sector	Considering reducing insurance premiums where building standards are reached or surpassed, as well as joint establishment of temporary villages, via cooperation between the insurance industry and state/federal government. This would increase the resilience of homes and support community cohesion post-disaster. (3.3, 3.5, 5.2, 5.5)
	Adding building back 'somewhere better' to insurance options to allow for managed retreat, where preferable. (5.3, 5.5)

Source: Authors

Clarifying the prioritisation of disaster risk reduction would help support a stronger integration of planning into disaster management. This could include adding 'saving life' as a priority in planning legislation, as is planned in Western Australia and strengthening planning requirements to give regard to natural hazards, as suggested by the Royal Commission into National Natural Disaster Arrangements in 2020. It could also include establishing referral directives within the planning process for all natural hazards, similarly to fire agencies acting as referral agencies.

Finally, responsibilities between the different tiers of government should be further clarified and organised more coherently, with the same level of government being responsible for similar tasks across the states and territories. For example, the Australian Government could take on the role of coordinating databases, data availability and assumptions used in risk assessment. State and territory governments could lead risk assessment and modelling, evaluation of recovery experiences, engagement of community and local government, and strategies for disaster recovery. Local government could implement risk assessments into planning schemes, develop hazard-risk land use plans and feed local experiences back to state and territory governments.

8.2 Outlook

This study has shown that integration of the work of hazard and emergency, planning and housing agencies has improved in the last 15 years. This is particularly due to insights from Royal Commissions and other inquiries into major disasters, consequent changes in regulations, and a raised awareness of the need for improved processes due to the increasing occurrence and scale of recent disasters. However, integration needs to be further improved and 'disaster thinking' needs to be better integrated into housing policy and settlement planning.

Overall, there is a need to take greater account of the impact of natural hazards and the risk of disaster when planning for urban growth and new housing. Housing policies and strategies need to consider disaster risk more clearly. While housing supply is a significant issue in Australia, the resilience of housing to natural hazards and climate change impact is similarly crucial. Clearer regulations about urban development priorities, as well as improved data availability and harmonisation, would assist planners in making firmer decisions about limiting development.

The development of clear political priorities and frameworks would help integrate disaster and risk thinking into housing and planning policy and practice. Stated priorities also need to be supported by funding. For example, buy-back schemes, land swaps and establishment of a stock of temporary housing options need funding. Funding for disaster risk reduction efforts is particularly needed and will be efficient in the long-term, as it lowers the impact of natural hazards and thus avoids larger costs for response and recovery.

Institutional coordination to strengthen the role of housing policy and settlement planning in disaster prevention, mitigation, preparedness and response should include adding disaster themes into relevant legislation and framework, increasing exchange between agencies through secondments and working groups, and clearly defining the responsibilities of housing and planning agencies in the different disaster management phases.

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Appendix 1: Key housing policy, settlement planning and disaster management organisations in Victoria, New South Wales and Western Australia

The following gives an overview of the key actors for housing, policy, settlement planning and disaster management in Victoria, New South Wales and Western Australia as the case studies for this report.

Victoria

There are more than 60 organisations involved in Victoria's emergency management sector with the State Emergency Management Plan (SEMP) describing emergency management arrangements and responsibilities (Emergency Management Victoria 2024b). The following briefly describes the key organisations which are also listed in Table 12.

Table 12: Key housing, settlement planning and disaster management organisations in Victoria

Disaster	Housing	Planning
Emergency Management VIC	Department of Families, Fairness and Housing (DFFH)	Department of Transport and Planning (DTP)
State Crisis and Resilience Council		
State Recovery Coordination Committee	Homes Victoria (within DFFH)	Victorian Planning Authority
Emergency Recovery VIC		
Police Services		
Ambulance services		
Medical services		
Fire services		
Department of Energy, Environment and Climate Action		

Source: Authors' presentation based on the State Emergency Management Plan

Emergency Management Victoria is a statutory entity established in July 2014 under the *Emergency Management Act 2013*. The organisation's task is: 'Leading emergency management in Victoria by working with communities, government, agencies and business to strengthen their capacity to withstand, plan for, respond to and recover from emergencies' (Emergency Management Victoria 2024a).

It is led by the Emergency Management Commissioner and the Chief Executive. The Emergency Management Commissioner has responsibility for coordination before, during and after major emergencies, including the management of consequences of an emergency and also recovery. The Chief Executive of Emergency Management Victoria is responsible for the day-to-day management of Emergency Management Victoria.

