

This report has been used to inform the Government's action plan for the Bushfire Framework Review 2019, but specific recommendations within this report may not be implemented in their entirety.



*We're working for  
Western Australia.*

# **Bushfire Planning** and **Policy Review**

A Review into the  
Western Australian Framework  
for Planning and Development in  
Bushfire Prone Areas

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22 January 2019

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## EXECUTIVE SUMMARY

In response to the findings and recommendations of Mr Mick Keelty AO in, '*A Shared Responsibility: The Report of the Perth Hills Bushfire February 2011 Review*' (the Keelty Report), a suite of bushfire reforms was released in December 2015. The reforms encompassed changes within the planning, building and fire and emergency services portfolios. They comprised:

- a new State Planning Policy 3.7 – *Planning in Bushfire Prone Areas* and supporting Guidelines;
- changes to the *Planning and Development (Local Planning Schemes) Regulations 2015* and *Building Regulations 2012*;
- the designation of bushfire prone areas across Western Australia reflected in the State map of Bushfire Prone Areas; and
- an accreditation system for bushfire practitioners.

Since the release of the reforms, it has become apparent that the implementation of the bushfire framework has created some unintended consequences that do not provide an appropriate balance between risk-to-life and the cost of, or ability to, mitigate risk.

Examples include residential lots in built-up urban areas unable to be developed and the inability to develop tourism accommodation and facilities in natural and/or remote locations.

This review seeks to identify ways to enhance the efficiency and fairness of the bushfire framework.

The targeted consultation process undertaken to inform this review included consultation with industry, State government agencies, emergency service providers and elected representatives.

Key themes arising from the consultation are set out in Section 3, and include the following:

- support for the retention of a bushfire planning and building framework, including bushfire prone mapping;
- preservation of human life should be the priority for the framework;
- a better balance between risk and cost implications (unintended consequences) is necessary;
- better recognition of landscape context is required, for example, built-up urban areas on the coastal plain compared to the Perth Hills; and
- the need for a bushfire framework that encourages and enable agencies and decision-makers to better balance bushfire risk with a range of competing considerations.

Section 4 of this report identifies key issues and recommended responses in relation to potential improvements to the bushfire policy framework with desired outcomes focusing on:

- a revised bushfire framework that more clearly prioritises the preservation of human life;
- a more practical response to address bushfire risk in built-up urban bushfire prone areas;
- the introduction of streamlined strategic processes that support the framework throughout the rest of Western Australia; and
- simple, practical and effective implementation measures.

The recommendations affect all aspects of the bushfire framework. A coordinated holistic approach across all portfolios is essential to achieve the proposed pragmatic outcomes. The recommendations recognise that there are higher risk areas and/or land uses for which the current framework remains the most appropriate approach.

A full list of the report's recommendations is included overleaf. The key recommendations include the following:

- reinforcing the policy intent – primary focus is protecting human life and accepting more risk (if risk to life is low);
- a multi-layered map of bushfire prone areas, based on existing mapping, that includes:
  - the designation of multiple categories of 'urban bushfire prone areas' with moderated building construction and planning responses including:
    - capped maximum bushfire attack level ('BAL') construction standards for all new residential construction; and
    - deemed to comply planning requirements for certain planning proposals; and
  - recognising the different fire behaviour in grassland areas and mapping these separately to trigger moderated planning requirements and a maximum BAL-12.5 construction requirement;
- the introduction of a broader landscape assessment process in other bushfire prone areas of WA; and
- a broader range of risk mitigation responses for nature-based tourism proposals.

Section 5 of this report identifies that implementation of the above recommendations requires change to the existing policy and regulatory framework, that includes amendments to the:

- *Fire and Emergency Services Act 1998*
- *Building Regulations 2012*
- *Planning and Development (Local Planning Scheme) Regulations 2015.*

It also requires review of *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7) and the development of a range of new bushfire mapping and planning guidelines. Further consultation will occur through these specific processes.

## RECOMMENDATIONS

### Primacy of human life

1. Continue to reinforce the protection of human life as the primary focus of the bushfire framework, recognising the importance of locational context and associated risk and adopt a more pragmatic approach where the risk to life is relatively low.

### Revised mapping methodology to deliver land use and development outcomes

2. The Department of Planning, Lands and Heritage (DPLH), in conjunction with the Department of Fire and Emergency Services (DFES) to identify urban bushfire prone areas, commencing with the Perth and Peel regions, Bunbury and Busselton and subsequently implement across other major cities and towns.
3. DPLH, in conjunction with DFES to classify existing bushfire prone area mapping within the urban bushfire prone area boundary into 'large regional reserves and transition areas', 'rural zoned land', 'general bushfire risk areas' and 'planning approved' areas.
4. Amend SPP 3.7 and the Guidelines to incorporate moderated planning responses in urban bushfire prone areas, including simplified 'deemed to comply' planning requirements.
5. Amend the *Building Regulations 2012* to implement capped BAL-12.5 in urban bushfire prone areas (except rural zoned lands and planning approved areas).
6. Retain the current process and frequency for the review of the map and retain the four-month transition period for newly mapped areas only (that is, the revised requirements should be effective immediately on gazettal if the area has previously been designated).
7. Identify grassland areas as a separate category on the map of *Bush Fire Prone Areas*. Amend SPP 3.7, the Guidelines and the *Building Regulations 2012* to include reduced planning requirements and a maximum construction standard of BAL-12.5.

### Planning policy framework

8. Amend SPP 3.7 policy objective cl. 5.1 to better articulate the primacy of human life and avoidance of development in extreme areas only.
9. Amend SPP 3.7 and Guidelines to adopt a broader landscape risk assessment.
10. DPLH, in conjunction with DFES, amend SPP 3.7 and/or the Guidelines to allow emergency planning arrangements to be considered in support of tourism and nature based land use proposals, where the full extent of the existing bushfire protection criteria cannot be achieved.
11. DPLH to lead discussion with the Department of Mines, Industry Regulation and Safety (DMIRS) to consider ways to strengthen the processes for disclosing information about a property's designation as a bushfire prone area on sale or transfer of land.

### Planning assessment process

12. DFES to investigate providing greater resourcing priority to its advice and referral role.
13. Monitor continued improvements in accreditation and the up skilling of practitioners and training.
14. Minimum 'best practice' requirements for firebreak notices be developed to standardise assessment practices under AS3959 and provide an enforceable mechanism for bushfire management plan compliance.

### Implementation

15. The report's recommendations are implemented, in accordance with Actions 1-9 in Section 5, by the responsible agencies as soon as possible.
16. Investigate the allocation of additional shared resources to DPLH, DFES and DMIRS to implement the required changes to the mapping, SPP 3.7, Guidelines and Regulations.



## 1. 2015 BUSHFIRE REFORMS PACKAGE – LIVING IN SAFER PLACES

*Living in Safer Places* (2015 bushfire reforms) was released as a whole-of-government package of reforms in December 2015, to address the land use planning-related recommendations contained in the Keelty Report, *A Shared Responsibility: The Report of the Perth Hills Bushfire February 2011 Review*, by Mr Mick Keelty AO.

The reforms comprised:

- bushfire prone areas designated by an order of the Fire and Emergency Services Commissioner which act as the trigger for applying planning and construction requirements. These are identified on the map of *Bush Fire Prone Areas* (the map) available on the Department of Fire and Emergency Services (DFES) website;
- amendments to the *Planning and Development (Local Planning Schemes) Regulations 2015* (LPS Regulations) inserting new deemed provisions into all local planning schemes. The deemed provisions trigger the requirement for a bushfire attack level (BAL) assessment to be undertaken for habitable buildings in bushfire prone areas and the need for development approval in areas of extreme risk (BAL-40 and BAL-FZ) subject to:
  - an exemption for single houses and ancillary dwellings on lots less than 1,100m<sup>2</sup>  
*note: exemption only applies to the need for a BAL assessment and development approval. It does not provide an exemption under the Building Regulations 2012*
  - a four-month transition period applying for new areas added to the map before the Local Planning Scheme Regulations apply
  - the requirements being in addition to any provisions relating to development in a special control area designated by a local government;
- *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7) and updated associated *Guidelines for Planning in Bushfire Prone Areas* (the Guidelines) for land use planning decisions in designated bushfire prone areas;
- amendments to the *Building Regulations 2012* that introduce a four-month transition period for meeting bushfire construction requirements in newly designated bushfire prone areas; and
- a professional training and accreditation system for bushfire planning professionals.

A summarised history of the regulatory and policy framework prior to 2015 is included as Appendix 1.

An overview of the current process is provided at Appendix 2.

Further to the Keelty Report, a special inquiry by Mr Euan Ferguson AFSM was conducted following the Waroona Complex Fire in January 2016. The Ferguson Report, titled *Reframing Rural Fire Management: Report of the Special Inquiry into the January 2016 Waroona Fire*, did not make any recommendations specific to land use planning. The report did make one recommendation and identify one opportunity relevant to the land use planning framework (but have not been incorporated), as set out below.

1. *The Department of Fire and Emergency Services to work with the Department of Planning and Local Governments to adopt a policy which enables Local Governments to identify, register and communicate, 'Places of Bushfire Last Resort' in settlements and townsites where the life risk from bushfire is very high or greater (recommendation 12).*
2. *The Department of Fire and Emergency Services to lead, in collaboration with the Department of Planning and the Building Commission, the development of a policy and guidance to landholders on a range of bushfire shelter options, including household bushfire refuges and community bushfire refuges. (Opportunity 10).*

## 2. THE NEED FOR REVIEW AND TERMS OF REFERENCE

The 2015 bushfire reforms have been generally well-received. However, some implementation issues have become evident, including concerns about the extent of the bushfire prone mapping, especially in built-up urban areas, and the impact of the consequential planning and building requirements.

The Department of Planning, Lands and Heritage and DFES are currently reviewing the *Guidelines for Planning in Bushfire Prone Areas* with a view to resolving some identified implementation issues and to provide more practical guidance in addressing the requirements of SPP 3.7.

In June 2017, the Minister for Planning with the agreement of the Minister for Emergency Services, requested a review of the bushfire planning and development framework. The review's Terms of Reference are as follows:

*“The terms of reference for the Review are to examine and report on the effectiveness of the Planning in Bushfire Prone Areas: Bushfire Policy Framework, which includes a review of the:*

- Map of Bush Fire Prone Areas; and*
- The application of standards and options to refine the criteria within and/or allow exemptions to the bushfire planning framework.*

*The Review will consider both the content of the Bushfire Policy Framework and the way in which it has been implemented by relevant Government agencies.*

*The Review will include recommendations as to how the Bushfire Policy Framework and its implementation can be improved to enhance efficiency and fairness.”*

The review provides an opportunity for the Government to maintain its commitment to ensuring there is appropriate protection for the community from the risk of bushfires, in line with the concept of a shared responsibility between Government and the community, while enabling pragmatic planning and development outcomes.

### 3. CONSULTATION

#### 3.1 Stakeholders

Targeted stakeholder consultation was undertaken to develop a better understanding of the issues with and potential options for improvement of the bushfire planning and development framework. Meetings were held with the following stakeholders:

##### Industry

Fire Protection Association Australia  
Housing Industry Association  
Lush Fire and Planning (bushfire planning consultants)  
Master Builders Association  
Property Council  
Strategen Environmental (bushfire planning consultants)  
Urban Development Institute of Australia

##### Emergency Services

Association of Volunteer Bush Fire Brigades  
United Firefighters Union  
WA Volunteer Fire and Rescue Services Association

##### Government

Department of Fire and Emergency Services  
Department of Mines, Industry Regulation and Safety  
Department of Planning, Lands and Heritage  
Office of Bushfire Risk Management  
Office of Emergency Management  
Western Australian Local Government Association  
Western Australian Planning Commission

##### Elected Representatives

Member for Girrawheen – Margaret Quirk  
Member for Kingsley – Jessica Stojkovski  
Member for Maylands – Lisa Baker  
Minister for Emergency Services, Hon Fran Logan  
Minister for Commerce, Hon Bill Johnston  
Minister for Local Government, Hon David Templeman

## 3.2 Feedback

Consultation feedback broadly fell within five key themes:

- General or overarching comments
- Bushfire prone area mapping
- SPP 3.7 and Guidelines
- Planning assessment process
- Building Regulations/Building Code of Australia (BCA)

### 3.2.1 General or overarching comments

There was general agreement that the preservation of life should be the primary objective of bushfire risk mitigation measures and that the map of *Bush Fire Prone Areas* and consequent planning and construction requirements, should better reflect this.

Other matters raised included:

- The creation of the map was an important step to ensure a safer community. Local governments in particular were positive about the map's introduction and the lead role taken by the State to introduce a consistent mapping standard.
- The risk aversion of some agencies and local governments in supporting development in bushfire prone areas and the consequential impact on residential development in areas considered to be a lower risk, particularly built-up areas within the metropolitan area. The simple (binary) nature of the map was seen as contributing to the risk averseness of the approvals process.
- A tension between the requirements for fuel reduction to reduce bushfire risk and for retaining vegetation for environmental value.
- The inconsistent application of bushfire planning policies and construction standards across State and local government, including assessing land not designated bushfire prone, for bushfire risks.
- Land uses that generate economic activity (for example, tourism facilities) being subject to the same regulation as other land uses.
- Limited recourse to appeal assessments or decisions particularly in relation to the inclusion within the map and subsequent construction requirements.
- Acknowledgement that land use planning and the development response is only one element of the response and management of bushfire risk.

### 3.2.2 Bushfire prone mapping

Key matters identified included:

- Overly conservative mapping in built-up urban areas (particularly on the coastal plain) and in the State's north. The mapping was considered to be more appropriate in areas seen as higher risk, such as the State's South West (other than built-up urban areas/large town centres) and Perth Hills.
- The binary map is a broad-brush approach that does not consider strategic locational context or case by case differences. It was also suggested that the map acts as a trigger for more rigorous processes which incur associated and potentially significant costs, irrespective of the actual level of contextual risk.

- Detailed 'on the ground' assessments and local knowledge are not being adequately utilised. Some local governments undertake extensive consultation as part of the mapping process while others do very little.
- Varied preferences for the timing of the review of the map that ranged from a biannual to a biennial review. There was also some concern that the annual review process commenced at the start of the bushfire season in November, when relevant local government resources had other bushfire related priorities.
- The need for a map that identifies a range of levels of risk (for example, low, medium, extreme) to produce fairer outcomes. The likely significant cost and time required to develop such a map was acknowledged. It was suggested that three separate maps could be created to trigger planning requirements, construction standards and mitigation requirements respectively.
- Further to the above, the lack of distinction on the current map between different types of vegetation was raised. However, the lack of reliable state-wide data, resource implications and practicality were acknowledged as impediments to achieving this.

