Kevin Hazell BUSHFIRE PLANNING

Alpine Shire Bushfire Planning Assessment

Final report

11 July 2024
Version 1

Prepared for Alpine Shire Council

Contents

About

Kevin Hazell Bushfire Planning is a town planning service that works with public and private sector clients to understand and apply planning scheme bushfire policies and requirements. It is led by Kevin Hazell who is a qualified town planner with extensive experience working on bushfire planning at State and local levels.

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Disclaimer

The views expressed in this report are those of the author. Information in this document is current at the time of writing. While all professional care has been undertaken in preparing the document, the author accepts no liability for loss or damages incurred because of reliance placed upon its content.

Version Control

Version	Date	Comment	Name
v0.1	23 April 2024	Preliminary report for client review	Kevin Hazell Town Planner
v1.0	11 July 2024	Final report	Kevin Hazell Town Planner

1. Introduction

Kevin Hazell Bushfire Planning has been engaged by Alpine Shire Council (the '***Council***') to prepare a bushfire planning assessment for the municipality. The purpose is to provide an assessment of the bushfire hazard and to consider bushfire policies in *c13.02-1S Bushfire Planning* of the Alpine Planning Scheme (the '***planning scheme***').

The bushfire assessment is to inform strategic planning at the whole of municipality level, with a specific focus on settlement planning for the following towns:

- Myrtleford
- Mount Beauty and Tawonga South
- Bright
- Porepunkah
- Dederang

The scope of work requires the assessment to consider:

- The level of bushfire risk across the Shire with a specific focus on urban areas and those identified for growth as part of recent settlement planning.
- Evaluate the historical bushfire data, fire weather conditions, topographical features, and vegetation types within Alpine Shire.
- Design, planning strategies and bushfire protection measures to enhance the resilience of towns and interface with surrounding areas.

The bushfire assessment is intended to inform the emerging land development strategy that the Council is currently preparing to support strategic planning across the Shire. A draft has been prepared (Alpine Shire Land Development Strategy, draft, November 2023) and is referred to in this report as LDS 2023. The bushfire assessment will also inform a rural land strategy which the Council is preparing.

1.1 Study Area

The Study Area is the municipal area of Alpine Shire. The Study Area does not include Mount Hotham or Falls Creek alpine resorts.

See:
Figure 1-1: Locality map with Study Area
Figure 1-2: Locality aerial photo with Study Area

A broader study area includes parts of Rural City of Wangaratta, City of Wodonga, Indigo Shire, Moira Shire, Benalla Rural City, Mansfield Shire and Towong Shire. The broader Study Area is referenced in the regional and sub-regional commentary included in Chapter 8.

See: **Figure 8-2: Settlements on a regional and sub-regional scale**

The study areas for settlement level bushfire assessments included in Chapters 9a-9e are based on existing residential zone land, land identified for growth in the LDS 2023 and surrounding rural land relevant to a settlement level bushfire assessment based on expert judgement.

1.2 Structure of this report

c13.02-1S Bushfire Planning includes strategies that inform how bushfire hazards are to be assessed and for considering where and how growth and new development should occur. Having regard to these strategies, this report responds to the scope of work as follows:

- Chapter 1a provides context on strategic and settlement planning in Alpine Shire.
- Chapter 2 provides an overview of bushfire content in the planning scheme, including the strategies in *c13.02-1S Bushfire Planning*.
- Chapters 3 to 6 provide information relevant to bushfire planning, including:
    - Chapter 3 describes Shire-wide landscape bushfire information using a range of information sources, mostly arising from the work of public authorities such as fire authorities and the Council.
    - Chapter 4 describes contextual information including bushfire history, bushfire management strategy guiding public agencies, Victorian Fire Risk Register, planning scheme bushfire designations and the regional bushfire planning assessment.
    - Chapter 5 describes the landscape bushfires to be anticipated.
    - Chapter 6 describes low(er) hazard areas.
- Chapter 7 describes landscape types as described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017). Landscape types help understand the relative risk between different places within the Study Area.
- Chapter 8 includes a discussion on regional and sub-regional appreciation of planning for bushfire.
- Chapter 9 introduces settlement-level assessments, following by a chapter on each of the five settlements being considered in detail as part of this report.

- Chapter 9a to 9e (separate document) includes settlement specific assessments. These are in part informed by the methodology for a bushfire hazard site assessment as described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017) and *AS3959-2018 Construction of buildings in bushfire-prone areas* (Standards Australia).
- Chapter 10 introduces a strategic approach to responding to bushfire in settlement planning, as a basis for considering how an integrated approach might work and to enable it to be assessed against c13.02-1S Bushfire Planning.
- Chapter 11 includes an assessment against *c13.02-1S Bushfire Planning* and other bushfire provisions
- Chapter 12 provides recommendations oriented around the five settlements being considered in detail as part of this report.
- Chapter 13 includes a conclusion.
- Appendix 1 contains contextual information on settlements not included in Chapter 9.
- Appendix 2 contains recommendations for changes to the Bushfire Management Overlay and Bushfire prone area mapping, for referral to the Department of Transport and Planning mapping monitoring and update service.

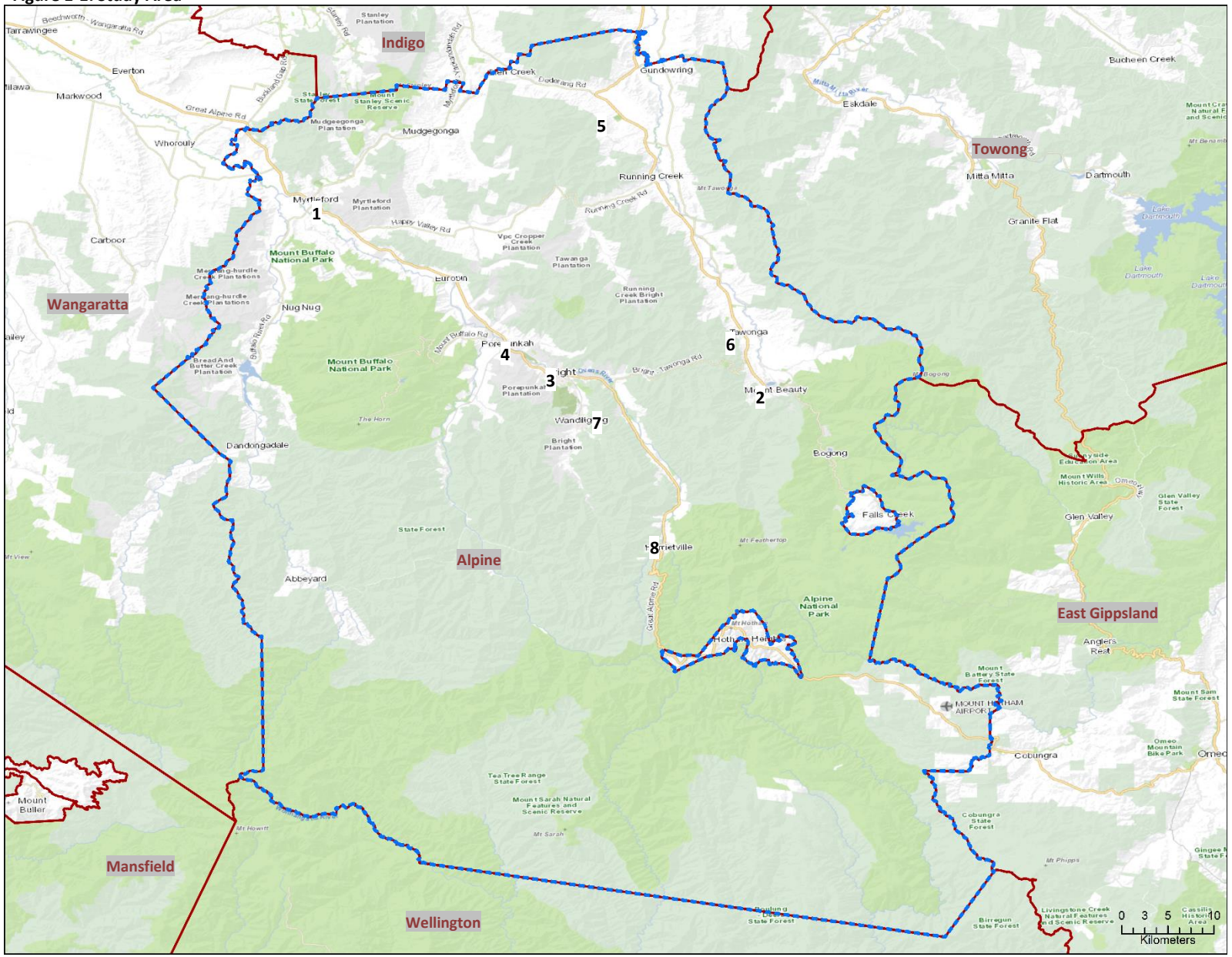
1.3 How to use this report

The bushfire assessment is only intended to inform decision making of a planning authority under the *Planning and Environment Act 1987*. The bushfire assessment does not inform decisions on individual planning approvals, such as permit applications, or bushfire-related decision making under non-planning emergency management legislation.

References in this report to growth and development only relate to these when enabled by a planning scheme amendment. This is consistent with this report informing the preparation of a Shire-wide settlement strategy and planning scheme changes arising from this. This report does not consider bushfire factors for applications under current planning scheme policies or settings and should not be used for this purpose.

Recommendations in this report only have regard to bushfire considerations. The Council will use these recommendations alongside other considerations in determining where growth will occur. A recommendation in this report for growth does not preclude the necessity for non-bushfire factors to be applied and which may, ultimately, make a recommendation in this report neither feasible or deliverable.

Figure 1-1: Study Area



Study Area

Local Government Area

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

Figure 1-2: Study Area

1a. Context on strategic and settlement planning in Alpine Shire

The Alpine Planning Scheme provides an appreciation of how settlements and growth are currently planned in Alpine Shire, as derived from State, regional and local planning policies. This chapter describes these policies.

1a.1 Municipal Planning Strategy

The Municipal Planning Strategy at c02.01 describes Alpine Shire as follows:

> *Alpine Shire Council is located approximately 300 kilometres north east of Melbourne and 70 kilometres south of Wodonga and approximately 4,787 square kilometres.*
>
> *The Shire falls into two distinct subregions:*
>
> *To the west lies the Ovens River basin which includes the large townships of Bright and Myrtleford. This subregion has a close relationship with the regional city of Wangaratta for employment opportunities, economic activity and higher order services.*
>
> *To the east lies the Kiewa River basin that includes the large township of Mount Beauty-Tawonga South. This subregion has a close relationship with the regional twin cities of Albury and Wodonga for economic activity, higher education, health services, cultural activities and recreational opportunity.*
>
> *Although not part of Alpine Shire, Falls Creek and Mount Hotham Alpine Resorts are located wholly within the Shire boundary and have a strong economic and environmental relationship with Alpine Shire.*
>
> *Most freehold land is located along the river valleys. There is in excess of 600 kilometres of common boundaries between privately owned land and public land requiring careful management of interfaces.*
>
> *There is continued demand for new housing in townships, much of which is purchased for holiday houses and short term rental accommodation placing pressure on the permanent housing market.*
>
> *Most residents live in the large townships of Bright, Mount Beauty-Tawonga South and Myrtleford, and the small township of Porepunkah.*
>
> *Alpine Shire's largest industry is its vibrant tourism industry based on snow sports, cycling, wine and fine food and nature based recreation such as rock climbing, fishing, mountain biking, bush walking, 4-wheel-driving, rafting, sight-seeing, and paragliding. Agriculture (beef, dairy and horticulture) and forestry (hardwood and softwood plantations) are also important contributers to the local economy. There is a mining legacy in the Shire, and land is still used for resource extraction.*

The strategic directions for settlements at c02.03-1 includes the following:

> *Approximately 70 per cent of the Shire's population is located in Ovens Valley area (Bright, Myrtleford, Dinner Plain, Harrietville, Porepunkah and Wandiligong) and approximately 30 per cent of the Shire's population is located in Kiewa Valley area (Mount Beauty/Tawonga South, Bogong, Dederang and Tawonga).*
>
> *Opportunities for development within the shire are limited by the environmental capacity of the surrounding land and influenced by proximity to road infrastructure and community, health and recreational opportunities.*

c02.03-3 Environmental risk and amenity includes content on bushfire:

> *Alpine Shire is regularly affected by significant natural events, particularly bushfire, and significant storm events that cause flooding and landslip in steeper areas.*
>
> *Large areas of the municipality are affected by the Bushfire Management Overlay.*
>
> *Bushfire risks in both urban and rural areas are largely due to dense vegetation cover, difficulty of access for emergency vehicles, and exposure of development at the rural-urban interface.*
>
> *Conflicting objectives between vegetation retention and clearing to reduce the risk from bushfire require considered management.*

1a.2 Planning Policy Framework

c10-19 includes State, regional and local policies within the *Planning Policy Framework.* Contextual regional and local policy includes the following. State planning policies are described in Chapter 2.

See *:*
Figure 1a-1: Planning Policy Framework extracts
Figure 1a-2: c02.04 Strategic Framework Plan, Alpine Planning Scheme

Figure 1a-1: Planning Policy Framework extracts

Clause	Objective	Relevant Policies/Strategies
12.05-1L Public and private land interfaces *This policy applies to all areas where publicly owned or managed land and privately owned land interface*.	To ensure development of private land adjacent to public land minimises impacts on environmental values of public land	• Encourage public and private land holders to plan cooperatively to ensure the protection of both private property and public land from fire, pests and other hazards • Ensure development is compatible with and does not detract from the values of and management plans for the national park or nature reserve. • Ensure environmental risks that may arise from the proposed development are identified and strategies for managing the risk are prepared
13.02-1L Bushfire Planning		• Avoid residential development of land that is identified as Bushfire Prone Land where residential development and use of land will intensify the risk or require a Bushfire Attack Level rating in excess of 29.
16.01-3L Rural residential development *This policy applies to all land in the Low Density Residential Zone and Rural Living Zone*	To ensure that rural residential development is appropriately located to: • Protect rural land from inappropriate development to provide social, economic and environmental benefits for existing and future generations. • Provide a safe living environment for residents.	Avoid rural residential development on constrained land that: • Has a bushfire hazard rating resulting in the construction requirement of a Bushfire Attack Level rating in excess of 29. • Is sloped steeper than twenty per cent (1 in 5).
17.04-1L Tourism	To enhance and expand the tourism industry, while protecting the environmental, landscape and cultural values of the Shire and the lifestyle of its residents.	• Maintain the existing character of towns by ensuring that township boundaries are not compromised by tourism development. • Discourage linear development of tourist facilities along the major traffic routes including the Great Alpine Road, the Kiewa Valley Highway and the alpine approaches.

1a.3 Recent strategic planning for the Study Area

The Alpine Shire Land Development Strategy (draft) November 2023 (LDS 2023) has been prepared. The purpose of the LDS 2023 is to:

- *Document growth forecasts for population, housing, and employment.*
- *Facilitate orderly development of urban land uses.*
- *Protect areas of environmental significance and sensitivity, and identify areas subject to natural hazards not appropriate for development.*
- *Enable change that responds to the valued character and qualities that distinguish each of the municipality's townships and settlements.*

The LDS 2023 includes the following commentary on natural hazards (Page 22):

Natural hazards

The impacts of climate change pose a significant threat to the health, wellbeing, and liveability of the natural environment, people and communities in Alpine Shire. An important principle underpinning the preparation of the LDS is to strengthen the resilience of settlements and communities and prioritise protection of human life.

Bushfire

Over the past 20 years, Alpine Shire has suffered the devastating effects of bushfires on its community and economy. The bushfires of 2019-20 burnt significant tracts of state forests and National Parks. The Bushfire Management Overlay (BMO) identifies areas where bushfire hazard warrants bushfire protection measures to be implemented and seeks to ensure that development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.

[…]

The Country Fire Authority (CFA) has provided a response to the Future Directions Consultation Paper noting Category 4 Bushfire Risk in all major townships in the area and a need for community resilience planning and further work that is outlined in the Implementation Plan.

The LDS 2023 includes the following strategic directions (Page 44):

> *Underpinning the vision is a set of directions for land use and development which reflect Victorian Government policy and preferred local outcomes for the community. The directions provide the framing for objectives, strategies and actions of the LDS and will also be used to inform future decision-making regarding housing and employment outcomes.*
>
> *3. To avoid development in areas of environmental and landscape significance and at risk of natural hazards to preserve natural resources and protect human life.*
>
> *4. To direct future population and housing development in accordance with the defined future roles of service towns, rural towns, small settlements and rural localities.*
>
> *5. To prioritise the creation of compact towns and settlements to enable more efficient use of land and infrastructure.*
>
> *6. To improve the diversity of housing to provide greater choice for residents throughout all stages of life.*
>
> *7. To support diversification, prosperity, sustainability, and innovation on employment land.*
>
> *8. To support new development that contributes to the unique local character of towns and settlements.*
>
> *9. To deliver appropriate utility, transport, and community infrastructure when and where it is needed to support growth.*
>
> [Note: The LDS 2023 does not include (1) or (2) in the above numbered list]

Strategic direction 1 (page 46) includes Action 1.5, which is to collaborate with the CFA to prepare a municipal bushfire assessment. This report / assessment gives affect to this action.

Strategic direction 2 (page 47) describes emerging thinking as follows:

> *Bright, Myrtleford and Mount Beauty-Tawonga South are classified as 'Service Towns' and Porepunkah has been classified as an emerging 'Service Town'. Service towns will accommodate the largest amount of future housing and employment growth.*
>
> *Porepunkah has previously been identified in the Alpine Planning Scheme as a township that has significant capacity for residential and commercial growth.*
>
> *The findings of the LDS have reiterated this given the inherent flood and bushfire risk impacting on the growth potential of other parts of the Shire, and the high demand for services currently experienced in Bright, Porepunkah continues to represent a suitable location for urban development, community infrastructure and housing. However further work, particularly in relation to planning for bushfire, will be needed to determine if rezoning of land to support growth is appropriate in Porepunkah.*
>
> *Separate to any opportunities for greenfield development in Porepunkah, a review of the Township Zone is required to ensure a more structured approach to commercial, industrial and residential use, to avoid conflicts in planning, and to apply zoning that reflects the patterns of land use.*

Strategic direction 3 (page 49) includes strategies as follows:

> *Strategy 3.1 Direct population growth to existing and emerging Service Towns identified in the Settlement Hierarchy and the Service Town Framework Plans to support efficient and safe use of land and infrastructure and convenient access to jobs and services.*
>
> *Strategy 3.2: Consolidate growth of Rural Towns within existing township boundaries, recognising that reticulated services are unlikely to be provided in these locations over the long term.*

See: **Figure 1a-3 Extract of Table 16, Future role of towns and settlements**

Strategic direction 4 (Page 54) includes the following commentary:

> *Greenfield housing*
>
> *Rezoning of new greenfield areas will provide for housing growth that cannot be accommodated in existing urban zoned areas.*
>
> *Opportunities for greenfield development are in areas that are not subject to environmental and other constraints, that satisfy government policy regarding urban growth and are able to be provided with urban services and facilities in an efficient and affordable manner.*
>
> *Greenfield investigation areas have been identified in Myrtleford, Porepunkah and Mount Beauty-Tawonga South as shown in Framework Plans shown in Chapter 9.*

The framework plans referenced in the LDS 2023 are reproduced in the Chapterr 9 in this report.

1a.4 Alpine Planning Scheme Review 2023

The *Alpine Shire Land Development Strategy (November 2023) Appendix A: Planning policy* (Page 18) provides a summary of the recent planning scheme review. Extracts are included below.

> *The Review found that the Alpine Planning Scheme contains many policy gaps and is not effectively guiding decision-making in Alpine Shire. There are significant gaps and the planning scheme is out-of-date. This is leading to inconsistent decision-making and lost opportunities for the most efficient use of land, adaptation to climate change and protection of values, such as landscapes and heritage, for the benefit of the community.*
>
> *The statutory planning function of Council is confronted with both legislative requirements and community expectations.*
>
> *The process to address the underlying issues that led to this situation to improve the performance of the planning function at Council are underway, but they will take time to see results. In the interim, the Review states that it is critical that Council remains focused on the strategic planning projects that will make the most difference to the wider community, and to building the capacity and confidence of the statutory planning team.*
>
> *Among other things, the Alpine Shire Land Development Strategy will be implemented via an amendment to the Alpine Planning Scheme to ensure the Municipal Planning Strategy and the local policies of the Planning Policy Framework (PPF) are up-to-date and can assist in decision-making.*

Figure 1a-2: c02.04 Strategic Framework Plan, Alpine Planning Scheme

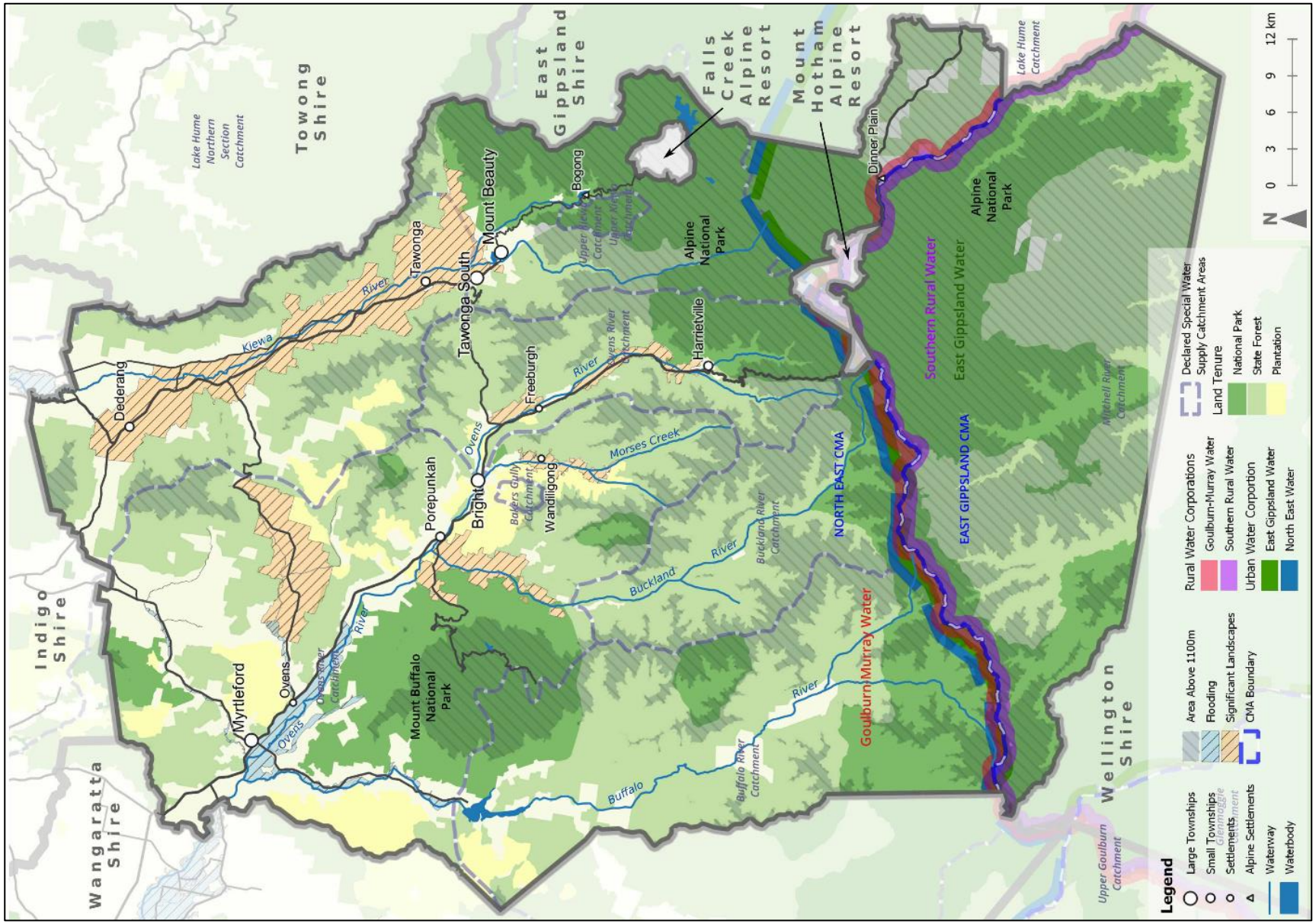


Figure 1a-3 Extract of Table 16, Future role of towns and settlements, Alpine Shire Land Development Strategy Draft (November 2023) Page 50

TABLE 16: FUTURE ROLE OF TOWNS AND SETTLEMENTS

Towns and settlements	Current role	Future role
Service Towns Bright Myrtleford Mount Beauty-Tawonga South Porepunkah (emerging)	Moderate to large towns containing commercial centres providing a variety of housing and a moderate employment base. Service Towns provide important community services. Service Towns are fully or partially serviced with reticulated services. Service Towns are popular visitor and retirement destinations. Porepunkah is identified as a small town in the current Alpine Planning Scheme which also notes it has significant capacity for residential, commercial and industrial growth, and has been identified as an emerging service town through the development of the LDS.	**Future growth:** Service Towns are supported as the primary locations for future residential and employment growth, subject to assessment of environmental risk (bushfire, flooding, landslip) constraints. **Zoning for residential and employment development**: Further rezoning for residential and employment purposes is supported in Service Towns to provide for population growth. However, infill development in existing zoned areas will be prioritised to make best and most efficient use of land and infrastructure. This includes infill development in established areas via development of medium and higher density housing types (villa units, townhouses, apartments and shop top housing), as well as further subdivision and development of existing zoned greenfield land on the fringe areas of Service Towns. Detailed guidance on growth will be provided through the preparation of structure plans and urban design frameworks. The zoning of Porepunkah will be reviewed through the structure planning process with an expectation that appropriate residential, industrial and commercial zones will be applied to recognise its transition to a Service Town. Additional commercial activity will be consolidated in the existing commercial centre of the township along Station Street. **Development and community infrastructure**: Growth in Service Towns will be supported by the provision of required development and community infrastructure which will be prioritised for delivery in Service Towns above other settlements.
Rural Towns Dederang Harrietville Tawonga Wandiligong Dinner Plain (seasonal tourist town)	Most of the Rural Towns have limited urban zoned land with a variety of zones being applied including Township Zone, Low Density Residential Zone and Farming Zone. They accommodate small populations. Rural Towns have limited commercial and community facilities which is generally dispersed throughout the towns. Harrietville, Wandiligong and Dinner Plain have reticulated water services, while Dinner Plain is the only Rural Town with reticulated sewerage. Dinner Plain is zoned Special Use Zone and does not have reticulated services.	**Future growth**: Only incremental population growth and housing and employment development is supported in Rural Towns within existing urban zoned areas. Further growth will be accommodated via infill development in established Rural Town areas, subject to assessment of environmental risk (bushfire, flooding, landslip) constraints. There are substantial opportunities for growth within the existing zoned but undeveloped land in Dinner Plain and residential, commercial, and industrial growth is supported to support the ongoing sustainability of the Dinner Plain community. Dinner Plain is very vulnerable to bushfire risk so any future development is subject to assessment of this risk. **Zoning for residential development**: Some Farming Zone land in Wandiligong is functioning as rural residential land and requires further review. This review has been identified as further strategic work. Apart from this, no further rezoning for residential purposes is supported within Rural Towns. In Dinner Plain, Council may consider converting the existing Special Use Zones to the underlying residential, industrial and commercial zones.

2. Planning scheme bushfire context

The planning scheme contains provisions that inform permit requirements, application requirements and policies & decision guidelines where the bushfire hazard could be an influence on future land use and development. This Chapter provides an overview of these provisions. Figure 2-1 summarises the considerations.

2.1 Integrated decision making (c71.02-3)

c71.02-3 requires planning authorities, in bushfire areas:

> *[T]o prioritise the protection of human life over all other policy considerations.*

Bushfire considerations are not to be balanced in favour of net-community benefit, as occurs for all other planning scheme matters. The bushfire emphasis in c71.02-3 was introduced through Amendment VC140 in December 2017. Such policy settings were recommended in 2011 by the *2009 Victorian Bushfires Royal Commission*.

2.2 Natural hazards and climate change (c13.01-1S)

The objective of the State natural hazards and climate change policy is:

> *To minimise the impacts of natural hazards and adapt to the impacts of climate change through risk-based planning.*

c13.01-1S Natural hazards and climate change contains a series of strategies to meet the above objective:

- *Respond to the risks associated with climate change in planning and management decision making processes.*
- *Identify at risk areas using the best available data and climate change science.*
- *Integrate strategic land use planning with emergency management decision making.*
- *Direct population growth and development to low risk locations.*
- *Develop adaptation response strategies for existing settlements in risk areas to accommodate change over time.*
- *Ensure planning controls allow for risk mitigation and climate adaptation strategies to be implemented.*
- *Site and design development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards.*

2.3 State planning policy for bushfire (c13.02-1S)

The objective of the State planning policy for bushfire is:

> *To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.*

The key strategy that directs bushfire decision making is:

> *Give priority to the protection of human life by:*
>
> - *Prioritising the protection of human life over all other policy considerations.*
> - *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*
> - *Reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.*

c13.02-1S Bushfire Planning applies to all planning and decision making relating to land:

- *Within a designated bushfire prone area;*
- *Subject to a Bushfire Management Overlay; or*
- *Proposed to be used or developed in a way that may create a bushfire hazard.*

c13.02-1S Bushfire Planning contains a series of strategies and these are summarised below.