The **State Crisis and Resilience Council** is responsible for providing emergency management policy and strategy advice to the Victorian Government. Its membership comprises the secretaries of all Government Departments, the Chief Executive Officer of the Municipal Association of Victoria (MAV), the Emergency Management Commissioner, the Chief Executive of Emergency Management Victoria and the Chief Commissioner of Victoria Police.

The **State Recovery Coordination Committee** (SRCC) is responsible for providing advice on the recovery needs and priorities of Victorian communities and governance of recovery activities. Its membership consists of Victorian Government senior officials. SRCC supports recovery agencies to undertake their responsibilities and resolve cross-government strategic issues.

Emergency Recovery Victoria (ERV) was established in January 2020 to coordinate recovery from the 2019–20 Eastern Victorian bushfires. In June 2021, ERV was additionally tasked with coordinating the clean-up and recovery from floods and storms that caused damage across 39 local government areas in Victoria. It functions as a standalone business unit within a broader Department of Justice and Community Safety (DJCS) Emergency Management Group.

Emergency Recovery Victoria coordinates support for communities to recover after a major emergency, working with all levels of government, agencies, industry and the impacted communities. It also provides advice to agencies and government on recovery investment proposals.

ERV's approach to recovery identifies five lines of recovery. In relation to housing and planning the 'people and wellbeing' and 'building and infrastructure' lines are relevant. The 'people and wellbeing' line of recovery is led by the Department of Families, Fairness and Housing (DFFH) with one of the intended recovery outcomes being 'People have timely access to a safe, stable and secure home'. The 'buildings and infrastructure' recover line is co-led by the Department of Energy, Environment and Climate Action (DEECA) and the Department of Transport and Planning (DTP). Intended recovery outcomes include: 'Utilities and transport routes are restored and strengthened'; 'Public infrastructure is resilient and supports recovery'; 'Residential, commercial and agricultural property is rebuilt and improved'.

Further state and territory government services that are involved in disaster management are **police services, ambulance and medical services, and fire services**, particularly during response.

The Housing Portfolio of the **Department of Families, Fairness and Housing** (DFFH) leads the design, development and delivery of housing and homelessness programs, policies and initiatives across the state. With regard to disaster management and housing the department's responsibilities are related to housing and accommodation and financial assistance. This includes:

- promoting awareness of safe practices and emergency procedures and implementing safety and warning systems for clients and funded services of DFFH (mitigation)

- maintaining emergency management surge capability and undertaking regular preparedness activities for emergency management operations (preparedness)

- establishing and maintaining regional-level relief and statewide social recovery policies, guidelines, frameworks and programs (preparedness)

- administering emergency financial assistance in the form of relief payments through the DFFH Personal Hardship Assistance Program (response and recovery)

- arranging emergency shelter and accommodation for displaced households when requested by councils (response)

- supporting securing interim accommodation for individuals, families and households whose primary residence is destroyed or damaged when requested (recovery)

- coordinating plans to assist households to prepare for the transition to permanent housing when requested (recovery) (SEMP, Roles & Responsibilities).

The **Department of Transport and Planning** (DTP) was established at the beginning of 2023 and brings the former Department of Transport (DOT) and the Land and Planning sections from the former Department of Environment, Land, Water and Planning (DELWP) together. The transport side of the department leads the transport infrastructure strategy, delivers major transport projects, and manages transport network operations, including coordinating services and managing disruptions. The planning side involves, planning, land use, building and heritage (DTP 2023 website). With regard to disaster management and planning the department's responsibilities are land use planning and building regulations. This includes:

- formulating policy and regulation in land use planning and building systems for bushfire and flood in the built and natural environment, such as bushfire management overlay (mitigation)

- landscape fuel management (vegetation removal) including legislative requirements (bushfire mitigation)

- urban planning in regard to heatwaves, including urban greening (water fountains, cool places and parks, air-conditioned facilities) (mitigation)

- built environment climate change adaptation, including coastal hazard management (mitigation)

- providing policy and regulatory settings, issues resolution and support for land use planning, building and heritage to facilitate rebuilding for housing, local businesses, and public buildings and services (recovery)

- protecting and rehabilitating cultural and heritage sites (recovery)

- providing advice and information services to municipal councils and delegated public land managers and community groups (recovery) (SEMP, Roles & Responsibilities; Planning website).