### 3.2.3 State Planning Policy 3.7 and Guidelines

Key matters identified included:

- Policy objective 5.1 "*Avoid any increase in the threat of bushfire to people, property and infrastructure*" *prima facie* prohibits any development in bushfire prone areas and provides an inappropriate context for the policy.
- The current system is overly rigid and does not allow for consideration of alternative solutions to reduce the bushfire risk.
- The undue risk adverse over-reliance of decision-makers on DFES advice.
- Greater consideration being given to proximity to firefighting services. The risk to life is reduced where firefighting services can respond quickly.
- Greater consideration being given to places of last resort and shelter, particularly where points of egress may not be safe during a fire.
- Proposals to use legal agreements between landowners to reduce fuel loads, thereby lowering the BAL ratings. However, enforcement challenges of such agreements were noted.
- The more consistent use of firebreak provisions in the *Bush Fires Act 1954* by local governments to reduce BALs on neighbouring properties.

### 3.2.4 Planning assessment process

Key matters identified included:

- The relative immaturity of the bushfire assessment industry and the concept of accepting assessments at face value without further investigation.
- The lack of mandatory accreditation for bushfire assessors and the fact that most local governments do not require assessments by accredited practitioners resulting in inconsistency.
- A shortage of bushfire assessment knowledge and skills in State and local government that contributes to a risk averse approach to the assessment of proposals.
- An over-reliance by decision-makers on DFES advice. The creation of an independent review process was proposed to overcome this.

### 3.2.5 Building Regulations/Building Code of Australia (BCA)

Key matters identified included.

- The map of *Bush Fire Prone Areas* is the biggest bushfire regulatory issue for builders.
- The limited number of builders who can construct buildings to higher BAL standards.
- The significant costs associated with building materials needed to construct to high BAL standards.
- Higher construction standards are primarily a life-saving measure. Most metropolitan areas have multiple points of egress and structural firebreaks reducing the likelihood of a person being trapped in the event of a bushfire. In these locations there could an exemption from or cap on construction requirements via a variation to the BCA.
- Transitional periods with escalating BAL caps to reduce the initial impact of the requirements.
- The duplication of assessment requirements at different stages of the planning and building approvals process, rather than allowing a single BAL to be used.

## **4. DISCUSSION AND OPTIONS**

This report addresses the need for change in four parts:

- Overall context
- A revised mapping methodology – to deliver desired land use and development outcomes
- The planning policy framework
- The planning assessment processes.

### **4.1 Overall context**

The existing bushfire planning and development framework and agency responsibilities are broadly supported. However, there is a need and opportunities for some practical and pragmatic improvements to address some unintended consequences of its implementation. In this respect, this review has been guided by the following principles:

1. The preservation of human life should be the highest priority of the bushfire planning and development framework and the framework's implementation should be simple, practical and effective in achieving this.
2. The contextual risk to human life is different in built-up urban areas on the Swan Coastal Plain, where there are multiple points of access/egress, increased opportunities for surveillance and early detection, greater ability for emergency services to respond, greater access to water and fewer and more restricted areas where bushfires with large fire runs can become established.
3. The loss of homes, while important, is a secondary consideration to people's safety.
4. The map of Bush Fire Prone Areas plays the critical central role for the bushfire framework in providing the trigger for the subsequent planning and construction requirements.
5. The processes for planning and building approvals form an important part of the holistic framework that mitigates against bushfire and makes communities safer.

In the context of the holistic bushfire mitigation framework, this review recognises:

- The risk from bushfire cannot be eliminated. Bushfire risk management and mitigation is a shared responsibility between the State and individual landowners. While living in a bushfire prone area may come with increased risk, buildings and property outside designated bushfire prone areas can also be at risk, as demonstrated by the January 2016 Waroona/Yarloop bushfire.
- The processes for planning and building approvals are only part of the response to bushfire risk. Other parts include management of fuel loads, provision of emergency services and the actions of individuals.
- The ability of the planning system to address bushfire risk across all stages of the planning process, providing the opportunity to incorporate and apply optimum bushfire management measures commensurate with the overall risk, but notes this flexibility does not extend to matters related to the bushfire construction standards of the Building Code of Australia.
- The practicality of implementing bushfire mitigation measures needs to be considered in the context of the broader landscape and must be balanced with other important considerations such as the cost of housing construction, the impact on ecological values and other relevant considerations.
- The application of bushfire construction standards does not guarantee a dwelling will survive prolonged exposure and are only designed to provide a temporary refuge while the bushfire front passes.

#### 4.1.1 *The primacy of human life*

The current objectives of SPP 3.7 advocate the need to avoid any increase in the threat of bushfire to people, property and infrastructure. The current bushfire framework inadequately considers the contextual risk to people and has resulted in stringent requirements being placed on proposals in areas with an overall low contextual risk to life (for example, built-up urban areas).

Contextual risk considers the broader landscape and its ability to generate a significant fire front, access to road networks for evacuation and proximity of fire fighters to respond to emergencies.

The ability of the existing bushfire framework to consider contextual risk is limited given the assessment methodology focuses on an individual site and does not broadly consider the wider risk context. The BAL assessment methodology of *Australian Standard 3959 Construction of buildings in bushfire-prone areas* (AS3959) is based on modelled fire behaviour that is unlikely to occur in a built-up urban context.

The contextual risk to human life, for example, in a built-up urban area is not the same as large-scale heavily vegetated areas given the potential fire intensity, access to an extensive road network and proximity to emergency service response. The proposed reforms take into account the contextual risk and provide for moderated land use planning and building responses in areas where the contextual risk to human life is lower.

The bushfire protection criteria set out in SPP 3.7 and the Guidelines are predicated on the notion of creating a safe but temporary refuge to shelter in place via asset protection zones and construction standards. Construction standards are designed to provide a place of temporary refuge while a bushfire front passes, rather than guarantee the survival of the building. Similarly, the establishment of an asset protection zone is reliant on it being maintained and will not necessarily reduce the rate of spread of a bushfire.

It is important not to place too much reliance on refuge options as they can provide a false sense of security. It is also noted that, of those deaths that have occurred in bushfires in Western Australia, most have occurred outside of dwellings. Mandating only a base-line level of protection is proposed where the contextual risk to human life from bushfire is lower. Greater consideration of the contextual risk is in keeping with approaches taken in the eastern states on land use planning and building responses to bushfire risk.

**RECOMMENDATION 1:** *Continue to reinforce the protection of human life as the primary focus of the bushfire framework, recognising the importance of locational context and associated risk and adopt a more pragmatic approach where the risk to life is relatively low.*



## 4.2 Revised mapping methodology

### 4.2.1 Urban bushfire prone areas

#### 4.2.1.1 Rationale for the creation of urban bushfire prone areas

Much of the critique of the existing bushfire framework is largely a result of limitations in the BAL assessment methodology of *Australian Standard 3959 Construction of buildings in bushfire-prone areas* (AS3959). A BAL assessment is based on modelled fire behaviour that is unlikely to occur in a built-up urban context, resulting in nonsensical outcomes (for example, a house abutting a small area of remnant vegetation in a built up urban area can receive the same high BAL rating as a house abutting State forest).

The extent and inflexibility of the planning and bushfire building construction requirements that are triggered by the map means that these shortcomings are exacerbated and onerous. In particular, the lack of flexibility to exempt or vary the construction requirements in areas where the risk is relatively low, despite being designated bushfire prone, is a major limitation of the current framework. The shortcomings are best addressed by adopting a revised approach that recognises the lower risk in built-up urban areas, through a modified map as well as planning and construction response.

In considering options for a revised mapping approach, an analysis of other jurisdiction's bushfire mapping frameworks was undertaken. A comparison of the different bushfire prone mapping systems across Australia is provided at Appendix 3.

The frameworks for New South Wales, Victoria, South Australia and Tasmania result in bushfire prone areas not being identified for their inner-city areas and only limited parts of the wider metropolitan area being mapped. Key elements of other state's frameworks are set out below:

- The Australian Capital Territory's approach to mapping bushfire prone areas is similar to the existing Western Australian framework.
- Victoria and New South Wales mapping incorporates reduced buffers to bushfire prone vegetation to respond to the different bushfire characteristics of different vegetation types and/or eliminate smaller sized parcels of bushfire prone vegetation.
- Queensland's methodology uses a sophisticated, scientific-based formula developed by the CSIRO to calculate multiple categories of potential fire-line intensity. However, in the absence of a planning policy, a designation only triggers a construction requirement.
- The South Australian mapping methodology is based on risk analysis techniques rather than solely relying on the presence of a vegetation hazard, meaning areas such as central Adelaide are deliberately excluded. Where mapping does exist within the greater Adelaide area, there are only minimal construction requirements.
- In Tasmania, bushfire prone area overlays for Hobart, Clarence and Kingborough have been approved and incorporated into their respective planning schemes. Where there is no overlay identified on a planning scheme map, *Planning Directive No 51 Bushfire-Prone Areas Code* (Minister for Planning and Local Government: 1 September 2017) establishes an interim position for designation of land prior to incorporation into a planning scheme. Land that is within 100 metres of an area of bushfire prone vegetation equal to or greater than 1 hectare, is designated bushfire prone.

The development of a multi-layered risk or intensity map for Western Australia is not considered a viable option due to the substantial time and resources required to develop such a map. Further, this would not resolve issues relating to the limited flexibility under the existing framework.

However, a revised approach utilising the existing mapping to identify 'urban bushfire prone areas' and to trigger a more-moderated planning and construction response is proposed. This approach takes account of a broader contextual range of factors which inherently mitigate against bushfire risk. The factors that characterise built-up urban bushfire prone areas and provide the basis for a more-moderated response include:

- a higher density of buildings with limited bushfire prone vegetation;
- limited exposure to large areas of vegetation and/or steep topography (for example, located on the Swan Coastal Plain) where fire behaviour and extent is more dangerous than those generally experienced in built-up urban areas;
- increased opportunities for surveillance and early notification in a bushfire event;
- a range of safe access/egress points (in multiple directions);
- a higher likelihood of receiving a timely response from emergency services; and
- reliable availability of water for firefighting with adequate pressure.

Recognition of these characteristics allows for a response that can deliver pragmatic outcomes and achieve a better balance in terms of the cost of measures required, compared with the low risk to human life.

#### 4.2.1.2 Delineation of urban bushfire prone areas

The approach referred to in section 4.2.1.1 above requires a clearly identified boundary for the urban bushfire prone areas, within which the moderated planning and construction response will apply.

An indicative boundary delineating urban bushfire prone areas for the Perth and Peel regions, Bunbury and Busselton is marked as a black line in *figures 1, 2 and 3*. While this requires some further refinement, it indicatively comprises:

- land on the Swan Coastal Plain only;
- land zoned for development (for example, Urban, City Centre, Industrial, Public Purpose in a region planning scheme – or equivalent);
- existing developed land of sufficient density where on-site vegetation is limited and/or likely to be well managed (provisionally R10 and above i.e. lots less than ~1,000m<sup>2</sup>); and
- often follows major features such as Roe Highway, Albany Highway and South Western Highway; and as such excludes some areas to the east, adjacent to the scarp, noting their proximity to the hills and that access-egress options are more-limited and vegetation covers a broader landscape area.

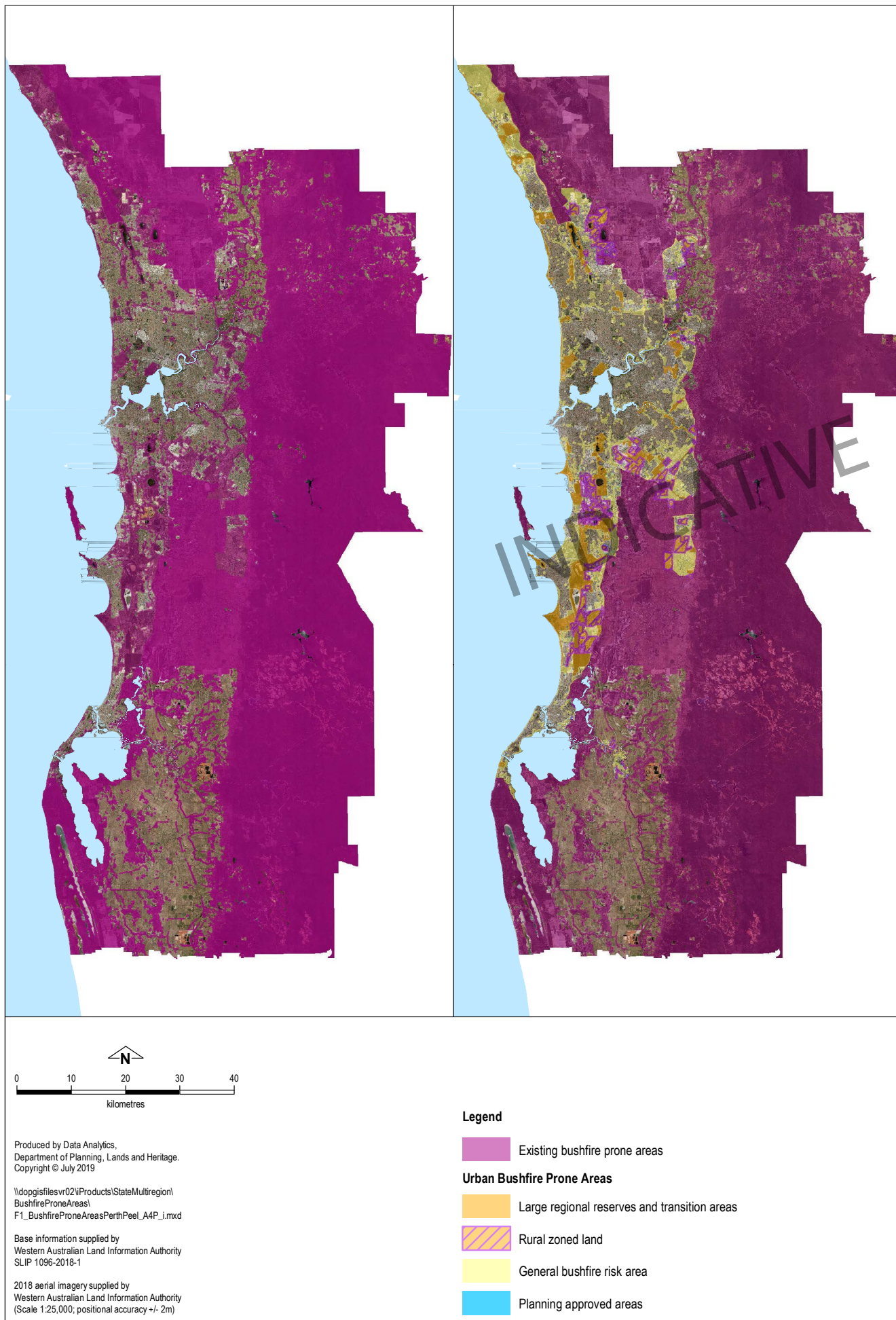
The delineation of the boundary would take into account existing high order roads or natural features, such as water courses or managed reserves, so that the physical hazard separation these features provide, can be taken into account.