<u>Landscape bushfire considerations</u>

c13.02-1S Bushfire Planning requires a tiered approach to assessing the hazard:

- *Considering and assessing the bushfire hazard on the basis of [...] landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site;*
- *Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.*

Alternative locations for development

c13.02-1S Bushfire Planning includes two strategies that seek to direct new development:

- *Give priority to the protection of human life by [...] directing population growth and development to low risk locations [.]*
- *Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.*

Availability and safe access to areas of enhanced protection

c13.02-1S Bushfire Planning requires a location in easy reach that provides better protection for life from the harmful effects of bushfire:

- *Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia) where human life can be better protected from the effects of bushfire.*
- *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*

The views of the relevant fire authority

c13.02-1S Bushfire Planning identifies that a key element of a risk assessment is to:

- *Consult […] with […] the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.*

Site based exposure

c13.02-1S Bushfire Planning provides policy directions for planning authorities about the level of acceptable exposure for new development enabled by a planning scheme amendment:

- *Directing population growth and development to low risk locations, being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia).*
- *Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than a BAL-12.5 rating under AS3959-2018.*

Areas of high biodiversity conservation value

c13.02-1S Bushfire Planning provides directions on situations where a bushfire risk and biodiversity values are both present:

- *Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are of high biodiversity conservation value.*

No increase in risk

c13.02-1S Bushfire Planning provides an overall view of acceptable risk:

- *Ensuring the bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development.*
- *Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reduce bushfire risk overall.*

2.4 Bushfire Management Overlay (c44.06)

The purpose of the Bushfire Management Overlay is:

- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*
- *To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.*
- *To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.*

The Bushfire Management Overlay is generally applied to patches of vegetation (except grasslands) that are larger than 4 hectares in size. Where such a patch of vegetation exists, a 150 metre ember protection buffer is added and this land is also included in the Bushfire Management Overlay. Areas of extreme hazard are also included in the Bushfire Management Overlay.

Planning Advisory Note 46: Bushfire Management Overlay Methodology and Criteria (2013, DPTLI) provides more information on where the Bushfire Management Overlay is applied.

2.5 Bushfire Planning (c53.02)

c52.03 Bushfire Planning specifies the requirements that apply to a planning application under c44.06 Bushfire Management Overlay. The purpose of this provision is:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*
- *To ensure that the location, design and construction of development appropriately responds to the bushfire hazard.*
- *To ensure development is only permitted where the risk to life, property and community infrastructure from bushfire can be reduced to an acceptable level.*
- *To specify location, design and construction measures for a single dwelling that reduces the bushfire risk to life and property to an acceptable level.*

2.6 Bushfire prone area (*c13.02-1S,* Building Act 1993 & Building Regulations 2018)

Bushfire Prone Areas are areas that are subject to or likely to be subject to bushfire. The Minister for Planning makes a determination to designate Bushfire Prone Areas under section 192A of the Building Act 1993.

Designated Bushfire Prone Areas include all areas subject to the Bushfire Management Overlay. Bushfire Prone Areas also include grassland areas and, occasionally, smaller patches of non-grassland vegetation.

The Building Regulations 2018 require bushfire construction standards in these areas and these are implemented by the relevant building surveyor as part of the building permit. These construction standards are referred to as bushfire attack levels (BAL).

Where land is included in the Bushfire Prone Area is also included in the Bushfire Management Overlay, the requirements of the Bushfire Management Overlay take precedence. Where this is the case, the building regulations ensure bushfire construction requirements in a planning permit are given effect to by the relevant building surveyor at the time a building permit is issued.

2.7 Use and development control in Bushfire Prone Areas (*c13.02-1S*)

c13.02-1S Bushfire Planning includes planning requirements for Bushfire Prone Areas. These are in the form a 'use and development control' that applies to certain uses that are in a Bushfire Prone Area.

The use and development control applies to Subdivisions of more than 10 lots, Accommodation, Child care centre, Education centre, Emergency services facility, Hospital, Indoor recreation facility, Major sports and recreation facility, Place of assembly, and any application for development that will result in people congregating in large numbers.

The use and development control requires that when assessing a planning permit application:

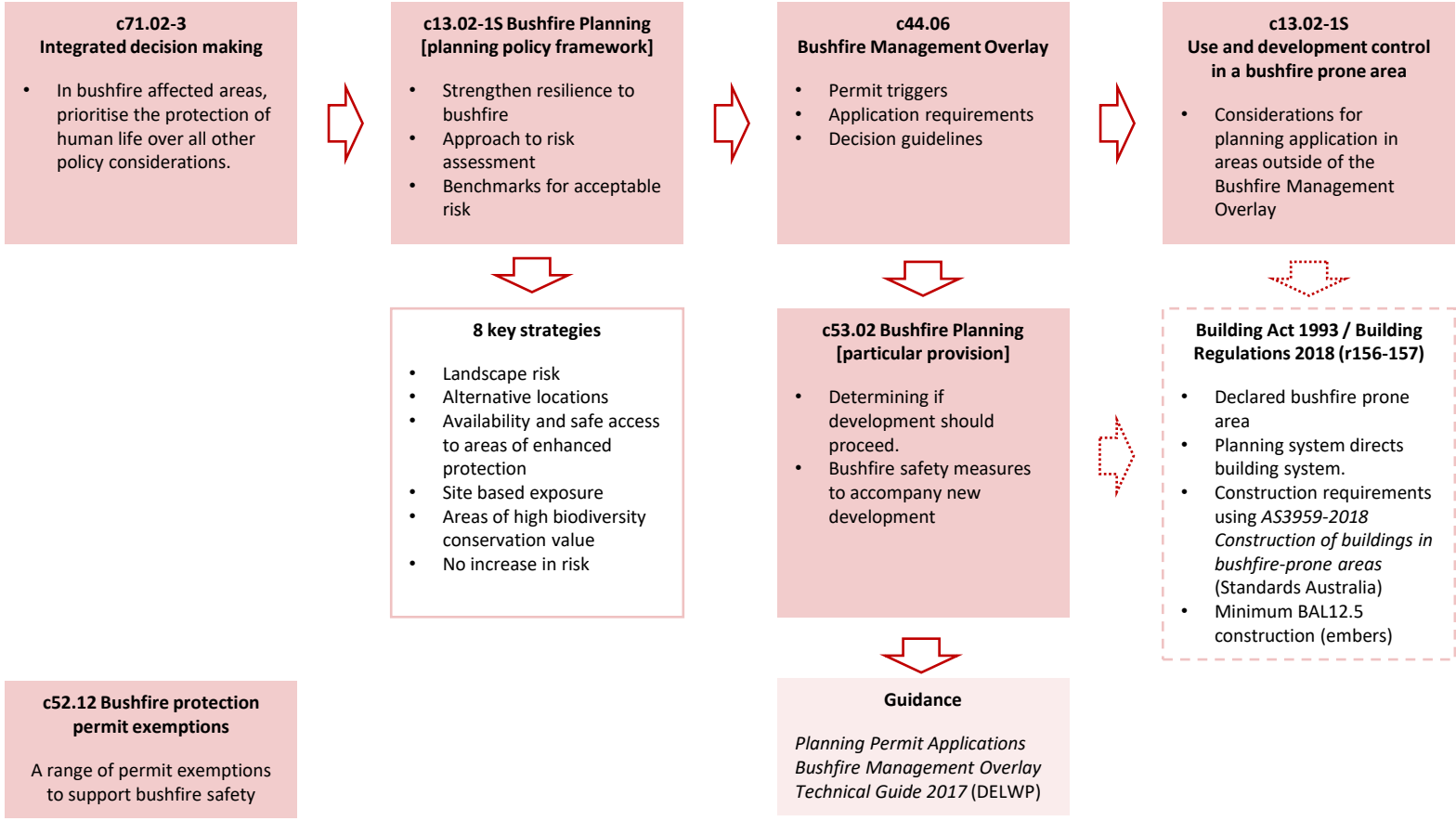
- *Consider the risk of bushfire to people, property and community infrastructure.*
- *Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.*

2.8 Bushfire protection permit exemptions (c52.12)

Bushfire related permit exemptions are included in *c52.12 Bushfire protection exemptions*. Exemptions are included for the following matters:

- Permit exemptions to create defendable space around existing buildings used for accommodation. They apply to bushfire prone areas, which includes land subject to the Bushfire Management Overlay. These are commonly known as the 10/30 rule and the 10/50 rule. This exemption applies to accommodation constructed or approved on or before 2009.
- Permit exemptions to create defendable space for a dwelling under the Bushfire Management Overlay, where the defendable space is specified in a planning permit issued after 31 July 2014. The permit exemption only applies to specified zones, which include residential zones. The permit exemption does not apply to defendable space specified in a planning permit for uses other than a dwelling and for any uses outside of the Bushfire Management Overlay.
- Permit exemptions for buildings and works associated with a community fire refuge and a private bushfire shelter (where a Class 10c building).

Figure 2-1: Planning scheme bushfire provisions and supporting material



3. Bushfire hazard landscape assessment

This Chapter describes the bushfire context of the Study Area using a range of information sources that help understand bushfire. The matters included are typically provided as part of a bushfire hazard landscape assessment as described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017).

The following *c13.02-1S Bushfire Planning* policies require these matters to be considered (emphasis added):

- *Considering and assessing the bushfire hazard on the basis of [..]* ***landscape*** *conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site.*
- *Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a* ***landscape****, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.*

The extent of the surrounding landscape relevant to any settlement or location for a planning decision is determined by factors such as the extent and continuity of vegetation, potential fire runs and where a bushfire can start, develop and grow large.

Considering bushfire from a landscape perspective is important as it affects whether larger bushfires (or grassfires) can threaten a location and the potential impact on life and property (including whether neighbourhood scale destruction could arise). These characteristics help understand how planning decision making can respond to bushfire hazards in the landscape.

3a. Weather-related elements of the landscape bushfire hazard

Bushfire hazards are formed from vegetation, slope / topography and weather.

Weather conditions influence the size, intensity, speed and predictability of bushfires and how dangerous they can be to the community. This chapter provides context on the weather-related elements of the landscape bushfire hazard.

3a.1 Bushfire weather in Victoria

The Department of Environment, Land, Water and Planning (DELWP) (2015) identifies key features relevant to bushfire weather in Victoria. These include:

- A forest fire danger index of well over 100
- Severe drought conditions
- Temperatures above 40° C
- Relative humidity below 10%
- Strong to gale-force north-westerly winds
- A strong to gale-force west-south-westerly wind change that turns the eastern flank of a running bushfire into a wide new fire front.

These conditions can create bushfires with powerful convection columns. Ember storms, wind-blown debris, downbursts, fire tornadoes and explosive flares of igniting eucalyptus vapour are likely to arise. DELWP (2015) notes that these conditions are representative of where a bushfire does most of its damage in a single day. The greatest loss of life and property in Victoria have historically been caused by such single day bushfires.

CFA (2023) describes wind as an important influence on bushfire, with wind influencing:

- Speed at which a fire spreads
- Direction in which a fire travels and the size of the fire front
- Intensity of a fire – wind provides more oxygen
- Likelihood of spotting (ember attack ahead of the main fire front).

A change in wind direction is one of the most dangerous influences on fire behaviour. Many people who die in bushfires get caught during or after a wind change. In Victoria, hot, dry winds typically come from the north and northwest and are often followed by a southwest wind change. In this situation the side of the fire can quickly become a much larger fire front.

3a.2 Bushfire weather and climate change

DELWP (2020) identifies that climate change is forecast to:

- Extend the bushfire season
- Make bushfires larger, more severe, and more frequent
- Make days with an elevated fire danger rating more frequent
- Start the bushfire season earlier, with more bushfires starting in spring (which may also change fire weather conditions that are experienced, such as wind speed and direction).

This is reinforced by the CSIRO (2020) which concluded that changing fire weather is likely to result in:

- Longer fire seasons, arriving earlier in spring most notably
- Accompanied by more extreme heatwaves, including in spring
- Lower rainfall during the cooler months in some fire prone regions of the […] southeast [of Australia]
- Hotter drought periods
- Evidence of more favourable environments for fire generated thunderstorms.

The *Royal Commission into National Natural Disaster Arrangements (2020)* concluded:

> *[…] [T]here may also be a trend towards more weather-dominated fire events. In weather-dominated events, fires interact with the atmosphere resulting in unpredictable and extreme fire behaviour. The most extreme of these are known as firestorms or pyrocumulonimbus (pyroCb) events, which can be associated with extraordinarily destructive fire behaviour.*

3a.3 Fire Danger Ratings

The National Council for Fire and Emergency Services (AFAC 2023) describe fire danger ratings as the potential level of danger should a bushfire start, with ratings calculated using a combination of weather forecasting and information about vegetation that could fuel a fire. They use as an input the forest fire danger index (FFDI).

Fire danger ratings have recently been changed, with the changes implemented for the 2022-2023 bushfire season.

See: **Figure 3a-1: Australian Fire Danger Rating System (AFAC 2023)**

Figure 3a-1: Australian Fire Danger Rating system (AFAC 2023) – Adapted

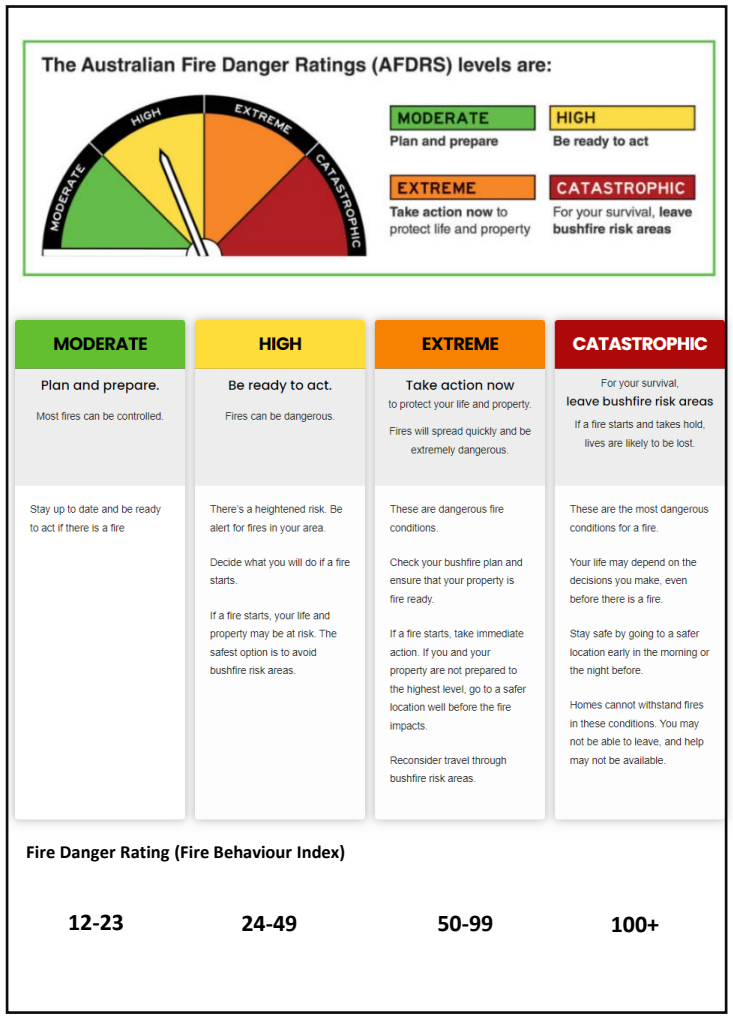


Figure 3a-2: Forest Fire Danger Ratings (pre-2022)

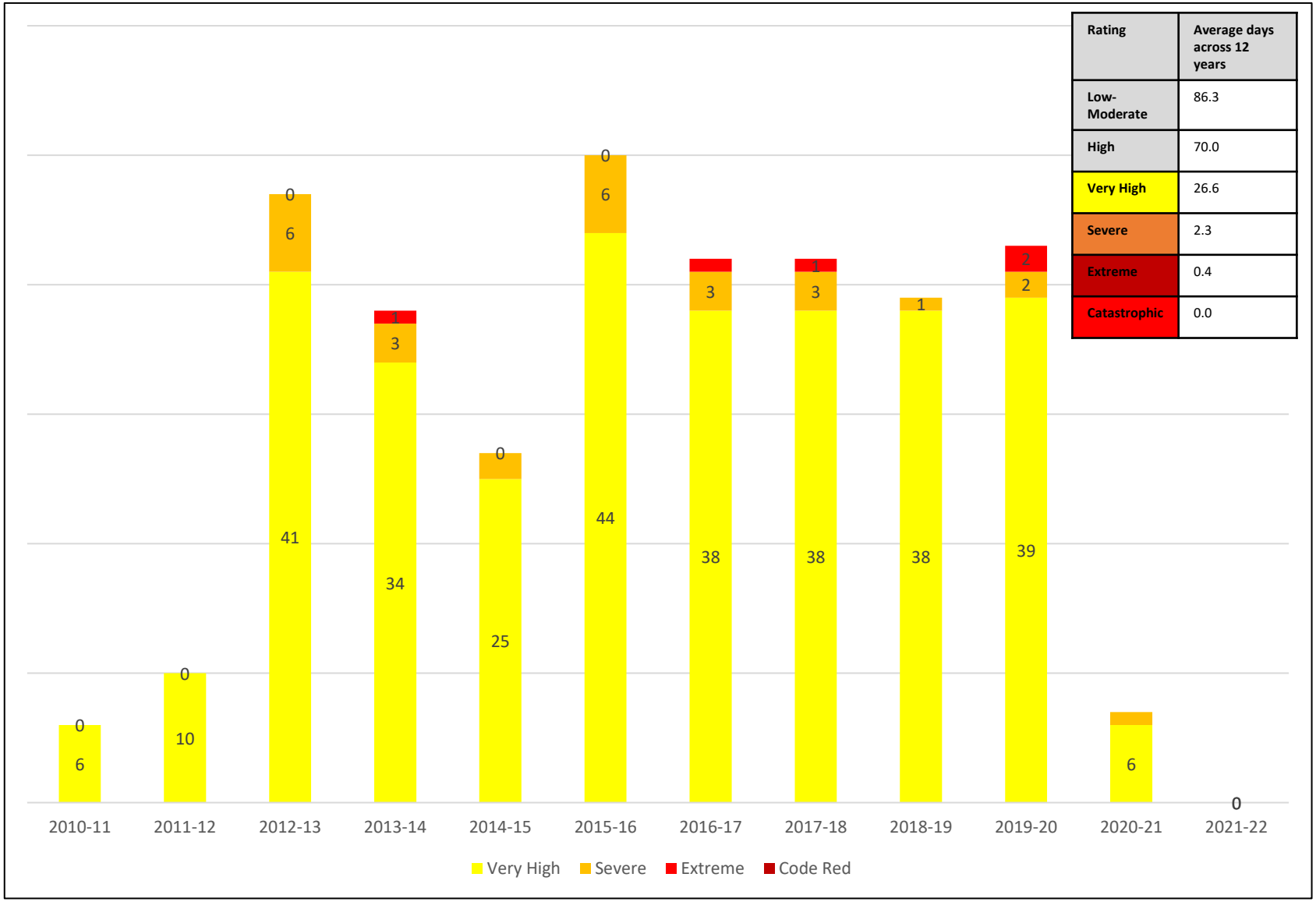
	FFDI	TOTAL FIRE BAN	WHAT DOES IT MEAN?
LOW-MODERATE	0-11	No	If a fire starts, it can most likely be controlled in these conditions and homes can provide safety. Be aware of how fires can start and minimize the risk. Controlled burning off may occur in these conditions if it is safe – check to see if permits apply.
HIGH	12.31	No	
VERY HIGH	32.49	Yes	
SEVERE	50-74	Yes	Expect hot, dry and possibly windy conditions. If a fire starts and takes hold, it may be uncontrollable. Well prepared homes that are actively defended can provide safety. You must be physically and mentally prepared to defend in these conditions.
EXTREME	75-99	Yes	Expect extremely hot, dry and windy conditions. If a fire starts and takes hold, it will be uncontrollable, unpredictable and fast moving. Spot fires will start, move quickly and come from many directions. Homes that are situated and constructed or modified to withstand a bushfire, that are well prepared and actively defended, may provide safety. You must be physically and mentally prepared to defend in these conditions.
CATASTROPHIC (CODE RED)	100+	Yes	These are the worst conditions for a bush or grass fire. Homes are not designed or constructed to withstand fires in these conditions. The safest place to be is away from high risk bushfire areas.

The pre-2022 fire danger ratings were capable of being tracked to total fire ban days and the forest fire danger index. These (especially the latter) had been extensively used in planning decision making as a basis for the closure of facilities in bushfire areas as a condition of the planning permit. There is not a simple translation of the pre-2022 categories to the new categories, as more factors are considered in determining the rating within each category.

The pre-2022 fire danger rating categories as shown in Figure 3A-2. The fire danger rating in the Study Area between 2010 and 2022 are shown in Figure 3A-3.

See:
Figure 3a-2: Forest Fire Danger Ratings (pre-2022)
Figure 3a-3: North East Region Fire Danger Rating 2010-2022 DELWP (pre-2022 system)

Figure 3a-3: North East Region Fire Danger Rating 2010-2022 DELWP (pre-2022 system)



3b. Vegetation-related elements of the landscape bushfire hazard

Bushfire hazards are formed from vegetation, slope / topography and weather. This chapter describes the vegetation-related elements of the landscape bushfire hazard.

3b.1 Bioregions and EVC benchmarks

Bioregions are a landscape-scale approach to classifying the environment using a range of attributes such as climate, geomorphology, geology, soils and vegetation. The following bioregions are in the Study Area.

See: **Figure 3b-2: Bioregion**

Highlands - Northern Fall

DEECA (2023) describes the EVCs in this area as follows:

> *Highlands - Northern Fall, located in the central part of Eastern Victoria, is the northerly aspect of the Great Dividing Range. These dissected uplands have moderate to steep slopes, high plateaus and alluvial flats along the main valleys. The geology is of Palaeozoic deposits giving rise to predominantly sedimentary and granitic rocks. The brown and red porous earths (Dermosols) occur in the upper reaches and yellow and red texture contrast soils (Chromosols and Kurosols) graduate down the valleys.*
>
> *The vegetation is a mosaic of Herb-rich Foothill Forest and Shrubby Dry ecosystems dominating large areas of lower slopes; Montane Dry Woodland and Heathy Dry Forest ecosystems on the upper slopes and plateau; and Grassy Dry Forest and Valley Grassy Forest ecosystems associated with major river valleys.*

Highlands – Southern Fall

DEECA (2023) describes the EVCs in this area as follows:

> *Highlands - Southern Fall, located in the central part of eastern Victoria, is the southerly aspect of the Great Dividing Range. These dissected uplands have moderate to steep slopes, high plateaus and alluvial flats along the main valleys. The geology is of Palaeozoic deposits giving rise to predominantly sedimentary and granitic rocks. The brown and red porous earths (Dermosols) occur in the upper reaches and yellow and red texture contrast soils (Chromosols and Kurosols) graduate down the valleys.*
>
> *The dominated vegetation is Shrubby Dry Forest and Damp Forest on the upper slopes, with Wet Forest ecosystems dominant in the valleys including Cool Temperate Rainforest in the most protected gullies; Montane Dry Woodland, Montane Damp Forest and Montane Wet Forest ecosystems occur in the higher altitudes.*

Central Victorian Uplands

DEECA (2023) describes the EVCs in this area as follows:

> *Central Victorian Uplands, located in the central Victoria, is dominated by Lower Paleozoic deposits giving rise to dissected uplands at higher elevations, amongst granitic and sedimentary (with Tertiary colluvial aprons) terrain with metamorphic and old volcanic rocks which have formed steeply sloped peaks and ridges. The less fertile hills support Grassy Dry Forest and Heathy Dry Forest ecosystems. Herb-rich Foothill Forest and Shrubby Foothill Forest ecosystems dominate on the more fertile outwash slopes. The granitic and sedimentary (with Tertiary colluvial aprons) terrain is dominated by Grassy Woodlands much of which has been cleared. Lower lying valleys and plains are dominated by Valley Grassy Forest and Plains Grassy Woodland ecosystems.*

Northern Inland Slopes

DEECA (2023) describes the EVCs in this area as follows:

> *Northern Inland Slopes, located in the north east of Victoria, consists of foothill slopes and minor ranges separated by river valleys that drain northward from the High Country to the Murray River. It is a mixed complex of geology's both granitic and metamorphic, which protrudes through and is surrounded by the Riverine Plain. The Warby Ranges is of granitic and sedimentary origin, Mt. Major is of volcanic and Terrick Terrick and Pyramid Hill are of granitic origin. The soils are predominantly texture contrast (Chromosols and Sodosols) apart from the Mt Major area (Ferrosols, Calcarosols and Vertosols).*
>
> *The vegetation is dominated by Grassy Dry Forest, Box Ironbark Forest, Granitic Hills Woodland, Heathy Dry Forest and, Shrubby Dry Forest ecosystems on the less fertile hills; Herb-rich Foothill Forest ecosystems on the more fertile hills and outwash; and Grassy Woodland, Valley Grassy Forest, Plains Grassy Woodland, Floodplain Riparian Woodland, Riverine Grassy Woodland, Riverine Sedgy Forest and Wetland ecosystems on the fertile plains and watercourses.*

Victorian Alps

DEECA (2023) describes the EVCs in this area as follows:

> *Victorian Alps, north east Victoria, consists of a series of high plateaus and peaks along the Great Dividing Range. The Palaeozoic deposits predominantly of granitic and basaltic origin give rise to friable leached earths, loams and peaty soils (Tenosols and Organosols). This bioregion has a cool climate with snow in winter, a short summer and annual rainfall above 1000m.*
>
> *The vegetation associated with the subalpine plateaus are Sub-alpine Woodland, Treeless Sub-alpine Mosaic and Sub-alpine Grassland ecosystems and the upper slopes and generally surrounding sub-alpine areas are dominated by Montane Dry Woodland, Montane Damp Forest, Montane Wet Forest and Montane Grassy Woodland ecosystems.*

Victorian Riverina

DEECA (2023) describes the EVCs in this area as follows:

> *Victorian Riverina, located north of the Great Dividing Range in Victoria, is characterised by flat to gently undulating landscape on recent unconsolidated sediments with evidence of former stream channels and wide floodplain areas associated with major river systems and prior streams. Alluvium deposits from the Cainozoic period gave rise to the red brown earths and texture contrast soils (Chromosols and Sodosols) which dominate the Riverine Plain.*
>
> *Annual average rainfall for the region ranges from 360- 672mm per annum. The average annual minimum and maximum temperature range is from 3 to 9 °C and 15 to 21 °C respectively. The vegetation is dominated by Plains Grassy Woodland, Plains Grassland, Pine Box Woodland/Riverina Plains Grassy Woodland Mosaic, Riverine Grassy Woodland/Riverine Sedgy Forest/Wetland Mosaic, Plains Grassy Woodland/Gilgai Plains Woodland/Wetland Mosaic, Grassy Woodland and Wetland Formation ecosystems. The Victorian Riverina bioregion is associated with the eight river basin tributaries of the Murray River draining north, west and south west from the Great Dividing Range of eastern Australia. However some rivers, such as the Avoca, drain internally into a series of terminal lakes and wetlands.*

3b.2 Ecological Vegetation Classes (EVCs)

Ecological vegetation classes (2005) are identified in many parts of the Study Area.

The dominant EVC is Dry Forest, within which there is Grassy Dry Forest, Heathy Dry Forest and Shrubby Dry Forest. In the higher elevation areas Wet or Damp Forests arise. Other EVCs include Sub-alpine Woodlands and Montane Woodlands.

See: **Figure 3b-3: Ecological Vegetation Classes**

3b.3 Natural landscape areas in the Hume region

DELWP (2020) describes the natural landscape as follows:

> *Vegetation communities change dramatically from west to east across the region, following a distinct rainfall and elevation gradient.*
>
> *In the west, there are floodplains of grasslands and woodlands; the landscape then becomes undulating and foothill forest; in the east are tall, wet montane forests, with snow gum woodlands and grassy alpine meadows on the higher mountain ranges.*
>
> *Several of these vegetation communities are sensitive to fire regimes, and along with several flora and fauna species are listed under the Flora and Fauna Guarantee Act 1988 and the Environment Protection and Biodiversity Conservation Act 1999.*
>
> *The flatter part of the region in the west has been more extensively cleared for agriculture and settlements, compared to the east, which remains largely forested. Several river valleys run in a north-west-to-south-east direction, the most significant of which are the Mitta Mitta, Kiewa, Ovens, King, Broken and Goulburn valleys.*

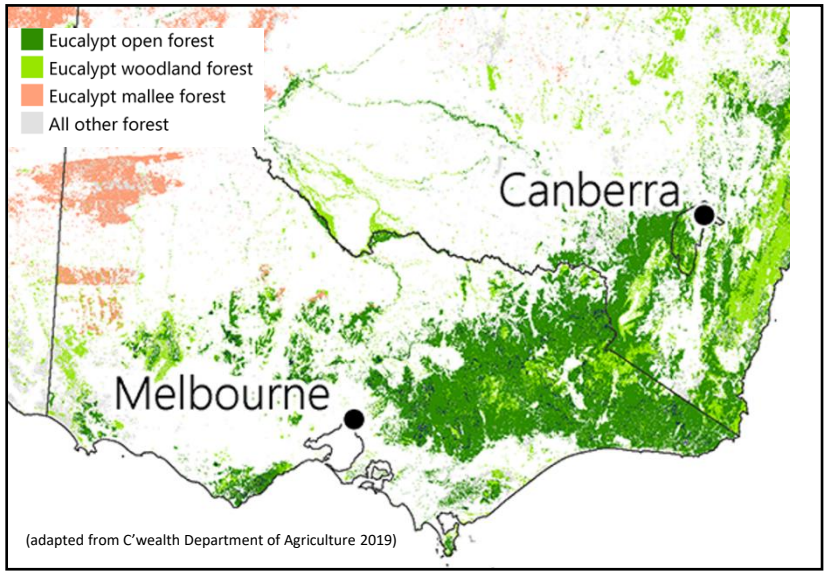
3b.4 Eucalypt Forests

Eucalypts have oil-rich foliage that burns readily. They correlate with the parts of eastern and south-eastern Australia where large landscape bushfires typically arise. The presence of eucalypt forests in the Study Area reinforces potential risks arising from landscape bushfire hazard.