The **Department of Energy, Environment and Climate Action** (DEECA) comprises Victoria's energy, environment, water, agriculture, forestry, resources, climate action, and emergency management functions. DEECA aims to reduce the impact of emergencies on people, property and the environment (DEECA 2023). Accordingly, DEECA has many responsibilities in relation to disaster management. Activities that are relevant to housing and planning include:

- landscape fuel management, including legislative requirements (mitigation)

- legislative policy framework including floodplain management strategy (mitigation)

- formulating policy and regulation for bushfire management in state forest, national parks and protected public lands (mitigation)

- supporting emergency response agencies by providing digital and spatial information and services, and topographical mapping, both hardcopy and electronic (response)

- leading the protection and rehabilitation of cultural and heritage sites (recovery) (SEMP, Roles & Responsibilities).

Overall, the State Emergency Management Plan and its related website provides a detailed overview of how different state (and also non-government) agencies and organisations are involved in emergency management, and what their responsibilities are. For housing the main responsibilities refer to accommodation (including emergency shelter, interim accommodation and permanent housing) and financial assistance. For planning the responsibilities lie mainly in mitigation and recovery, particularly in relation to policy and regulation in land use planning and building systems for hazard-prone areas and for rebuilding.

New South Wales

The following briefly describes the key organisations of New South Wales' emergency management sector which are also listed in Table 13.

Table 13: Key housing, settlement planning and disaster management organisations in New South Wales

Disaster	Housing	Planning
NSW Reconstruction Authority	Homes NSW	Department of Planning, Housing and Infrastructure
Emergency Management	Land and Housing Corporation (LAHC)	
Recovery Agencies	Department of Communities and Justice	
Fire services, Police Services,	Aboriginal Housing Office (AHO)	
Ambulance services, Medical services		

Source: Authors

Disaster

The **NSW Reconstruction Authority**, previously Resilience NSW, was established in December 2022 as a response to the 2022 NSW floods and aims to reduce the impact of disasters, support communities in recovering, and coordinate development and rebuilding efforts in disaster-affected areas. The NSW Reconstruction Authority (the Authority) sits within the **Department of Planning, Housing and Infrastructure** and its function is designed to; lead disaster resilience, risk reduction, adaptation and mitigation activities, as well as provide education and infrastructure before disasters to minimise harm, ensure the reconstruction process begins swiftly when a disaster occurs and reduce community devastation.

The Authority's major responsibilities include:

- creating and implementing the State disaster mitigation plan, which identifies strategies and actions for reducing the impact of disasters, considers the effects of climate change, and determines priority projects for regions to mitigate disaster impacts

- giving advice as needed to councils and government agencies on disaster adaptation

- supporting communities to help recover from a disaster

- coordinating development in disaster-affected areas

- acquiring and subdividing land for rebuilding communities

- rebuilding infrastructure (NSW Government 2023c).

The Authority intends to incorporate an alignment between disaster planning and strategic planning, prioritising the integration of resilience considerations into the design of future cities and towns.

The State Emergency Management Plan (EMPLAN) details the NSW approach to emergency management of disasters. The plan is governed by the *State Emergency and Rescue Management Act 1989 (SERM Act)*. The structure of NSW emergency management consists of state, regional and local levels. **The State Emergency Management Committee (SEMC)** is responsible for developing emergency management policy and oversees emergency management on the state level. Below the SEMC is the regional level *Region Emergency Management Committees (REMC)* and the local level *Local Emergency Management Committees (LEMC)*. Both REMC and LEMC develop emergency management policy and oversee emergency management at each level (NSW Government 2023b).

When a disaster emergency occurs, the role of **Emergency Operations Controller (EOCON)** assumes responsibility where no specific Combat agency is nominated. Combat agencies are the agency primarily responsible for controlling the response to a particular emergency, such as the State Emergency Services (SES) or NSW Fire and Rescue. EOCON roles are performed at state, regional and local level and is responsible for the overall control and coordination of emergency response operations. The EOCON position is a member of the NSW Police Force senior executive (NSW Government 2023b).

State Rescue Board (SRB) is a statutory body constituted under the SERM Act. Its principal function is to ensure the maintenance of efficient and effective rescue services throughout the State. The SRB will carry out its responsibilities through the Heads of the agencies which provide accredited rescue units and the NSW Police Force, who are responsible for the coordination of rescue within the State.