Note that a transition area (20 metre buffer) inside the urban bushfire prone area boundary should be incorporated to ensure appropriate planning controls are put in place that will address any increased level of risk that exists outside the boundary.

The Perth and Peel regions, Bunbury and Busselton are proposed as the first stage identification of urban bushfire prone areas. These accommodate most of the urban development in Western Australia, are set in relatively low-vegetated areas, and will allow for any necessary refinement of the reform prior to rolling out this reform to other built-up urban areas. Accordingly, options for further roll-out to other major regional cities and towns should be examined following monitoring and assessment of this specific reform following implementation.

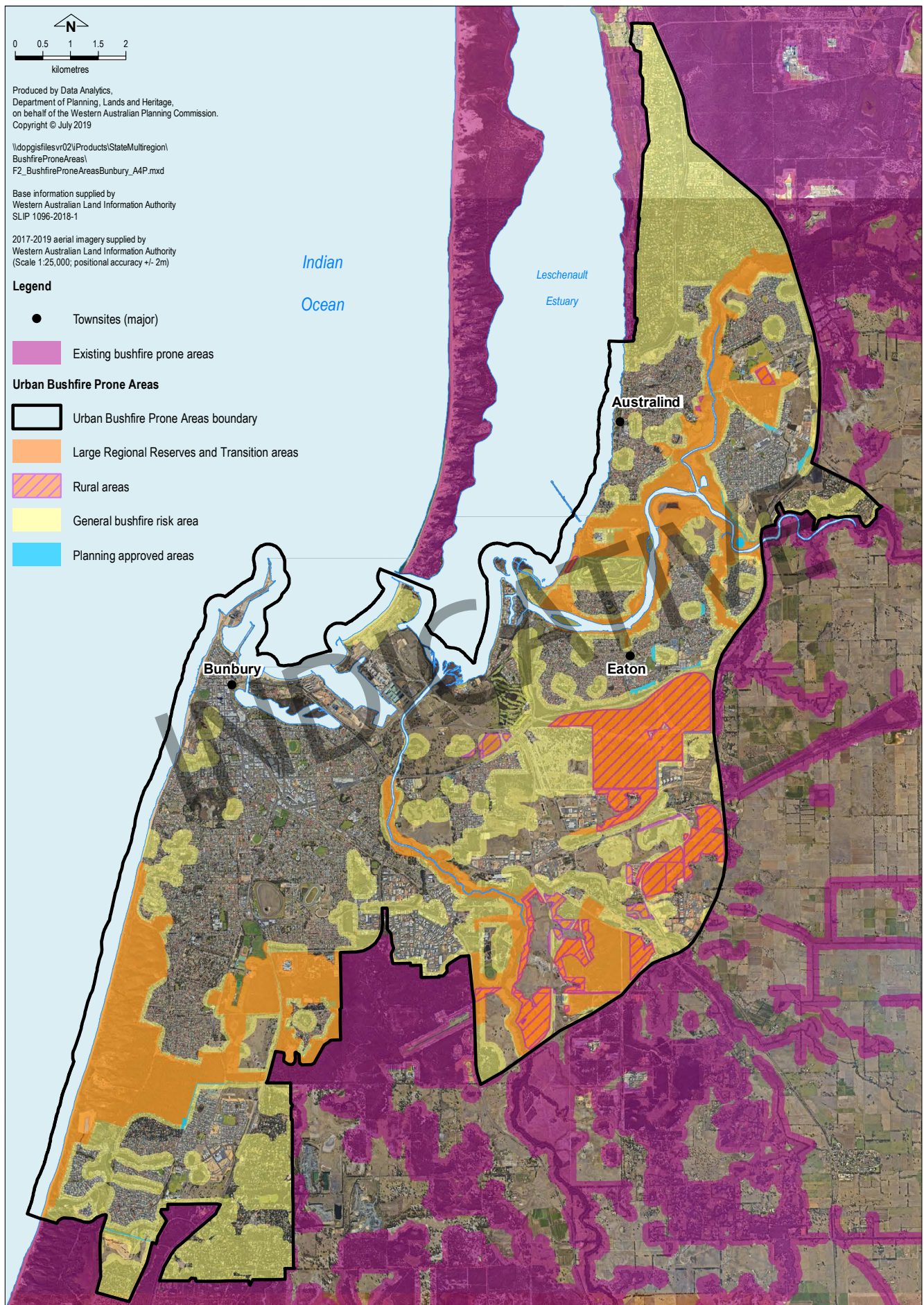
This reform does not propose to circumvent the need for assessment of bushfire risk as part of a strategic planning proposal and/or assessment of proposals to rezone land outside the urban bushfire prone area boundary.

**RECOMMENDATION 2:** *DPLH, in conjunction with DFES, to identify urban bushfire prone areas, commencing with the Perth and Peel regions, Bunbury and Busselton and subsequently implement across other major cities and towns.*



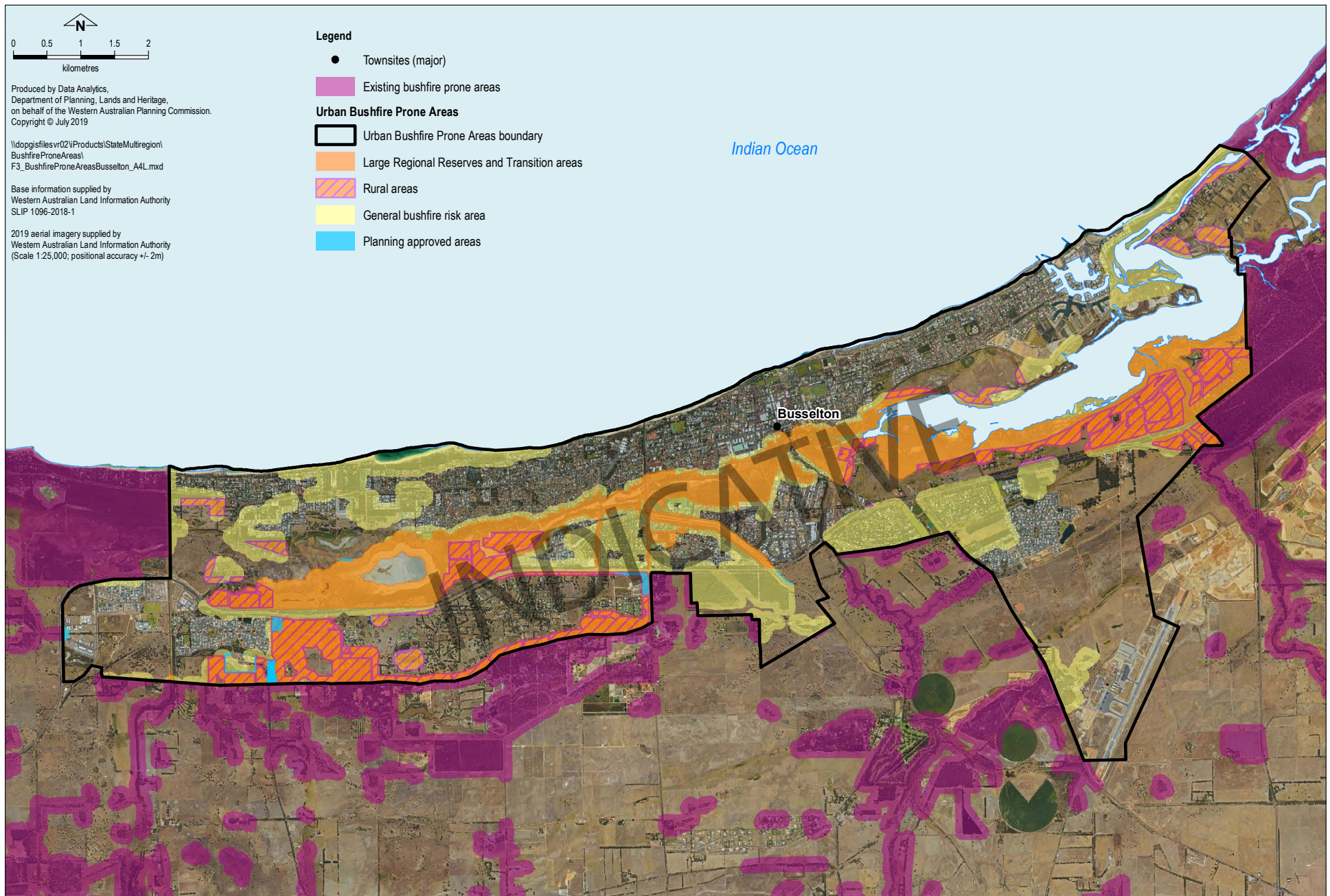
**Figure 1: Urban bushfire prone areas – Perth & Peel region**





**Figure 2: Urban bushfire prone areas – Bunbury**





**Figure 3: Urban bushfire prone areas – Busselton**

#### 4.2.1.3 Strategic options for urban bushfire prone areas

Within the context of defined urban bushfire prone areas for the Perth and Peel regions, Bunbury and Busselton, a range of planning and construction options were assessed with the aim of simplifying assessment processes and providing for balanced outcomes that better reflect the level of risk. Appendix 4 sets out a range of mapping and response options that were considered.

Option 4 is the most balanced suite of options and is preferred. It proposes to reclassify the urban bushfire prone areas (i.e. all existing bushfire prone areas within the delineated boundary) into four categories, as set out below:

1. Large regional reserves and transition areas (mapped orange) – *have moderated planning and construction requirements*
2. Rural zoned land (mapped orange with a purple cross hatch) – *have moderated planning and construction requirements*
3. General bushfire risk areas (mapped yellow) – *have moderated construction requirements only*
4. Planning approved areas (mapped blue) – *are exempt from both planning and construction requirements.*

*Note:* Refer to Option 4 in Appendix 4 for more detail.

The proposed suite of responses takes into account the range of characteristics that exist in the urban bushfire prone areas and proposes moderated planning and construction responses that reflect the risk. It includes the introduction of simplified, deemed to comply planning requirements, a capped construction standard for residential buildings and exemptions for small areas of vegetated land that are identified for future development.

It also recognises that areas of Rural zoned land, within the broadly defined urban bushfire prone areas, present a similar risk to rural areas outside this area given the presence of on-site bushfire prone vegetation and the need for ongoing management by the landowner. As such, the majority of existing planning and construction requirements remain appropriate with additional flexibility in relation to access.

The proposed suite of moderated responses aligns best with the objectives of this review by creating a more efficient, practical and equitable system, where the preservation of life is the primary objective. It acknowledges that the risk to individuals is lower in built-up urban bushfire prone areas than in non-built-up urban areas. Further, it responds to the limitations in the AS3959 assessment methodology that does not account for the broader landscape context within the assessment. In a built-up urban context, individuals are less likely to need to shelter in their homes in the event of a bushfire as they have a greater range of options for egress. These areas also have more-reliable access to water and emergency response and lower fuel levels.

It is noted that the proposed moderated responses will still result in higher levels of protection than the majority of existing dwellings within the proposed urban bushfire prone areas (that is, pre-2015). Furthermore, these are proposed minimum construction requirements that do not preclude the ability of landowners to build to a higher construction standard, if desired.

To give effect to the intent behind the revised mapping, both planning and construction requirements are proposed to be simplified and moderated to correspond to the different urban bushfire prone area categories. A more detailed description of each of the proposed mapping sub-categories is outlined in section 4.2.1.4 and summarised in *Table 1*.

#### 4.2.1.4 Urban bushfire prone areas sub-categories – planning and construction response

As set out in 4.2.1.3, four sub-categories of mapping have been identified within the proposed urban bushfire prone areas. Figure 4 provides an indicative comparison of the existing and proposed revised mapping. The proposed planning and construction response to these is set out in Table 1. The following section provides a description of each sub-category, the proposed planning and construction response and brief rationale for each approach.

##### 4.2.1.4.1 *Large regional reserves and transitional areas (orange)*

###### *Large regional reserves*

Comprise large, contiguous bushfire prone areas greater than 100 hectares in size that are reserved for Parks and Recreation, Public Purpose or State Forest in a region planning scheme, or equivalent in a local planning scheme.

###### *Transition areas*

A transition area, to mapped bushfire prone vegetation, is proposed to ensure the implementation of appropriate measures through the planning system for proposals directly abutting the following areas:

- urban bushfire prone area boundary – 20 metre buffer inside the boundary
- large regional reserves – 20 metre buffer
- Rural zoned land – 20 metre buffer.

Note: no buffer is required to mapped ‘planning approved areas’.

###### Planning and construction response (Large regional reserves and transitional areas)

Deemed to comply planning requirements are proposed to apply to structure plan and subdivision proposals in areas mapped as large regional reserves and transition areas to ensure an appropriate level of protection is incorporated into proposal design. The deemed to comply provisions promote best-practice urban design with respect to bushfire mitigation outcomes and would include a perimeter road to provide physical separation, emergency access and the provision of a reticulated water supply. Adoption of the deemed to comply provisions will streamline approvals processes. Where the deemed-to-comply provisions are not appropriate or available, the current provisions within SPP 3.7 remain.

The deemed to comply requirements are proposed to apply to large subdivisions or structure plans involving 10 residential lots or more.

There is little benefit to requiring a bushfire assessment to support rezoning and other strategic planning proposals within defined urban bushfire prone areas in light of the broader landscape context and the fact that these proposals will generally result in an expansion of the urban footprint, further reducing the risk of bushfire while at the same time increasing the level of protection to existing development. This does not apply to rezoning proposals incorporating vulnerable or high-risk land uses.