Cruz et al (2012) describes the key mechanisms driving high fire intensity in eucalypt forests arise from fuel characteristics where fairly open canopies allow the development of an understorey layer dominated by trees, shrubs and/or herbaceous vegetation that provide vertical fuel continuity. Fuel bark associated with these forests is a key driver of bushfire behaviour where fibrous bark is easily ignited and dislodged or where smooth bark provide aerodynamic efficiency. Both allow for vertical fire propagation and spot fire ignitions, with spot fires (or ember ignited fires) being the dominant fire spreading process.

See: **Figure 3b-1: Eucalyptus forests in south-east Australia**

Figure 3b-1: Eucalypt forests in south-east Australia



3b.5 Grassland areas

Grasslands exist in various parts of the Study Area, including along valley floors, in the more open areas around Myrtleford, and in flatter areas in the northern parts of the Study Area including around Mudgegonga and Dederang.

The CFA (2021) identifies key characteristics of grasslands and grassfires to include:

- *Grassfires can start and spread quickly and are extremely dangerous.*
- *Grassfires can travel up to 25 km per hour and pulse even faster over short distances.*
- *Grass is a fine fuel and burns faster than bush or forests.*
- *Grassfires tend to be less intense and produce fewer embers than bushfires, but still generate enormous amounts of radiant heat.*
- *The taller and drier the grass, the more intensely it will burn.*
- *The shorter the grass, the lower the flame height and the easier the fire will be to control.*
- *Grassfires can start earlier in the day than bushfires, because grass dries out more quickly when temperatures are high.*

3b.6 Plantations

Plantations exist in the central part of the Study Area, including extensive concentrations around Bright and to the east of Myrtleford. Other plantations arise in the western part of the Study Area.

Planning scheme decision making usually assumes a plantation is at maximum fuel load and does not apply any reduced risk to be factored into decision making associated with recent harvesting. If a plantation is permanently removed, then the issue is no longer relevant and planning scheme decision making can proceed on that basis.

There is extensive research about whether plantations affect forest structure and consequently affect likely fire behaviour (for example, the potential for crown fires), including how fire behaviour might change over time as vegetation re-grows following harvesting / logging. For this report, plantations are assumed to be 'forests' according to the classification of vegetation using *AS3959-2018 Construction of buildings in Bushfire Prone Areas* (Standards Australia 2018).

See: **Figure 3b-4: Plantations**

3b.7 Vegetation types for planning scheme decision making

The Bushfire hazard site assessment is a planning scheme tool (referenced in *c53.02 Bushfire Planning*) for assessing bushfire hazards. It uses (in part) the vegetation types and classification in *AS3959-2018 Construction of buildings in Bushfire Prone Areas* (Standards Australia 2018). Vegetation for bushfire analysis is different than for other purposes, such as EVCs, landscape value or biodiversity, although the extent of vegetation will often correlate.

Vegetation types for planning scheme decision making are:

- Forest
- Woodland
- Scrub
- Shrubland
- Mallee / Mulga
- Grassland
- Modified vegetation

At the settlement and site-scale, the above classifications provides a localised assessment of bushfire hazards and there is no strategic map that seeks to show these classifications. Instead, localised assessments would identify classifiable vegetation based on field observations in association with specific planning proposals. Nonetheless, there are two dominant vegetation types in the Study Area that are most informative to landscape bushfire behaviour.

Forests

Forest under *AS3959-2018 Construction of buildings in Bushfire Prone Areas* (Standards Australia 2018) is dominant in the treed areas in the Study Area.

Forest is described by the CFA (2014) as follows:

> *Forests occur throughout Victoria and encompass great floristic diversity. Forests are generally characterised by tall, straight trees, but there is a great degree of variability in forests. Forests are described by the BMO as having multiple layers of vegetation, including a pronounced shrubby middle layer in addition to a taller canopy and an underlying layer of grasses, herbs or sedges.*
>
> *Although normally defined by the highest layer of trees having a canopy cover of greater than 30%, this can in practice be difficult to discern, particularly in more open situations. In addition, taller woodlands may have a secondary tree layer just below the dominant tree canopy and are therefore also treated as forests. Shrubby variants can be low-growing in the dry forests, or tall and dense in the wet forests. Grassy variants often have a high diversity and cover of herbs. Grasses are dominated by Wallaby grass and Spear grass species.*
>
> *Of particular interest are heathy woodlands, which may not be tall, but have significant fuel loads in the mid layers. Heathy woodland canopies can grow close together, so are treated as forests.*
>
> *Plantations of pine and blue gum have also been included as forests. Fire behaviour in plantations can be highly variable depending on management regimes. Pine plantations can have very high fuel loads without shrubby layers, due to the tree structure having branches near ground level, providing almost continuous fuel from the ground to the top of the canopy.*

In progressing localised hazard assessments, there may be circumstances where areas of woodland rather than forest is better assessed at the local or site scale. This reflects that there is a transition between forests and woodland and the distinction is not self-evident in all cases, especially as vegetation is present in settlement / urban areas and where the middle and understorey may be modified from their natural condition.

Grasslands

Grasslands under *AS3959-2018 Construction of buildings in Bushfire Prone Areas* (Standards Australia 2018) are the other Study Area dominant vegetation type.

Grassland is described by the CFA (2014) as follows:

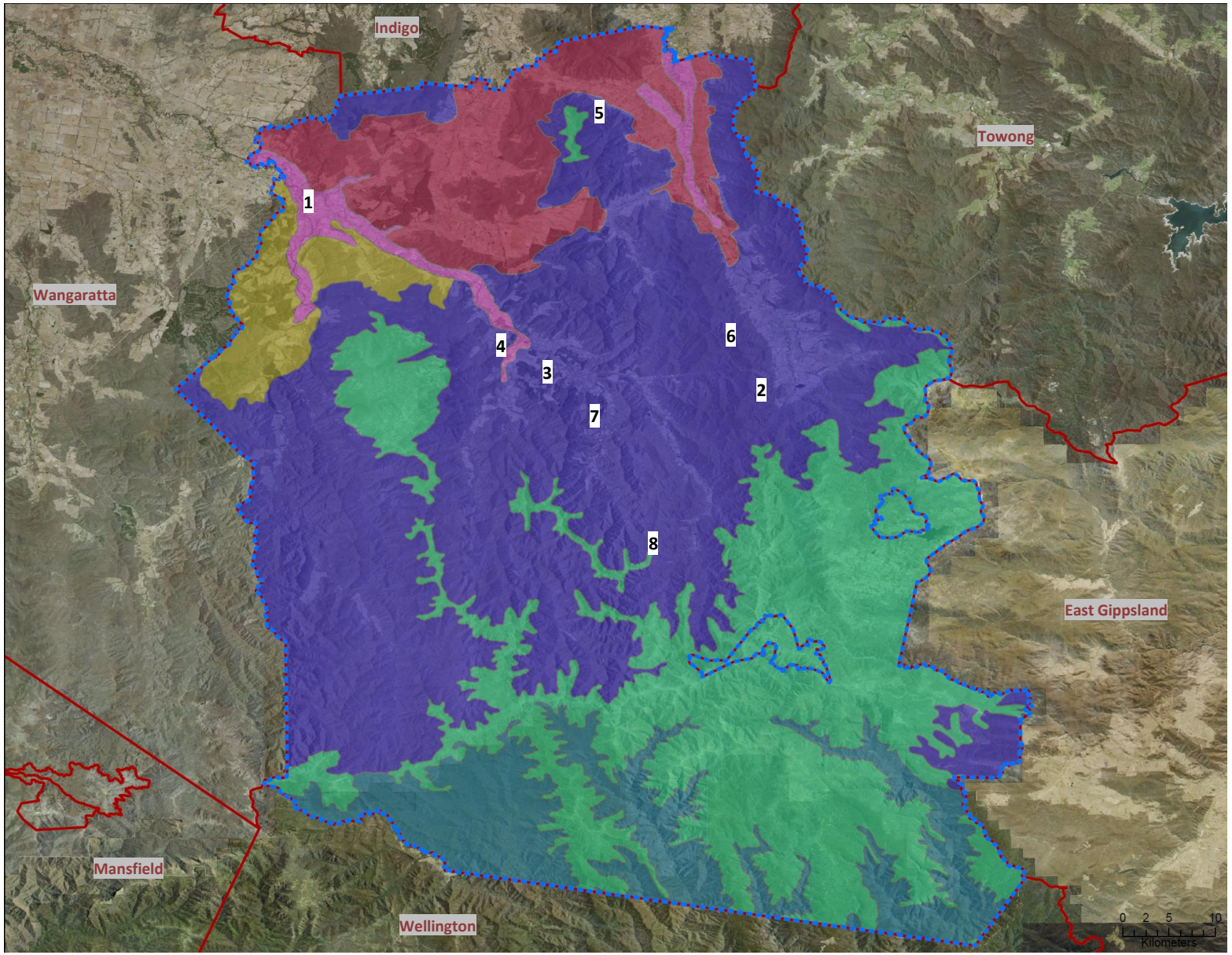
> *Grasslands are widespread and cover not only native grasslands, but also areas of cropping pasture and some cultivation. Although trees or shrubs may be present, they are widely spaced, occur only occasionally and form less than 10% canopy cover. Although strictly a shrubland, chenopod shrubland (e.g. Saltbush) is characterised by grass growth after a high-rainfall event. This growth influences fire behaviour in the drier parts of the state and as such, these areas are described as grassland for the purposes of the BMO and AS 3959–2009 in Victoria.*
>
> *The predominant native grasslands in Victoria are located on the volcanic plains in the southwest, the north-central plains, the Wimmera plains, and the Gippsland Plains in the south-east. Clay soils support a diverse range of native grasses, herbs, forbs and small shrubs (<1 metre). The more arid locations exhibit chenopod-dominated shrublands (salt-tolerant, succulent shrubs of various Saltbush species). Montane and alpine grasslands and shrublands are located at higher elevations on fertile, rocky or shallow soils, and dominated by grasses and herbs. within an otherwise treeless landscape.*
>
> *Areas of modified woodland or forest that has been converted to pasture or crop are treated as grassland areas. There may be scattered individual trees or treelines along creeks within an otherwise treeless landscape.*

3b.8 Landcover

Landcover (2015-2019) as contained on Nature Kit 2.0 (DELWP) shows the extensively treed areas in the Study Area with exotic pasture / grasslands throughout the valleys.

See **Figure 3b-5: Landcover vegetated extent**

Figure 3b-2: Bioregions

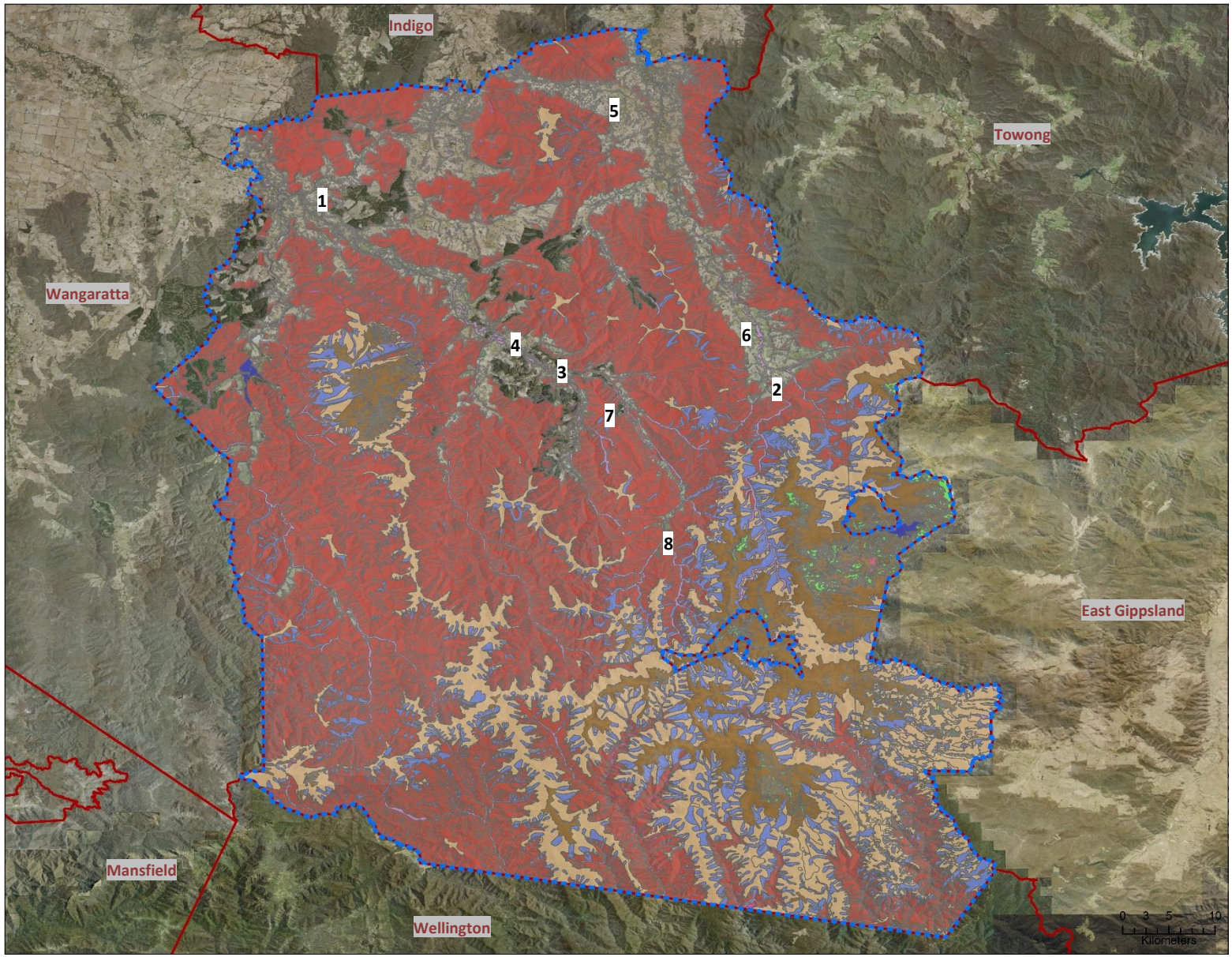


Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

Figure 3b-3 Ecological Vegetation Classes 2005



Study Area

Local Government Area

Grassy Dry Forest

Alpine Grassland

Sub-alpine Woodland

Montane Dry Woodland

Note: Not all EVC's shown on map are included on key

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

Figure 3b-4: Plantations

Study Area

Local Government Area

Plantation

Note: No data in other parts of the study area

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

Figure 3b-5: Landcover (2015-2019) as contained in Nature Kit 2.0 (DELWP)

Treed native vegetation

Exotic pasture / grassland is assumed

Horticulture / irrigated pastures and crops is assumed

Hardwood plantation is assumed

Water is assumed

Date: 5/3/2024

3c. Slope and topography related elements of the landscape bushfire hazard

Bushfire hazards are formed from vegetation, slope / topography and weather. This chapter describes the slope / topography elements of the landscape bushfire hazard.

Slope and topography describe the shape and relief of the land. Topography is a measurement of elevation and slope is the percent change in that elevation over a certain distance.

See:
Figure 3c-1: Slope based on the 10m contour
Figure 3c-2: Elevation based on the 10m contour

Slope and topography show (at a landscape scale) extensive areas of steep terrain. This includes gullies and valleys where wind driven bushfire behaviour may arise.

Slope under hazardous vegetation informs how fast a bushfire may travel. The CFA (2023) identify the following characteristics of slope:

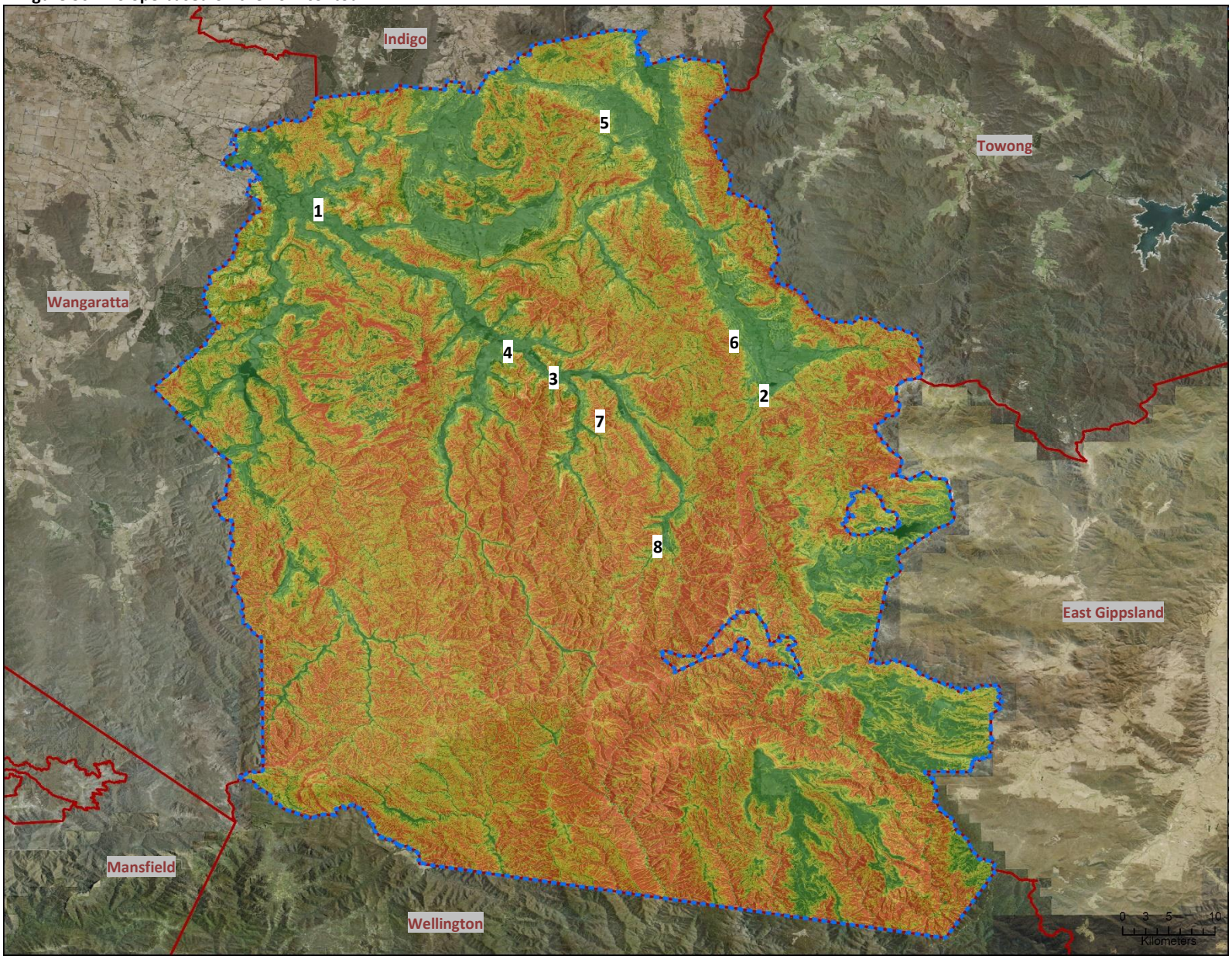
- *A fire will burn faster uphill. This is because the flames can easily reach more unburnt fuel in front of the fire.*
- *Radiant heat pre-heats the fuel in front of the fire, making the fuel even more flammable.*
- *For every 10˚ slope, the fire will double its speed.*
- *By increasing in speed the fire also increases in intensity, becoming even hotter.*
- *Fires tend to move more slowly as the slope decreases.*

Evidence of bushfire behaviour indicates that extreme bushfire behaviour is more likely to arise in locations where there is steep and rugged terrain, especially in eucalypt forests like those found in the Study Area.

In these types of environments, the movement of a bushfire consistently across a landscape as assumed in some bushfire models (for example, models that underpin *AS3959-20018 Construction of buildings in a Bushfire Prone Area* (Standards Australia 2018)) are less instructive to likely bushfire behaviour. Instead, the combination of rugged terrain and the vegetation type can create extreme bushfire behaviour and an '*area of bushfire*' (Tolhurst 2011).

Based on the topography in the Study Area when combined with the vegetation types, it is reasonable to conclude that extreme bushfire behaviour is likely in the Study Area. The potential for extreme bushfire behaviour is a key input to planning decision making because it helps appreciate where large bushfires will arise and where the most damage from bushfire may occur (including neighbourhood scale destruction).

Figure 3c-1: Slope based on the 10m contour



Study Area

Local Government Area

Slope in degrees

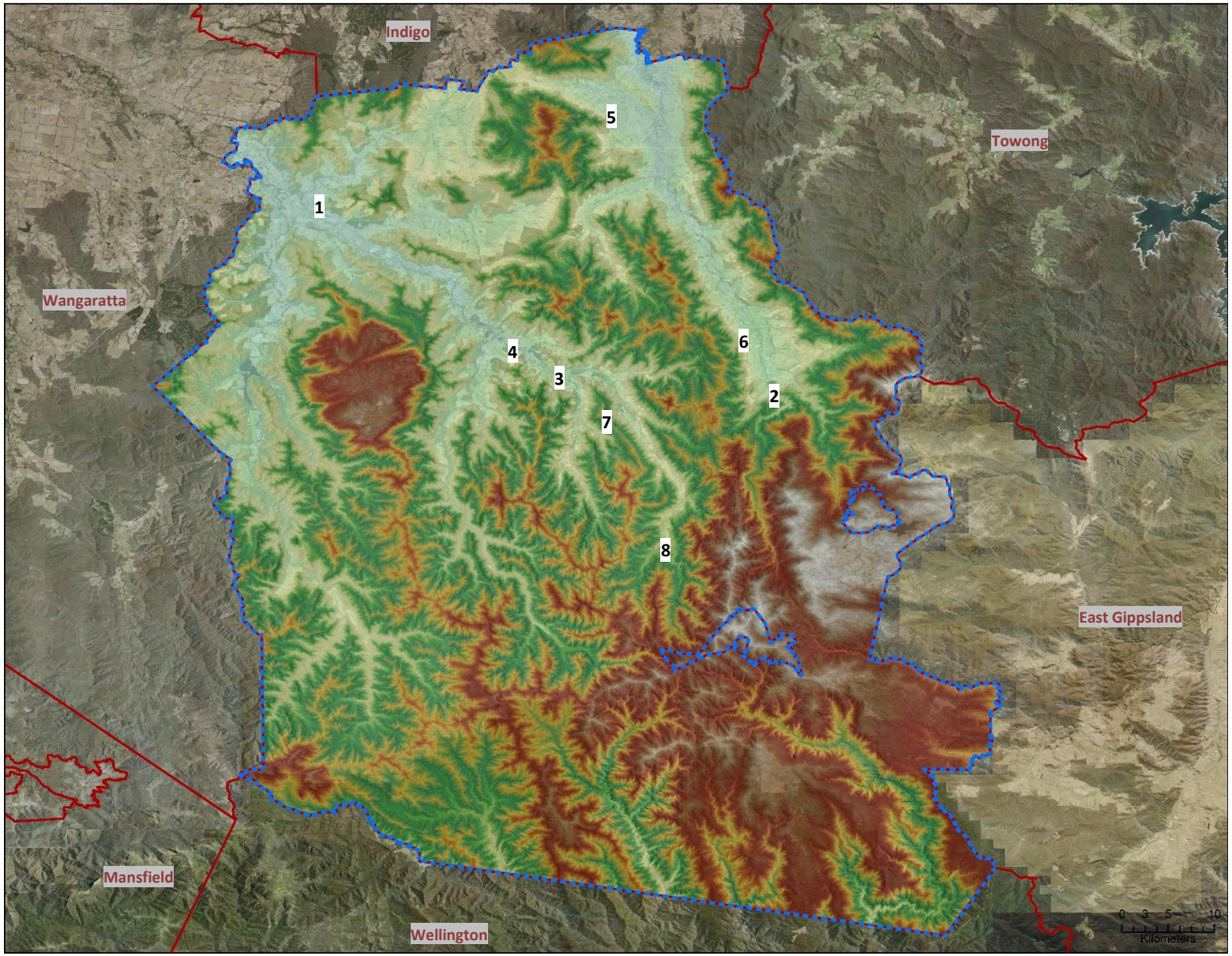
- 0-5
- 5-10
- 10-15
- 15-20
- 20-25
- 25-30
- 30+

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

Figure 3c-2: Elevation based on the 10m contour



Study Area

Local Government Area

10m Contour

Elevation Profile

2028m

167m

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

3d. Fuel management in the Study Area

Bushfire hazards are formed from vegetation, slope / topography and weather. This chapter describes how fuel management activities seek to affect vegetation in managing bushfire risks.

3d.1 Joint Fuel Management Program

The Joint Fuel Management Program outlines where Forest Fire Management Victoria, the CFA and (sometimes) other public agencies intend to carry out fire management operations on Victoria's public and private land.

The strategy for fuel management is the *Hume Bushfire Management Strategy* (DELWP 2020) with a three-year program published by Forest Fire Management Victoria (2021).

The fuel management program is expressed as a series of zones. Each zone performs a function in the overall aim to reduce the amount of fuel available to burn, to reduce bushfire intensity and rate of spread and to, potentially, increase opportunities for suppression (especially before grassfires and bushfires have time to grow large).

The fuel management zones include:

- Asset Protection Zones (APZ) are an area around properties and infrastructure where intensive management of fuel provides localised protection to reduce flame height, radiant heat and ember attack on life and property in the event of a bushfire.
- Bushfire Moderation Zones (BMZ) are an area around properties and infrastructure where fuel is managed to reduce the speed and intensity of bushfires and to protect nearby assets, particularly from ember attack in the event of a bushfire. They are designed to complement Asset Protection Zones and reduce bushfire spotting (ember attack) and convective output (extreme fire behaviour).
- Landscape Management Zones (LMZ) are an area where fuel is managed to minimise the impact of major bushfires, to improve ecosystem resilience and for other purposes (such as to regenerate forests and protect water catchments). They aim to reduce treatable fuels and achieve ecologically beneficial fire intervals.
- Planned Burning Exclusion Zones are an area where planned burning is to be avoided, mainly because ecological assts in this zone cannot tolerate fire. These areas are not managed to achieve a fuel treatment goal.

Not all areas within each zone receive treatments each year, with specific treatments planned on a 3-year rolling basis.

3d.2 Fuel management in the Study Area

The fuel management zones in the Study Area comprise the following:

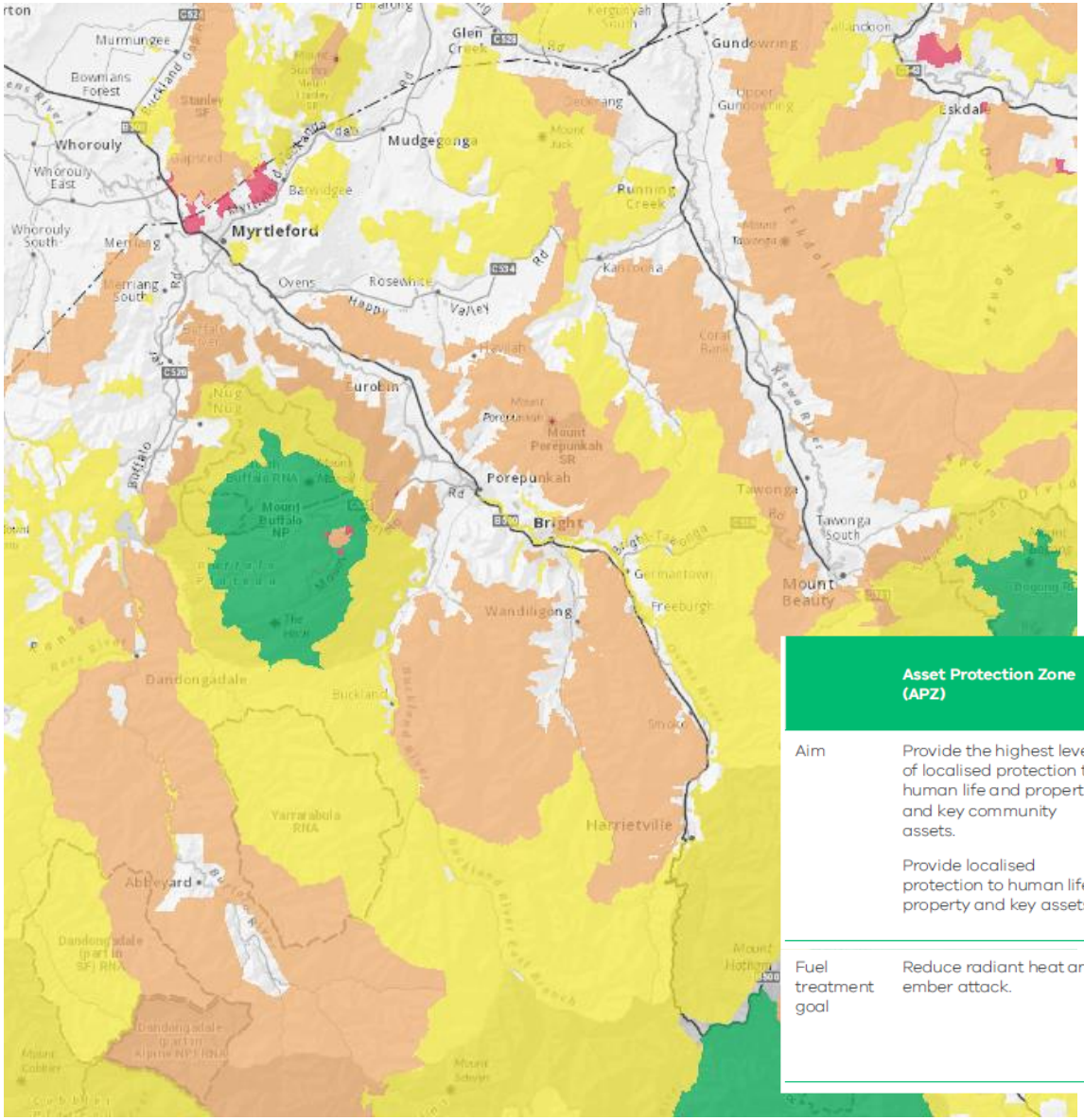
- Asset Protection Zones orientated to the north-west of Myrtleford.
- Bushfire Moderation Zones oriented to settlements in the valleys, including Bright, Tawonga, Mount Beauty & Tawonga South, Wandiligong and Harrietville.
- Landscape Management Zones oriented to the forests further away from settlements.
- Planned burn exclusion zones focused on the highest elevation areas and their surrounds.