The **State Emergency Recovery Controller (SERCON)** is responsible for preparation and maintenance of NSW recovery policies, arrangements and plans. It also closely works with the SEOCON during the response phase of an emergency, coordinates comprehensive assessments of the extent of damage and the need for recovery operations. *SERCON* recommends the appointment of a *Recovery Coordinator* and overseeing and supporting Region and State level Recovery Coordinators as needed, as well as monitoring and reporting to the Minister on the progress of recovery of the disaster (NSW Government 2023b).

Similar to Victoria, other emergency services involved include: **Fire services including NSW Fire and Rescue, Rural Fire Services, Police Services, Ambulance services, Medical services**.

The **Land and Housing Corporation (LAHC)** is a public trading enterprise established in 2001 under the *Housing Act 2001 (NSW)* and operates under the directions of the Minister for Planning and Minister for Homes. LAHC's key strategic objectives are to deliver more social housing across metropolitan and regional New South Wales; efficiently manage and maintain NSW housing asset and support the NSW Government in increasing its social housing portfolio through sustainable asset management. The LAHC is an agency of the **Homes NSW**.

The **Department of Communities and Justice (DCJ)** is the lead agency in the Communities and Justice portfolio, which aims to create safe, just, inclusive, and resilient communities through its services. DCJ focuses on prevention and early intervention to improve outcomes for:

- people experiencing or who have experienced domestic and family violence
- people who have experienced sexual assault
- young people and adults in contact with the justice system
- people experiencing or at risk of homelessness and people in need of safe and affordable housing.
- vulnerable children and young people
- people with disability
- Aboriginal people, who are overrepresented across services
- seniors
- people from culturally and linguistically diverse backgrounds.

The **Aboriginal Housing Office (AHO)** is a statutory body established under the *Aboriginal Housing Act 1998* (NSW) to ensure that Aboriginal and Torres Strait Islander people have access to affordable, quality housing. The AHO is governed by an all-Aboriginal Board, which provides advice to the Minister for Housing in New South Wales. The AHO is an agency of the **Homes NSW**.

Commencing the start of 2024, **Homes NSW** is a new department aimed at making the housing system more efficient and accessible brings together the housing and homelessness services of the **DCJ** with NSW **Land and Housing Corporation (LAHC)**, the **AHO** and key worker housing all under one roof. Homes NSW has been mandated with accelerating the development, maintenance and repair of social and affordable homes across New South Wales.

The previous Department of Planning and Environment (NSW) split into two new entities from the start of 2024: the Department of Climate Change, Energy, the Environment and Water and the **Department of Planning, Housing and Infrastructure (DPHI)**. The DPHI brings together specialists in urban and regional planning, housing, industry, office of Local Government and Crown lands. The DPHI has responsibilities and functions under many pieces of environmental legislation. In relation to settlement planning, the agency of planning in the DPHI is responsible implementing decisions about NSW land (NSW Government 2024b).

Western Australia

Western Australia's emergency management framework outlines policies, processes, and responsibilities for emergency management (State Emergency Management Committee 2022). This framework is governed by the Minister for Emergency Services, the State Disaster Council, the Security and Emergency Committee of Cabinet, the State Emergency Management Committee, and the State Emergency Coordinator. An Emergency Management Capability Framework guides the analysis and development of the 170 organisations that make up Western Australia's emergency management sector. An Outcomes Framework is being developed around four transformational shifts for long term change, which cover transparent emergency management, increasing local preparedness, reducing vulnerability through collaboration, and healing people and communities (State Emergency Management Committee 2022). Table 14 presents the key organisations in disaster management, housing and settlement planning.

The Department of Fire and Emergency Services (DFES) is responsible for emergency service operations, capabilities, and strategy throughout the state and its regions. Its strategy and management portfolio encompasses risks and capabilities analysis, policy, legal, and compliance, resilience and recovery, learning, development, and governance. The Rural Fire Divisions branch manages bushfire risk and technical services and provides advice on land use planning. The Department relies on over 26,000 volunteers and 1,600 staff 'to prevent, prepare for, respond to, and recover from natural hazards' (Department of Fire and Emergency Services 2024a) through enhancing local communities' abilities to recognise and understand their risks and manage their hazards. A recent program, developed in tandem with the Western Australian Local Government Association (WALGA), aims to identify support gaps and opportunities, streamline Local Emergency Management Arrangements (LEMA), and embed them in local government's planning and reporting practices.