Similarly, additional opportunities to enhance the protection of human life in these areas through the application of bushfire planning mitigation measures at the development approval stage of the planning process are limited and therefore warrant an exemption from the current bushfire planning policy framework. The exemption does not apply to development applications that involve vulnerable or high-risk land uses.

Retention of existing planning requirements for vulnerable and high-risk proposals is an appropriate approach and commensurate with the level of risk associated with the land use, subject to the revised provision for greater flexibility in applying secondary access requirements in rural areas.

It is proposed that a blanket maximum BAL-12.5 construction standard be applied to large regional reserves and transitional areas.

A BAL-12.5 construction standard provides defence against ember attack, one of the primary causes of house destruction in a bushfire. This approach recognises the broader landscape context of these areas and that the opportunity and responsibility remains for individuals to further mitigate risk through building to higher standards if they wish – as part of the shared responsibility approach to addressing bushfire risk. Other relevant measures such as emergency evacuation plans and insurance are also available. The application of a maximum BAL construction standard will remove the time and costs of needing to undertake a BAL assessment in many cases.

The cost of constructing to a BAL-12.5 standard has the potential to be less onerous than current requirements. The additional costs of construction to BAL-12.5 can range from \$2,000 up to \$12,000 dependent on building typology, size and design.

Importantly, this will avoid the unintended consequence of existing (pre-December 2015) residential lots in built-up urban areas being made effectively undevelopable in a practical sense, as a result of receiving an extreme BAL rating, even when most surrounding homes have been developed without any bushfire mitigation requirements.

#### *4.2.1.4.2 Rural zoned land (orange with a purple cross hatch)*

Rural zoned land includes all land (regardless of size) zoned Rural or Rural-Water Protection in a region planning scheme, or equivalent in a local planning scheme. The mapping of Rural zoned land also incorporates land zoned Urban Deferred in a region planning scheme as proposals on Urban Deferred zoned land are assessed within a rural, not urban zoning context.

#### Planning and construction response

Moderated planning requirements are proposed for land zoned Rural or Rural-Water Protection in a region planning scheme (mapped orange with a purple cross hatch), within an urban bushfire prone area.

Subject to some modification to include relaxed secondary access requirements, the application of SPP 3.7 requirements for structure planning, subdivision and development proposals in Rural zoned areas recognises the complexity of the response required to adequately address individual proposals and the higher likelihood that bushfire prone vegetation will be retained as part of any proposal. The allowance for relaxed access requirements recognises the broader urban context within which the Rural zoned land is located, specifically the existence of a more-comprehensive road network.

Rezoning proposals that do not involve vulnerable or high-risk land uses within these areas of Rural zoned land will be exempt from further SPP 3.7 assessment, recognising that changing the land use in these areas will most likely reduce vulnerability to bushfire. Where the vegetation in these areas is predominantly grassland, separate recommendations apply (refer to section 4.2.2).

Construction requirements will be in line with the BAL assessment (in accordance with APZ).

#### *4.2.1.4.3 General bushfire risk areas (yellow)*

The majority of the balance of urban bushfire prone areas would be classified as 'general bushfire risk' areas. These would generally comprise Urban, Industrial and Central City zones as well as Road and Railway and Public Purpose reserves in a region planning scheme, or equivalent in a local planning scheme.

Bushfire prone vegetation in these areas is generally more fragmented and/or may be subject to proposed modification as a result of future intensification or change of land use.



#### Planning and construction response

A planning response is not considered necessary for general bushfire risk areas. However, capped construction standards will apply. This approach creates fairness for existing developed areas that adjoin lower risk urban bushfire prone areas. It also represents a pragmatic risk-based approach to support broader government policy to promote infill development by removing barriers that may restrict approvals in highly urbanised environments.

It is proposed that a blanket maximum BAL-12.5 standard be applied to general bushfire risk areas.

This will further assist with avoiding the unintended consequence of existing (pre-December 2015) residential lots in built-up urban areas being made financially undevelopable as a result of receiving an extreme BAL rating, even when most surrounding homes have been developed without any bushfire mitigation requirements.

#### *4.2.1.4.4 Planning approved areas (blue)*

Planning approved areas comprise urban bushfire prone areas smaller than five hectares in size that are identified in an approved local structure plan (or similar) for future development that will result in the vegetation being cleared.

#### Planning and construction response

From a risk-based perspective, the need for any additional planning and construction requirements in planning approved areas (blue) is considered unnecessary. In addition to the rationale applied to categorising urban bushfire prone areas, the vegetation in these areas is temporary and, given the small size, the ability for a bushfire to gain any significant momentum to the point that it may threaten lives and property is considered limited. An additional category/layer within the map is recommended to provide special consideration to these areas.

*Figure 4* provides an indicative comparison of the existing and proposed revised mapping layers. The proposed planning and construction response to these is set out in *Table 1*.



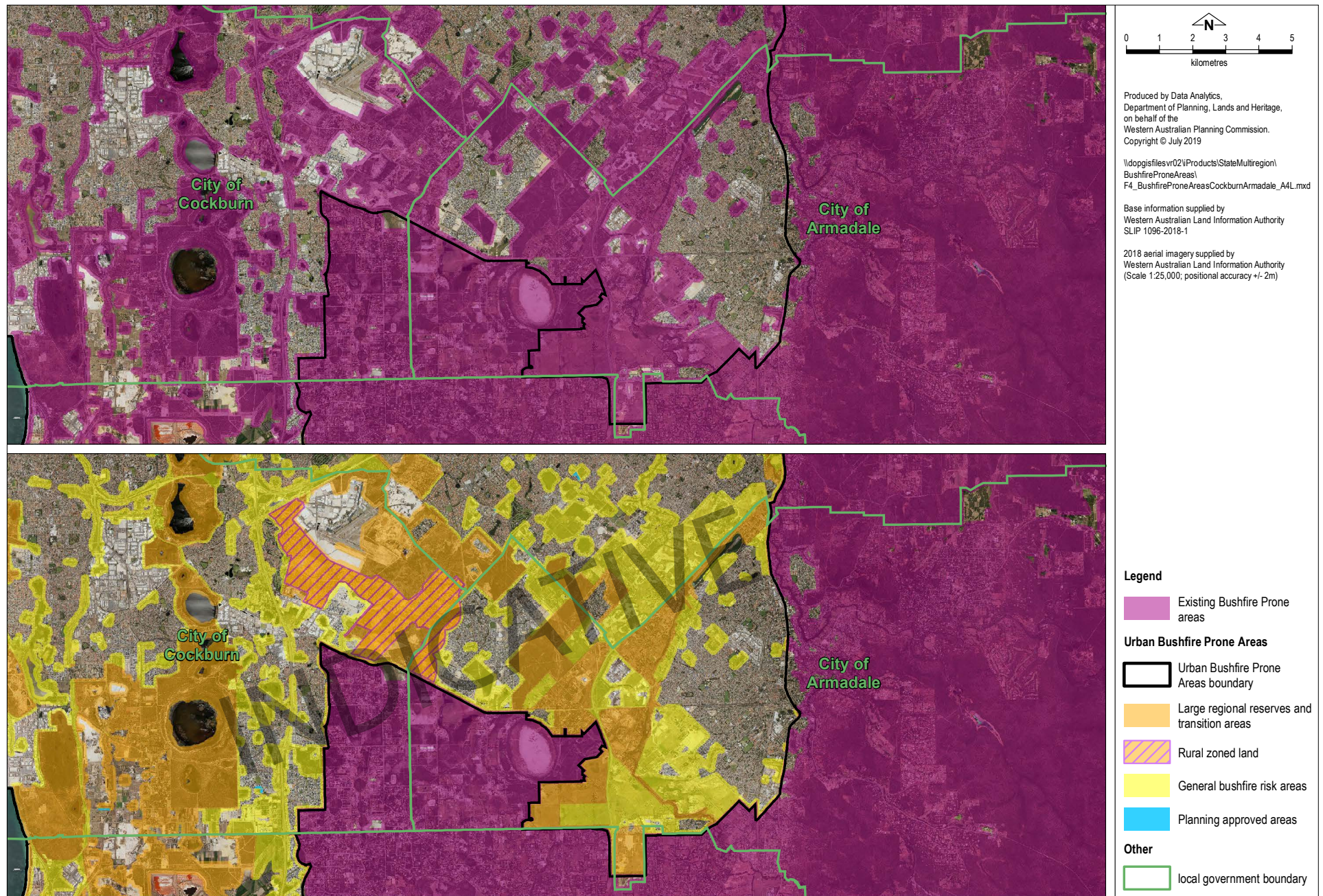


Figure 4: Urban bushfire prone areas – City of Cockburn/Armadale



Table 1: Summary of recommended changes for urban bushfire prone areas

Type	Map colour	Mapping criteria	Planning response	Construction response
<b>Large regional reserves</b>	Orange	All areas > 100ha reserved parks and recreation or zoned state forest or public purpose	Revised SPP 3.7 and Guidelines to incorporate deemed to comply provisions for large subdivisions and structure plans (>10 lots).  Rezoning proposals and development applications exempt from revised SPP 3.7 unless vulnerable or high risk land use. Revised SPP 3.7 to include relaxed secondary access requirements for these land uses.	Capped BAL-12.5
<b>Transition areas</b>	Orange	20m buffer to urban bushfire prone area boundary  20m buffer to large regional reserves  20m buffer to rural zoned land	Revised SPP 3.7 and Guidelines to incorporate deemed to comply provisions for large subdivisions and structure plans (>10 lots).  Rezoning proposals and development applications exempt from revised SPP 3.7 unless vulnerable or high risk land use. Revised SPP 3.7 to include relaxed secondary access requirements for these land uses.	Capped BAL-12.5
<b>Rural zoned land</b>	Orange with purple cross hatch	All areas zoned rural or Rural-Water Protection.	Revised SPP 3.7 and Guidelines to apply for all structure planning, subdivision and development applications, with relaxed secondary access requirements.  Rezoning proposals exempt from revised SPP 3.7 unless vulnerable or high risk land use.	As per BAL assessment (in accordance with APZ)
<b>General bushfire risk areas</b>	Yellow	All remaining bushfire prone areas	No requirements	Capped BAL-12.5
<b>Planning approved areas</b>	Blue	Bushfire areas <5ha identified for development within an approved structure plan (or similar)  Note: no buffer.	No requirements	No requirements

**RECOMMENDATION 3:** *DPLH, in conjunction with DFES, to classify existing bushfire prone area mapping within the urban bushfire prone area boundary into 'large regional reserves and transition areas', 'rural zoned land', 'general bushfire risk areas' and 'planning approved' areas.*

**RECOMMENDATION 4:** *Amend SPP 3.7 and the Guidelines to incorporate moderated planning responses in urban bushfire prone areas, including simplified 'deemed to comply' planning requirements.*

**RECOMMENDATION 5:** *Amend the Building Regulations 2012 to implement a capped BAL-12.5 in urban bushfire prone areas (except rural zoned lands and planning approved areas).*

In developing Recommendation 5, it is noted that variations to matters covered by the Building Code of Australia are governed by an Intergovernmental Agreement (IGA). The IGA discourages variations and requires proposed variations to be approved by the Minister for Commerce.

The recommendation to amend the *Building Regulations 2012* is the most viable option for implementing this approach. In making this recommendation, it is noted that South Australia, Tasmania, Queensland, Victoria and New South Wales each have approved variations that impact on the implementation of AS3959 inserted either directly in the BCA itself or enforced through regulations in their respective states.

#### 4.2.1.5 Bushfire prone mapping – roles and responsibilities

In considering the roles and responsibilities within the current system, it is recommended that the bushfire mapping function remains the responsibility of the Fire and Emergency Services Commissioner. Overall, the consultation undertaken also revealed support for the process and frequency for the revision of the map.

In light of the proposed methodology for determining urban bushfire prone areas, DPLH will need to lead the process for refining the delineation of urban bushfire prone areas, their sub-classifications and future changes to this boundary (that is, in conjunction with future zoning of land). In this respect, it is recommended that DPLH provide DFES with an annual update to coincide with the annual review of the map, once urban bushfire prone areas have been established. This should include revisions to the urban bushfire prone area boundary and changes to land subject to these sub-classifications.

This ongoing process, as well as the implementation measures outlined in Section 5, will generate additional resourcing requirements for DPLH, DFES and DMIRS.

**RECOMMENDATION 6:** *Retain the current process and frequency for the review of the map and retain the four-month transition period for newly mapped areas only (i.e. the revised requirements should be effective immediately on gazettal if the area has previously been designated).*

#### 4.2.2 Grasslands

There is extensive evidence that grassfire behaviour is substantially different to that of a bushfire fuelled by other types of vegetation, both in terms of intensity and duration. In this respect the flame residence time for grass fire is 5-15 seconds compared to the residence time for typical exposure conditions for a forest fire which is 120 seconds. The grass fire exposure time of 5-15 seconds results in radiant heat values that are lower than those determined in AS3959 for BAL-12.5. Based on these values, flame length is the governing factor for building ignition. BAL-FZ is only required where the flame length is greater than the separation distance. (Cheney, N.P., and Sullivan, A., *Grassfires: fuel, weather and fire behaviour*, 2008).

However, the AS3959 methodology means that farmland and open areas of rural living land are generally classified as 'grassland' unless there is evidence to justify exclusion (i.e. permanently maintained at less than 10cm in height). In this context, it is not uncommon for a site (for example, a farm homestead) to receive a BAL-40 or BAL-FZ rating where it is directly abutting open farmland. It also means that areas of unmanaged grass in urban areas, often weeds, can result in a high BAL rating.

Accordingly, it is recommended that grassland areas (including open farming, cropping and pastoral lands) be identified as a separate category on the map in order to address grassland issues on broad acre farming land and the unique characteristics of this vegetation type.

It is recommended that a maximum BAL-12.5 construction standard apply and planning requirements be limited to the implementation of deemed to comply requirements for asset protection zones and the provision of and access to, a suitable water supply at the development stage only. The deemed to comply requirements for asset protection zones in grassland areas will be developed to ensure flame length is not greater than the separation distance. Deemed to comply requirements for asset protection zones in grassland areas (in Western Australia) will be developed to ensure flame length is not greater than the separation distance.

The recommended grassland category should apply statewide, including Rural zoned land within the built-up urban area.