See **Figure 3d-1: Fire management zones in the Strategic Framework Plan area**

The *Hume Bushfire Management Strategy* (DELWP 2020) includes the following key principles informing fuel management in the Study Area (extracts, not all principles shown):

- *Focus fuel management activities within Asset Protection Zone (APZ) and Bushfire Moderation Zone (BMZ), where fuel hazards are reduced to an acceptable level […]*
- *Undertake fuel management activities within Landscape Management Zone (LMZ) where there is a clear bushfire risk reduction objective or ecological outcome, otherwise minimise fuel management activities within LMZ to reduce negative impacts on ecosystem resilience*
- *Reduce the size of bushfires as much as possible through rapid suppression and maintenance of a network of fuel-reduced areas (such as strategically placed BMZ and LMZ areas, which are managed together to reduce risk across the landscape, for example, interconnecting ridgelines in remote areas) and an annual schedule of maintenance of strategic fire access roads, water points, helipads and other fire response infrastructure in the landscape.*

Figure 3d-1: Fire management zones on public land in the Study Area (Adapted from DELWP 2020 and FFMV 2024)



Fire Management Zones

- Asset Protection Zone (APZ)
- Bushfire Moderation Zone (BMZ)
- Landscape Management Zone (LMZ)
- Planned Burn Exclusion Zone (PBEZ)

	Asset Protection Zone (APZ)	Bushfire Moderation Zone (BMZ)	Landscape Management Zone (LMZ)	Planned Burning Exclusion Zone (PBEZ)
Aim	Provide the highest level of localised protection to human life and property and key community assets. Provide localised protection to human life, property and key assets.	Maintain fuel-reduced corridors, reducing the speed and intensity of bushfires. Achieve ecologically-desirable outcomes where possible.	Reduce overall bushfire hazard at the landscape scale; support ecological resilience and land-management objectives. Manage land for particular values (forest regeneration and protection of water catchments).	Exclusion of planned burning from areas primarily intolerant to fire.
Fuel treatment goal	Reduce radiant heat and ember attack.	Complement APZ goals and reduce bushfire spotting. Increase ability to suppress fires.	Reduce treatable fuels to reduce fire spread and impacts on landscape values and achieve ecologically beneficial fire intervals.	Not applicable.

4. Contextual factors relevant to bushfires

The following chapters discuss contextual factors that help appreciate bushfires in the Study Area, including bushfire history, bushfire management strategy guiding public agencies, Victorian Fire Risk Register, planning scheme bushfire designations and the regional bushfire planning assessment.

4a. Bushfire history

Bushfire history can be informative to understanding likely bushfire behaviour, but where bushfire has or has not occurred in the past should not be overemphasised in planning decision making. All bushfire hazards are assumed capable of being part of a bushfire (or grassfire) and planning decision making generally responds to bushfire hazards on this basis.

However, bushfire history can assist in understanding how communities have previously experienced bushfire and can reiterate important features likely to arise in any future bushfire (for example, the effect of the late afternoon wind change typical in Victoria's worst bushfire weather).

4a.1 Regional bushfire strategy summary of bushfire history and patterns

The *Hume Bushfire Management Strategy* (DELWP 2020) provides the following information:

> *Hume region has a long history of large and intense fires, some involving significant loss of life and property. Major fire events in the region include a total of 1.27 million ha burnt in the 1939 Black Friday fires, more than 503,000 ha in the 2003 Alpine fires, 444,000 ha in the 2006–07 Great Divide fires, 247,000 ha in the 2009 Black Saturday fires, 36,000 ha in the 2013 Harrietville fire and 320,120 ha in the 2019–20 Black Summer fires.*
>
> *Since 2000, the region has been subject to a series of particularly severe bushfire events in relatively quick succession. These fires have affected many thousands of hectares of public and private land and had significant social, economic and environmental impacts.*

4a.2 Bushfire history

The potential for bushfire in and around the Study Area is demonstrated by bushfire history. There is extensive bushfire history in the Study Area including large, landscape-scale bushfires along with smaller fires.

Key elements of bushfire behaviour demonstrates through bushfire history include:

- Landscape scale bushfires in the large forested areas.
- Fire moving into grassland areas from bushfire in forested areas.
- Grassfire entering forested areas.

See **Figure 4a-1: Bushfire history since 1960**

4a.3 Major bushfires in the Study Area

Various sources provide contextual and descriptive content on past bushfires, with selected extracts of these provided below.

See **Figure 4a-2: Selected major bushfires**

2003 Alpine Fires (Forest Fire Management Victoria (2024)

> *Eighty-seven fires commenced by lightning in the northeast of Victoria on 8 January. Eight fires were unable to be contained and joined to form the largest fire in Victoria since the 1939 Black Friday bushfires. The fires burned for 59 days before contained. The Alpine fires burned more than 1.3 million hectares, 41 homes, and 9,000 livestock, with thousands of kilometres of fencing destroyed. Areas affected included Mt Buffalo, Bright, Dinner Plain, Benambra, and Omeo.*

2006-2007 Great Divide Fires (Forest Fire Management Victoria (2024)

> *Fire agencies responded to more than 1,000 fires across Victoria from mid-December 2006 to mid-March 2007. The total area burned exceeded 1,200,000 hectares.The two most serious fires occurred in the northeast (the Great Divide North fire) and Gippsland (the Great Divide South fire). The fires were contained in mid-February after burning for 59 days. The Great Divide North and South fires burned 1,048,238 hectares, majority on public land. Other significant fires burning at the same time were the Tawonga Gap fire (33,590 hectares) and the Tatong-Watchbox Creek Track fire (31,810 hectares). There was one death, 51 houses destroyed and 1,741 stock lost.*

2009 Beechworth fire (2009 Victorian Bushfires Royal Commission)

The 2009 Beechworth fire occurred within the 2009 Black Saturday period and was therefore subject to the 2009 Victorian Bushfires Royal Commission (VBRC). Its description of the fires (Volume 1, Page 210) included the following content on how the fire progressed (extracts shown):

> *From the point of ignition the fire burned on public land in eucalypt forest, moving south-east under the influence of a strong north-westerly wind. Initial witnesses described a small fire—only 2 to 3 square metres—burning directly under power lines on the eastern side of Buckland Gap Road (also known as the Beechworth–Myrtleford road), just south of Library Road. […]*

A further urgent threat message was issued at 21:25, warning residents of the potential impact of the wind change. Throughout the night, threat messages continued to be issued, alerting residents of Barwidgee Creek, Mudgegonga, Stanley, Yackandandah, Bruarong, Rosewhite, Murmungee, Ovens, Myrtleford, Glen Creek, Kancoona, Kancoona South, Running Creek and Dederang and along Carrolls Road (near Mudgegonga). […]

At 21:50 Mr McKenzie received reports of a spot fire in Mudgegonga. This was earlier than expected, and it meant the fire was spotting long distances. He issued a fire situation report at 21:59, advising that there were new spot fires east of the firefront at Barwidgee Creek.[…]

At 23:34 Mr McKenzie reported that there was extreme fire behaviour and significant spotting, including up to 1 kilometre from the township of Myrtleford. He issued a fire situation report saying the fire was 'going'. At about 23:46 he received word that the fire had crossed the Yackandandah–Myrtleford road; this meant the fire was moving very quickly. Between 21:30–22:00 on 7 February and 02:30–03:00 on 8 February the fire travelled 24 kilometres.[…]

The predicted south-westerly wind change reached the fire ground at about midnight, turning the northern flank—which was at that stage about 32 kilometres long—into the main firefront. The fire began heading north-east, towards cleared agricultural land, mountainous forest and Mudgegonga.

At about 00:20 on 8 February Mr McKenzie was told a 'firestorm' was approaching Mudgegonga and heading into the Rosewhite Valley.Ms Pat Easterbrook and her husband, Lindsay, lived across the road from the two people who were killed by the fire. She described the fire as it approached Mudgegonga:

> *It … sounded as though a few jets were … taking off over the top of our house. I said to Lindsay, 'What the hell is that?' He said, 'That's the fire' … [Shortly after] everything just burst into flames … It was like bombs were going off. The mountain on the left side, on the creek side, the north side, that just exploded. The tree breaks that were coming up from the creek were on fire. The shed was burning down. It was roaring down from the south side as well.*

At about 01:00 on 8 February, Mr Andrew Taylor, Alpine Shire Municipal Emergency Resource Officer, and Senior Sergeant Incoll were told the fire was heading towards Carrolls Road in Mudgegonga. […]

About midday the south-westerly wind began to increase in strength, and the fire began major runs between Mudgegonga and Bruarong in the north and Rosewhite and Running Creek in the east. As the fire approached Running Creek, between about 17:00 and 18:00, it spotted for several kilometres across the Kiewa Valley into heavily forested terrain. This area had undergone fuel-reduction burning in the autumn of 2007, and the result was that the fire behaviour moderated considerably.

Shortly after 18:00 on 8 February the northern run of the fire was largely controlled by fire crews in cleared paddocks.

On 9 February weather conditions moderated further, and fire crews constructed control lines and conducted back-burns. This work continued until 10:30 on 16 February, when the fire was declared contained. The fire was reported under control on 25 March.

Key statistics for this fire from the VBRC include:

- A maximum temperature of 45.5 degrees at Wangaratta.
- Wind speeds up to 35km/hour with gusts up to 57km/hour.
- A maximum fire danger index of 126 at Wangaratta at 1.30pm.

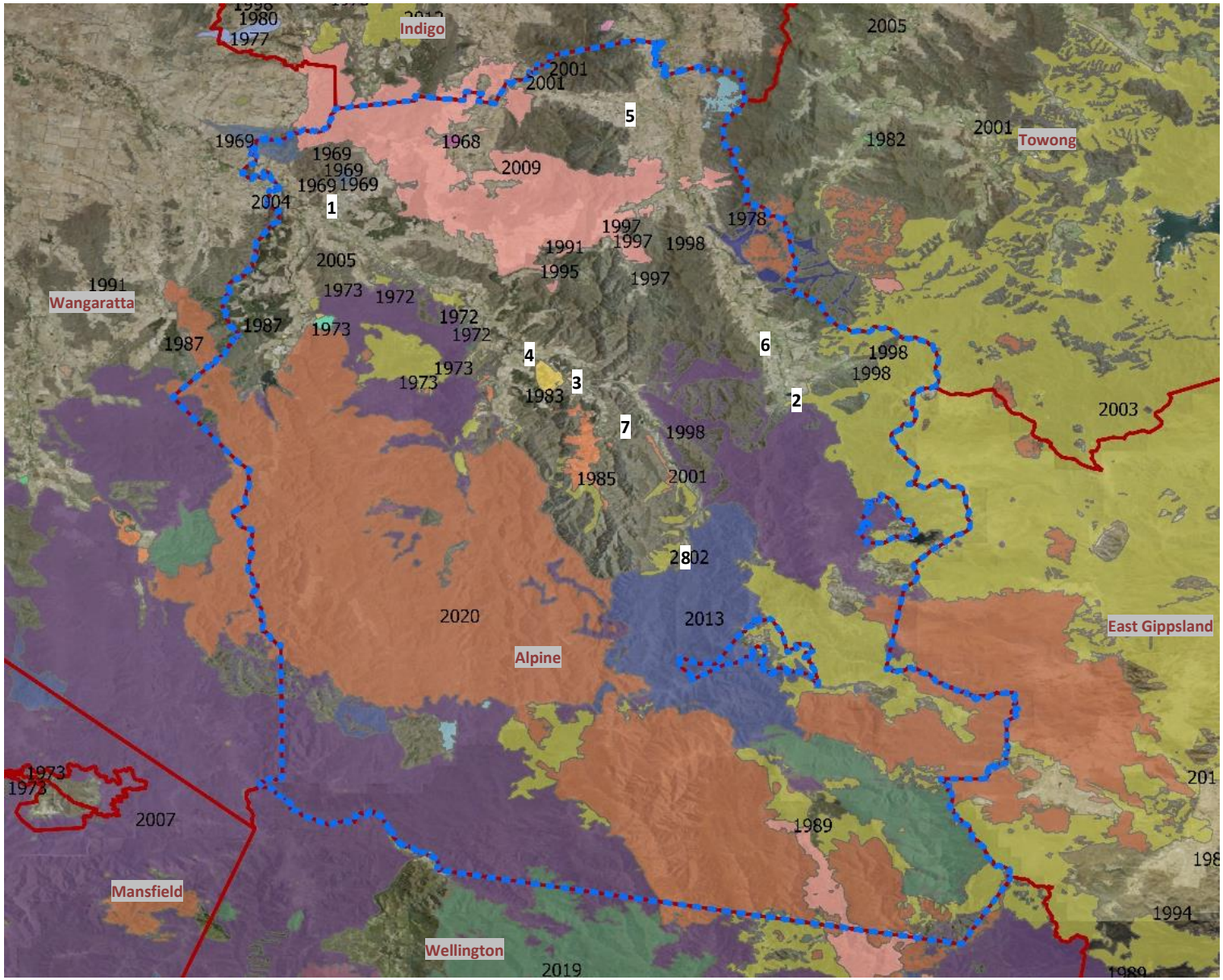
<u>2020 Hume fires (Inspector General for Emergency Management (Vic) (2020)</u>

Parts of the Study Area were affected by the 2020 Hume fires, which occurred within the Black Summer of bushfires affecting the east coast of Australia. The Inspector General for Emergency Management review into these fires included the following extracts.

> *Two fires in the Abbeyard area grew quickly with minimal opportunity for effective suppression in the extreme fire conditions that prevailed at the start of January. Crews were pulled back from the fire front to attend to asset protection around Catherine Station and Abbeyard, before heavy machinery was extracted from the area. By 2 January, fires had breached control lines on the Ovens 41 Abbeyard–Yarrarabula South fire, which would overrun a second fire Ovens 36 Abbeyard–Worseldine Track and other smaller outbreaks.*
>
> *Coinciding with the announcement of the State of Disaster, the entire Alpine National Park and surrounding state forest areas were closed to visitors and those already there were advised to leave.*
>
> *With the prediction of extreme fire weather on 4 January, all crews and machinery were withdrawn from the Ovens Complex of fires and redeployed to undertake asset and township protection works in the Upper Ovens Valley, around Harrietville, Bright, Wandiligong and Porepunkah.*

The fires in the Ovens Complex remained active on 5 January. An Emergency Warning for communities west of Mount Buffalo National Park and Myrtleford, and an Evacuation Warning in place for the communities of Freeburgh, Harrietville, Smoko and Wandiligong were progressively downgraded over the next 24 hours. Fires which stared on New Year's Eve were overrun by the main Ovens 41 Abbeyard–Yarrarabula South fire, including a 1000 ha fire in the Mount Buffalo National Park.

Figure 4a-1: Bushfires in the Study Area since 1960



Study Area

Local Government Area

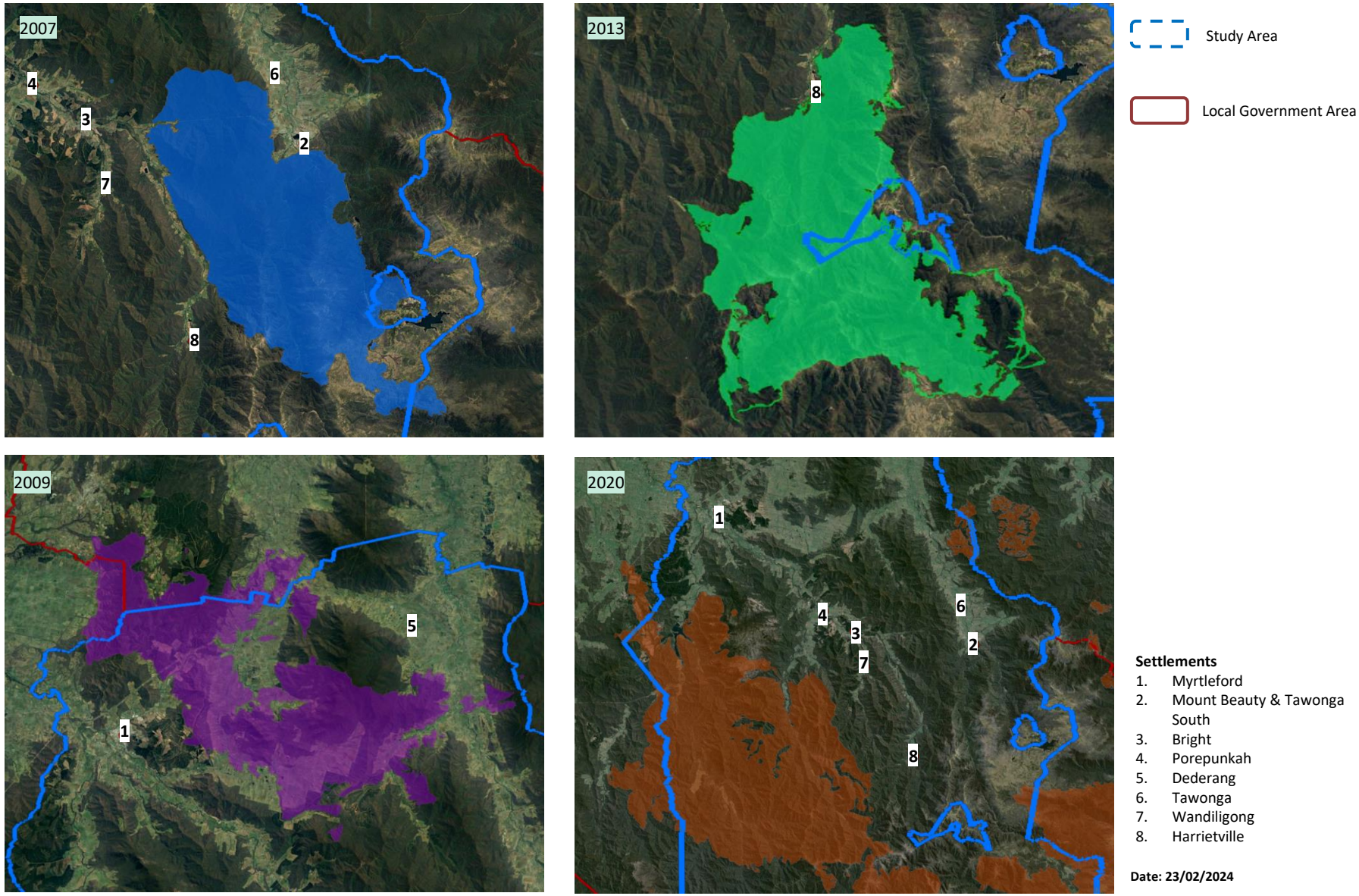
Note: Some fires overlap other fires and therefore the full extent of all fires may not be shown

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

Figure 4a-2: Selected larger bushfires in the Study Area



4b. Bushfire management strategies guiding public agencies

4b.1 Regional bushfire management strategies

The Hume Bushfire Management Strategy (DELWP 2020) considers the long-term implications of bushfire to direct the activities of bushfire-related public agencies and to reduce bushfire risk to people, property, infrastructure and economic activity.

The bushfire management strategy contains information that assists in appreciating the landscape bushfire risk. This includes the following extracts:

> *Since 2000, the region has been subject to a series of particularly severe bushfire events in relatively quick succession. These fires have affected many thousands of hectares of public and private land and had significant social, economic and environmental impacts.*
>
> *The risk of bushfire is widespread across our landscape. In the northern and western parts of the region, fires are often fast-moving, wind-driven grassfires that are generally contained within 24 hours, despite sometimes covering large areas. In the southern and eastern areas, the steep, long and heavily forested slopes of our landscape mean fires are generally slower, intense and difficult to suppress. These fires in the difficult terrain of the Great Dividing Range, High Country and Central Highlands have impacts not only for Hume region but for landscapes, communities and regions to the south and east of Hume. Significant fires have also entered the Hume region from fires in NSW.*
>
> *Responding to more than 1,000 ignitions a year, fire management agencies in Hume see extreme contrasts in ignition patterns and fire behaviours that require a variety of suppression strategies. More than 80% of ignitions in the Hume region occur on private land, and 20% of these are caused by lightning.*

The bushfire management strategy includes simulations of house loss to identify areas across a landscape where bushfires could have the greatest impact. The outputs from these simulations show that the Study Area, comparative to other locations in the Hume Region, has:

- Settlements in the highest 5% and 20% of risk of house loss, oriented around parts of Bright, Mount Beauty – Tawonga South, Tawonga, Harrietville and Myrtleford.
- Other areas identified at some risk of modelled house loss, which includes all other settlements in the Study Area.

See **Figure 4b-1: Modelled house loss bushfire risk**

The bushfire management strategy contains information that assists in appreciating where modelled house loss is likely in the region. This includes the following extracts:

> *In Hume, communities with relatively high numbers of properties, which are also in the path of many simulated bushfires and/or identified in the VFRR-b are considered as highest risk.*
>
> *Property risk is highest around the communities in the valleys and surrounding hilly terrain in the Murrindindi, Alpine,Indigo and Mansfield shires. Some examples of particular higher risk localities include Marysville, Kinglake, Flowerdale, Yackandandah, Bright, Mount Beauty /Tawonga, Jamieson, Sawmill Settlement/ Merrijig, and Tolmie.*
>
> *The communities in these localities are in the paths of multiple simulated bushfires with the greatest level of potential impact. They are vulnerable to bushfires starting at a variety of locations, and bushfires under worst case weather conditions could result in the most properties lost.*

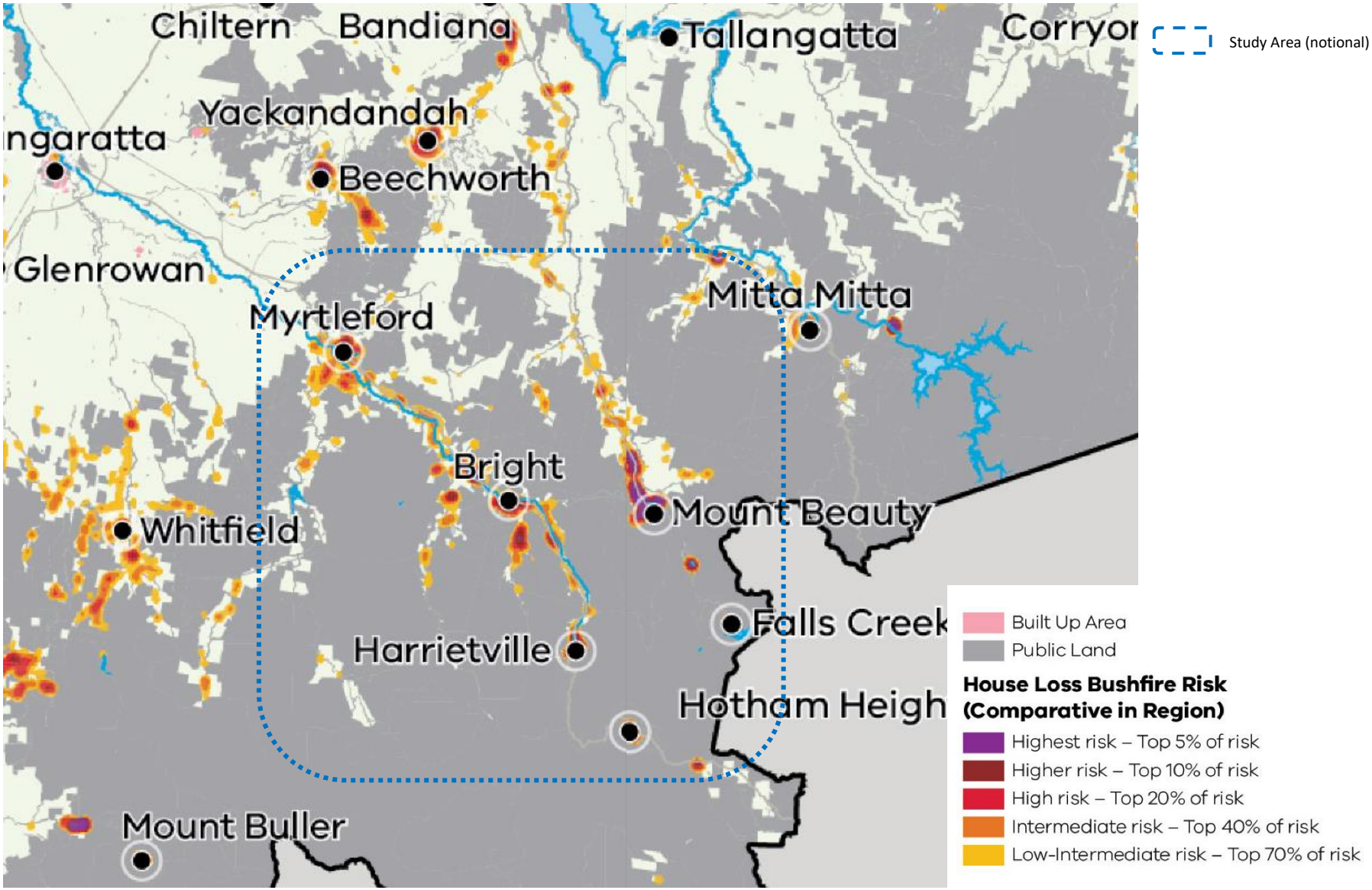
4b.2 Municipal bushfire strategies

Each local council is required to have a municipal bushfire plan. These specify local fuel management activities derived from the analysis in the Victorian Fire Risk Register (see other parts of this report) and local priorities.

The *Alpine Shire Municipal Fire Management Plan 2019 – 2022* is no longer current but does include information that generally described the municipal level approach to managing bushfire risks. The following description is included for context about the role of land use planning in bushfire risk creation and management (emphasis added) (Page 15):

> *The impact of a bushfire increases if the fire occurs in areas where people live, work and visit, so settlement and visitor patterns are important when determining bushfire risk. There has been a significant population expansion in* ***rural residential development*** *in several parts of the Shire for lifestyle reasons.* ***The increased amount of urban rural interface*** *requires intensive fire management and creates variation in the degree and nature of bushfire risk between localities. [..]*
>
> *Importantly, visitors to the municipality are often drawn to the areas of higher fire risk creating a situation of increasing potential impact as the fire risk rises. Furthermore, visitors to the region are often less informed of bush fire risk and less prepared to deal with bushfire situations.*

Figure 4b-1: Modelled house loss bushfire risk (adapted from DELWP 2020)



4c. Victorian Fire Risk Register

The Victorian Fire Risk Register (VFRR) is a data set prepared by fire authorities and local councils that identifies assets at risk of bushfire. The human settlement data is most interesting to planning scheme decision making.

The VFRR can be of interest to appreciate how current assets (for example, settlements) are shown as risks, according to fire authorities and local councils. The VFRR only assesses existing risks. The VFRR should not be over-emphasised in planning decision making as it has not been prepared for this purpose and does not contemplate new risk that might arise because of a planning decisions.