Table 14: Key housing, settlement planning and disaster management organisations in Western Australia

Disaster	Housing	Planning
Department of Fire and Emergency Services (DFES)	Department of Communities	Department of Planning, Lands and Heritage
State Emergency Management Committee		Western Australian Planning Commission (WAPC)
State Emergency Management Committee > Recovery Agencies		
Hazard Management Agencies		
State Disaster Council		
Department of Health		
Police Services		
Ambulance services		
Medical services		

Source: Authors' presentation based on the State Emergency Management Plan

Western Australia's emergency management arrangements are overseen by the **State Emergency Management Committee (SEMC)** which advises the Minister for Emergency Services in accordance with the national principles for disaster recovery in social, built, economic and natural environments. The SEMC represents 40 organisations and government agencies as a standing committee with five sub-committees on climate change, risk, response capabilities, public safety communications, and recovery and community engagement. District Emergency Management Committees (DEMCs) and Local Emergency Management Committees (LEMCs) are established by local governments to ensure effective implementation of emergency arrangements. The State Emergency Management Committee develops and coordinates risk management strategies, provides direction to the emergency management sector, assesses community vulnerability, prepares State emergency management policies and plans to guide public authorities, industry, and the community, and provides community coordination (WA Government 2024b).

Western Australia's recovery agencies are managed by the **State Recovery Coordination Group**, which develops a state level recovery plan and monitors its progress, assesses required assistance, helps implement local recovery plans, identifies a public lead authority in every recovery environment, advises the government, and coordinates state level financial arrangements. Local Emergency Management Arrangements (LEMA) appoint a Local Recovery Coordinator and make sure that a Local Recovery Plan is in place. Hazard management agencies include recovery arrangements in the State Hazard Plans (WA Government 2023b).

The Disaster Preparedness and Management Unit in the **Department of Health** is responsible for managing the state's health disaster plans, the safety of public events, and the training for emergency response and recovery (Department of Health 2021).

As with the other states other emergency services involved include: **Police Services, Ambulance services and Medical services**.

Housing sits within the **Department of Communities** with a focus on creating affordable housing opportunities for people who need support. It works with other stakeholders to deliver social housing. This includes management of public and community housing dwellings, constructing new social housing and providing housing for remote Aboriginal communities. In relation to disaster management, the Department is responsible for the provision of welfare services when a disaster has struck, managing emergency accommodation, food provision, support services, financial assistance, and registration and reunification (WA Government 2023a).

The **Department of Planning, Lands and Heritage** was established in 2017 and is responsible for state level land use planning and management and oversight of Aboriginal cultural heritage and built heritage matters. In relation to disaster management it is involved in planning for bushfire-prone areas. This includes guidelines for planning in bushfire-prone areas specifying requirements to be met at different stages of the planning process; and ensuring that necessary bushfire protection measures are incorporated into development. Furthermore, there are Coastal hazard risk management and adaptation planning guidelines, which provide the framework for undertaking risk management planning for risks arising from coastal hazards (WA Government 2024a).

The **Western Australian Planning Commission (WAPC)** is a statutory authority established under the Planning and Development Act 2005 with state-wide responsibility for urban, rural and regional land-use planning and land development matters. The Department of Planning, Lands and Heritage provides administrative and technical advice to the WAPC, while the WAPC has responsibility for decision-making (WA Government 2024d).

The planning system in Western Australia is currently under review. One of the aims of the reform is to make the preservation of human life a central priority.

Appendix 2: Key legislation, policy and plans for Victoria, New South Wales and Western Australia

Victoria

Table 15 presents the key legislation, policy and plans for Victoria. The following gives an overview of the relevant content.

Disaster

The **Emergency Management Act 2013** sets out emergency management arrangements in Victoria. The Act has implemented significant government reforms to emergency management arrangements. It defines key elements of Victoria's emergency management structure, assigns significant roles and responsibilities, and provides clear accountability regarding the management of major emergencies. The Act established the State Crisis and Resilience Council, Emergency Victoria, the Emergency Management Commissioner, and the Inspector-General for Emergency Management.