**RECOMMENDATION 7: *Identify grassland areas as a separate category on the map of Bush Fire Prone Areas. Amend SPP 3.7, the Guidelines and the Building Regulations 2012 to include reduced planning requirements and a maximum construction standard of BAL-12.5.***

### 4.3 Planning policy framework

#### 4.3.1 SPP 3.7 policy objectives

The existing policy objectives of SPP 3.7 are to:

- “5.1 Avoid any increase in the threat of bushfire to people, property and infrastructure. The preservation of life and the management of bushfire impact are paramount.”*
- 5.2 Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process.*
- 5.3 Ensure that higher order strategic planning documents, strategic planning proposals, subdivision and development applications take into account bushfire protection requirements and include specified bushfire protection measures.*
- 5.4 Achieve an appropriate balance between bushfire risk management measures and, biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change.”*

Whilst these objectives are generally sound, there is a conflict in the use of “avoid any increase” in a planning policy that is intended to generally be applied to ensure development proposals occur in a responsible manner, rather than not occurring at all.

In addition, as set out in section 4.1 and 4.2, the focus of the policy should be on the preservation of human life and there are a range of factors that contribute to this. Accordingly, it is recommended that the objectives of SPP 3.7 be refined to reinforce the primacy of human life and that avoidance applies in extreme areas where the risk cannot be mitigated (objective 5.1). This reinforces that mitigation measures should be the primary tool for managing the risk (objective 5.2 and 5.3). The suggested refined policy objective is:

- “5.1 Avoid intensification of land use in areas where the bushfire risk is extreme and cannot be mitigated. The preservation of human life is paramount.”*

**RECOMMENDATION 8:** *Amend SPP 3.7 policy objective cl. 5.1 to better articulate the primacy of human life and avoidance of development in extreme areas only.*

#### 4.3.2 Broader landscape assessment

As identified previously, one of the challenges of the current bushfire framework in relation to both planning and construction standards is that it relies on a site-specific assessment. The lessons learnt from the implementation of the existing bushfire framework include acknowledgement that the broader landscape context needs to be taken into consideration to better understand a site’s contextual risk.

The concept of a broader landscape type of assessment is particularly relevant to policy objective 5.1 referred to in section 4.3.1. Policy decisions to support this objective are currently guided by cl. 6.7 which states “...applications which will result in the introduction or intensification of development or land use in an area that has or will, on completion, have an extreme BHL and/or BAL-40 or BAL-FZ will not be supported unless...”. The current BHL and BAL assessment tools are largely inadequate to appropriately inform this level of decision due to their site-specific nature.

The inability to undertake a broader landscape assessment can result in proposals not being supported where they do not meet a specific criterion despite the relatively low contextual risk (for example, they might be located in a rural farmland setting with little to no bushfire prone vegetation other than grassland but situated at the end of a cul-de-sac with single access). Conversely, a proposal may technically comply with all the policy requirements to

achieve site-specific criteria (such as achieving BAL-29 or less at the development site) yet be located in an extreme bushfire risk area that is broadly surrounded by dense vegetation such as State forest.

This leads to inconsistencies in the interpretation and assessment of these types of scenarios. The deficiencies with the current site-specific assessments are exacerbated by the current extent of the mapping and AS3959 assessment methodology.

Similar to the rationale for differentiating urban bushfire prone areas, incorporating a broader landscape assessment into the planning policy framework will enable a more strategic and streamlined assessment of bushfire risk in bushfire prone areas throughout the state. It will provide an opportunity to filter proposals that require closer consideration due to their inherent risks, from those with a lower risk where mitigation measures are already provided for within the landscape (i.e. access, water, emergency response, lower fuel levels).

The introduction of this assessment, and an exemption for proposals assessed as 'low risk' from requiring further assessment under SPP 3.7, will provide more certainty to land developers and promote better consistency amongst decision makers. An amended cl. 6.7 is also required.

In contrast to the current BHL methodology that is based on the existing site conditions, a broader landscape assessment will be able to take into account the future developed state. This recognises that, in some cases, development can reduce the overall bushfire risk.

The introduction of a broader landscape assessment will also complement the current Guidelines review process, an aim of which is to better articulate the bushfire protection criteria requirements for different stages of the planning process. The existing bushfire protection criteria applied to all planning proposals are often difficult to relate to strategic planning proposals as they tend to be skewed towards small scale subdivision and development. A broader landscape assessment that uses methodology based on a separate set of strategic principles and objectives that take into account factors such as landscape fire risk would fill this gap.

The Department of Planning, Lands and Heritage has undertaken some preliminary work to establish a broader landscape assessment process. This should be progressed and incorporated into the bushfire planning framework in place of a BHL assessment. The broader landscape assessment should be used to streamline the approvals process and act as a gateway assessment to determine exemptions or the level of further assessment required.

The principles that have guided this review should be adopted when developing the criteria for the broader landscape assessment, including the need for simple and pragmatic outcomes that prioritise the preservation of life in context of the bushfire risk.

**RECOMMENDATION 9:** *Amend SPP 3.7 and Guidelines to adopt a broader landscape risk assessment.*

#### *4.3.3 Tourism and nature-based land uses*

The assessment of tourism proposals and other nature-based land uses within bushfire prone areas is often complex due to the bespoke nature of each development and the inherent need for these facilities to be located in areas that tend to compete with the objectives of the policy.

From a bushfire risk perspective, nature-based land use proposals tend to be incongruous with the policy intent of SPP 3.7 and have difficulty complying with the required bushfire protection measures. Many of these land uses also fall within the 'vulnerable' definition in SPP 3.7 and as such are subjected to additional requirements. However, it is not always appropriate to refuse such proposals where they may play an important role in supporting

objectives relating to tourism, the economy (particularly in regional areas), local job creation and responding to a reasonable community demand for a range of recreation opportunities.

The bushfire protection measures for dwellings embedded into the existing framework are predicated on the concept of providing an option to 'shelter in place' as a last resort to manage the bushfire risk. This is achieved through the creation of asset protection zones and the construction of buildings designed to withstand the determined level of bushfire exposure. Most nature-based land uses not involving overnight accommodation are temporary in nature and if they do have such accommodation, will usually be on a short-term basis only. They are inextricably linked to the landscape in which they are placed and in a Western Australian context, are invariably located where access, water and emergency response are limited.

Most visitation in the State's north occurs during winter which is a time of lower bushfire risk. However, in the south of the State high visitation coincides with the time of higher bushfire risk.

A new approach that appropriately recognises and responds to their unique circumstances is required. In this regard, emergency planning arrangements need to be addressed to ensure the incorporation of measures to preserve life.

A range of responses to manage the bushfire risk should be incorporated into the framework and utilised depending on the particular nature-based land use and the relevant circumstances, including both the location and the level of risk.

In terms of emergency planning arrangement, the preferred approach is to first seek to avoid the risk. This can be achieved by having arrangements for the temporary closure or early evacuation of a facility on days where a bushfire warning has been issued and/or on days of elevated Fire Danger Ratings (for example, extreme and/or catastrophic) and providing practical alternate options to temporally locate that land use.

Where temporary closure or early evacuation is not reasonable nor practicable, the framework should provide for the use of alternative options, such as refuge buildings or refuge open spaces to shelter in place as a last resort. This approach adopts a similar conceptual scenario to what is acceptable for the approval of residential type development built to the assessed bushfire construction standards and is consistent with the recommendation in the Ferguson Special Inquiry in relation to the need to identify 'Places of Bushfire Last Resort' in areas where the life risk from bushfire is very high or greater.

Regardless of the recommended response, agreed emergency planning arrangements will need to have been determined prior to the assessment of applications for development.

***RECOMMENDATION 10: DPLH, in conjunction with DFES, amend SPP 3.7 and/or the Guidelines to allow emergency planning arrangements to be considered in support of tourism and nature based land use proposals, where the full extent of the existing bushfire protection criteria cannot be achieved.***

Since this matter was first considered, DPLH, in conjunction with DFES and Tourism WA, have prepared a draft policy position statement that provides additional guidance for tourism uses where additional contingencies may be necessary to address bushfire risk, consistent with this report. This position statement presents an opportunity to test the new policy position before formal incorporation into SPP 3.7 and/or the Guidelines, as per Recommendation 10.



#### *4.3.4 Notifications on title and property interest reports*

Clause 6.10 of SPP 3.7 (Bushfire conditions may be imposed) allows for notifications to be placed on titles where development is approved in bushfire prone areas and in part addresses Recommendation 40 of the Keelty Report (Appendix 1).

While this process is an important step in creating awareness of individual responsibilities among land owners, registering a notification on title following a planning approval involves both cost and time. It also results in a haphazard outcome as the notification is only registered on titles subject to a condition of planning approval. Existing properties that may be in close proximity to recently approved developments won't have any such notification. In addition to the costs to register the notification, there are additional costs to remove the notification should conditions change over time.

Property interest reports (PIR) are often accessed by potential purchasers at the point of sale via the vendor's real estate agent and are another important avenue of raising landowner awareness. The data currently contained within PIRs is directly linked to the map of *Bush Fire Prone Areas*. The use of PIRs to inform landowners has obvious advantages over notifications as it is more widespread (applies universally to all properties identified on the map regardless of whether or not a previous planning approval has been issued on a particular property), is readily updated as the map changes over time, is cheaper to access, and is provided in a standardised format. However, currently these are not universally required.

Given the importance of landowner awareness, it is recommended that the process by which information is disclosed to prospective purchasers is strengthened. This approach better reflects the intention of Recommendation 40 of the Keelty Report. The benefits of this recommendation are wide-ranging and extend beyond the bushfire prone planning framework.

***RECOMMENDATION 11: DPLH to lead discussion with DMIRS to consider ways to strengthen the processes for disclosing information about a property's designation as a bushfire prone area on sale or transfer of land.***

## 4.4 Planning assessment processes

### 4.4.1 *Decision-makers and referral agencies*

Frustration was expressed through the consultation process regarding a perceived lack of willingness of relevant State government agencies to consider alternative or innovative bushfire risk management measures or proactively engage with the consultant industry. Concern was also expressed at the weighting given to DFES advice by decision makers such as the WAPC and local governments.

Decision-makers are expected to balance all referral advice (including factors other than bushfire) and related information when considering a planning proposal. While many local and State government employees have an understanding of basic bushfire planning principles and can review basic assessments, the technical nature of the subject matter means that decision-makers require DFES assistance to assess technical advice and documents.

The Department of Fire and Emergency Services has a clear role in providing bushfire advice to both State and local government. As mandated in their governing legislation, their advice is required to represent a narrow focus with consideration only given to bushfire and safety. Its role does not extend to balancing other, often competing considerations that planning decision makers have to take into account when considering a planning proposal. As such, their advice is often perceived to be overly conservative.

Understandably, decision-makers are reluctant to make decisions that are not consistent with DFES advice, citing liability concerns and recognising the significant implications of bushfire.

The consultation undertaken has identified that the development industry's frustration relates to DFES' conservative approach to providing advice as well as the staff resources available to liaise proactively with industry and engage in the planning approval process. DFES' limited capacity to provide timely advice in its role as a referral agency exacerbates these problems. This also has implications for the ability of decision-makers to meet statutory decision timeframes.

In response to the matters outlined above, the establishment of an independent review process was suggested during the consultation process to arbitrate specifically on bushfire considerations that form part of higher level planning proposals.

When considering this or alternative options such as the appointment of specialist advisors to assist decision-makers, important considerations include the effect on timing, the impact of adding additional layers to the planning process and the cost of resourcing. Further considerations include the broad range of decision making points in the planning and development framework as well as the potential for any option to encourage a more cautious approach from decision makers and/or DFES.

Importantly, any independent panel or technical advisor would be faced with the same decision-making challenges as existing referral agencies and decision makers and any additional assessment process layer would likely impact on statutory timeframes. In light of the above, the establishment of a further independent panel or similar, is not supported.

Alternatively, providing greater resourcing priority within the DFES to support the referral agency role, would likely improve planning and development assessment processes. This would improve DFES' capacity to proactively engage and allow more robust, internally peer reviewed consideration and assessment of performance-based solutions and support the ability of decision-makers to meet statutory decision timeframes.

**RECOMMENDATION 12:** *DFES to investigate providing greater resourcing priority to its advice and referral role.*

#### 4.4.2 Bushfire assessors and practitioners

The professional recognition of accredited assessors and practitioners is still relatively new in Western Australia and consultants have been expected to respond to a substantial policy shift, including the ongoing (staged) review of the *Guidelines for Planning in Bushfire Prone Areas*. Over time, as the industry continues to mature and skills and capacity continue to develop, there will likely be a greater alignment between the expectations of industry, DFES and decision-makers, in terms of planning and development outcomes. In conjunction with the proposed bushfire planning and development reforms, some transitional issues will diminish with time resulting in likely improvements in the quality of consultant outputs.

The Fire Protection Association of Australia (FPAA), the accrediting body in Western Australia for bushfire practitioners, has recently established a State Bushfire Working Group, with representatives from government and the accredited consultant industry working together to facilitate better outcomes and provide a conduit for discussing technical assessment matters. The FPAA operate similar groups in Victoria and New South Wales, providing benefits of established governance arrangements and standards that could be replicated in Western Australia. Given the infancy of this group, it is considered premature for this review to recommend an additional layer of governance with the potential for duplication.

Whilst mandatory accreditation is not recommended at this time, this review recognises the value of the accreditation framework and Government should continue to strongly encourage the use of accredited professionals.

Accordingly, it is recommended that agencies monitor the effectiveness of these forums before any further changes are considered.

**RECOMMENDATION 13:** *Monitor continued improvements in accreditation and the up skilling of practitioners and training.*

#### 4.4.3 Firebreak notices

Currently in Western Australia, the main mechanism to exclude grassland from a BAL assessment in AS3959 is if the relevant grassland is required to be managed by a firebreak notice issued by the local government under s33 of the *Bush Fires Act 1954*. Firebreak notices are issued as a means of controlling fire risk on private properties and are enforceable under law.

However, their requirements are not standardised across the State which results in inconsistencies in BAL assessments. Standardising firebreak notices across the State will allow BAL assessors to apply automatic exemptions to vegetation classifications without needing to check individual local government requirements, making landowner implementation more consistent and the BAL assessment process easier. The minimum requirements should align with both AS3959 and the Guidelines (for example, the requirement for all grass on land less than a specified area be maintained in a low fuel condition and/or that minimum asset protection zone requirements apply around dwellings on large lots).