See: **Figure 4c-1: Victorian Fire Risk Register human settlement**

The VFRR identifies:

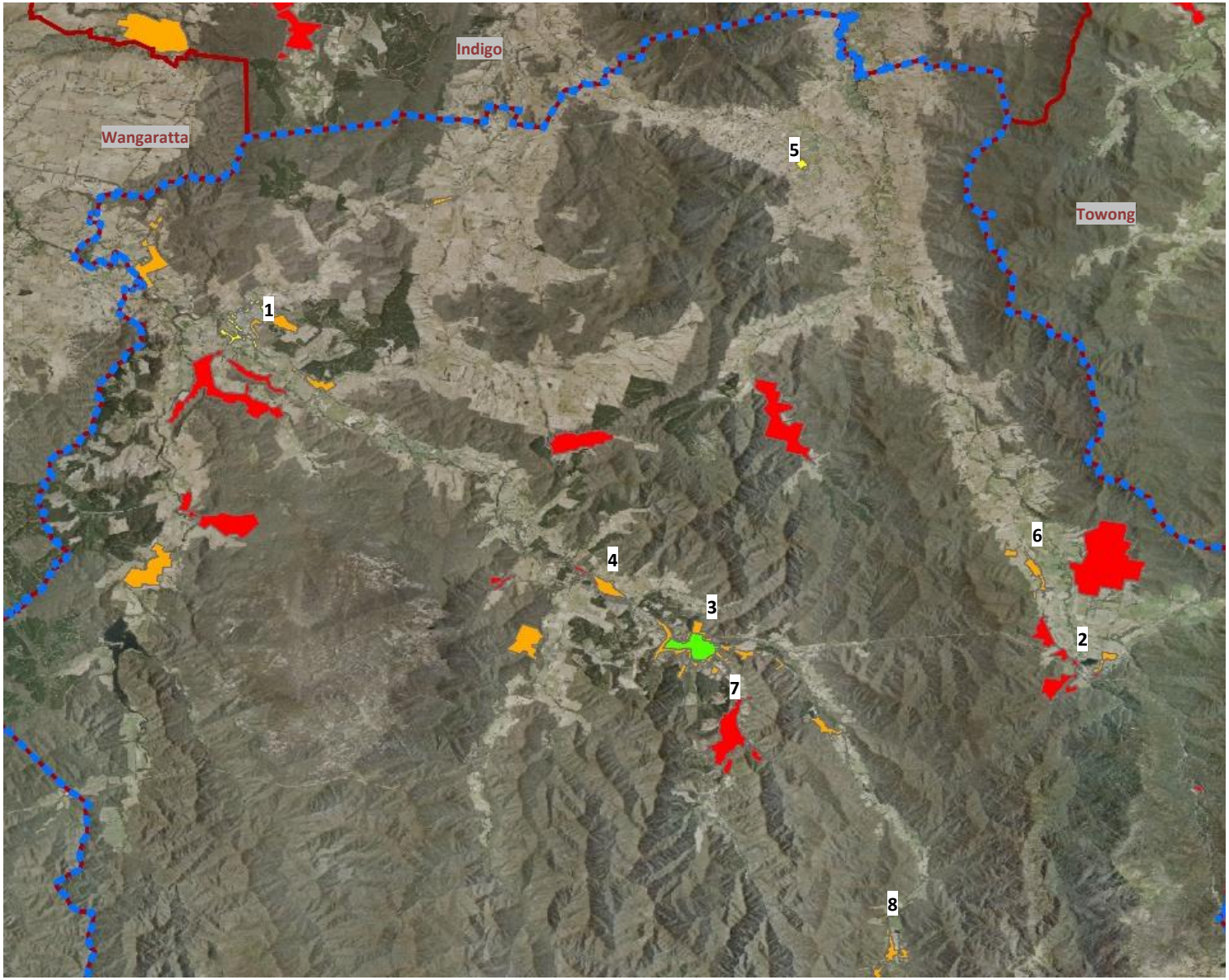
- All of the settlement of Wandiligong at an extreme risk.
- Parts of settlements at an extreme risk, including parts of Mount Beauty – Tawonga South.
- All of Harrietville & Tawonga, the edges of Bright, the main urban parts of Mount Beauty & Porepunkah and the outer north-east edges of Myrtleford at a very high risk.
- All of Dederang and the edges of Myrtleford as high risks.
- The core of Bright as a low risk.
- The core of Myrtleford as no identified risk.

It is noted that the VFRR is not a State-wide, regional or sub-regional assessment of risk and provides no value to understand relative risk between places when seeking to apply *c13.02-1S Bushfire Planning* policies.

On balance, there are some peculiarities about the VFRR assessment in Alpine Shire, including the core of Bright being assessed as low-risk and most of Myrtleford being no risk at all. These will not readily read-across to the planning-risk assessments contained later in this report nor to the risk of modelled house loss in the regional bushfire management strategy.

More detailed maps of the VFRR for selected settlements in provided in the settlement Chapters 9a to 9e later in this report.

Figure 4c-1: Victorian Fire Risk Register Human settlement



Study Area

Local Government Area

Extreme

Very High

High

Low

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

4d. Planning scheme bushfire destinations and Zones

4d.1 Planning scheme bushfire designations

Planning schemes identify potentially bushfire affected land through the inclusion of land into the Bushfire Management Overlay or within a designated Bushfire Prone Area (referenced in *c13.02-1S Bushfire Planning* and approved under the Building Act 1993). Appendix 2 to this report provides advice on possible changes to planning scheme designations, which this chapter outlining where and how they currently apply.

Bushfire Management Overlay

The Bushfire Management Overlay is applied across Victoria based on areas of non-grassland vegetation larger than 4ha (patch size criteria) with a 150m buffer applied to account for ember attack (ember criteria). It is also applied to land likely to be subject to extreme bushfire behaviour (extreme fire behaviour criteria).

The Bushfire Management Overlay applies to most of the Study Area except for the grassland areas (outside of the BMO ember protection buffer) in the northern parts of the Study Area.

It is noted that the extreme fire behaviour criteria is likely driving the application of the Bushfire Management Overlay in locations where it extends beyond the typical 150m ember protection buffer measured from the edge of non-grassland hazards. These locations include all of Bright & Porepunkah, along with all the settlement areas of Mount Beauty and Tawonga South.

See Figure 4d-1: Bushfire Management Overlay

Schedules to the Bushfire Management Overlay

Some areas of Bushfire Management Overlay are within a schedule. These specify bushfire protection measures to streamline decision making for the development of a lot with a single dwelling.

Schedule 1 applies to various areas including parts of Bright, Porepunkah, Mount Beauty – Tawonga South. Schedule 1 provides for a BAL12.5 construction standard, reflecting the expectation that development in these areas would be exposed to no more than 12.5kw/sq.m of radiant heat.

Schedule 1 areas tend to arise in the core of settlement areas which are relatively low fuel. By being central to settlement areas the settlement / hazard edges are avoided along with the flame contact and highest levels of radiant heat that arise closer to settlement edges. 12.5kw/sq.m of radiant heat is the same outcome as specified in *c13.02-1S Bushfire Planning* for development enabled by a strategic plan and/or a planning scheme amendment. The expected radiant heat outcome in these area is at the lowest end of the permitted spectrum of acceptable radiant heat exposure specified in planning schemes.

It is however important to recognise that Schedule 1 is applied based on a radiant heat exposure and not in response to assessed levels of ember attack or whether high to extreme levels of ember attack are likely to arise. It is also not a strategic planning consideration.

Schedule 2 applies to parts of Tawonga South, Bright, and Myrtleford. Schedule 2 provides for a BAL29 construction standard. This construction standard reflects the potential for up to 29kw/sq.m of radiant heat. It may also reflect higher levels of ember attack and the potential for localised bushfire to arise within developed areas.

In combination, Schedule 1 and Schedule 2 areas form a 'layered' approach to settlements that have them, where the edges of settlements are not included in a schedule, a middle area included within Schedule 2, and a core settlement area included in Schedule 1. Bright provides a simple example of this.

See Figure 4d-1: Locations with schedules to Bushfire Management Overlay

Bushfire Prone Area

The Bushfire prone area applies to all land within the Bushfire Management Overlay along with grassland areas, smaller patches of non-grassland vegetation and land usually within 150m or 50m of these areas (forming part of the ember protection buffer).

The Bushfire Prone Area applies to all land in the Study Area except low fuel settlement areas in Myrtleford. These parts of Myrtleford are significant for indicating them being low enough risk to not warrant being included into the Bushfire Prone Area at all, according to planning scheme bushfire designations.

See Figure 4d-2: Bushfire Prone Area

4d.2 Zones

Planning scheme Zones provide an indication of the overall planning structure of the Study Area, including where settlements and concentrations of development exist.

See **Figure 4d-3: Zones**

Figure 4d-1: Bushfire Management Overlay and Schedules to the BMO

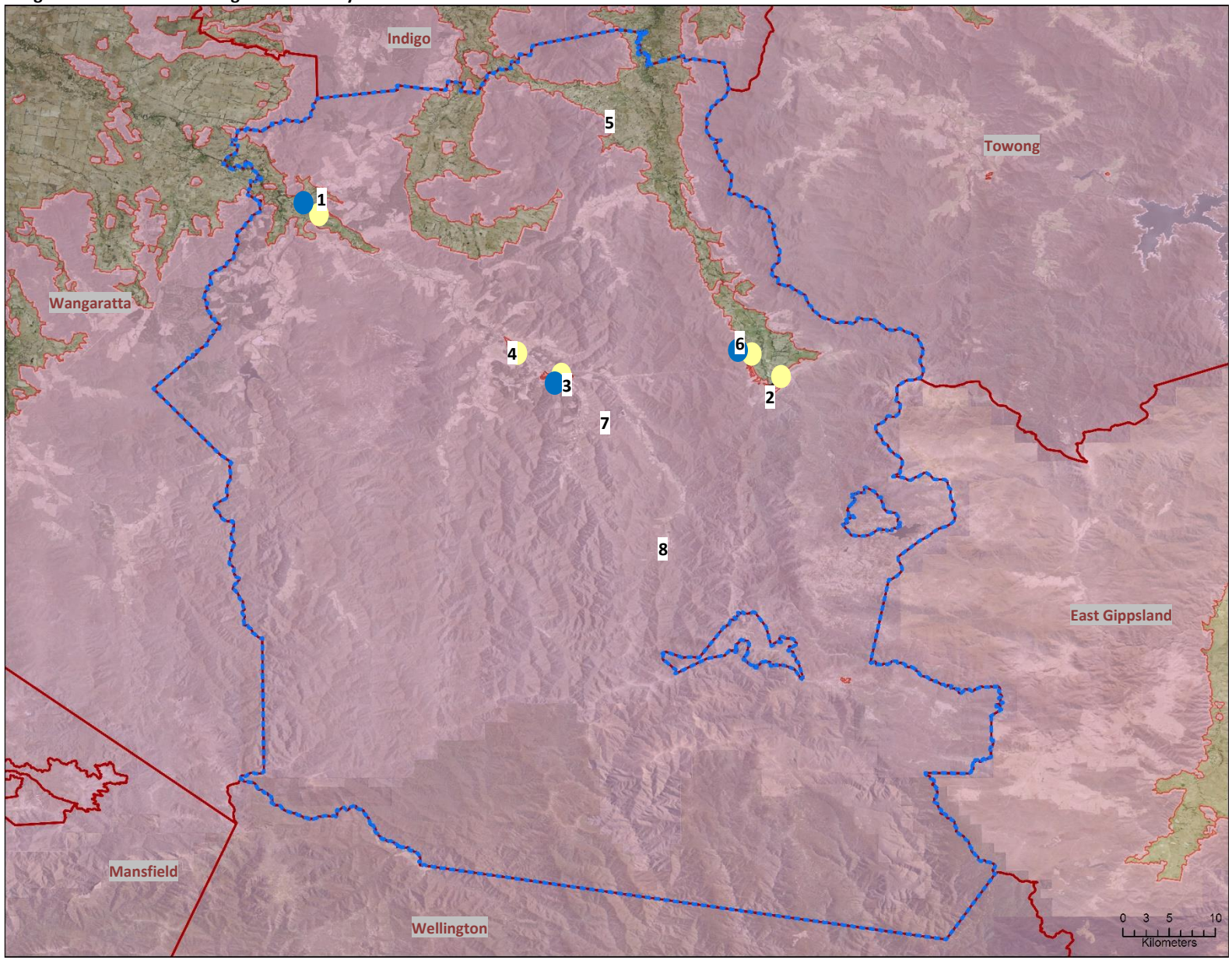
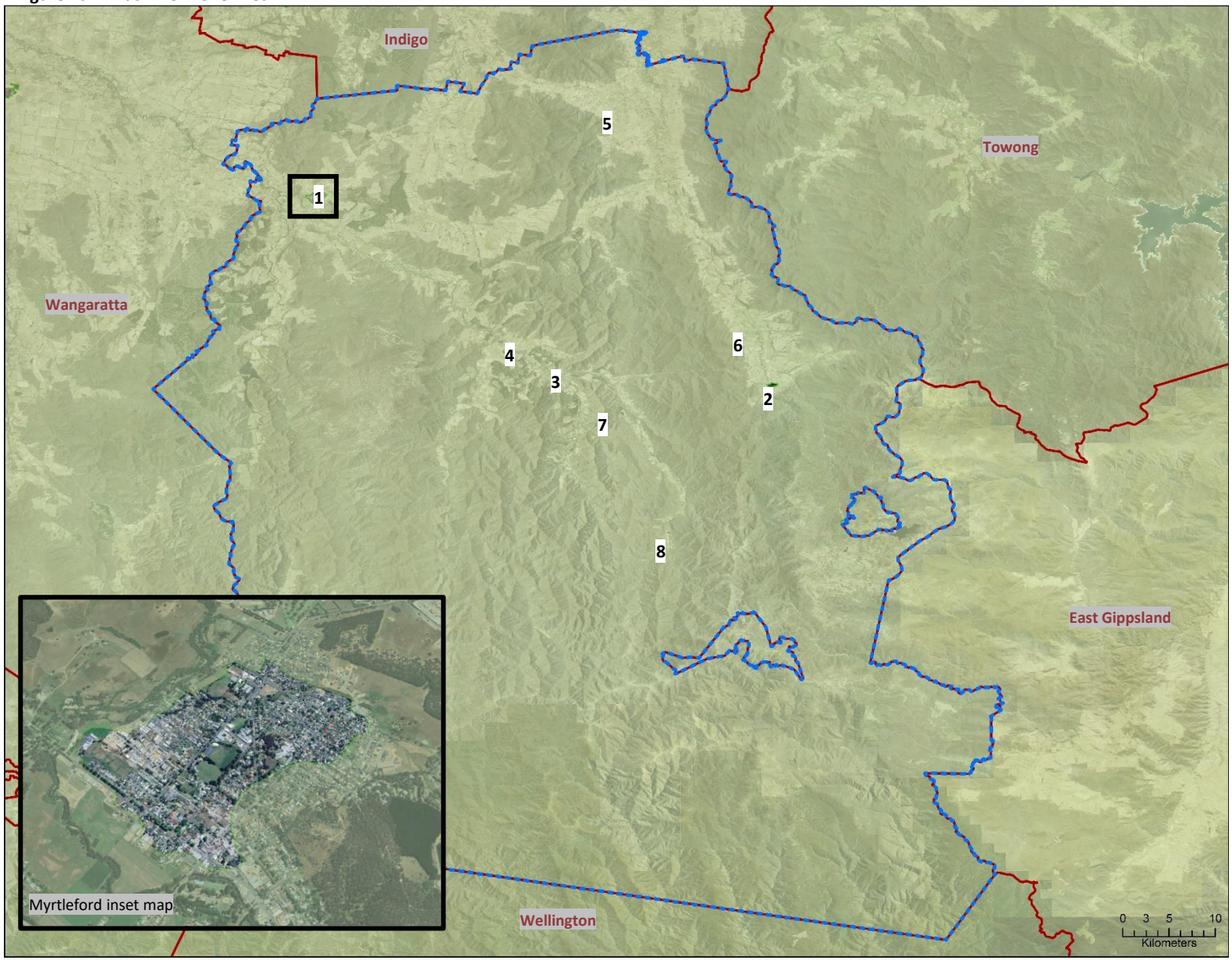


Figure 4d-2: Bushfire Prone Area

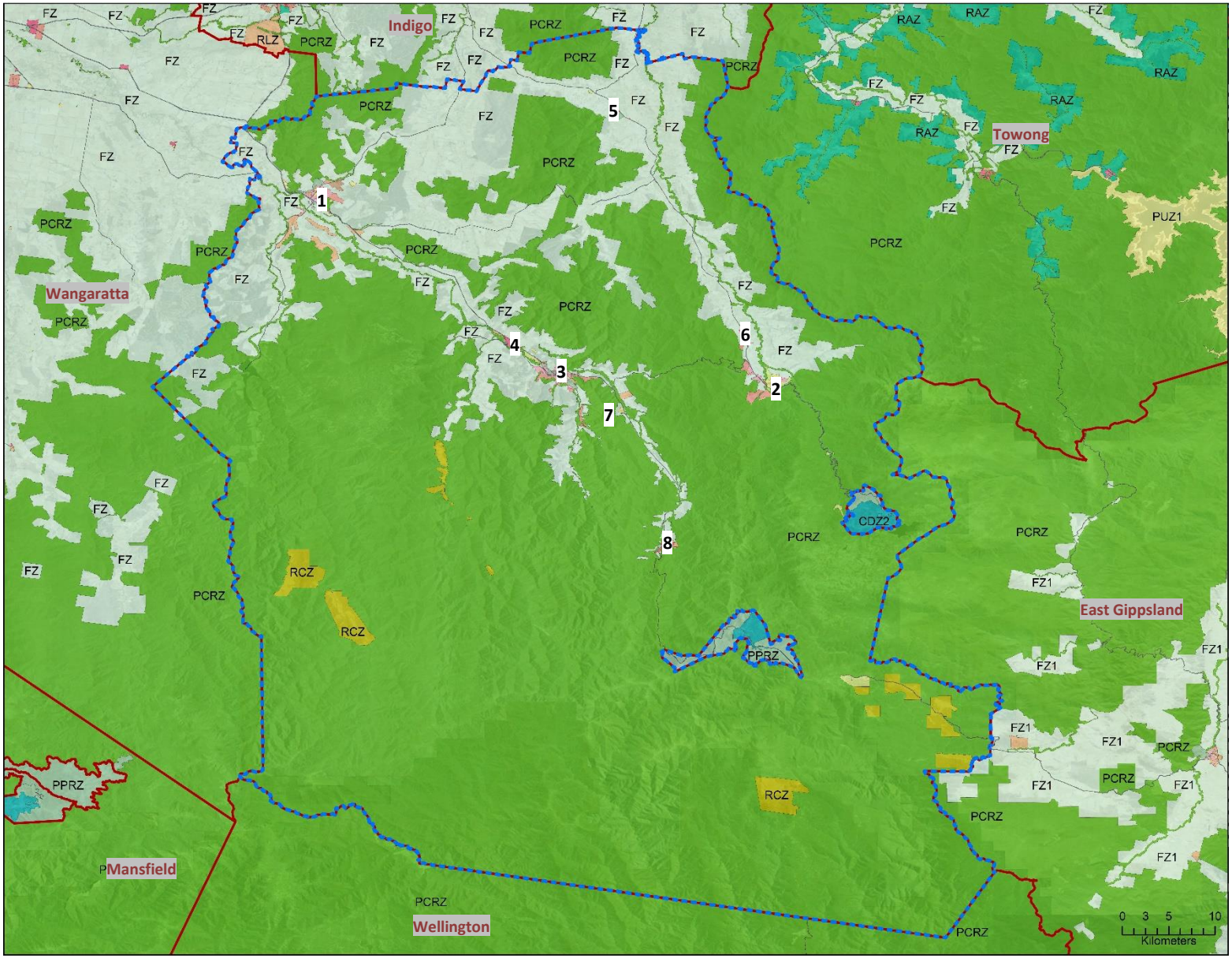


Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

Figure 4d-3: Zones



Study Area

Local Government Area

FZ

PCRZ

RCZ

Note: Not all zones shown on map are included on key

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 23/02/2024

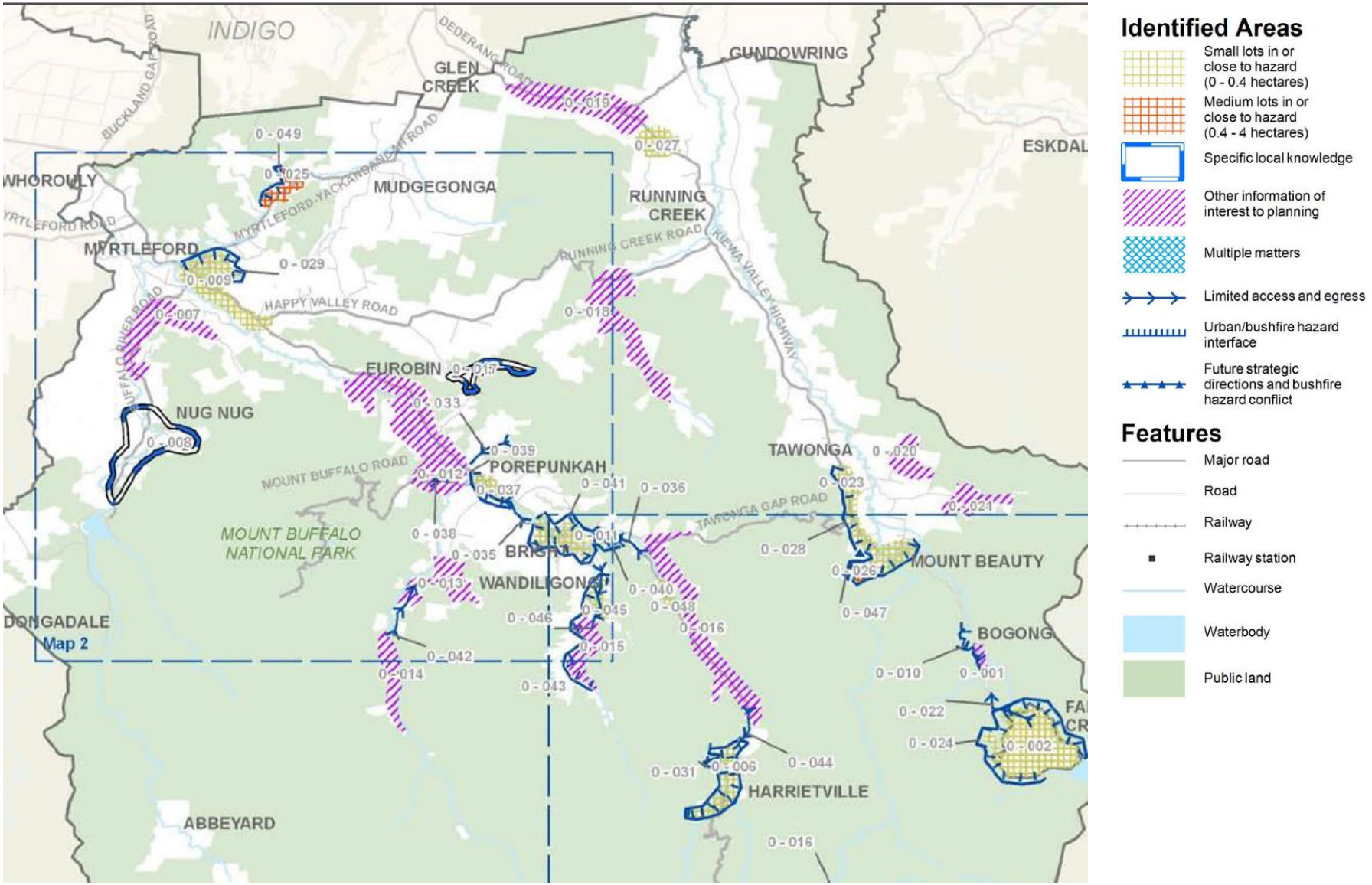
4e. Regional bushfire planning assessment

The *Regional Bushfire Planning Assessment Hume Region* 2012 (DPCD) provides information about 'identified areas' where a range of land use planning matters intersect with a bushfire hazard.

Identified areas include extensive hazard / settlement interfaces, small lots in or close to bushfire hazards, and development pressure in bushfire areas in many parts of the Study Area. Key issues also include local and strategic access challenges in many places.

See **Figure 4e-1: Regional Bushfire Planning Assessment**

Figure 4e-1: Regional bushfire planning assessment – Hume Region (extract)



Source: DPCD 2012

5. Landscape bushfires to be anticipated

Chapter 3 provided an appreciation of the bushfire hazard having regard to weather vegetation and slope / topography. Chapter 4 described contextual information including bushfire history, the bushfire management strategy guiding public agencies, Victorian Fire Risk Register, planning scheme bushfire designations and the regional bushfire planning assessment.

This Chapter takes the analysis forward by describing the landscape bushfires to be anticipated in the Study Area. Landscape bushfire considerations are important because they help to understand how bushfire may impact on a location, including the likelihood of a bushfire threatening a location, its likely intensity and destructive power, and the potential impact on life and property.

5.1 Likely landscape-scale bushfires

The range of vegetation types within the Study Area include large areas of forests, when considering both the EVCs present, land cover information and the vegetation types in *AS3959-2018 Construction of buildings in bushfire prone areas* (2018). Outside of the few larger settlements, vegetation capable of being a bushfire hazard applies to nearly all the Study Area. The slope and topography within the Study Area is dominated by mountainous areas, including areas of rugged terrain.

The vegetation / bushfire hazard and the terrain, when combined with Victoria's bushfire weather, means that large, landscape-scale bushfires are to be expected in the Study Area. These are enabled by long fire runs of a scale consistent with some of the longest fire runs in Victoria.

All forms of bushfire attack (flame contact, radiant heat, ember attack, extreme ember attack) can be generated by the landscape hazard and should be expected in all parts of the Study Area, although to different extents in different places.

The effects of climate change in combination with the landscape bushfire hazard means that bushfires are likely to become progressively worse. Based on past bushfires and modelled bushfire conditions, it is likely that the severity of bushfire would exceed the FFDI 100 and flame temperature (1080) used to inform bushfire setbacks in planning schemes (as expressed in the defendable space tables in *c53.02 Bushfire Planning*).

The bushfire landscape is sufficiently hazardous where interventions (for example, fuel reduction activities) do not materially affect the risk for the purpose of planning scheme decision making, especially under the worst bushfire weather conditions which are to be expected.

Whilst forests will carry large bushfires through the Study Area, they will interact with grasslands in the northern parts of the Study Area. These grasslands will be influenced by landscape bushfire behaviour by:

- Moving forest fires 'running' into grassland areas, the effect being wide grassfire fronts arising at the point of grassfire ignition.
- Ember attack (including extreme ember attack) into grassland areas, which can ignite individual grassfires well ahead of the main fire front.

Grasslands, because of the influence of forests, need to be considered within the frame of landscape bushfires rather than a more typical grassland which avoids the impact from forest fires (for example, in other parts of the region where only grassland hazards exist). A key input to planning scheme decision making is the distance grasslands are influence by landscape forest fires beyond which a 'typical' grassfire is appropriate to assume. This is considered in other parts of this report.

<u>Extreme bushfires</u>

It is reasonable to conclude that extreme bushfire behaviour is likely to arise in the Study Area. Filkov et al (2019) provides a definition of extreme fire behaviour from the (US) National Wildfire Coordination Group as follows:

> *Extreme implies a level of fire behaviour characteristics that ordinarily precludes methods of direct control action. One or more of the following is usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, strong convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously.*

The likely landscape bushfire may be a multi-day bushfire including bushfires in the landscape for weeks and potentially months at a time. There is also the potential for single day bushfire, with these correlating with where significant loss of life and neighbourhood scale destruction tends to arise as evidenced in past bushfires in Victoria (such as on Ash Wednesday and Black Saturday).

<u>Settlements</u>

Within the areas influenced by forests are settlements. These are variably affected by fire behaviour driven by north-west winds and on a typical wind change, south-west winds.

Moving bushfires are likely to impact on the edges of settlements where they adjoin bushfire hazards. Bushfire is likely to penetrate deep into settlement areas where there are continuous hazard paths, which may include riparian corridors and heavily vegetated parts of settlements. Flame contact from the fire front and very high levels of radiant heat are to be expected in settlement areas adjoining vegetation in a mostly natural condition.

Ember attack at high to extreme levels is likely to arise across all settlement areas. This will create localised fires with flames and radiant heat from vegetation in gardens, parks and on roadsides being on fire and from structures being on fire. Life threatening levels of radiant heat and flame contact from these localised fires are to be expected. Movement within settlement areas will be difficult during a bushfire, including because of smoke hazards.

Neighbourhood and settlement scale destruction is likely to arise wherever the landscape hazards interface with settlements, consistent with modelled house loss undertaken by DELWP (2020).

The likely landscape-scale bushfires described above have been realised frequently in the Study Area, as evidenced by bushfire history.

5.2 Grassfires

The Country Fire Authority (2024) identify the following grassfire characteristics:

- Grassfires can start and spread quickly and are extremely dangerous.
- Grassfires can travel up to 25 km per hour and pulse even faster over short distances.
- Grass is a fine fuel and burns faster than bush or forests.
- Grassfires tend to be less intense and produce fewer embers than bushfires, but still generate enormous amounts of radiant heat.
- The taller and drier the grass, the more intensely it will burn.
- The shorter the grass, the lower the flame height and the easier the fire will be to control.
- Grassfires can start earlier in the day than bushfires, because grass dries out more quickly when temperatures are high.

Interspersed with grassland areas are areas of fragmented vegetation. These will include clumps of non-grassland vegetation, roadside vegetation, strips of trees (for example, along vehicle accesses and water courses) and the occasional smaller patch of non-grassland vegetation. The extent of fragmentation will be a factor when considering bushfire at the local scale but the impact on landscape-scale bushfire is minimal. The grassland vegetation will be the dominant driver of bushfire behaviour in these grassland areas

6. Low hazard areas

An assessment has been made of areas that may be lower fuel where human life can be better protected from the harmful effects of bushfire. Lower fuel areas can provide protection at a settlement and neighbourhood scale as they provide a form of passive mitigation, enabling people to move away from bushfire hazards if they need to.

c13.02-1S Bushfire Planning defines such places as BAL:Low. BAL:Low places are where hazardous vegetation is more than 100m away (50m for grasslands). Hazardous vegetation for the purpose of BAL:Low is defined as vegetation that cannot be excluded under 2.2.3.2 of *Australian Standard AS3959:2018 Construction of buildings in Bushfire Prone Areas* (Standards Australia).

In BAL:Low places, people sheltering in the open air are assumed to not be exposed to flame contact and the highest levels of radiant heat from a moving bushfire front that would be harmful to people. This methodology for BAL:Low does not necessarily achieve this outcome because:

- BAL:Low does not consider ember attack or the potential for extreme ember attack.
- Land where the vegetation is low-threat as defined by *AS3959-2018 Construction of buildings in bushfire prone areas* (2018) but which still presents a bushfire hazard from localised vegetation and other flammable elements, including buildings being on fire, is not considered.
- Land in proximity to forested areas where there are steep slopes under the hazardous vegetation meaning flame contact and higher levels of radiant heat are still likely at harmful levels.

Despite limitations, policies relating to safer areas do provide a stepping-off point for considering safer areas in the development of planning responses to bushfire hazards.

6.1 Lower fuel areas in the Study Area

Lower fuel areas are available in the main settlements of Myrtleford, Porepunkah, Mount Beauty and Tawonga South. Parts of Bright have lower fuel areas but due to the linear configuration of this settlement, the lower-fuel areas may be some distance from urban land. Dederang also has a low fuel area.