In 2018, the Victorian Parliament passed amendments to the Act, requiring the Emergency Management Commissioner to prepare a Victorian **State Emergency Management Plan** (SEMP). The SEMP provides details of the roles and responsibilities of agencies in relation to emergency management. Further support documents and plans are: Emergency Management Manual Victoria (EMMV), State Emergency Recovery Plan, State Emergency Recovery Framework, Emergency Management Sector Outcomes Framework, Strategic Roadmap for Emergency Management in Victoria 2022—28, Victorian Emergency Management Strategic Action Plan 2022—25.

Housing

The **Housing Act 1983** governs the provision of social housing in Victoria. Its purpose is to ensure that every person in Victoria has 'adequate and appropriate housing at a price within his or her means'. The Housing Act has no specific reference to emergency or disaster management.

The **Residential Tenancies Act 1987** defines the rights and responsibilities of renters and rental providers.

Planning

The **Planning and Environment Act 1987** describes the statutory planning system with its rules, schemes, and processes, establishes the framework for planning permissions, rules, and decision-making. Land use policies are regulated in planning schemes, a set of legally binding, subordinate legislation, policies, and guidelines that are not part of the Act.

The **Victoria Planning Provisions** (VPPs) based on the Planning and Environment Act set the rules for local planning schemes through state standards. Climate change response has been added as the fourth purpose of the first clause in the VPPs in 2022, recognising the significance of planning in preparing for and mitigating the impact of environmental hazards by creating land use policies based on the risk of bushfires, flooding, and sea level rise (Rowley 2023). The Bushfire Management Overlay is an example of a planning tool that relates to a specific hazard. It regulates housing permits, building controls, and construction standards in high bushfire risk areas. Relevant clauses include:

- Clause 52.07 – Emergency Recovery: provides exemptions from permit requirements for temporary accommodation and continuation of a business after emergencies, including bushfire

- Clause 52.12 – Bushfire Protection Exemptions: a set of exemptions from permit requirements for removal of native vegetation to allow for bushfire defence

- Clause 52.14 – 2009 Bushfire – Replacement Buildings: exemptions allowing a simplified process for reconstructing buildings destroyed in the 2009 fires. With the passage of time this is presumably approaching the end of its operation

- Clause 53.02 – Bushfire Planning: provides design standards for development within the BMO. (Rowley 2023)

Table 15: Key legislation, frameworks and plans for disaster management, housing and settlement planning in Victoria.

Legislation	Relevant frameworks and plans
Emergency Management Act 2013	State Emergency Response Plan
Housing Act 1983	State Emergency Recovery Plan
Residential Tenancies Act 1987	State Emergency Recovery Framework
Planning and Environment Act 1987	Emergency Management Manual Victoria
	Emergency Management Sector Outcomes Framework
	Strategic Roadmap for Emergency Management in Victoria 2022-2028
	Victorian Emergency Management Strategic Action Plan 2022-25
	Emergency Recovery Victoria - Recovery Framework
	Victoria Planning Provisions

New South Wales

Table 16 presents the key legislation, policy and plans for New South Wales. The following gives an overview of the relevant content.

Disaster

The State Emergency and Rescue Management Act 1989 (SERM) provides the general legal framework and governance for emergency management in New South Wales. The SERM Act is the overarching policy in relation to emergency and disasters in New South Wales. The **NSW State Emergency Management Plan (EMPLAN)** outlines the approach to emergency management, the governance and coordination arrangements and roles and responsibilities of agencies (NSW Government 2023b). The **NSW Recovery Plan 2023** is a key sub-plan to the EMPLAN. The recovery plan outlines the responsibilities, authorities and mechanisms for disaster recovery (NSW Reconstruction Authority 2023).

Agency Enabling Legislation are transferred to specific agencies in relation to some key hazard types such as fire, bushfires and flood and described how the risks from these specific hazards are to be managed. These specific acts include:

- Fire and Rescue NSW Act 1989

- Rural Fires Act 1997

- State Emergency Service Act 1989.

The **NSW Flood prone land policy's** primary objective is to reduce the impacts of flooding and flood liability on communities and individual owners and occupiers of flood-prone property, and to reduce private and public losses resulting from floods, utilising ecologically positive methods wherever possible. In doing so, community resilience to flooding is improved (NSW Government 2023a).

The **NSW State Rescue Policy (4th edition) 2021**, outlines the efficient and effective maintenance of rescue services throughout New South Wales. This policy provides details of how flood related rescues are operated (State Rescue Board of NSW 2021).