In addition, standardisation of firebreak notices to include a requirement for ongoing landowner compliance with the approved bushfire management plan will assist in the enforcement of bushfire management plans where this is not already provided for.

**RECOMMENDATION 14:** *Minimum 'best practice' requirements for firebreak notices be developed to standardise assessment practices under AS3959 and provide an enforceable mechanism for bushfire management plan compliance.*

## 5. IMPLEMENTATION

This section sets actions required by government agencies to implement the endorsed recommendations of this report.

These subsequent processes may have their own public consultation and/or review requirements.

This section summarises the specific actions required by government agencies to implement the recommendations of this report, which include significant changes to the policy and regulatory framework across multiple sectors. The complex nature of these recommendations needs to be recognised and implementation timeframes should be realistic, despite the likelihood that the pressure for reform will increase as time progresses and existing problems with the current framework will occur in the interim.

### 5.1 Map of Bush Fire Prone Areas

*Responsible agencies (Actions 1-4): DFES and DPLH.*

Action 1: Amend s18P of the *Fire and Emergency Services Act 1998* to expand the power of the FES Commissioner to designate 'urban bushfire prone areas' with multiple designation categories in addition to 'normal' bushfire prone areas.

Action 2: Refine urban bushfire prone areas and the different sub-category layers of the Map, starting with the Perth and Peel regions, Bunbury and Busselton, as follows:

- Urban bushfire prone area boundary:
  - As indicatively defined in section 4.2.1.2 – *Delineating urban bushfire prone areas*.
- Urban bushfire prone areas sub-categories:
  - Large regional reserves (orange): All areas greater than 100ha reserved for Parks and Recreation, Public Purpose or State Forest in a region planning scheme, or equivalent in a local planning scheme;
  - Transition areas (orange): a 20-metre buffer inside the urban bushfire prone area boundary, to large regional reserves and rural zoned lands.
  - Rural zoned land (orange with purple cross hatch): Land zoned Rural or Rural-Water Protection in a region planning scheme, or equivalent in a local planning scheme;
  - General bushfire risk areas (yellow): all other urban bushfire prone areas; and
  - Planning approved areas (blue): bushfire areas smaller than five hectares in size and identified in an approved structure plan to be cleared.

Action 3: Develop guidelines for the identification of grassland areas throughout the State.

Action 4: Staged implementation of urban bushfire prone area criteria to other major cities and towns throughout the State.

## 5.2 State Planning Policy 3.7 and Guidelines

*Responsible agency (Action 5): DPLH lead in consultation with DFES*

Action 5: Amend SPP 3.7 and Guidelines to:

- update the policy objectives;
- recognise the recommended response in urban bushfire prone areas (summarised in Table 1), including the development of deemed to comply criteria;
- develop and incorporate a broader landscape assessment; and
- incorporate the provision for tourism and nature based land uses to consider emergency planning arrangements where the bushfire protection criteria cannot be met.

## 5.3 Local Planning Scheme Regulations

*Responsible agency: DPLH*

Action 6: Amend *Planning and Development (Local Planning Scheme) Regulations 2015* to change the planning requirements in 'urban bushfire prone areas'.

- Ensure Part 10A requirements (i.e. the requirement to obtain a BAL assessment and development approval where the BAL is BAL-40 or BAL-FZ) are not triggered within the urban bushfire prone area boundary or in grassland areas.

## 5.4 Building Regulations

*Responsible agency (Action 7): Department of Mines, Industry Regulation and Safety (DMIRS).*

Action 7: Amend *Building Regulations 2012* to set the bushfire construction standards for:

- 'urban bushfire prone areas' (except rural zoned land and planning approved areas) at BAL-12.5; and
- 'grassland areas' at BAL-12.5.

## 5.5 Other actions

*Responsible agencies (Actions 8 and 9): DPLH to lead discussions with DMIRS.*

Action 8: Commence the development of minimum 'best practice' requirements for firebreak notices to standardise assessment practices under AS3959 and provide an enforceable mechanism for bushfire management plan compliance.

*Responsible agencies: DPLH, OBRM and DFES.*

Action 9: DPLH to initiate discussion with DMIRS regarding the process for disclosing information on sale or transfer of land.

**RECOMMENDATION 15:** *The report's recommendations are implemented, in accordance with Actions 1-9, by the responsible agencies as soon as possible.*

**RECOMMENDATION 16:** *Investigate the temporary allocation of additional shared resources to DPLH, DFES and DMIRS to implement the required changes to the mapping, SPP 3.7, Guidelines and Regulations.*

*Table 2* provides a summary of the recommended changes to the bushfire planning and construction framework.

*Appendix 5* provides a comparative summary between the current bushfire framework and the proposed changes to the framework. The table outlines the reduced requirements for planning approval and building construction standards in locations recognised as having a lower contextual risk as indicated by the proposed urban bushfire prone areas and grassland classifications within the bushfire prone mapping.

Table 2: Summary of recommended changes to the bushfire planning and construction framework, as reflected in the map (Figures 1, 2 and 3).

Type	Map Colour	Mapping Criteria	Planning response	Construction response
<b>Statewide Bushfire Prone Areas</b>				
<b>Bushfire prone areas</b>	Purple	No change. Includes built-in 100m buffer.	As per revised SPP 3.7 and Guidelines*	As per BAL assessment
<b>Grassland areas</b>	Pink	All areas classified as unmanaged grassland (requires use of vegetation mapping data. If not available, should form part of the local government review process).  Includes built-in 50m buffer	Revised SPP 3.7 and Guidelines* to incorporate deemed to comply requirements for development applications only.	Capped BAL-12.5
<b>Urban Bushfire Prone Areas (as per Table 1)</b>				
<b>Boundary</b>	Black line	Refer to section 4.2.1.2	Refer to categories below	Refer to categories below
<b>Large regional reserves</b>	Orange	All areas > 100ha reserved parks and recreation or zoned State forest or public purpose.	Revised SPP 3.7 and Guidelines* to incorporate deemed to comply provisions for large subdivisions and structure plans (>10 lots).  Rezoning proposals and development applications exempt from revised SPP 3.7 unless vulnerable or high-risk land use.	Capped BAL-12.5
<b>Transition areas</b>	Orange	20m buffer to urban bushfire prone area boundary  20m buffer to large regional reserves  20m buffer to rural zoned land	Revised SPP 3.7 and Guidelines* to incorporate deemed to comply provisions for large subdivisions and structure plans (>10 lots);  Rezoning proposals and development applications exempt from revised SPP 3.7 unless vulnerable or high-risk land use.	Capped BAL-12.5

Type	Map Colour	Mapping Criteria	Planning response	Construction response
<b>Rural zoned lands</b>	Orange with purple cross hatch	All areas zoned Rural or Rural-Water Protection.	Revised SPP 3.7 and Guidelines* to apply for all structure planning subdivision and development applications, with relaxed secondary access requirements;  Rezoning proposals exempt from revised SPP 3.7 unless vulnerable or high risk land use.	As per BAL assessment (in accordance with APZ)
<b>General bushfire risk areas</b>	Yellow	All remaining bushfire prone areas.	No requirements	Capped BAL-12.5
<b>Planning approved areas</b>	Blue	Bushfire prone areas <5ha identified for development within an approved structure plan (or similar).  No buffer.	No requirements	No requirements

\*Revised SPP 3.7 and Guidelines to incorporate relaxed secondary access requirements in urban bushfire prone areas and a broader landscape assessment and emergency planning arrangements for tourism land uses in all other areas.



## **APPENDIX 1 – REGULATORY AND POLICY FRAMEWORK PRIOR TO THE 2015 BUSHFIRE REFORMS**

Bushfire resistant construction standards for residential dwellings in ‘designated bush fire prone areas’ were first introduced in the BCA in the 1990s and applied to “land which has been designated under a power in legislation as being subject, or likely to be subject, to bush fires”. Australian Standard 3959 Construction of buildings in bushfire-prone areas (AS3959) is the primary tool used to comply with the BCA and involves the determination of a building’s BAL to measure the potential severity and intensity of a bushfire attack.

In 2001, the Fire and Emergency Services Authority (FESA) and WAPC published the *Planning for Bush Fire Protection Guidelines (the Guidelines)* which provided the foundation for fire risk management planning at a community and land development level. It was supported by Development Control Policy 3.7 Subdivision of Rural Land. *State Planning Policy 3.4 Natural Hazards and Disasters (SPP 3.4; 2006)* aimed to ensure that the risk posed by natural hazards and disasters (including bushfire) was given proper consideration in the planning process.

Prior to the introduction of the 2015 bushfire reforms package, responsibility for the designation of bushfire prone areas lay with local governments. Only a very small number had done so, meaning the BCA provisions could not be applied and also resulted in inconsistent application of SPP 3.4 and Guidelines. In addition, SPP 3.4 did not provide a clear policy position on what is considered appropriate or that bushfire risk should be considered at higher levels of the planning process.

The Guidelines were updated and expanded in 2010 to adopt more contemporary bushfire mitigation practices.

Mick Keelty AO was commissioned by the Western Australian Government to conduct a review following the Perth hills bushfire in February 2011. His report, 'A Shared Responsibility: The Report of the Perth Hills Bushfire February 2011 Review', recognised the central role that land use planning and building plays in reducing the risk of bushfire to life, property and infrastructure and reinforced that with early and improved intervention of the land use planning and building systems, the vulnerability of settlements to the risk of a bushfire can be minimised over time. The reports' five recommendations relating to land use planning were:

*Recommendation 3 – The State Government transfer responsibility for declaring bushfire prone areas from local government to the WAPC. The WAPC should urgently assess those areas that should be declared bushfire prone.*

*Recommendation 4 – The State Government give legislative effect to the Planning for Bush Fire Protection Guidelines.*

*Recommendation 39 – State and local governments:*

- a) recognise that regardless of future declarations of bushfire prone areas, the existing planning and building problems in the Perth Hills related to bushfire risk will persist;*
- b) urge residents in these areas to retrofit their homes and evaporative air conditioners in compliance with AS 3959 - 2009;*
- c) examine options to retrospectively bring these areas into compliance with Planning for Bushfire Protection Guidelines.*

*Recommendation 40 – The State Government mandate that the title deeds for relevant properties be amended to indicate if the property is in a declared bushfire prone area.*

*Recommendation 42 – The State Government recognise the projected changes in climate and potential impact on future fire events.*

For Recommendation 3, it was agreed that the responsibility for declaring bushfire prone areas more appropriately lay with the Fire and Emergency Services portfolio rather than the WAPC, leading to the development of a Mapping Standard by the Office of Bushfire Risk Management (OBRM).

In response to Recommendation 4:

- deemed provisions were proposed in the *Planning and Development (Local Planning Schemes) Regulations 2015* requiring a BAL assessment and a development approval in extreme areas (overriding any existing single dwelling exemption) in extreme areas to allow consideration of other factors, such as building location, in addition to the application of construction standards; and
- a draft SPP 3.7 and revised Guidelines were released for public consultation in May 2014.

The draft SPP 3.7 and Guidelines underwent significant changes following public consultation. Three key issues raised through that process were:

- the treatment of transitional urban areas such as the expanding development front where the existing risk is only considered to be temporary.
  - clarification was made that accepting a higher risk in transitional areas or adjoining land management agreements between private landowners is not appropriate;
- infill development.
  - a provision for “minor development” was inserted into the SPP to allow for construction at BAL-40 and BAL-Flame Zone (FZ) for infill sites; minor (for example, two lot) subdivision doesn’t qualify; and
- the need for discretionary decision-making for applications proposing “unavoidable development”.
  - further clarification provided and the precautionary principle introduced.

Given the significant changes, a targeted consultation with those who previously made a submission was undertaken on the revised draft in August 2015. This consultation resulted in:

- further changes being made to better articulate the preservation of life is the paramount consideration;
- strengthening the presumption against the intensification of vulnerable and high risk land uses in extreme areas;
- providing for notifications on title to be required for new lots created in bushfire prone areas;
- restructuring of the policy and Guidelines to better clarify the requirements at each stage of the planning process and the appropriate level of assessment/detail.

Further modifications to the draft SPP were developed in consultation with DFES, OBRM and the then Building Commission (now DMIRS) designed to reduce red tape including:

- providing for a 1,100m<sup>2</sup> lot size exemption for the development of single houses and ancillary dwellings;
- the use of a BAL contour map (where one exists) in place of a BAL assessment (to reduce duplication of assessments); and
- the ability for a proponent to submit a self-assessed BAL assessment where the proposal is for a single house and more than 50km from a gazetted town site.

In August 2015, the *Fire and Emergency Services Act 1988* was amended to give the Fire and Emergency Services Commissioner the ability to declare bushfire prone areas across the State.

The full reforms package was released on 6 December 2015.

## APPENDIX 2 – EXISTING REGULATORY AND POLICY FRAMEWORK

Under the system of reforms released in December 2015, the map of Bush Fire Prone Areas acts as a central trigger for further assessment in the planning and building system. The map is binary (in/out) and identifies the presence of bushfire prone vegetation (based on the BAL assessment methodology contained within AS3959) plus a 100-metre buffer.

In a planning context, SPP 3.7 is applied to every layer of the planning process in bushfire prone areas. This includes strategic proposals, such as local planning strategies and schemes, rezonings and structure plans, subdivisions and individual development applications. SPP 3.7 recognises that planning for and assessing bushfire risk is most effective when properly addressed at the earliest stage in the planning process. For all strategic planning proposals, subdivision and development applications, SPP 3.7 requires an assessment of the bushfire risk and the application of bushfire protection criteria which serve to address issues such as location, siting and design, water supply and the provision of access. The level of assessment required generally corresponds with the scale and level of detail contained within the proposal. Compliance with the bushfire protection criteria must be demonstrated before an approval is considered and there is a presumption against approval of any proposal in a high-risk area (that is, where the bushfire hazard level is extreme or where BAL-40 or BAL-FZ apply) unless specific exemptions apply. SPP 3.7 is underpinned by the precautionary principle which means that refusal is recommended in areas where there is doubt.

The LPS Regulations act as a safety net to ensure that the development of 'habitable buildings' that may otherwise be exempt from the planning process (for example, single houses that are compliant with the Residential Design Codes) require planning approval where they are subject to BAL-40 or BAL-FZ. This enables the development to be assessed against SPP 3.7 with the intention of implementing measures to better manage the risk.