See: **Figure 6-1: Locations that have lower fuel areas and BAL:Low capable land**

Given the bushfire hazard in the Study Area, including the vegetation types and rugged terrain, it is probable that an area of BAL:Low would not in fact be capable in all cases of protecting people sheltering in the open air from the harmful effects of bushfire.

Extreme ember attack is likely into lower fuel areas, along with the potential that low-fuel areas may not have the capacity to accommodate the number of people seeking shelter, especially at the peak of the tourism season which correlates with the bushfire season.

For these reasons, the utility of the measure of BAL:Low may not be relevant for some settlements in the Study Area. This issue is explored in more detail in the planning response to *c13.02-1S Bushfire Planning* later in this report.

Grassland areas have a credible basis for areas of BAL:Low to arise in conjunction with new development. This is because the separation distances to achieve an area of BAL:Low or an even larger area tend to be highly achievable in grasslands where larger lots exist in combination with a lack of non-grassland vegetation.

It is also common for there to be a lack of vegetation protected by the planning scheme in grasslands that makes providing the separation distances through vegetation management highly achievable. Low fuel areas can therefore often arise in conjunction with planning decision making in grassland areas. It is also possible to require this as a result of planning permission being granted / planning permit conditions.

6.2 Designated places of shelter

There are many designated neighbourhood safer place located in the Study Area. This is to be expected given the extent of bushfire hazard. Consistent with CFA advice, designated places of safety are not afforded any weight in planning decision making. This is because designated places of safety are not a justification to enable new risk to be introduced that is otherwise not consistent with planning scheme policies. There is also no assurance that any designated location will not change in future or be removed from being designated based on changed circumstances.

Planning scheme considerations around lower fuel areas may often correlate with the location of a designed neighbourhood safer place.

See: **Figure 6-2: Locations with Neighbourhood safer places**

6.3 Ember attack

All areas within the landscape, including BAL:Low areas and designated neighbourhood safer places, are likely to be subject to ember attack. In some places, extreme ember attack is expected. Sheltering in these locations and traveling to these locations during a bushfire will be uncomfortable and potentially dangerous for people.

Figure 6-1: Locations that have BAL:Low capable land

Figure 6-2: Locations with Neighbourhood Safer Places

7. Landscape types in the Study Area

Landscape types are applied from considering likely bushfire scenarios, the potential for neighbourhood scale destruction and the availability and access to safer areas. These matters are described in the preceding chapters.

The assessed landscape types enable locational policies in *c13.02-1S Bushfire Planning* to be considered based on the landscape risk of specific places in the Study Area as well as appreciating the relative risk between places within the Study Area.

7.1 Policies informing Landscape types

c13.02-1S Bushfire Planning includes strategies on locational considerations that influence where development could be directed to enhance life-safety outcomes in response to bushfire hazards. These locational policies relate to landscape bushfire considerations, availability of safer areas and alternative locations for development.

Landscape types provide a framework for bringing these policy considerations together in a spatial analysis of what might be acceptable according to *c13.02-1S Bushfire Planning*.

Landscape bushfire considerations

Landscape bushfire considerations include the scale of likely bushfire and the type of hazard in the wider locality where a bushfire can start and grow large. The following policies require these matters to be considered:

- *Considering and assessing the bushfire hazard on the basis of [..] landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site.*
- *Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.*

These policies ensure that decision making fully appreciates whether there is potential for the most destructive bushfires to arise. They emphasise the assessment of bushfire hazards not only very close to a site or area of planning interest but in the much wider area (referred to as the bushfire '*landscape*').

Alternative locations for development

An appreciation of alternative locations or growth and development can assist in considering where best amongst alternatives can life safety be enhanced. The following policies require these matters to be considered:

- *Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.*
- *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*

Policies on assessing alternative locations for development tend to be determinative to acceptable strategic planning outcomes, including because of their focus on directing development to low risk locations. In many bushfire settings, such locations often do not exists and reinforce the need to avoid planning scheme enabled new development.

Availability of safer areas

Consideration of how occupiers of a development or people living in a specific location can move to a safer area was introduced into planning schemes in 2017. Bushfire protection is enhanced where people have a layering of options available to them, including being able to move to a safer location.

The following policies require these matters to be considered:

- *Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia) where human life can be better protected from the effects of bushfire.*
- *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*

BAL:Low land is where hazardous vegetation is more than 100m away (50m for grasslands). Hazardous vegetation for the purpose of BAL:Low is defined as vegetation that cannot be excluded under 2.2.3.2 of *Australian Standard AS3959:2018 Construction of buildings in Bushfire Prone Areas* (Standards Australia).

7.2 Landscape types explanation

Landscape types (1-4) are described in *Planning Permit Applications Bushfire Management Overlay Technical Guide (DELWP, 2017).* Generally, as the landscape types identified progress through 1-4, the landscape risk increases.

See: **Figure 7-1: Overview of landscape types**

The identified landscape types in this report are strategic and are not intended to be scaled to apply to individual properties. Landscape types are not always a perfect match to a particular location but they remain useful including as a stepping off point for discussions and further investigations, especially the settlement assessments in Chapter 9 and the policy analysis in Chapter 11. They also assist to provide an indication on the relative risk in different parts of the Study Areas.

To simplify where landscape types apply, another data set may be used to define the spatial extent or boundary. For example, the Bushfire Prone Area, Bushfire Management Overlay or Victorian Fire Risk Register. Where another data set has been used, it is referenced to distinguish it from where expert judgement is otherwise used to define boundaries of the landscape types.

7.3 Assessed Landscape types

Based on the likely bushfire scenarios, the potential for neighbourhood scale destruction and the availability and access to low fuel areas, landscape types can be assessed. The assessed landscape types are shown in Figure 7-2.

See Figure 7-2: Assessed landscape types

7.4 Using the assessed landscape types shown in this report

The assessed landscape types have been prepared solely for the purposes of preparing this report. They are not intended to be applicable to other planning processes and they are not scalable to individual property boundaries. They should not be used for planning permit applications under the Bushfire Management Overlay.

Figure 7-1: Overview of landscape types

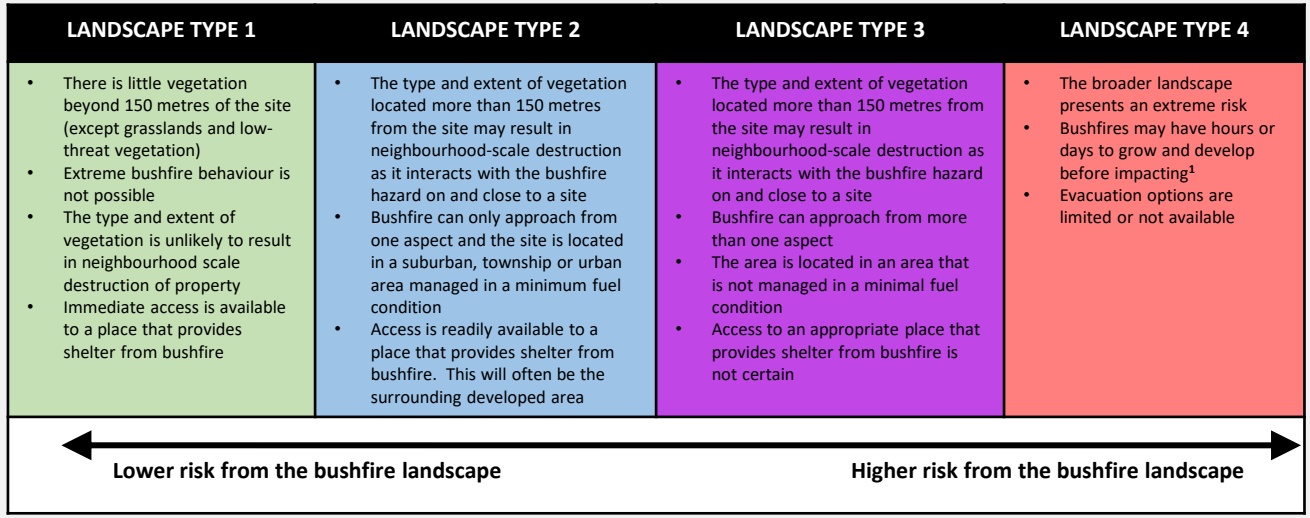
Planning Permit Applications Bushfire Management Overlay Technical Guide (DELWP, 2017) identifies landscape types to inform planning decision making based on the risk from the landscape beyond the site. They enable landscape bushfire information to be described according to a simple framework to assist planning decision making.

Landscape types assist in:

- Consistently describing landscape hazards. Landscape hazards are bushfire hazards more than 150m from an area that inform the likelihood of a bushfire threatening a location and its likely intensity and destructive power.
- Describing proximity and access to low fuel areas that may provide shelter from bushfire. In these areas, people may avoid flame contact and can withstand the effects of radiant heat from a moving bushfire.
- Understanding the relative risk between different locations.

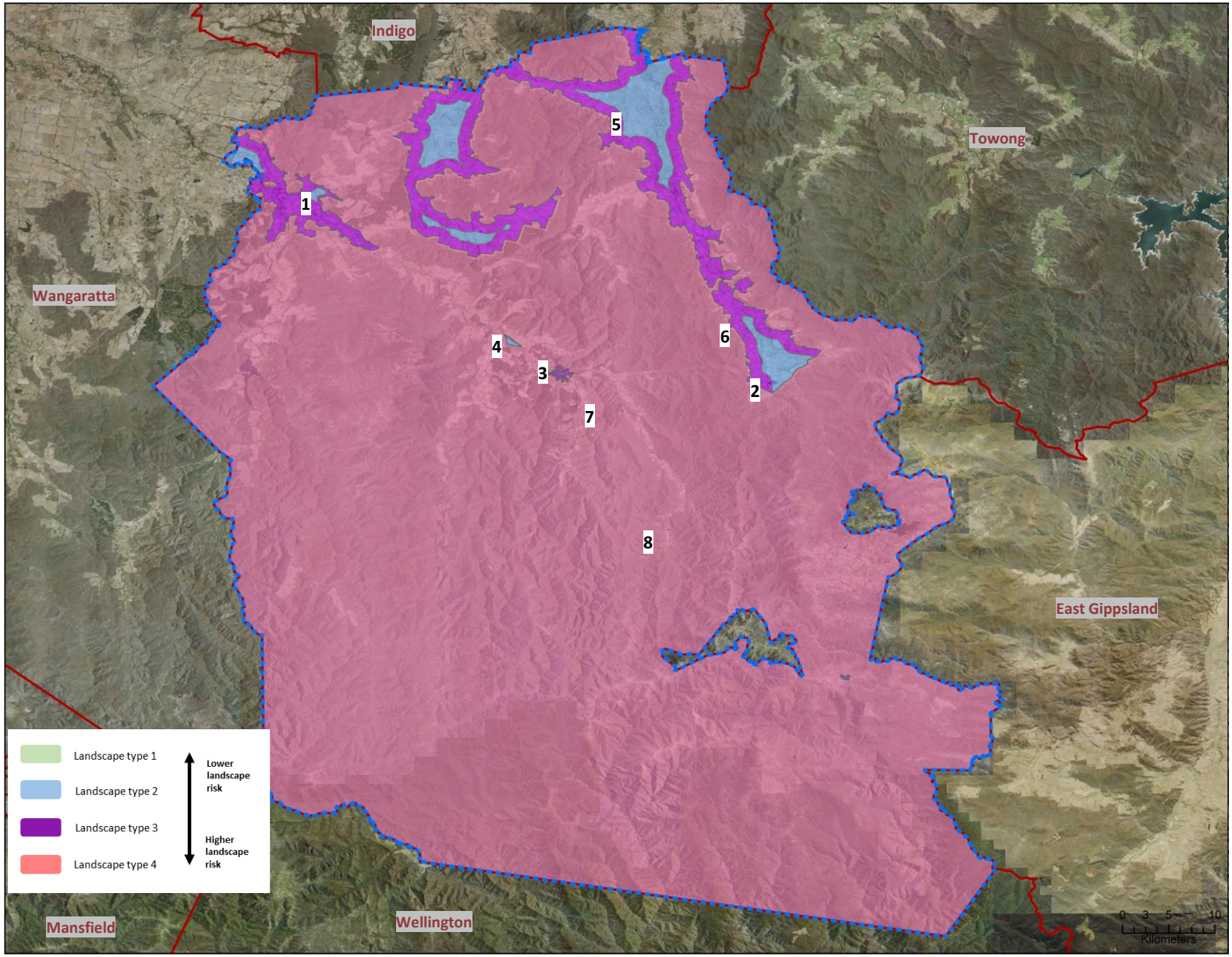
Landscape types when applied provide a spatial representation of how different areas are affected by landscape scale bushfire considerations. Based on this, places that are relatively higher or lower risk emerge.

The diagram on this page summarises landscape types.



[1] *Adapted by author*

Figure 7-2: Landscape types in the Study Area



Study Area

Road

Landscape type 1 (none)

Landscape type 2

Landscape type 3

Landscape type 4

Boundaries shown on this plan are schematic only and should not be scaled to property boundaries

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 5/04/2024

7a. Landscape type 1 locations

There is no Landscape type 1 assessed in the Study Area. Landscape type 1 generally applies to locations which are at the lowest-end of the landscape risk spectrum using the landscape type approach.

Given the potential for extreme bushfire behaviour in most parts of the Study Area, including in grasslands that are close to forested areas, the description of Landscape type 1 cannot be applied as it assumes minimal bushfire hazards in the wider landscape and no potential for extreme fire behaviour, conditions not applicable to the Study Area.

This chapter provides context on Landscape type 1 locations for reference only.

7a.1 Landscape type 1 planning description

Landscape type 1 is described by DELWP (2017) as follows:

- *There is little vegetation beyond 150 metres of the site (except grasslands and low-threat vegetation)*
- *Extreme bushfire behaviour is not possible*
- *The type and extent of vegetation is unlikely to result in neighbourhood scale destruction of property*
- *Immediate access is available to a place that provides shelter from bushfire (usually capable of being provided within a site or development proposal).*

7a.2 Land not included in a bushfire prone area

The methodology for assessing landscape types would ordinarily assess land not included in a Bushfire Prone Area as being Landscape type 1. This would have applied to the developed settlement areas of Myrtleford, the only part of the Study Area not within a Bushfire Prone Area (other than a water body in Mount Beauty).

See: **Figure 4d-2: Bushfire Prone Area**

Having considered the Bushfire Prone Area in Myrtleford, it is concluded that it is not being applied to properly capture the potential for ember attack and therefore should not be used as a proxy for land that is no bushfire risk or sufficiently low bushfire risk to warrant Landscape type 1 being applied.

The analysis and recommended adjustments to the Bushfire Prone Area (and Bushfire Management Overlay) are included in Attachment 2.

See: **Attachment 2 Review of planning scheme bushfire designations**

7a.3 Data informing landscape type 1 locations

Nil. No Landscape type 1 has been assessed.

7a.4 Appreciation of policy for landscape type 1 locations

Planning scheme directions that seek to direct growth to Landscape type 1 locations are likely to be favourably assessed against locational policies in *c13.02-1S Bushfire Planning.* There is however no opportunity for this in the Study Area.

7b. Landscape type 2 locations

This Chapter describes the locations which are at the lower-end of the landscape risk spectrum using the landscape type approach. They can be assessed as Landscape type 2.

See **Figure 7b-1: Landscape type 2 locations**

7b.1 Landscape type 2 planning description

Landscape type 2 is described by DELWP (2017) as follows:

- *The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site*
- *Bushfire can only approach from one aspect and the site is located in a suburban, township or urban area managed in a minimum fuel condition*
- *Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area.*

7b.2 Adjusting the Landscape type 2 planning description

Grasslands

The landscape types approach assumes all grasslands are within Landscape type 1 and will not be exposed to extreme bushfire behaviour. Given the extent of forests in the landscape, grasslands beyond the immediate forest interface (1km) are assessed as the relatively higher Landscape type 2 to emphasise the potential for extreme bushfire behaviour in the wider landscape.

Place of shelter

In a rural / grassland setting, Landscape type 2 does not currently have land managed in a minimum fuel condition (or no hazard condition). In the application of landscape types in a grassland setting, the emphasis is on the ability to create a no hazard area of land in conjunction with new development given the ease of which this is likely to be possible (essentially, mowing the grass).

This is the typical response to grassland areas in strategic planning decision making and is followed in this report.

7b.3 Where does Landscape type 2 arise?

Landscape type 2 arises in the following settings.

Grasslands

Grasslands beyond the immediate interface of forests. In these areas, there is potential for increased ember-ignited grassfires and multiple grassfires as bushfire moves out of the forest. They are not readily assessed as the alternative Landscape type 1 (see previous chapter). They are relatively higher risk by being in proximity to large forest areas.

Settlements

Most of the developed areas of Myrtleford, Mount Beauty and Porepunkah, emphasising the separation available to forest hazards and taking advantage of low hazard land available for shelter. Whilst it is recognised that in these settlements bushfire can approach from more than one aspect, the separation to forest fire runs and the minimum fuel condition of the settlements is emphasised in assessing this landscape type.

7b.4 Data informing Landscape type 2 locations

Grasslands

- Grasslands to the north Mount Beauty based on the western edge of the Bushfire Management Overlay (which itself is buffered off the forest edge by 150m), considering aspect where a fire in nearby forests to the east would be moving away from the area and proximity to low hazard land in the settlement of Mount Beauty.
- Grasslands within forested landscape (which is all grasslands) based on being at least 1.15km from the forest edge and 1km from the edge of the Bushfire Management Overlay, unless within a settlement outlined below. No accounting for aspect has been used in grassland areas assessed as Landscape type 2 except in Mount Beauty.

Settlements

- Land not designated as a Bushfire Prone Area in Myrtleford.
- Land in Mount Beauty based on being located to the west of forest hazards, thereby accounting for aspect where a fire in nearby forests would be moving away from Mount Beauty under dominant bushfire weather.
- Land in Porepunkah south of Station Street.

Figure 7b-1: Assessed Landscape Type 2 Locations

Study Area

Local Government Area

Landscape type 2

Boundaries shown on this plan are schematic only and should not be scaled to property boundaries

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong

Date: 05/04/2024

7c. Landscape type 3 locations

This Chapter describes the locations which are at the higher-end of the landscape risk spectrum using the landscape type approach.

See **Figure 7c-1: Landscape type 3 locations**

7c.1 Landscape type 3 locations

Landscape type 3 is described by DELWP (2017) as follows:

- *The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site*
- *Bushfire can approach from more than aspect*
- *The area is located in an area that is not managed in a minimal fuel condition*
- *Access to an appropriate place that provides shelter from bushfire is not certain*

7c.2 Adjusting the Landscape type 3 planning description

No adjustments are needed.

7c.3 Where does Landscape type 3 arise?

Landscape type 3 arises in the following settings.

Grasslands

Grasslands close to the forest interface. In these areas, the impact of forest fires nearby drives the landscape risk based on:

- The potential for increased grassfires from ember-ignitions arising from bushfires in forests.
- The potential for multiple grassfires and/or a wide fire front into grassland areas as bushfire moves out of the forest.

Settlements

Where parts of settlements are located within a forest landscape, including:

- The edges of Myrtleford, Dederang and Porepunkah.
- All of Tawonga and Tawonga South.
- Parts of Bright away from the immediate forest interface.

7c.4 Data informing Landscape type 3 locations

Grasslands

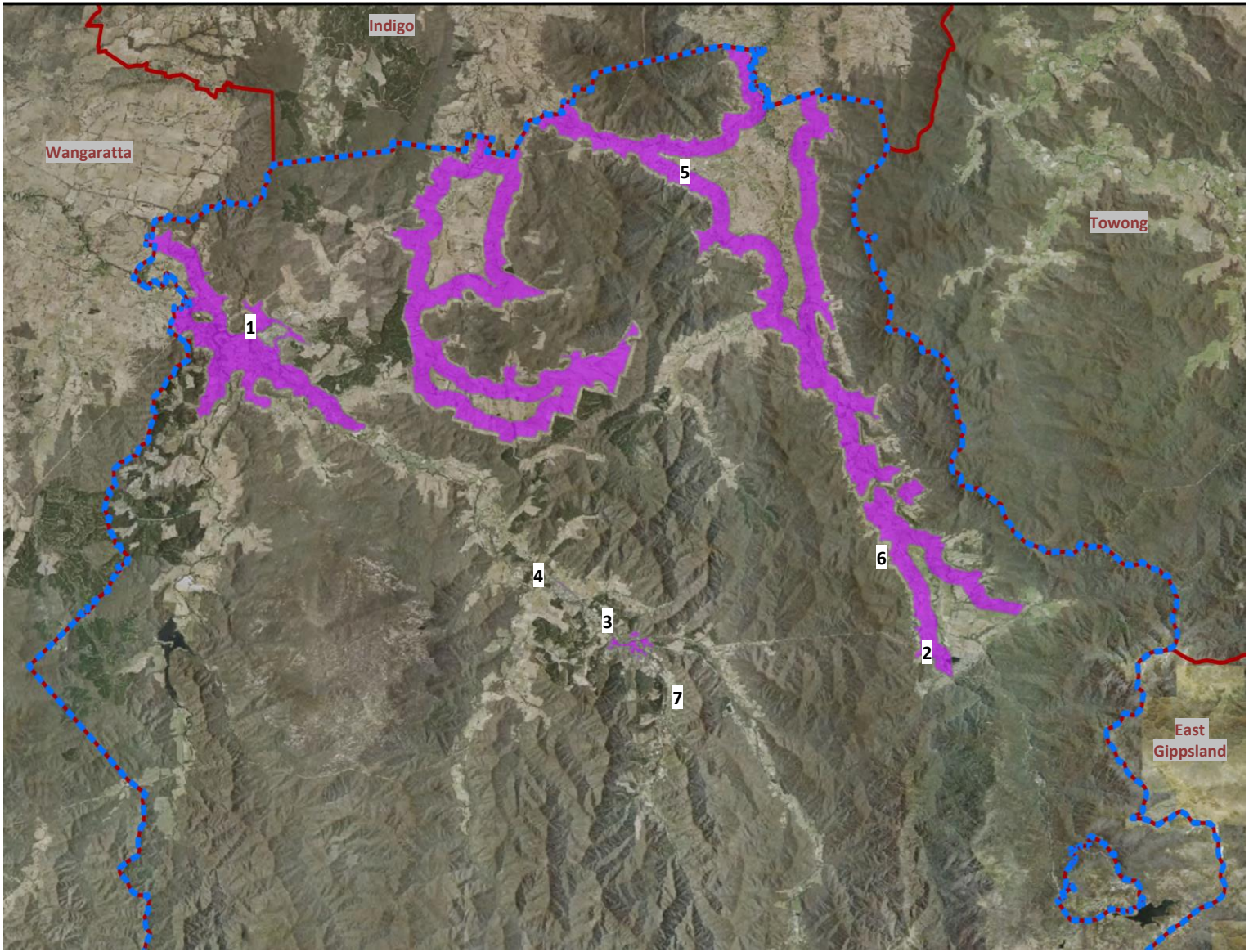
- Grasslands within forested landscapes (which is all grasslands) based on being between 150m and 1.15km from the edge of the Bushfire Management Overlay (which itself is buffered off the forest edge by 150m), unless within a settlement outlined below.
- Grasslands to the south of Myrtleford that are between 1km and 1.15kms from the edge of the Bushfire Management Overlay. This is extended in some parts to also apply to where a small area of land beyond 1.15kms arises that is not low hazard or within a settlement which would otherwise warrant Landscape type 2 if not for the landscape bushfire risk.
- No accounting for aspect has been used in grassland areas except the land to the north of Mount Beauty assessed as Landscape type 2.

Settlements

Settlements located between 150m and 1km from the edge of the Bushfire Management Overlay (which itself is buffered off the forest edge by 150m) except:

- Land in Myrtleford where the edge of Landscape type 3 is defined by the Bushfire Prone Area.
- Land in Bright where the extent of Landscape type 3 is defined by land include into a schedule to the Bushfire Management Overlay.

Figure 7c-1: Assessed Landscape Type 3 Locations



Study Area

Local Government Area

Landscape type 3

Boundaries shown on this plan are schematic only and should not be scaled to property boundaries

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong

Date: 05/04/2024

7d. Landscape type 4 locations

This Chapter describes the locations which are at the highest-end of the landscape risk spectrum using the landscape type approach.

See **Figure 7d-1: Landscape type 4 locations**

7d.1 Landscape type 4 areas

Landscape type 4 is described by DELWP (2017) as follows:

- *The broader landscape presents an extreme risk*
- *Bushfires may have hours or days to grow and develop before impacting*
- *Evacuation options are limited or not available*

7d.2 Adjusting the Landscape type 4 planning description

No adjustments are needed.

7d.3 Where does Landscape type 4 arise?

Landscape type 4 arises in the following settings.

Grasslands

Grasslands at the immediate forest interface. In these locations there is the potential for increased grassfires from ember-ignitions arising from bushfires in forests and the potential for multiple grassfires and/or a wide fire front into grassland areas as bushfire moves out of the forest. Extreme ember attack is to be expected.

Settlements

Where settlements directly interface with forests, including the edges of Myrtleford, Tawonga South and Bright.

7d.4 Data informing Landscape type 4 locations

Grasslands

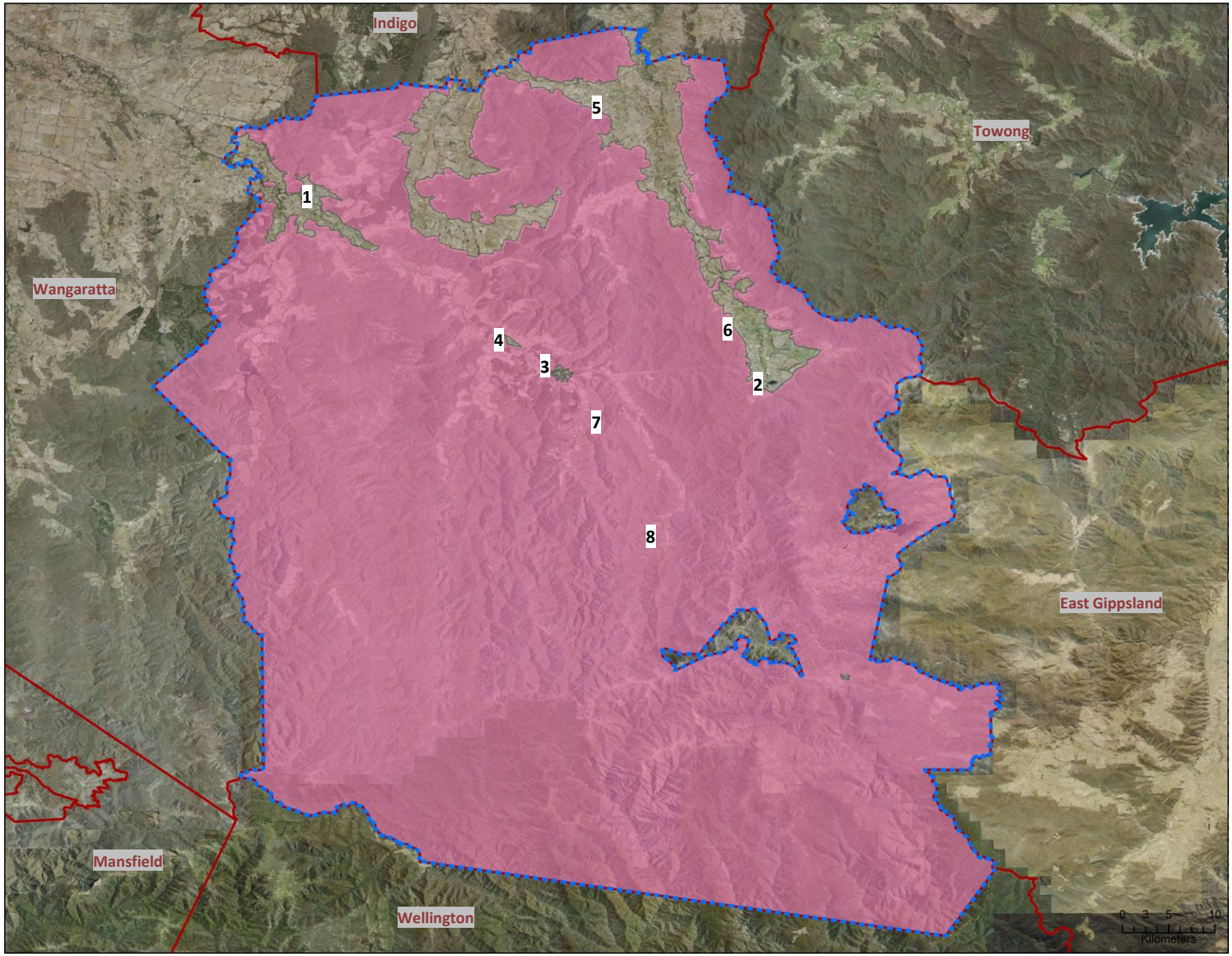
- Grasslands within the Bushfire Management Overlay (which is buffered off the forest edge by 150m), unless within a settlement outlined below.

Settlements

Settlements within the Bushfire Management Overlay (which is buffered off the forest edge by 150m), except:

- Parts of Bright included in a schedule to the Bushfire Management Overlay (and included in Landscape type 3).
- Mount Beauty which is assessed based on aspect as Landscape type 2.

Figure 7d-1: Assessed Landscape Type 4 Locations



Study Area

Local Government Area

Landscape type 4

Boundaries shown on this plan are schematic only and should not be scaled to property boundaries

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang
6. Tawonga
7. Wandiligong
8. Harrietville

Date: 05/04/2024

8. Regional and sub-regional appreciation of planning for bushfire

State bushfire policies require low risk locations for settlement growth to be considered on a regional or sub-regional basis. This supports ensuring that municipal boundaries do not preclude consideration of directing growth to lower risk locations outside of an individual local government area.

c13.02-1S Bushfire Planning includes strategies on locational considerations that influence where development could be directed to enhance life-safety outcomes in response to bushfire hazards. The following policy is especially relevant (emphasis added):

- *Assessing alternative low risk locations for settlement growth on a **regional**, municipal, settlement, local and neighbourhood basis.*

8.1 Hume Regional Growth Plan May 2014 (DTPLI)

The *Alpine Shire Council Land Development Strategy (November 2023) – Appendix A Planning Policy* includes a summary of the Hume Regional Growth Plan 2014. Extracts of this summary are included below (emphasises added in the primary document).