Housing

The **Housing Act 2001 No 52** governs the provision of public and community housing in New South Wales. The purposes of the acts include to maximise the opportunities for all people in New South Wales to have access to secure, appropriate and affordable housing. The Housing Act has no specific reference to emergency or disaster management.

The **Social and Affordable Housing NSW Fund Act 2016** establishes the Social and Affordable Housing NSW Fund for the purpose of providing funding for the delivery of social and affordable housing.

The **State Environmental Planning Policy (Housing) 2021** is also known as the Housing SEPP. The purpose of the Act is to enable the development of diverse housing types, including purpose-built rental housing, encourage the development of housing that will meet the needs of more vulnerable members of the community and ensure new housing development provides residents with a reasonable level of amenities.

The **Residential Tenancies Act 2010** No 42 outlines the rights and obligations of landlords and tenants, rents, rental bonds and other matters relating to residential tenancy agreements, and for other purposes.

Housing 2041 - NSW Housing Strategy is a whole-of-government approach that establishes a 20-year vision for better housing outcomes, focusing on supply, affordability, diversity and resilience.

NSW Homelessness Strategy 2018—23 is a five-year plan for a comprehensive approach to prevent and improve the way New South Wales responds to homelessness.

Future Directions for Social Housing in New South Wales: Social & Affordable Housing Fund (SAHF) was established in 2015 following the signing of a Memorandum of Understanding between the NSW Government, Infrastructure Australia and the NSW Council of Social Services (NCOSS). It provided an investment fund of up to $1.1 billion to support the delivery of social and affordable housing through the delivery of 'innovative partnerships between community housing providers, non-government organisations and the private sector. The scheme aims to deliver 3,400 additional social and affordable homes in New South Wales by 2023, with 70 per cent of the homes to be available for social housing tenancies.

Communities Plus was originally announced in 2015 by the NSW Government and is a $22 billion redevelopment program of Land and Housing Corporation social housing sites throughout New South Wales. Communities Plus aims to develop integrated communities of private, social, and affordable housing in partnership with non-government housing providers and private sector developers. Under Communities Plus, the NSW Government has committed to build 23,000 new and replacement social housing dwellings, 500 affordable housing dwellings and up to 40,000 private dwellings through redevelopment projects on existing social housing estates over the next 10 years.

Planning

The central land use planning act in New South Wales is the **Environmental Planning and Assessment Act 1979 (EP&A Act)**. Some of the objects of the act include to promote the delivery and maintenance of affordable housing, project the environment and facilitate ecologically sustainable development and promote the proper construction and maintenance of buildings (NSW Government 2024b).

Table 16: Key legislation, frameworks and plans for disaster management, housing and settlement planning in New South Wales

Legislation	Relevant frameworks and plans
State Emergency and Rescue Management Act 1989 (SERM)	Housing 2041. NSW Housing Strategy
Housing Act 2001 No 52	Housing 2041. 2021–2022 Action Plan
The Social and Affordable Housing NSW Fund Act 2016.	NSW Homelessness Strategy 2018–2023
The State Environmental Planning Policy (Housing) 2021	Future Directions for Social Housing in NSW: Social & Affordable Housing Fund
Residential Tenancies Act 2010 No 42	
Environmental Planning and Assessment Act 1979 (EP&A Act)	Communities Plus
	Together Home

Western Australia

Table 17 presents the key legislation, policy and plans for Western Australia. The following gives an overview of the relevant content.

Disaster

The **Emergency Management Act 2005** (EM Act) sets out emergency management roles and responsibilities at a state, district and local level in relation to the four aspects of emergency management: prevention, preparation, response and recovery. It established the State Emergency Management Committee (SEMC). The **Emergency Management Regulations 2006** (EM Regulations) which support the EM Act further detail roles and responsibilities. The Act requires the SEMC to arrange for the preparation of emergency management plans as considered necessary (State Emergency Management Committee 2022).

The **State Emergency Management Policy** provides a strategic framework for emergency management and describes the guiding principles and objectives for the organisation of emergency management for public authorities, business and the community (State Emergency Management Committee 2022).