Both planning instruments (SPP 3.7 and the Local Planning Scheme Regulations) contain exemptions that relate to the construction of a single house or ancillary dwelling on a lot/s less than 1,100m<sup>2</sup>. This exemption recognises the limited role that planning can play in influencing the vulnerability to bushfire on such constrained lots (that is, siting and design options are extremely limited and factors such as provision of access and water usually predetermined). These houses are generally approved in accordance with SPP 3.7 regardless of their BAL rating under a provision that allows for 'minor development'. Their exemption from the planning framework is seen as an important measure to reduce red tape.

In addition to the bushfire risk mitigation measures built into the planning framework, the BCA contains bushfire resistant construction standards that must be applied to the construction of residential buildings (being Class 1, 2 or 3 buildings and associated Class 10a buildings and decks) in bushfire prone areas. The bushfire resistant construction standards are designed to reduce a building's vulnerability to bushfire attack and are generally met through the application of AS3959 which requires a BAL assessment to be completed. A BAL, measured as a factor of kW/m<sup>2</sup>, is a way of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact and is calculated by variables such as the applicable Fire Danger Index (FDI), the type of vegetation and its proximity to the building and the slope of the site. The BAL determined by an assessment is then used to apply corresponding construction standards that are detailed within AS3959.

The building legislation does contain a process that allows a person to make an application to the Building Commissioner for a declaration to modify or not apply a building standard. A declaration can only be made in circumstances that does not increase the risk to people, property or the environment and that is in the public interest or is consistent with another written law. It is often difficult for applicants to meet these requirements.

To support the new reforms, the Barnett Government developed a training and accreditation framework. The accreditation framework aims to improve bushfire risk management measures being applied to land uses and development by enabling the provision of effective, professional and consistent advice. Accreditation is available at three different levels. The establishment of a recognised professional industry provides developers, landowners/proponents and decision-

makers, such as local government and State government agencies, with the confidence that the service provider has met certain professional standards and has the skills and knowledge to provide consistent and professional services.

It is important to note that both the Local Planning Scheme Regulations and BCA requirements are legislative requirements and are non-discretionary. Being a policy, the requirements of SPP 3.7 do not have a statutory head of power and therefore they aren't mandatory. SPP's are however, the State's highest level of planning policy and decision makers are obliged under legislation to give them 'due regard' in their decision making.

As outlined in Section 2, the Guidelines are currently being reviewed with a view to resolving some early implementation issues and provide clearer information in relation to how SPP 3.7 should be applied. The Guidelines review process is being informed by an external working group that involves relevant State government agencies, local government, industry bodies and bushfire consultants. It is being undertaken as a staged approach, so the agreed changes can be implemented as soon as possible. So far, the review has resulted in changes being made to asset protection zone requirements (version 1.1; February 2017), bushfire hazard level (BHL) assessment and BAL contour map methodology and more guidance provided on the requirements that apply to vulnerable land uses (version 1.2; August 2017). Version 1.3 (December 2017) revised the guidance relating to the development of bushfire management plans and how to present a performance principle-based solution. The Guidelines review is not considering the map of *Bush Fire Prone Areas*, SPP 3.7 or the BCA requirements.

## APPENDIX 3 – COMPARISON OF BUSHFIRE PRONE MAPPING APPROACHES IN AUSTRALIA

### *Western Australia*

Responsibility for the designation and map of *Bushfire Prone Areas* rests with the Fire and Emergency Services Commissioner on advice from OBRM. OBRM has developed the map of *Bushfire Prone Areas Mapping Standard* (Mapping Standard) to determine which areas of the Western Australia should be designated bushfire prone. The Mapping Standard is based on the site assessment requirements of AS 3959.

An area is mapped bushfire prone if it contains one or a combination of the following:

1. A single area of bushfire prone vegetation that is one hectare in area or greater
2. Bushfire prone vegetation that is between 0.25 hectares and one hectare in area that is located within 100 metres bushfire prone vegetation that is 1 hectare or greater in area.
3. Bushfire prone vegetation that is less than 0.25 hectare in area that is located within 20 metres of other bushfire prone vegetation.
4. Strips of vegetation 20 metres or greater in width regardless of length that is within 20 metres from other bushfire prone vegetation.

Research into past bushfire events indicates that approximately 85 per cent of destroyed houses have been within 100 metres of bushfire, with ember attack being a significant cause of property ignition.<sup>1</sup> As such, a 100-metre buffer has been added to the periphery of the bushfire prone vegetation. The map is the trigger for applying both planning and construction requirements.

### *Australian Capital Territory*

The ACT has a similar map of bushfire prone areas to Western Australia based on the mapping criteria found in AS 3959. The map has “been developed to help describe and prioritise bushfire management in the ACT”<sup>2</sup>. A site-specific bushfire risk assessment might need to be undertaken during the planning/design process which may result in mitigation measures being required in areas not declared Bushfire Prone<sup>3</sup>.

### *New South Wales*

The NSW mapping criteria uses the same one-hectare trigger point as Western Australia. There are three different categories of hazard depending on the vegetation type, which alter the extent of the buffer:

1. Forest, woodland, heath, forested wetlands and timber plantations – 100 metre buffer.
2. Rainforests, remnant vegetation and lower risk vegetation such as discrete urban reserves, topographies that don't permit upslope fire runs towards development, infrastructure to support suppression by firefighters, and/or location of development allows early ignition detection – 30m.
3. Grasslands, freshwater wetlands, semi-arid woodlands, arid shrublands – 30 metre.

The Rural Fire Service's *Guidelines Planning for Bushfire Protection (August 2018)* is enforced through regulations and contains both planning and construction requirements.

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<sup>1</sup> K. Chen and J. McAneney 2010, *Bushfire Penetration into Urban Areas in Australia: A Spatial Analysis*, Risk Frontiers Macquarie University for Bushfire CRC, p. 16.

<sup>2</sup> The ACT Strategic Bushfire Management Plan 2014-2019, ACT Emergency Services Agency, page 18. <http://esa.act.gov.au/wp-content/uploads/The-ACT-Strategic-Bushfire-Management-Plan.pdf>

<sup>3</sup> Planning for Bushfire Risk Mitigation General Code, ACT Planning and Land Authority, Page 3. <http://www.legislation.act.gov.au/ni/2008-27/copy/56033/pdf/2008-27.pdf>

## *Victoria*

The Victorian map includes two layers: one requires a construction response only (Bushfire Hazard Level 1 (BHL1)), the second requires both a planning and construction response (BHL2). All development within a Designated Bushfire Prone Area, including new homes, alterations and/or additions, needs to be to a minimum of BAL-12.5, including for sites assessed as BAL Low. Higher construction levels may be required as determined by the site BAL assessment.<sup>4</sup>

BHL1 includes areas of forest, woodlands, scrub, shrublands, mallee and rainforest where the size of the vegetation is between two and four hectares and includes a 150-metre buffer. It also includes unmanaged grassland larger than two hectares with a 60-metre buffer. BHL2 includes areas of forest, woodlands, scrub, shrublands, mallee and rainforest that is larger than four hectares and includes a 300-metre buffer. BHL2 does not include grasslands.

Areas are excluded from the map include a range of forms of managed grassland (for example, residential land, recreational areas and ovals, commercial and industrial land, irrigated agricultural lands used for horticulture and cropping, and orchards, vineyards and market gardens), managed golf courses and parks and reserves smaller than two hectares.

## *Queensland*

Queensland's mapping criteria was developed by the CSIRO<sup>5</sup>. There are five levels of bushfire hazard recognised, categorised by the areas potential bushfire intensity:

1. Very high potential bushfire intensity
2. High potential bushfire intensity
3. Medium potential bushfire intensity
4. Potential impact buffer (100-metre buffer beyond an area of Medium potential bushfire intensity)
5. Low Hazard area (not displayed on the Map)

The final Bushfire Prone Area map excludes areas that do not meet a minimum medium potential fire-line intensity threshold. The map is further refined by removing or downgrading (for example, reclassifying an area from high potential bushfire intensity to medium potential bushfire intensity) small and disconnected patches of vegetation that are less likely to be ignited or would not sustain a severe bushfire. Pasture, cropping and native grasslands are excluded.

While the public map displays all four categories, all areas that are mapped bushfire prone have the same planning and construction response (for example, undertake a BAL assessment to determine the BAL rating for a class 1, 2, 3 or 10a building).

## *South Australia*

Local governments are responsible for designating bushfire-prone areas with 39 councils out of 68 having done so. Inner city and suburban areas are excluded and much of the outback is unmapped. Identification of bushfire prone areas is based on risk analysis techniques including satellite images, slope and topography, weather statistics, vegetation data (including fuel loads) and population growth<sup>6</sup>.

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<sup>4</sup> See Criteria to be used in Mapping Victoria's Bushfire Prone Areas, [https://www.planning.vic.gov.au/\\_data/assets/pdf\\_file/0027/5499/BPA\\_Mapping\\_Criteria\\_V4.pdf](https://www.planning.vic.gov.au/_data/assets/pdf_file/0027/5499/BPA_Mapping_Criteria_V4.pdf)

<sup>5</sup> The mapping standard calculates the potential fire-line intensity, in kilowatts per linear meter, for each area of vegetation based on vegetation type, likely fuel load and linear rate of fire spread.

<sup>6</sup> Minister's Code February 2009 (as amended October 2012) - Undertaking development in Bushfire Protection Areas, Government of SA,

The public map shows three different layers, categorised as General bushfire risk area, Medium bushfire risk area and High bushfire risk area. The planning/construction requirements vary with each layer (Table 3).

Table 3: Differences in construction response based on bushfire risk area in South Australia<sup>7</sup>

	Building construction standards	Have a dedicated fire-fighting water supply of at least
High bushfire risk area requirements	BAL construction standard based on site assessment	22,000 litres
Medium bushfire risk area requirements	Built to BAL-12.5	2,000 litres
General bushfire risk area requirements	No additional construction requirements	2,000 litres

### *Tasmania*

Bushfire prone area overlays for Hobart, Clarence and Kingborough have been approved and incorporated into their respective planning schemes. Buildings in bushfire prone areas need to be built to the sites corresponding BAL construction standard. The Mapping Standards for each of these local government areas has been individually developed in consultation with the Tasmania Fire Service and incorporate consideration of relevant factors such as the total area, type and location of vegetation, fire run potential, effective slope and use, development or land management status of the property.

Where there is no overlay identified on a planning scheme map, Planning Directive No 51 Bushfire-Prone Areas Code (Minister for Planning and Local Government: 1 September 2017)<sup>8</sup> establishes an interim position for designation of land prior to incorporation into a planning scheme. Land that is within 100 metres of an area of bushfire prone vegetation equal to or greater than 1 hectare, is designated bushfire prone. 'Bushfire-prone vegetation' is defined as contiguous vegetation (i.e. separated by less than 20m) including grasses and shrubs but not including maintained lawns, parks and gardens, nature strips, plant nurseries, golf courses, vineyards, orchards or vegetation on land that is used for horticultural purposes.

Planning Directive No 51 Bushfire-Prone Areas Code sets out relevant planning requirements for areas designated under this Planning Directive.

### *Northern Territory*

The Northern Territory does not designate bushfire prone areas.

[http://www.sa.gov.au/\\_data/assets/pdf\\_file/0004/166909/Ministers\\_code\\_undertaking\\_development\\_in\\_bushfire\\_protection\\_areas.pdf](http://www.sa.gov.au/_data/assets/pdf_file/0004/166909/Ministers_code_undertaking_development_in_bushfire_protection_areas.pdf)

<sup>7</sup> Requirements for bushfire risk areas. Department of Planning, Transport and Infrastructure, 2016.

<https://www.sa.gov.au/topics/planning-and-property/land-and-property-development/building-rules-regulations-and-information/requirements-for-bushfire-risk-areas>

<sup>8</sup> [https://www.planning.tas.gov.au/\\_data/assets/pdf\\_file/0006/389400/Planning\\_Directive\\_5.1\\_-\\_Bushfire-Prone\\_Areas\\_Code\\_-\\_effective\\_1\\_September\\_2017.PDF](https://www.planning.tas.gov.au/_data/assets/pdf_file/0006/389400/Planning_Directive_5.1_-_Bushfire-Prone_Areas_Code_-_effective_1_September_2017.PDF)

Table 4: Summary of bushfire prone mapping approaches across Australia.

Jurisdiction	Area trigger	Buffer zone (metres)	Responsibility for mapping	Excluded area	Multiple layers	References
<b>Western Australia</b>	1 ha	100	FES Commissioner (on the advice of OBRM, which operates independently of DFES). Local governments feed information into the OBRM process.	In accordance in AS 3959 exclusions	1 layer	<a href="#">Mapping Standard for Bush Fire Prone Areas</a>
<b>Australian Capital Territory</b>	1 ha	100	Emergency Services Agency Commissioner	Defined urban areas excluded in accordance with AS 3959 exclusions. Site specific bushfire risk assessment might need to be undertaken during the planning/design process which may result in mitigation measures being required in areas not designated.	1 layer	<a href="#">Planning for Bushfire Risk Mitigation General Code</a>
<b>New South Wales</b>	1 ha	100m for category 1, 30m for categories 2 and 3	NSW RFS sets mapping criteria. Bush fire prone land maps are prepared by local council and certified by RFS Commissioner	In accordance with AS 3959 exclusions, plus other areas that, due to their size, shape and overall risk are not considered Category 1, 2 or 3 vegetation.	1 public layer (3 vegetation layers that alter the vegetation buffer size)	<a href="#">Guide for Bush Fire Prone Land Mapping Version 5b (November 2015)</a>
<b>Victoria - BHL 1</b>	2 ha	60m for unmanaged grassland; 150m for all other types of vegetation	Minister for Planning (Department of Environment, Land, Water and Planning)	Isolated vegetated areas less than 2 ha	Construction response only – no additional planning requirements	<a href="#">Criteria to be used in Mapping Victoria's Bushfire Prone Areas</a>



Jurisdiction	Area trigger	Buffer zone (metres)	Responsibility for mapping	Excluded area	Multiple layers	References
<b>Victoria - BHL 2</b>	4 ha	300m buffer applies	Minister for Planning (Department of Environment, Land, Water and Planning)	Isolated areas less than 4 ha (BHL 1)	Planning and construction requirements	<a href="#">Criteria to be used in Mapping Victoria's Bushfire Prone Areas</a>
<b>Queensland</b>	CSIRO developed computer program to map fire line intensity across state. 100m buffer applied.			Grassland, areas with low fire intensity	3 public layers (however all have the same response)	<a href="#">A new methodology for State-wide mapping of bushfire prone areas in Queensland</a>
<b>South Australia</b>	Not available		Local Government	Generally town sites, with adequate fire protection measures	4 bushfire risk categories (different response's see SA table above)	<a href="#">Minister's Code 'Undertaking development in Bushfire Protection Areas'</a>
<b>Tasmania</b>	1 ha	100m  Some flexibility depending on site	<ul style="list-style-type: none"> <li>Tas Fire Service working with all LG to map bushfire prone areas – 3 complete, 1 underway</li> <li>State-wide map in development</li> <li>Self-determination of 1 ha of bush where no map</li> </ul>	<p>In accordance with AS 3959 exclusions.</p> <p>For mapping, lots less than 2,000m<sup>2</sup> with less than 15% bushfire prone area.</p>	1 layer – where map produced by local government	<a href="#">Tasmania Fire Service - Hobart Municipality Planning Report.</a>
<b>Northern Territory</b>	No areas designated bushfire prone mapping.					