> *The Hume Regional Growth Plan applies to the twelve local government areas in North East Victoria (the Hume region), including Alpine Shire. The plan provides a regional approach to land use planning within a 30-year timeframe and identifies where development can be supported at a regional scale and priority areas for future infrastructure to support growth. It sets out the key strategic directions for this region, which are reflected in the PPF.*
>
> *Within the Central Hume sub-region, focus areas for growth are Wangaratta and Benalla. The implication of such a designation means those two cities are the focus for services and employment access planning and investment. Growth is also projected for the surrounding towns that have good access to Wangaratta and Benalla, including the communities of the Ovens (part of Alpine Shire), King and Broken River Valleys.*
>
> *In Alpine Shire, Myrtleford and Bright are identified as locations where increased tourism development (currently a major drive of the Hume Region's economy) and lifestyle opportunities may be concentrated. Myrtleford has the closest proximity to Wangaratta (40km west), with the next closest city being Wodonga (65km north). In the Kiewa Valley, Mount Beauty and Tawonga South are strongly linked to Albury-Wodonga, located in the Upper Hume sub-region.*
>
> *The following settlement hierarchy is identified for the Central Hume sub-region (towns/settlements in Alpine Shire highlighted in bold text):*
>
> - *Regional city – Major growth location: Wangaratta*
> - *Medium to high growth location: Benalla*
> - *Key sub-regional settlements – Moderate growth locations: **Myrtleford, Bright** (incorporating **Porepunkah**) and Mansfield.*
>
> *The Plan highlights key regional challenges, including existing skills shortages and the need for additional employment opportunities to support the projected regional population growth.*
>
> *It sets out a framework to support the future growth (Figure 1), according to the following strategies:*
>
> - *Focus growth and development specifically in the regional cities of Shepparton, Wangaratta, and Wodonga, and in Benalla.*
> - *Encourage residential growth in areas where there are supporting employment, transport services and commercial activities. Urban growth frameworks included in this plan broadly identify these areas for Shepparton, Wodonga, Wangaratta and Benalla.*
> - *[….]*
> - *The tourism industry will continue to generate regional wealth and interest from investors, including Alpine resorts which have the potential to offer a range of tourism activities year-round.*

See **Figure 8-1: Central Hume Sub-region – Future Urban Growth**

8.2 Planning Policy Framework

Selected policies from the Planning Policy Framework are outlined below, which appear to be derived from the Hume Regional Growth Plan 2014.

> *11.01-1R Settlement – Hume*
>
> *Facilitate growth and development specifically in the regional cities of Shepparton, Wangaratta, Wodonga and Benalla.*
>
> *Support growth and development in other existing urban settlements and foster the sustainability of small rural settlements.*

8.3 Discussion on regional growth settings

To the extent the Hume Regional Growth Plan 2014 directs growth at the regional level to Alpine Shire, from a bushfire perspective the approach does not reflect a contemporary approach to planning. Its approach is characterised by:

- Designating growth into bushfire areas without the technical basis for whether that growth can be realised in a life-safety context.
- Containing separate and conflicting policies that are unlikely to be resolvable at a municipal level from a bushfire perspective.
- Emphasising low and/or lower risk locations for growth but suggesting development can proceed in high-risk places if unavoidable, remaining silent on why growth is unavoidable when the levers to deliver avoidance are readily available through P&E Act 1987 decision making.
- Excessive framing of bushfire as a constraint to the achievement of other policy areas such as growth, biodiversity or township character rather than as a life safety imperative.
- Appearing to exclude the Bushfire Prone Area from consideration where *c13.02-1S Bushfire Planning* requires it to now be considered in planning decision making.

The Planning Policy Framework largely gives effect to the Hume Regional Growth Plan 2014 in both regional and local policies. Policies which cut across *c13.02-1S Bushfire Planning* as derived from the Hume Regional Growth Plan 2014 are unlikely to be realised.

It is essential to be cognisant of the operation of the Planning Policy Framework as established in c72 of the planning scheme, which requires planning authorities in bushfire affected areas to prioritise the protection of human life over all other policy considerations. This policy sentiment was within planning schemes at the time the regional growth plan was prepared but was better operationalised through c72 in 2017, after the regional growth was prepared. Such policy settings were recommended in 2011 by the *2009 Victorian Bushfires Royal Commission (VBRC)*.

The change is significant as to be meaningfully applied, life safety would operate to be prioritised over the regional growth plan. This is the correct approach to how planning schemes operate whilst also being essential to successful strategic planning which needs to consider low and lower risk outcomes in Alpine Shire.

8.4 Appreciating bushfire policies in the regional and sub-regional context

Regional growth planning directs the most change to the regional cities which includes Wangaratta, Benalla and Wodonga, all of which enable development to be low risk and significantly lower risk than development in the Study Area. This element of regional growth planning is self-evidently advantageous from a bushfire perspective.

Of more relevance is how the settlement hierarchy beyond these three larger settlements operates. Of most interest at the sub-regional scale are:

- Similar sized settlements to Myrtleford and Bright, including Euroa, Mansfield and Chiltern, that are significant lower risk.
- Other settlements such as Violet Town, Glenrowan and Springhurst that are significantly lower risk than any existing settlement in Alpine Shire.

See **Figure 8-2: Settlements on a regional and sub-regional scale**

To the extent that regional growth directions seek to provide a network of towns below Wangaratta, Benalla and Wondonga, there would seem to be many to choose from if looking for low risk settlements (or part thereof) and lower risk settlements relative to settlements in Alpine Shire.

8.5 What does this mean?

Relative to alternative locations at the regional and sub-regional scale, existing settlements in Alpine Shire are higher risk. But in absolute risk terms there are locations within Alpine Shire that can deliver low-risk outcomes as defined in planning scheme decision making.

The policy framing around this is important as it enables a shift away from any suggestion Alpine Shire is delivering a 'regional or sub-regional growth agenda' to one where new development is being considered within a municipal scale of assessment to achieve local planning objectives.

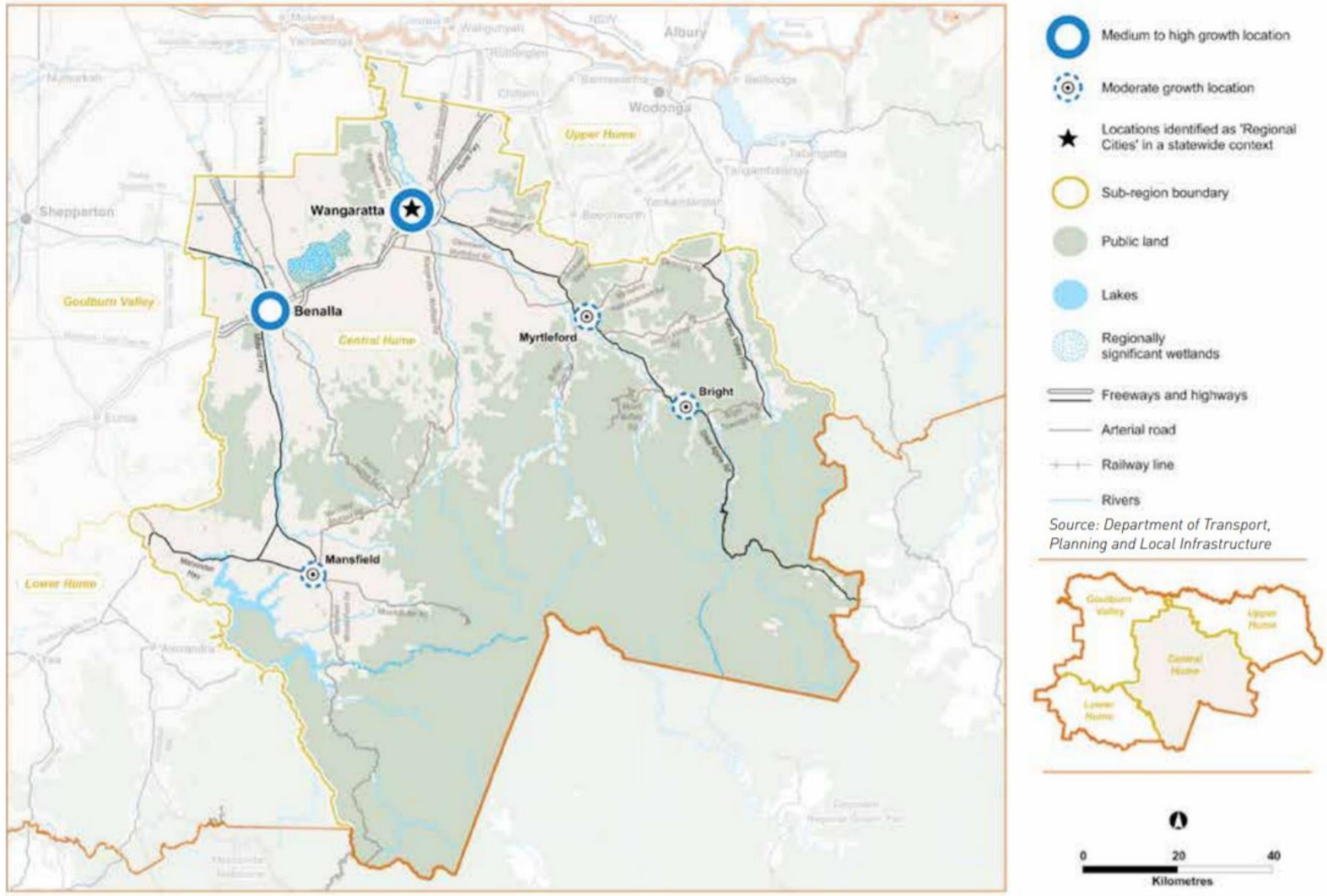
Being clearer about the justification for change enables decision makers to carefully weigh up the range of policies in *c13.02-1S Bushfire Planning*. Balancing within bushfire policy settings is to be expected, it is when balancing bushfire with other policies that strategic planning proposals become less acceptable and/or undeliverable.

A more nuanced approach can include, for example, policies that:

- Consider alternative locations for development within the municipal scale of assessment.
- Consider where new development can improve on existing conditions and deliver an overall risk reduce at the settlement scale.
- Consider specific uses rather than 'growth' as an all-encompassing objective, recognising that different uses (for example, single dwellings, other accommodation, economic development) present different bushfire risks in completed development.
- Are prepared to look beyond historical settlement patterns to 'find' low risk locations, even if they are locations not previously considered in strategic planning.
- Recognise that some places are too dangerous to develop and introducing more people should be avoided.

Successfully responding to bushfire is not a tick-a-box approach where 'failure' on one element of policy is fatal (which is no more credible than 'satisfying' one element of policy is sufficient). Instead, the role of strategic planning in Alpine Shire is to negotiate acceptable outcomes in a bushfire setting having regard to *c13.02-1S Bushfire Planning* as a whole and focused on life safety outcomes. The balance of this report seeks to achieve this.

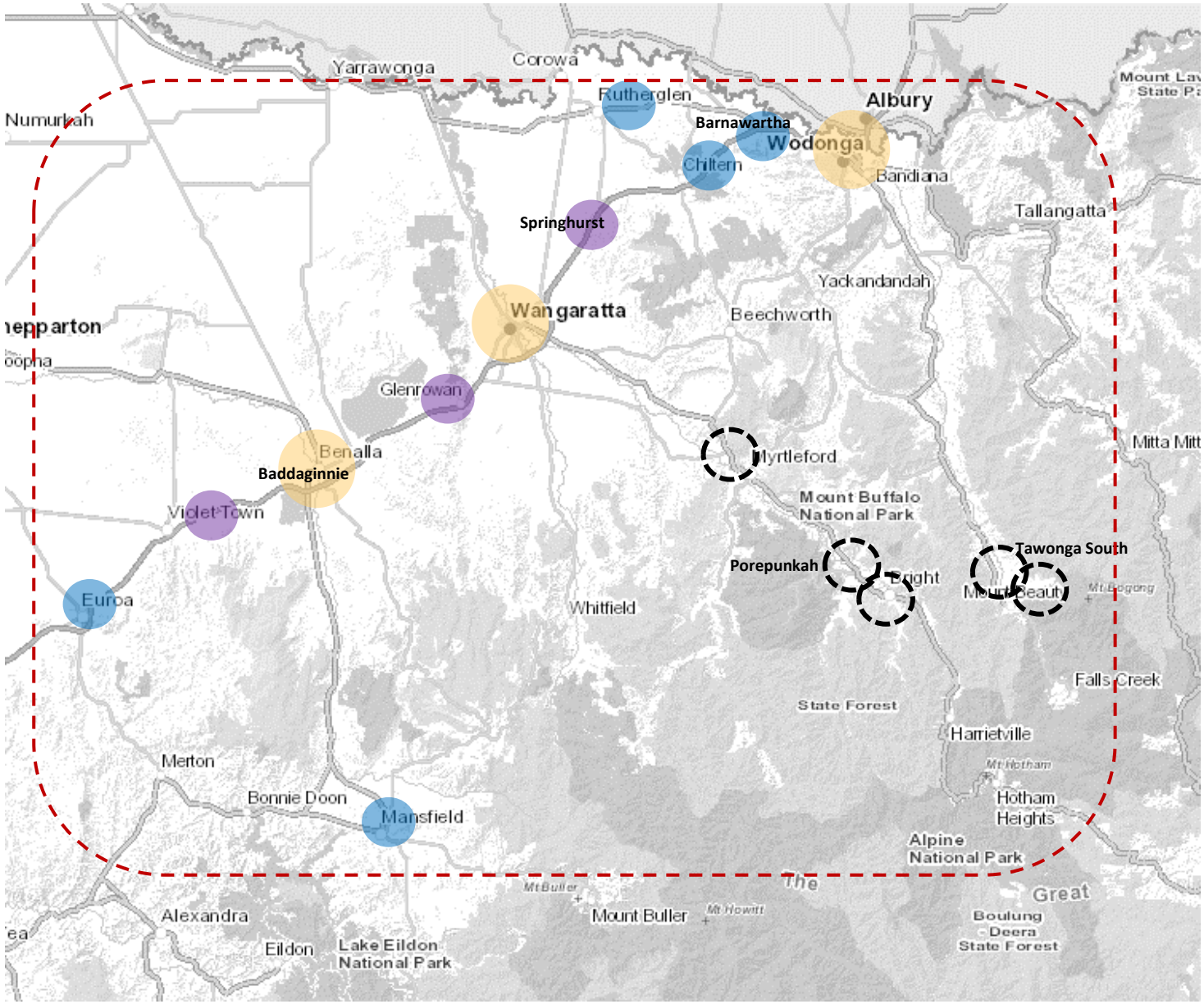
Figure 8-1: Central Hume Sub-region – Future Urban Growth



Source: Hume Regional Growth Plan, 2014.

SGS ECONOMICS AND PLANNING: : PLANNING POLICY

Figure 8-2: Settlements on a regional and sub-regional scale



Study Area

Sub-regional Study Area (notional)

Study Area larger settlements

Low risk settlements on a sub-regional regional scale

Lower-risk settlements relative to Myrtleford and Bright (at a similar size)

Lower-risk settlements relative to other Alpine Shire settlements

Date: 23/02/2024

9. Local and settlement assessments

Most of this report until now has focused on strategic and landscape bushfire considerations. *c13.02-1S Bushfire Planning* has a concurrent focus on local and settlement scales of assessment to ensure bushfire is comprehensively considered in any given location.

Whilst though the landscape types identified in Chapter 7, all existing settlements in Alpine Shire are assessed, this chapter looks at the following existing settlements in more detail:

- Myrtleford (Chapter 9a)
- Towonga South and Mount Beauty (Chapter 9b)
- Bright (Chapter 9c)
- Porepunkah Chapter 9d).
- Dederang (Chapter 9e)

See: **Figure 9-1 Settlements assessed In Chapter 9**

The analysis of these settlements is included in a separate document to manage file sizes.

9.1 Policies and guidelines informing local and settlement assessments

c13.02-1S Bushfire Planning includes strategies on local and site planning for bushfire. *Design Guidelines: Settlement Planning at the Bushfire Interface* (DELWP 2020) provides design advice on settlement planning. *c53.02 Bushfire Planning* includes approved and alternative measures to be applied alongside development, if a permit is required under the Bushfire Management Overlay.

These policies and guidelines are summarised in this chapter.

9.2 c13.02-1S Bushfire Planning

c13.02-1S Bushfire Planning includes strategies on local and site planning for bushfire, oriented around ensuring exposure to bushfire hazards on and close to a development locations are managed through bushfire setbacks and considering if there are safer areas nearby where people could seek shelter, if they needed to (for example, if their site-based mitigation fails).

Bushfire exposure benchmark

c13.02-1S Bushfire Planning provides directions for planning authorities about the level of acceptable exposure for new development enabled by a planning scheme amendment:

- *Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than a BAL-12.5 rating under AS3959-2018.*
- *Directing population growth and development to low risk locations, being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia).*

Exposure to meet planning scheme requirements is delivered through development being setback (i.e. separated) from bushfire hazards and where necessary, an area of defendable space being applied to maintain the setback land in a low fuel condition.

In this report, it is assumed that a responsible authority would require consideration of bushfire exposure for a planning application, as necessary under the Bushfire Management Overlay and as reasonable contemplated under the *c13.02-1S Bushfire Planning*. No distinction is made as to whether a planning permit would be required under the Bushfire Management Overlay.

Availability of safer areas

Consideration of how occupiers of a development or people living in a specific location can move to a safer area was introduced into planning schemes in 2017. Bushfire protection is enhanced where people have a layering of options available to them, including being able to move to a safer area.

The following *c13.02-1S Bushfire Planning* strategies require these matters to be considered:

- *Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia) where human life can be better protected from the effects of bushfire.*
- *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*

9.3 *Design Guidelines: Settlement Planning at the Bushfire Interface* (DELWP 2020)

Design Guidelines: Settlement Planning at the Bushfire Interface (DELWP 2020) (the '*Design Guidelines*') assists in the creation of responsive settlement planning outcomes. The Design Guidelines provide advice on strategic and settlement planning set out according to three themes:

- Form and structure of settlements
- The settlement interface
- Bushfire protection measures across a whole settlement. The Design Guidelines have been considered in preparing the local and settlement scale assessments in this report.

The Design Guidelines include a description of the bushfire threat to settlements. This is reproduced in this report to assist the reader to appreciate how bushfire may affect settlements.

See **Figure 9-2: Generalised understanding of how bushfire threatens settlements**

9.4 *c53.02 Bushfire Planning*

Where a planning permit is required under the Bushfire Management Overlay, site-based requirements arise under *c53.02 Bushfire Planning.* The main elements include the following approved measures in *c53.02 Bushfire Planning:*

- AM2.2 - Siting of development within a proposed lot.
- AM2.3 - Building design.
- AM3.1 - Defendable space and construction standards.
- AM4.1 - Water supply and emergency vehicle access.
- AM5.3 - Perimeter road adjoining permanent hazards.
- Emergency management planning

Site based requirements in *c53.02 Bushfire Planning* has been considered in preparing the local assessments in this report. Landscape and strategic factors are not considered in these chapters unless specifically identified as such.

9.5 *c13.02 Use and development control in a bushfire prone area*

Planning consideration is required under the *c13.02-1S Use and development control in a bushfire prone area* for many types of planning applications, including for vulnerable uses and to subdivide land into more than 10 lots. The use and development control requires that when assessing a planning permit application:

- *Consider the risk of bushfire to people, property and community infrastructure.*
- *Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.*

As the Bushfire Management Overlay may not always apply, the Use and development control will often be used to derive comparable outcomes in response to bushfire risks.

9.6 Methodology for local and settlement assessments

For each selected settlement, the following has been assessed:

- **Contextual information:**
  - Extent of existing residential Zone land, as a proximation of the existing settlement extent.
  - The 10m contour, to appreciate slope within the settlement and immediate surrounds.
  - Whether there is a Neighbourhood Safer Place in proximity to the settlement.
- **Bushfire assessments:**
  - Whether bushfire setbacks likely to be required by the planning scheme can be met.
  - How bushfire vegetation management is likely to be needed, including the introduction of new vegetation (hazards).
- **Design response inputs to future planning**
  - Whether there are preferred or acceptable directions for future growth, based on bushfire considerations.
  - Whether there are priority interfaces which could be optimised in any growth.
  - Whether it would be acceptable to consolidate development within existing urban boundaries.
  - Whether there are vacant sites where development would remove hazards as a beneficial element of future growth.

The output for each settlement is a settlement bushfire diagram with annotations. On each diagram, additional comments are added that might assist preparing future structure plans.

Figure 9-1: Settlements assessed in Chapter 9

Study Area

Local Government Area

Settlements

1. Myrtleford
2. Mount Beauty & Tawonga South
3. Bright
4. Porepunkah
5. Dederang

Date: 23/02/2024

Figure 9-2: How bushfire threatens settlements (DELWP 2019)

Understanding the bushfire threat

Landscape scale bushfire threats

Vegetation, topography and weather conditions are the three major characteristics that contribute to landscape scale bushfire threat.

The intensity and duration of a bushfire is largely influenced by these factors. These broader landscape characteristics strongly impact how a fire is likely to act and its probable size, intensity and destructive power and therefore its level of risk and potential to impact people and safety. In some circumstances the risk from a large bushfire cannot be mitigated, which is why development should be avoided in the areas of highest risk.

How bushfire may threaten a settlement

Bushfires are complex and many factors contribute to their behaviour and the threat they can pose. For the purpose of addressing bushfire through the planning scheme, there are three main factors to be considered at the settlement scale.

1. Flame contact and radiant heat
2. Ember Attack
3. Bushfire 'fuels' in vegetated areas

1. Flame contact and radiant heat

The settlement interface with the bushfire hazard is where a moving bushfire front will create flame contact and radiant heat that are harmful to human life and likely to destroy buildings.

Part 2 of the Guidelines provides direction on how to design the settlement interface to mitigate the impact of flame contact and radiant heat from a moving fire front.

2. Ember attack

Land on the settlement interface and land throughout a settlement may be exposed to ember attack.

Ember attack occurs when small burning twigs, leaves and bark are carried by the wind, landing throughout a settlement and igniting fuel sources. Fuel sources typically include vegetation but can also include buildings and sheds.

When ignited from embers, these fuel sources can generate flame contact and levels of radiant heat that are harmful to human life and can destroy buildings. Ember attack is the most common way that structures catch fire during a bushfire. Refer to Parts 1 & 3 on how to manage the threat from ember attack within a settlement.

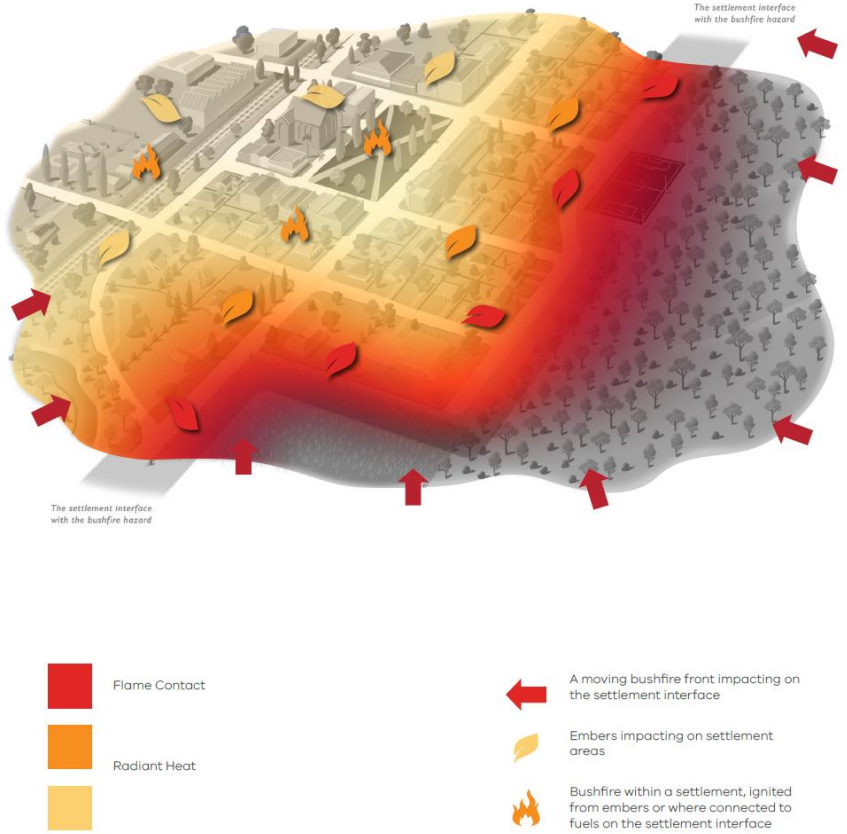
3. Bushfire 'fuels' in vegetated areas

'Fire runs' is the term given to describe how a bushfire will likely 'run' or move through a landscape. Fire runs are fuelled by vegetation and can be ignited where there is a continuous fuel path. This path may be from a forest and lead to a settlement. If the fuels at the interface are not managed it enables deeper penetration of a moving fire front or ember attack potential.

Vegetated areas within a settlement, such as nature reserves, river corridors and areas of remnant vegetation, can create a larger fire run by creating a continuous fuel path within or through a settlement.

Therefore, large vegetated areas may contribute to the fire run potential and therefore the risk to human life.

Refer to 1.4, 2.2, 3.1 and Attachment 1 on how to manage the threat from vegetated areas within a settlement.



10. A strategic approach to responding to bushfire in Alpine Shire settlement planning

Chapter 1 to 7 of this report provides bushfire information to enable *13.02-1S Bushfire Planning* to be considered in settlement planning. This chapter provides a framework for bushfire responsive settlement planning derived from *c13.02-1S Bushfire Planning.*

The purpose of setting this out before the *c13.02-1S Bushfire Planning* assessment in Chapter 11 is to identify an overall strategic approach, with risk reductions and risk increases, that when considered together as a strategic approach could demonstrate no net increase in risk and possibly a risk reduction overall on the current planning scheme settings. These risk changes can then be considered against *c13.02-1S Bushfire Planning*.

In considering a strategic approach to responding to bushfire in Alpine Shire settlement planning, there is opportunity to further consider inputs in the LDS 2023 as it continues to be developed, as follows:

- *Revisit predict and provide approaches to housing growth.*

The LDS 2023 uses past development trends as a broad guide to future growth in each settlement and the allocation of growth between settlements (see LDS 2023 Chapter 6, page 30). This approach is not suitable in bushfire constrained contexts because past development has mostly arisen outside of current planning scheme bushfire policies. Past trends are not an indicator of acceptable life-safety outcomes if those trends were continued.

- *Re-consider non-bushfire constraints on settlement growth*

The LDS 2023 is influenced by a range of policy constraints, planning scheme constraints and physical constraints. These may have worked to limit opportunities for bushfire-responsive development and/or provided a context for the proposed introduction of new risk into sub-optimal bushfire locations.

Potentially reconsidering non-bushfire constraints on settlement growth may result in new opportunities and options for achieving municipal planning objectives. The strategic approach set out in this chapter is somewhat dependant on this occurring.

- *Work with the community to understand sustainable but constrained settlements*

The preparation and approval of planning strategies do not always contemplate the true nature of bushfire risk and its likely impacts. In reviewing the LDS 2023 and its background & engagement products, there are not clear statements on bushfire risk that might be expected, including:

- That neighbourhood scale destruction and the loss of many houses is likely in many settlements in Alpine Shire.
- That bushfire is not only in the surrounding forests and plantations but will be in the towns and in the centre of towns.
- That as bushfire occurs and settlements are impacted, neighbourhood scale destruction and significant dislocation lasting many years is to be expected.
- That the historical lack of bushfire in the settlements in Aline Shire are a product of good luck, not any strategic indication of lower risks.

The above is realistic about what might be likely in future and how Planning and Environment Act 1987 decision making needs to occur in this setting. It is optimal to ask the community what they think of settlement planning in a context more soundly based in likely bushfires. We are optimistic that this report can support the Council to do this.