Table 17: Key legislation, frameworks and plans for disaster management, housing and settlement planning in Western Australia

Legislation	Relevant frameworks and plans
Emergency Management Act 2005 (EM Act)	State Emergency Management Policy
Emergency Management Regulations 2006	State Emergency Management Plan
Housing Act 1980	State Hazard Plans
Planning and Development Act 2005	State Support Plans
	Local Emergency Management Arrangements
	WA Housing Strategy 2020-2030
	State Planning Policy Framework (State Planning Policy No. 1, 2017)
	State Planning Strategy 2050
	State Planning Policy 2.0 - Environment and natural resources policy
	State Planning Policy 2.6 - Coastal planning
	State Planning Policy 3.0 - Urban growth and settlement
	State Planning Policy 3.4 - Natural hazards and disasters
	State Planning Policy No. 3.7: Planning in Bushfire Prone Areas

Source: Authors

The **State Emergency Management Plan** describes the emergency management arrangements based on the Emergency Management Act 2005 and Emergency Management Regulations 2006 and identifies the roles and responsibilities of public authorities and other relevant organisations (State Emergency Management Committee 2024).

The State Emergency Management Plan, State Hazard Plans, State Support Plans and Local Emergency Management Arrangements (LEMA) are subsidiary parts of this framework, with state, district, and local emergency and recovery coordinators working together to deliver the strategy (WA Government 2023c).

Housing

The **WA Housing Act from** 1980 lays out provisions for public housing, carried out by the Department of Communities, which manages the State's public housing portfolio, works with industry, government and community agencies, and provides home ownership pathways (WA Government 2021). While the Housing Act does not mention disaster mitigation or resilience strategies, the Department's current **2020—30 strategy** emphasises the need of 'a more strategic approach to urban planning, design and delivery' (Department of Communities 2021).

The Department of Communities develops, manages, and safeguards a framework with policies and guidelines for community housing providers. The framework makes design and management recommendations, without specifically referring to disaster resilience.

Planning

WA's **State Planning Policy Framework** (State Planning Policy No. 1, 2017) includes planning strategies, policies, and guidelines as set by the Western Australian Planning Commission, based on the **Planning and Development Act** (2005) and the **State Planning Strategy 2050** (2014) (Western Australian Planning Commission 2017).

The Framework establishes key principles around the community, economy, environment, infrastructure, development, and governance for all State and regional plans, policies and strategies, and defines the overarching aim of planning as the provision of sustainable use and development of land. The environmental principles require a risk-management approach to avoid hazards and to prevent environmental issues resulting from incompatible land uses in close proximity (Western Australian Planning Commission 2017).

The **State Planning Policy 3.4 - Natural hazards and disasters** – states that 'the most effective strategy for reducing the long-term impact of natural hazards is to integrate mitigation activities into the process of land use planning' (Western Australian Planning Commission 2006b) and requires all planning documents, schemes, and strategies to include planning for natural disasters as a key element. Coordinated and integrated state agency activities are demanded where land use and development is affected by disasters through planning instruments, land use changes, and flexible, responsive development.

State Planning Policy 2.0 - Environment and natural resources policy calls for an integrated environment and natural resource management, including broader land use planning, while **State Planning Policy 3.0 - Urban growth and settlement** - stipulates that urban growth and development should recognise climatic and environmental constraints. The State Planning Built Environment and Precinct Design Guidelines make no mention of resilient design in regard to disaster or appropriate land use other than technical regulations for safe developments (WA Government 2024c).

Coastal and bushfire-prone areas have long been singled out as the most at-risk settlement environments, which is reflected in a wealth of policies and regulations that set out to provide a balanced approach to competing needs and wants in a sustainable way (such as **State Planning Policy 2.6 - Coastal planning** and **State Planning Policy No. 3.7: Planning in Bushfire Prone Areas**). Coastal hazard risk management and adaptation is part of planning process across all levels of government, in the form of state planning policies, regional strategies, regional and local planning schemes, local planning strategies, as well as 'day to day decision-making on zoning, structure plans, subdivision, strata subdivision and development applications, and actions of decision-makers in carrying out their responsibilities' (Western Australian Planning Commission 2006a).

Planning and building requirements for developments and subdivisions in bushfire-prone areas are regulated through Schedule 2 Part 10A of the Planning and Development (Local Planning Schemes) Regulations 2015, State Planning Policy 3.7 - Planning in bushfire-prone areas, the accompanying guidelines, and the Building Code of Australia. Risk-based land use planning and development is mandated for all levels of government, from high level strategic planning documents and proposals down to subdivision and development applications, through the 2015 regulations 'to preserve life and reduce the impact of bushfire on property and infrastructure' (WA Government 2015).