## APPENDIX 4 – MAPPING OPTIONS FOR URBAN BUSHFIRE PRONE AREAS

*Table 4* summarises a range of options considered for urban bushfire prone areas. Option 4 is the preferred approach and discussed in more detailed in section 4.2.1 of this report.

Both options 1 and 3 result in all or most urban bushfire prone areas being excluded from the framework which is considered inappropriate in terms of an appropriate response to the level of bushfire risk.

Options 2 and 4 both maintain the extent of existing bushfire prone areas through the urban footprint but propose a tempered construction and planning response, with capped construction standards (either BAL-29 or BAL-12.5) and simplified planning requirements. Option 4 goes one step further to classify the urban bushfire prone areas into four sub-categories, specifically identifying large regional reserves, rural zoned land and small areas of land identified for future development as distinct from all other urban bushfire prone areas. Option 4 addresses the different levels of bushfire risk within the urban context and provides less onerous planning requirements in the lower risk areas.

In relation to BAL standards, a cap is recommended to overcome deficiencies of the BAL assessment methodology and avoid the unintended consequences when residential lots receive an extreme BAL rating, despite the urban context and incur a very high financial cost. The imposition of a capped BAL-29 construction standard will still incur time and costs associated with the need to undertake a BAL assessment. Estimates across Australia of the cost to construct to BAL-29 can vary notably and may range from \$11,900 to \$22,000 depending on the building typology, size, design and location. Given this, and consistent with taking a contextual risk-based approach, enforcing a maximum BAL-29 construction standard is not considered appropriate.

In recognition of the above, it is proposed that a BAL-12.5 standard be applied within urban bushfire prone areas, except for rural zoned lands and planning approved areas. From a risk management perspective, with a focus on human safety, this recommendation recognises the existing safeguards in urban bushfire prone areas, the fact that most household destruction is caused by ember attack for which protection is provided at BAL-12.5, the additional measures that can be taken by individual owners if they so choose and the increased costs involved with other options.

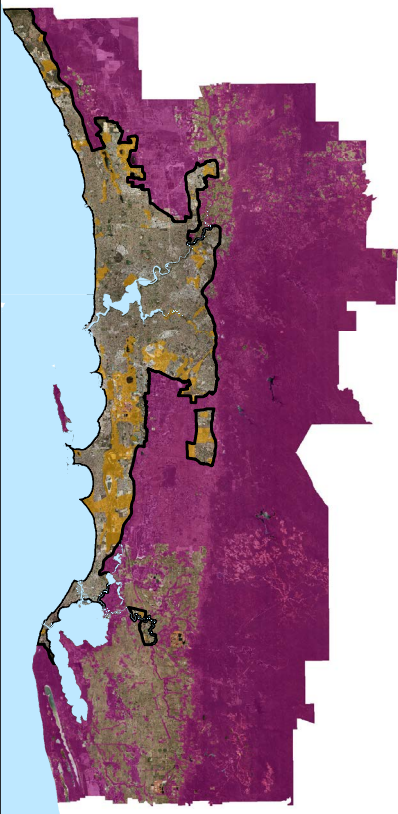
The likelihood of on-site bushfire prone vegetation remaining in rural areas necessitates a different approach. Any subdivision or development in these rural areas will be subject to revised SPP 3.7 requirements and it is appropriate that houses are built to the BAL construction standard identified in the bushfire management plan (in accordance with the asset protection zone requirements).

The imposition of a blanket BAL-12.5 represents the minimum standard recommended by Government in the urban context. As part of the shared responsibility approach to bushfire risk management, homeowners can choose to construct to a higher standard and should also ensure they have appropriate building/contents insurance and emergency evacuation plans in place.

Table 5: Strategic options for urban bushfire prone areas

Option	Map of Bush Fire Prone Areas	SPP 3.7 & Guidelines Requirements	Construction requirements	Summary of Considerations
<div data-bbox="141 284 539 1104" data-label="Image"> </div> <p><b>Option 1</b></p> <p><i>Exclude all bushfire prone areas within the urban bushfire prone area boundary</i></p>	<p>Exclude all existing bushfire prone areas within urban bushfire prone area boundary.</p> <p>One tier of mapping throughout the State (i.e. no urban bushfire prone areas).</p>	<p>No SPP requirements in urban bushfire prone areas.</p>	<p>No construction requirements in urban bushfire prone areas.</p>	<p><b><i>No planning or construction response</i></b></p> <p>Pros</p> <ul style="list-style-type: none"> <li>• Recognises the lower risk to human life in urban bushfire prone areas.</li> <li>• Simpler process that imposes less cost on development</li> </ul> <p>Cons</p> <ul style="list-style-type: none"> <li>• No bushfire planning considerations in urban bushfire prone areas at all.</li> <li>• No bushfire construction standards for dwellings in urban bushfire prone areas at all.</li> </ul>

Option	Map of Bush Fire Prone Areas	SPP 3.7 & Guidelines Requirements	Construction requirements	Summary of Considerations
<div data-bbox="143 284 539 1104" data-label="Image"> </div> <p><b>Option 2</b></p> <p><i>Include all bushfire prone areas within the urban bushfire prone area boundary as a separate classification</i></p>	<p>Include all existing bushfire prone areas within the urban bushfire prone area boundary as a separate, single classification.</p> <p>Two tiered mapping throughout the State (urban bushfire prone areas and the rest of the State).</p>	<ul style="list-style-type: none"> <li>• Rezoning proposals: exempt from SPP 3.7 unless vulnerable or high risk land use.</li> <li>• Structure Planning and large subdivisions: deemed to comply planning provisions.</li> <li>• Development applications: exempt from SPP 3.7 unless vulnerable and high risk land use.</li> </ul>	<p>Capped BAL-12.5 construction standard.</p>	<p><b>Modified planning response and capped construction requirements</b></p> <p>Pros</p> <ul style="list-style-type: none"> <li>• Recognises the lower risk to human life in urban bushfire prone areas.</li> <li>• Simpler process that imposes less cost on development, but to a lesser extent than other options.</li> <li>• Allows for moderated bushfire planning and construction standards in all urban bushfire prone areas via an amendment to the Building Regulations.</li> </ul> <p>Cons</p> <ul style="list-style-type: none"> <li>• Allows for reduced bushfire construction standards for dwellings in all urban bushfire prone areas where the assessed risk to buildings may be greater.</li> </ul>

Option	Map of Bush Fire Prone Areas	SPP 3.7 & Guidelines Requirements	Construction requirements	Summary of Considerations
<p><b>Option 3</b></p> <p><i>Include only large regional reserves and rural zoned land within the urban bushfire prone area boundary</i></p> 	<p>Include only some existing bushfire prone areas with two sub-classifications within the urban bushfire prone area boundary comprising:</p> <ul style="list-style-type: none"> <li>• large regional reserves and transition areas</li> <li>• areas of rural zoned land.</li> </ul> <p><u>Exclude</u> all other bushfire prone areas within the urban bushfire prone area boundary.</p> <p>Three tiered mapping throughout the State (two sub-classifications of urban bushfire prone areas and the rest of the State).</p>	<p>Large regional reserves and transition areas:</p> <ul style="list-style-type: none"> <li>• Rezoning proposals exempt from SPP 3.7 unless vulnerable or high risk land use.</li> <li>• Structure Planning and large subdivisions: deemed to comply planning provisions.</li> <li>• Development applications – exempt from SPP 3.7 unless vulnerable and high risk land use.</li> </ul> <p>Rural zoned land:</p> <ul style="list-style-type: none"> <li>• Rezoning proposals exempt from SPP 3.7 unless vulnerable or high risk land use.</li> <li>• SPP 3.7, with relaxed access requirements, applies to all structure planning, subdivision and development applications.</li> </ul>	<p>Large regional reserves and transition areas: capped BAL-12.5.</p> <p>Rural zoned land: as per BAL assessment (in accordance with APZ).</p>	<p><b>Modified planning response and capped construction requirements</b></p> <p>Pros</p> <ul style="list-style-type: none"> <li>• Recognises the lower risk to human life in urban bushfire prone areas.</li> <li>• Simpler process that imposes less cost on development</li> <li>• Allows for moderated bushfire planning and construction standards adjacent to significant urban bushfire prone areas via an amendment to the Building Regulations.</li> </ul> <p>Cons</p> <ul style="list-style-type: none"> <li>• No bushfire planning considerations in all other urban bushfire prone areas.</li> <li>• Allows for reduced bushfire construction standards for dwellings adjacent to significant urban bushfire prone areas where the assessed risk to buildings may be greater.</li> <li>• No bushfire construction standards in all other urban bushfire prone areas.</li> </ul>

Option	Map of Bush Fire Prone Areas	SPP 3.7 & Guidelines Requirements	Construction requirements	Summary of Considerations
<div data-bbox="143 284 539 1102" data-label="Image"> </div> <p><b>Option 4</b></p> <p><i>Include all bushfire prone areas within the urban bushfire prone area boundary, with four sub-classifications</i></p>	<p>Include all existing bushfire prone areas with four sub-classifications within the urban bushfire prone area boundary comprising:</p> <ul style="list-style-type: none"> <li>• large regional reserves and transition areas;</li> <li>• areas of rural zoned land;</li> <li>• small bushfire areas already identified for future development, and</li> <li>• general bushfire risk areas (balance of existing bushfire prone areas).</li> </ul> <p>Five tiered mapping throughout the State (four sub-classifications of urban bushfire prone areas and the rest of the State).</p>	<p>Large regional reserves and adjoining land and rural zoned land: Same as Option 3.</p> <p>Small bushfire areas already identified for future development: exempt from SPP 3.7</p> <p>General bushfire risk areas: exempt from SPP 3.7.</p>	<p>Large regional reserves and general bushfire risk areas: Capped BAL-12.5.</p> <p>Rural zoned land: as per BAL assessment (in accordance with APZ).</p> <p>Small bushfire areas already identified for future development: have no requirements.</p>	<p><b>Modified planning response and capped construction requirements</b></p> <p>Pros</p> <ul style="list-style-type: none"> <li>• Recognises the lower risk to human life in urban bushfire prone areas.</li> <li>• Simpler process that imposes less cost on development.</li> <li>• Allows for moderated bushfire planning considerations adjacent to significant urban bushfire prone areas.</li> <li>• Allows for moderated bushfire construction standards in most urban bushfire prone areas via an amendment to the Building Regulations.</li> </ul> <p>Cons</p> <ul style="list-style-type: none"> <li>• No bushfire planning considerations in general bushfire risk areas or small bushfire areas already identified for future development.</li> <li>• Allows for reduced bushfire construction standards for dwellings in all urban bushfire prone areas where the assessed risk to buildings may be greater.</li> </ul>



## Appendix 5 - Comparison of requirements based on location of proposed planning application

	CURRENT FRAMEWORK	PROPOSED FRAMEWORK					
	Statewide	Statewide	Urban Bushfire Prone Areas				
Type of proposal	All bushfire prone areas	General bushfire prone areas	Grassland areas	Rural zoned lands	Large Regional Reserves and transition areas	General Bushfire Risk areas	Planning approved areas
	100m buffer	100m buffer	50 m buffer	All BPA zoned Rural or Rural-Water Protection	BPA > 100ha reserved for parks and recreation or zoned state forest or public purpose + 20m buffer to UBPA boundary; 20m buffer to large regional reserves; 20m buffer to rural zoned lands	All remaining bushfire prone areas	BPA <5ha identified for development within an approved structure plan or similar No buffer
Strategic planning proposal*	Bushfire Hazard Level Assessment (site specific): - If above BAL-Low = bushfire protection criteria	Broader landscape assessment: - If Low = no further requirements - If Mod = consider approval - If High = recommended refusal	<b>No requirements</b>	<b>No requirements</b>	Broader landscape assessment for vulnerable** and high-risk land uses ONLY <b>Otherwise = no requirements</b>	<b>No requirements</b>	<b>No requirements</b>
Structure plan* and subdivision applications	BAL contour map or BAL assessment: - If above BAL-LOW = bushfire protection criteria	Broader landscape assessment: - If Low = no further requirements - If Mod = BAL contour map + bushfire protection criteria ** - if High = recommended refusal	<b>No requirements</b>	BAL contour map and/or BAL assessment + bushfire protection criteria** (with relaxed secondary access provisions)	Deemed to comply requirements for applications ≥ 10 lots ONLY <b>Otherwise = no requirements</b>	<b>No requirements</b>	<b>No requirements</b>

	CURRENT FRAMEWORK	PROPOSED FRAMEWORK					
	Statewide	Statewide		Urban Bushfire Prone Areas			
Development application	BAL contour map or BAL assessment: - If above BAL-LOW = bushfire protection criteria	BAL assessment + bushfire protection criteria**	Deemed to comply requirements	BAL assessment + bushfire protection criteria** (with relaxed secondary access provisions)	BAL assessment + bushfire protection criteria for vulnerable** and high-risk land uses ONLY <b>Otherwise = no requirements</b>	<b>No requirements</b>	<b>No requirements</b>
Building Permit (Class 1, 2, 3 building or associated Class 10A building and decks)	As per BAL assessment	As per BAL assessment	No BAL assessment Capped BAL-12.5	As per BAL assessment	No BAL assessment Capped BAL-12.5	Capped BAL-12.5	<b>No requirements</b>

\* Current framework considers structure plans a strategic planning proposal

\*\* Special considerations to apply for tourism proposals