Using the above as a stepping off point, future strategic planning could be developed around a series of inter-related elements as follows:

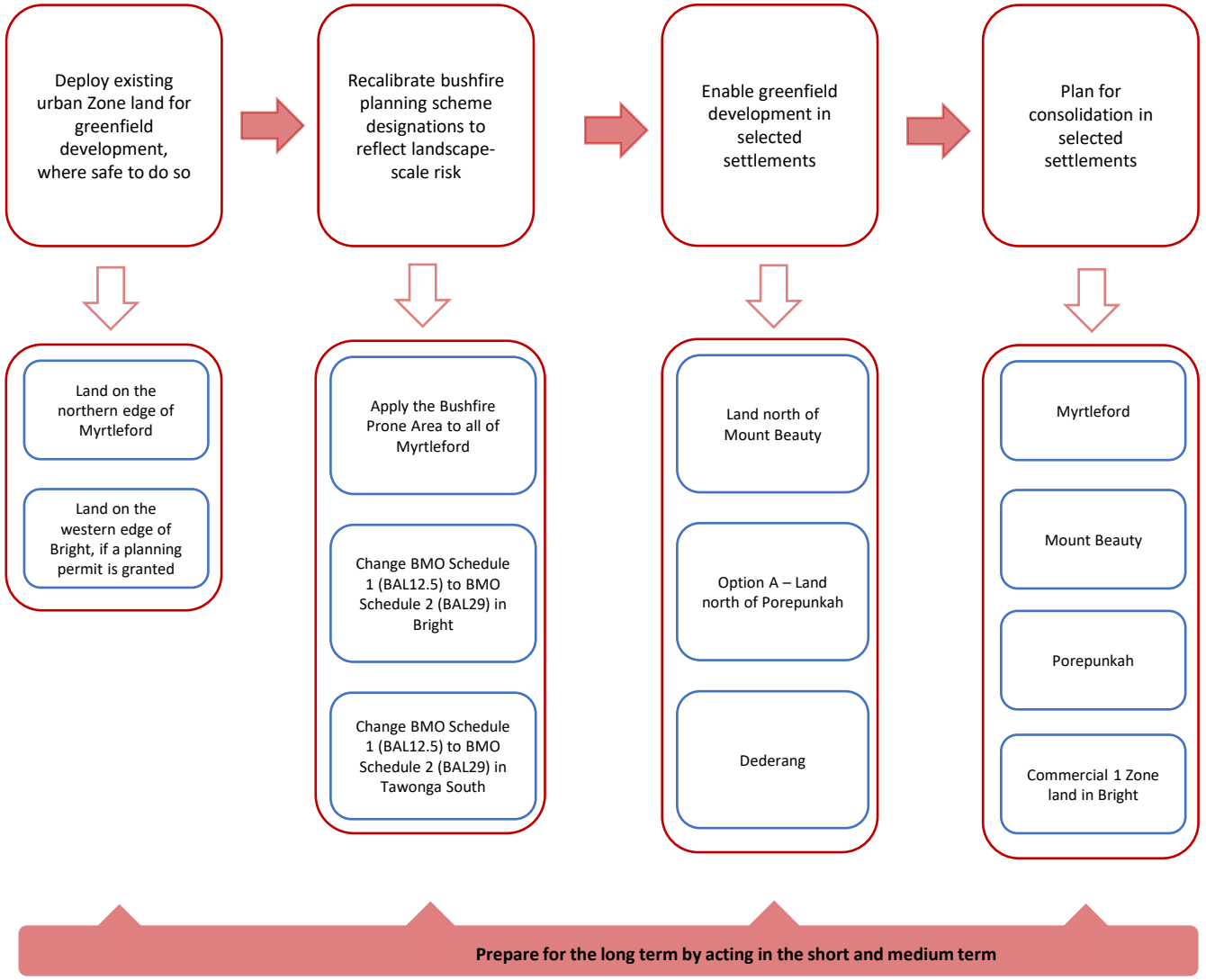
1. Deploy existing urban Zone land for greenfield development, where available.
2. Recalibrate bushfire planning scheme designations to reflect landscape-scale risk.
3. Enable greenfield development in selected settlements.
4. Plan for consolidation in selected settlements.
5. Prepare for the long term by acting in the short and medium term.

See: **Figure 10-1 Strategic approach to responding to bushfire in Alpine Shire settlement planning**

Each element is explained below.

The strategic approach is used in Chapter 11 to consider the risk changes and/or adjustments that are factored into the formal step-by-step assessment of *c13.02-1S Bushfire Planning.*

Figure 10-1: Strategic approach to responding to bushfire in Alpine Shire settlement planning



10.1 Deploy existing urban Zone land for greenfield development, where safe to do so

There are two existing greenfield development areas within the General Residential Zone:

- Land on the northern edge of Myrtleford; and
- Land on the western edge of Bright.

Chapter 9 (settlement chapters) describes these areas and concluded that at the site-scale they can achieve acceptable outcomes (and therefore partially satisfy *c13.02-1S Bushfire Planning*). At the landscape scale, they are high risk (especially the land in Bright).

Responsible authorities and relevant fire authorities tend to give significant weight to development proceeding where land is already Zoned for a specific use than if the same proposal required a planning scheme amendment to enable development.

c13.02-1S Bushfire Planning is therefore variable implemented between strategic planning proposals / planning scheme amendments and decisions on planning applications, despite there being limited planning scheme basis for variability.

In the context of delivering new housing, existing urban Zone land for greenfield development where available is a significant contribution to housing supply in the short to medium term at the municipal level.

Myrtleford

The risk to this land is from a patch of forest within the 'settlement' area of Myrtleford rather than from a continuous run of forest fire connected to the wider hazard in the landscape. This land is immediately connected to the existing settlement land and its low hazard core, meaning people will be able to walk several streets 'back' into the settlement and find places of enhanced safety (including land assessed as BAL:Low).

These advantageous features when combined with urban sized lots mean that completed development will mostly result in Landscape type 2 outcomes (or the lower end of Landscape type 3), consistent with other parts of Myrtleford. It is reasonable for the future planning of Myrtleford to factor in the build out of this land.

It is noted that the land is in several different parcels and may be not be emerging in a coordinated way from a bushfire perspective. If opportunity allows, it would be preferable for a development plan or similar to guide the subdivision of land to enable bushfire mitigation to be coordinated across multiple lots.

Bright

The undeveloped land at the western edge of Bright adjoins forests with landscape fire runs onto its edges. It will be at the immediate interface of landscape-scale bushfires. It is not located to immediately adjoin the low hazard parts of Bright and the movement of people to places of enhanced safety is sub-optimal.

If developed in way that maximises bushfire protection, it may result in land capable of being assessed in part as Landscape type 3, consistent with other urban parts of Bright. The location of the land in its bushfire landscape is unlikely to deliver low risk outcomes. But maximising bushfire protection on the land and achieving the best possible outcome in the context of development proceeding is necessary, if development is to proceed on this land.

Whether development proceeds on this land is subject to a planning permit being granted. Depending on that process, the land can be either factored into the build out of Bright or not. Self-evidently, if development does proceed on the land the supply of lots into Bright is secured for some time given the size of this land.

It is noted that the LDS 2023 includes a smaller area of land in multiple properties (approximately 8ha in total) also at the western edge of Bright and proposed to be included within a Low Density Residential Zone. Council has advised that up to 8 lots might arise on this land.

Given the scale of risk increase associated the larger greenfield land to the south, this smaller parcel of land is somewhat at the margins of risk increase when considered together. It is reasonable for the future planning of Bright to factor in the build out of this small parcel if the larger area of land is granted a planning permit.

10.2 Recalibrate planning scheme bushfire designations

Planning scheme bushfire designations comprise the Bushfire Management Overlay, schedules to the Bushfire Management Overlay and the Bushfire Prone Area (noting that the Bushfire Prone Area is designated under the Building Act 1993).

Whilst under constant review by the Department of Transport and Planning (DTP) through the State-led designations approach (as recommended by the VBRC), the designations in Alpine Shire are in parts now out of date and significantly so.

Attachment 2 details recommended changes, consistent with the scope of work for this assessment that included considering existing designations. The recommended changes arise from a need for bushfire designations to better reflect landscape bushfire risk rather than site-scale bushfire risk which was the dominant focus when the designations were initially prepared in 2014-2017.

The recommended changes in summary are:

- Apply the Bushfire Prone Area to all of Myrtleford.
- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Bright.
- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Tawonga South.

For the Council to action this change, this report can be provided to DTP. There is no statutory 'decision' required for this to occur. The Council would simply be providing information for consideration by DTP in refining bushfire designations in Alpine Shire.

Once within the State-led process, DTP will make its own investigations working with the CFA and will recommend to the Minister for Planning whatever it sees fit. Changes to designations would occur at the State-level as part of the regular designation updates. If DTP chooses not to proceed with any changes, that is a matter for them.

Changes to bushfire designations are prospective and not retrospective, they would only apply to new development seeking a planning or building permit after any changes were made.

Recalibrating planning scheme bushfire designations are important as they would enable bushfire designations to accurately reflect contemporary application including landscape bushfire risk. Importantly however for settlement planning, they provide a risk reduction in settlements where changes are made and can contribute to the careful calibration of risk overall, including in the context of new risk being introduced.

10.3 Enable greenfield development in selected settlements

There are two locations where some development could be enabled when assessed against *c13.02-1S Bushfire Planning* as part of an overall strategic approach to responding to bushfire in Alpine Shire.

10.3.1 Land to the north of Mount Beauty

Land to the north of Mount Beauty is within Landscape type 2. In itself, Landscape type 2 is an acceptable location to direct growth based on strategic and landscape factors in *c13.02-1S Bushfire Planning*. Chapter 9 (settlement chapters) describes that at the site-scale the land can achieve acceptable outcomes also. Overall, it is a favourable location in the Alpine Shire municipal context.

The LDS 2023 recognises the interrelationship of the settlements of Tawonga South and Mount Beauty. At these two settlement scales, land to the north of the Mount Beauty is the lowest risk location for growth amongst the alternatives within Tawonga South – Mount Beauty combined. Compared to the locations for greenfield growth in Tawonga South identified in the LDS 2023, land to the north Mount Beauty is significantly lower risk.

The Council should focus its efforts to exploring development on the northern edge of Mount Beauty in favour of all other greenfield locations in Tawonga South – Mount Beauty.

10.3.2 Porepunkah

Land to the immediate north of Porepunkah adjoins the existing Township Zone that is low hazard. The existing developed part of Porepunkah is mostly within Landscape type 2 for this reason (rather than the higher risk Landscape types 3 or 4), along with benefiting from generous setbacks from forests (to the north, over 600m). Porepunkah does however sit within a high-risk landscape.

The LDS 2023 identifies an 'Area for Investigation - Potential residential' to the north of Porepunkah. The settlement chapter for Porepunkah (in this report) identified two options for its northern growth to provide a basis for assessment.

Option A – Enable limited growth would involve one or three new rows of housing being provided immediately adjoining the existing Township Zone land. Given the length of the interface, up to 80 new lots (one row of new houses) or 240 new lots (three rows of new housing) could be created, which is strategically significant for Porepunkah and Porepunkah – Bright combined.

Option A could be justified according to *c13.02-1S Bushfire Planning* based on the following:

- Satisfying site-based considerations in *c13.02-1S Bushfire Planning,* which Chapter 9 confirms are capable of being met. This includes a perimeter road as the interface on the (new) northern edge of Porepunkah and development set back from grasslands to achieve Column A / no more than 12.5kw/sq.m of radiant heat.
- Requiring a BAL29 in completed development to provide strengthened ember protection in new dwellings in response to the landscape risk.

Development would be the form of a linear development across several land holdings. Coordinating development and the implementation of bushfire protection measures would be essential. A development plan for the entire interface could be prepared to manage this.

Porepunkah is not a low-risk settlement. However, introducing new greenfield development (risk increase) can be connect to a nuanced strategic approach including:

- Strengthening resilience at the settlement level in the planning scheme level by:
    - Recognising grassland areas to the north and south of Porepunkah (the current grasslands between the town and forests) as strategically beneficial and not to be comprised by other decisions unrelated to settlement planning. This includes not introducing new hazards associated with plantations or as mitigation in non-urban planning permit decisions.

- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Porepunkah, requiring a BAL29 for new dwellings which provides enhanced ember protection in response to the higher levels of ember attack to be expected and to support low hazard outcomes in settlement areas for shelter (enhancing the credibility of the BAL:Low land). This change is recommended in Attachment 2.

- Acknowledge and plan for an overall risk reduction when assessed against *c13.02-1S Bushfire Planning* by:
    - Recognising the current sub-optimal northern interface, especially the lack of a perimeter road, and that the introduction of limited growth provides the opportunity to create a bushfire optimised interface for the protective benefit and risk reduction for existing Township Zone land.
    - Recognise that enabling limited growth would arise in Porepunkah as an alternative to Bright (beyond existing Zoned land), with Porepunkah being relatively lower risk of the two settlements.
    - Carefully progressing strategic planning through a structure plan that has bushfire central to its analysis.

10.3.3 Dederang

Dederang is a smaller settlement and is not currently a focus for new development in strategic and settlement planning. Dederang is a location where new growth could be enabled. Dederang is a lower risk location which can be built on by:

- Taking advantage of land to the south of the existing Township Zone but which would remain more than 500m away from forests.
- Recognising the lack of an existing defined settlement edge and the potential for a moving grassfire to enter existing Township Zone land by:
    - Promoting development to the south and west to create a new, contemporary bushfire settlement edge. This would include perimeter roads and hazard management (if lot sizes larger than 1,200sq.m were proposed) which would be substantially lower risk than current settlement edges.
    - In planning development to the west, minimise the creation of linear development and substantial increases in hazard interfaces by require a *'rectangular'* development area comprising land up to Dederang Primary School (for example).
- Acknowledging the low hazard land to the east as part of the Dederang Recreation Reserve and the role it plays as a place of shelter, including land assessed as BAL:Low.
- Acknowledging a growing role for Dederang as a place of shelter and low hazard area in the wider Kiewa Valley.

Whilst fully serviced land and urban size lots would be preferred, there are strategic advantageous to Dederang further developing even in the context of low-density residential development that would justify development being directed there, in any event. But even if low density, the full suite of bushfire protection measures would be required.

Development in Dederang where supported as part of a settlement planning for Alpine Shire would benefit from a structure plan, development plan or similar to coordinate development and bushfire protection measures.

10.4 Plan for consolidation in selected settlements

Consolidation of settlements is a likely incremental change that will continue to occur in most settlements. The form of development is variable, with vacant lots being developed with a dwelling, older dwellings replaced by new dwellings, medium density housing, new businesses including for the visitor economy, and non-dwelling Accommodation (for example, hotels, bed and breakfasts, etc).

Incremental development will occur in settlements under current planning scheme controls if strategic and settlement planning is silent. Fire authorities and responsible authorities routinely approve new development that introduces more people into existing settlements. In some cases, the planning scheme enables and streamlines it (for example, through permit exemptions, streamlined provisions and BMO Schedule areas).

Decision-making for strategic and settlement planning needs to consider whether it seeks to manage issue of consolidation at all and if doing so, can such directions demonstrate bushfire risk is acceptably managed. It would be advantageous from a life-safety perspective that consolidation did occur within a settlement planning framework (such as a structure plan).

Some settlements do have favourable characteristics which could enable an emphasis on consolidation of existing settlement areas. This would require:

- A level of risk acceptance associated with strategic movement challenges along the Great Alpine Road and introducing more people into a constrained bushfire context (i.e. it is difficult to evacuate people out of a settlement or out of the bushfire landscape).
- The need for enhanced mitigation, mostly in the form of closure of uses and emergency management procedures for development, to seek to better manage people before, during and after a bushfire.
- The need to strengthen settlement resilience in response to consolidation, through the recalibration of bushfire planning scheme designations to reflect landscape-scale risk or specific changes to designations in response to consolidation.

The balance of the decisions on consolidation in selection settlements is a whole of system one, shared by the Council, relevant fire authorities and the Minister for Planning. The emphasis to be placed on emergency management agencies, including powers to manage people outside of planning decision making, may also be relevant.

The following lower risk parts of selected settlements could be considered for consolidation, subject to future structure planning.

10.4.1 Myrtleford

Myrtleford is optimised to promote consolidation taking advantage of the large area of low hazard land (BAL:Low assessed land) and the relative benefits of being separated from the immediate forest interfaces on the north-west and south-west. The residual landscape bushfire risk is from ember attack.

Consolidation focused on land not currently included in the Bushfire Prone Area or assessed as BAL:Low land (these are the same areas) would be a focus for consolidation. Given the favourable attributes of Myrtleford, consolidation for dwellings, town centre uses and tourism uses (including Accommodation) are likely to be acceptable. Promoting uses for vulnerable people in permanent accommodation would be less favourable assessed (for example, aged care).

Consolidation would be dependent on the adjustments to the Bushfire Prone Area recommended in this report (see Attachment 2), to ensure all new development is provided with ember protection.

It would also be prudent for the planning scheme to recognise grassland areas on all sides of Myrtleford as strategically beneficial and not to be comprised by other decisions unrelated to settlement planning. This includes not introducing new hazards, including as mitigation in planning permit decisions.

10.4.2 Mount Beauty

Mount Beauty is optimised to promote consolidation taking advantage of the large area of low hazard land and the relative benefits of being separated from the immediate forest interfaces on the north-west and south-west. The residual landscape bushfire risk is from ember attack although there is some risk form a south running bushfire, meaning nuance in the consolidation areas might be necessary.

Consolidation focused on the current BMO Schedule 1 land should be a focus. Given the favourable attributes of Mount Beauty, consolidation for dwellings, town centre uses and tourism uses (including Accommodation) are likely to be acceptable. Promoting uses for vulnerable people in permanent accommodation would be less favourable (for example, aged care).

Consolidation would be dependent on changing BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in areas proposed for consolidation, requiring a BAL29 for new dwellings which provides enhanced ember protection but also radiant heat protection from localised flaming elements such as structures being on fire. Given consolidation would likely involve structures being closer together, this would be a logical response.

10.4.3 Porepunkah

Porepunkah is optimised to promote consolidation taking advantage of the large area of low hazard land and the relative benefits of being separated from the immediate forest interfaces on the north-west and south-west. The residual risk is from ember attack.

Consolidation focused on the current BMO Schedule 1 land should be a focus. Given the favourable attributes of Porepunkah, consolidation for dwellings, town centre uses, and tourism uses (including Accommodation) are likely to be acceptable. Promoting uses for vulnerable people in permanent accommodation would be less favourable (for example, aged care).

Consolidation of an area would be dependent on changing BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in areas proposed for consolidation, requiring a BAL29 for new dwellings which provides enhanced ember protection but also radiant heat protection from localised flaming elements such as structures being on fire. Given consolidation would likely involve structures being closer together, this would be a logical response.

10.4.4 Bright

Bright is not especially optimised to promote consolidation as its low hazard areas are in three parts and localised hazards are present within the settlement. Bright also does not benefit from any separation between settlement areas and forests at the settlement – hazard interface.

Consolidation focused on Commercial 1 Zone in the town centre could be a focus for town centre uses and tourism uses (including Accommodation). Using planning permit conditions, these uses can be closed on high-risk bushfire days and this can materially reduce the risk to acceptable levels, despite the presence of otherwise unfavourable bushfire characteristics.

10.5 Prepare for the long term by acting in the short and medium term

c13.02-1S Bushfire Planning seeks overall risk reductions, where possible, as a positive outcome from strategic and settlement planning and, sometimes, to balance out any risk increases (within bushfire policy considerations).

The strategic approach to responding to bushfire in Alpine Shire settlement planning, set out in this chapter, would provide the Council with short term and medium term options, including securing adequate housing land supply for at least the next five years (if not more) at the municipal level (but not necessarily in each settlement).

There is a need however to look beyond short-term land supply to the medium to long term issues. There is no point seeking to respond to bushfire in future only once existing land is used up. Getting ahead of the issue well in advance of problems emerging is likely a more sustainable approach to strategic and settlement planning.

It may therefore be opportunistic to consider now how bushfire planning is to be managed in the long term in Alpine Shire. It may also be necessary to do so now, where long term decisions could enable short term growth and development.

10.5.1 Take advantage (in the medium to long term) of low-risk locations and outcomes

Landscape type 2 locations oriented to the northern parts of the Shire, especially around Dederang and Mudgegonga, provide a strategic opportunity to deliver low risk outcomes. Strategic and structure planning can recognise these areas as opportunities and start a process of considering if they can be taken advantage of (and how).

There may be a range of options, subject to further assessment, including:

- Establishing Dederang as a larger settlement, including land north of the Kiewa Valley Highway. This might recognise how development is driven by and attracted to Albury – Wodonga as a strategic driver and whether there is an economic basis for development in these areas.
- Considering whether these locations perform a role in future economic development, including for integrated developments seeking to take advantage of the mountainous setting and proximity to tourism assets without being in a settlement and which may otherwise be seeking to locate in higher risk parts of the Shire. By creating a strategic basis for directing this development in lower risk areas, more straight forward planning approvals can be envisaged.

10.5.2 Recognise the outwards growth of selected settlements is completing

Beyond existing Zone land and limited growth in selected locations as set out in this chapter, Bright, Myrtleford, Tawonga South and likely Porepunkah will be bushfire constrained settlements in perpetuity.

Future planning should assume there will be no more greenfield development, with settlement boundaries permanently constrained by bushfire. Explicitly recognising this as soon as possible is a central feature of the response to *c13.02-1S Bushfire Planning* in the next Chapter. It provides part of the risk reduction which can off-set limited risk increases contemplated in this report.

This is essential in the context that there is no absolutely low risk land in Alpine Shire (as evidenced by no Landscape type 1 being assessed).

It will be important and necessary that the upside of this report (where development could be justified) is coupled at the same time with restrictive policies, including to ensure the more difficult decisions are not deferred to a later unspecified time or subsequent Planning & Environment Act 1987 process.

Being clear about the strategic intention also delivers a level of planning certainty for communities on what future development could be expected.

A long-term approach to settlement boundaries in a bushfire constrained settlement is likely to be highly beneficial to creating strategic alignment and to securing CFA agreement to a long-term approach to strategic and settlement planning and the short term risk changes contemplated in this Chapter.

10.5.3 Create alignment outside of Planning and Environment 1983 decision making

Many ways in which a sustainable settlement arise are outside of new development or Planning and Environment Act 1983 decision making. The LDS 2023 includes many such actions.

This includes the role of advocacy in seeking new regulatory and other tools to support sustainable settlements in a high cost and bushfire constrained setting (for example, management of short-term accommodation, provision of housing for key workers, unlocking land where landowners are unwilling to do so, plantation management).

It may also be necessary to work with infrastructure providers to consider the delivery of new infrastructure in locations supportive of bushfire responsive settlement planning. This may require infrastructure providers to reconsider their plans and proposals in the medium term.

There may also be benefits in aligning economic development strategies with bushfire considerations to ensure the Council is promoting growth and development in locations which are reasonably likely to secure planning approvals.

11. Assessment against *c13.02-1S Bushfire Planning* and other bushfire provisions

This report has considered the bushfire context of the Study Area, the landscape hazard, the availability of low fuel areas and whether there are locations that could satisfy the *c13.02 Bushfire Planning* exposure requirement. It has further considered in Chapter 10 a strategic approach to responding to bushfire in Alpine Shire settlement planning, including specific ways settlement planning could emerge through an integrated series of proposals.

This chapter assess settlements in Alpine Shire and the strategic approach to responding to bushfire according to *c13.02-1S Bushfire Planning* and other bushfire planning provisions.

11.1 c13.02-1S Bushfire Planning

11.1.1 Landscape bushfire considerations

c13.02-1S Bushfire Planning requires a tiered approach to assessing the hazard:

- *Considering and assessing the bushfire hazard on the basis of [..] landscape conditions - meaning the conditions in the landscape within 20 kilometres and potentially up to 75 kilometres from a site.*
- *Assessing and addressing the bushfire hazard posed to the settlement and the likely bushfire behaviour it will produce at a landscape, settlement, local, neighbourhood and site scale, including the potential for neighbourhood-scale destruction.*

The bushfire hazard landscape assessment has considered the bushfire hazard at the strategic and landscape scales as required by these policies. Identified landscape types have been prepared that assist to appreciate different risks in different parts of the municipality and within settlements.

At the Shire-wide scale, Alpine Shire is a high risk municipality due to landscape bushfire considerations. Within this, risk is variable and requires a nuanced approach when considering risk differences between settlements and whether lower risk outcomes can be achieved in response to landscape bushfire considerations.

Whilst not a focus for settlement-level analysis this report, at a landscape scale Wandiligong and Harrietville are high risk settlements and are assessed as Landscape type 4. The Council's current approach to strategic and settlement planning for these places and the LDS 2023 does not direct growth to these settlements. They are not further considered in this Chapter.

Greenfield development / outward growth of settlements

Based on the strategic approach to responding to bushfire in Chapter 10, landscape bushfire considerations would derive acceptable outcomes where:

- Greenfield development is directed to Landscape type 2 locations comprising land north of Mount Beauty and to Dederang. These are settlements assessed in part as Landscape type 2 in Alpine Shire.
- Limited greenfield development directed to the north of Porepunkah (Option A) to take advantage of favourable features of this settlement, subject to risk reductions relating to existing settlement areas (BMO schedule changes set out in Attachment 2 and structure planning considering a BAL29 construction for new homes in greenfield areas).

  The planning authority would need to recognise that Option A would complete Porepunkah with a settlement boundary that is then fixed in perpetuity, based on landscape bushfire considerations.

  When considered together, Landscape type 2 outcomes in completed new greenfield development can be envisaged along with risk reductions for the settlement overall and planning scheme risk reductions from a bushfire responsive settlement boundary.

Realising greenfield development as above would be combined with deploying existing urban Zone land for greenfield development if granted a planning permit in Myrtleford and Bright.

Landscape bushfire considerations would indicate that selected settlements should not contain an outward growth trajectory based on landscape bushfire factors. This includes Bright and Tawonga South, and also Tawonga but this is not identified for outward growth in any event in the LDS 2023.

It also includes Myrtleford as being bushfire constrained moving forward, but this arises from the extensive flood affected land south of the existing settlement which would otherwise be worthy of consideration from a landscape bushfire perspective for greenfield development as the lowest risk land around Myrtleford.

Consolidation of settlements

Consolidation as part of future structure planning in lower risk parts of selected settlements can respond to landscape bushfire considerations by taking advantage of existing lower risk land.

Myrtleford, with Landscape type 2 areas, is suitable for consolidation subject to the adjustments to planning scheme designation set out in Attachment 2.

Mount Beauty, with Landscape type 2 areas, is suitable for consolidation subject to the consideration in structure planning of whether a BMO BAL29 schedule is appropriate in areas proposed for consolidation as set out in Attachment 2.

Porepunkah, with Landscape type 2 areas, is suitable for consolidation subject to the consideration in structure planning of whether a BMO BAL29 schedule is appropriate in areas proposed for consolidation as set out in Attachment 2 and where structure planning fixes the settlement boundary in perpetuity based on the landscape bushfire setting of the settlement.

Bright is more problematically consolidated as it is more suspectable to the impacts of landscape bushfires. Only the core Commercial 1 Zone land, which is already highly developed, is recommended for a policy of consolidation. This would be enabled in part by the adjustments to planning scheme designation set out in Attachment 2.

Overall

Greenfield development and consolidation in selected locations can satisfy landscape bushfire considerations in *c13.02-1S Bushfire Planning,* where forming part of a strategic approach to responding to bushfire in Alpine Shire.

11.1.2 Alternative locations for development

c13.02-1S Bushfire Planning includes two strategies that seek to direct new development:

- *Give priority to the protection of human life by [..] directing population growth and development to low risk locations[.]*
- *Assessing alternative low risk locations for settlement growth on a regional, municipal, settlement, local and neighbourhood basis.*

Chapter 8 considered Alpine Shire in a regional and sub-regional planning policy and bushfire context. Regional growth planning directs the most change to regional cities which includes Wangaratta, Benalla and Wodonga, all of which enable development to be low risk and significantly lower risk than development in Alpine Shire.

To the extent that regional growth planning provide a network of towns below Wangaratta, Benalla and Wondonga, there are many options if looking for low risk settlements (or part thereof) outside of Alpine Shire and lower risk settlements relative to settlements in Alpine Shire. Settlement planning in Alpine Shire should not seek to justify housing growth on a regional or sub-regional basis, as any reasonable consideration of alternative locations for development would not prioritise or emphasis Alpine Shire, quite the opposite.

Relative to alternative locations at the regional and sub-regional scale, existing settlements in Alpine Shire are higher risk. But in absolute risk terms there are locations within Alpine Shire that can deliver low-risk outcomes as defined in planning scheme decision making.

The policy framing around this is important, as it shifts away from any suggestion Alpine Shire is delivering a 'regional or sub-regional growth agenda' to one where new development is being considered within a municipal scale of assessment to achieve local planning objectives.

Being clearer about the justification for change enables decision makers to carefully weigh up the range of policies in *c13.02-1S Bushfire Planning*. Balancing within bushfire policy settings is to be expected, it is when balancing bushfire with other policies that strategic planning proposals become less acceptable and/or undeliverable.

To this end, at the municipal scale the strategic approach to responding to bushfire in Chapter 10 would:

- Direct new greenfield development to land north of Mount Beauty and Dederang, lower risk settlements in Alpine Shire.
- Directing limited greenfield development and consolidation to Porepunkah as part of an integrated strategy, recognising this settlement is not clearly low or high risk at all scales of assessment but has attributes of both.
- Direct consolidation to Myrtleford, Mount Beauty and Porepunkah, building on Landscape type 2 land or the potential to create Landscape type 2 outcomes in completed development when combined with some favourable locational attributes.
- Directing limited consolidation to Bright, recognising the Commercial 1 Zone land as the lowest risk part of the settlement.

At the sub-municipal scale, the strategic approach to responding to bushfire in Chapter 10 includes:

- Directing new greenfield development to Mount Beauty rather than Tawonga South. Mount Beauty is lower risk than Tawonga South.
- Directing new greenfield development to Porepunkah rather than Bright. Porepunkah is lower risk than Bright.
- Directing consolidation (and the development it might enable) to Porepunkah rather than to Bright. Existing settlement areas in Porepunkah are lower risk than all of Bright.

The strategic approach to responding to bushfire in Chapter 10 recognises that Bright, Myrtleford, Tawonga South and Porepunkah (once short-term greenfield development is delivered) would have a fixed settlement boundary in perpetuity and would no longer be recognised or revisited as preferred locations for greenfield development. At the planning scheme level, this is a significant risk management intervention, recognising them in statutory planning as not preferred locations for continuing outward expansion.

The strategic approach to responding to bushfire in Chapter 10 would also seek to prepare and plan for the long term by giving significant weight to lower risk land (Landscape type 2) in future strategic and settlement planning, recognising this land as being alternative locations for development of strategic significance given bushfire considerations. Part of this is considering what advocacy may be required to ensure development in low risk locations has a prospect of being realised.

11.1.2 Availability of safe areas

c13.02-1S Bushfire Planning requires a location that provides enhanced protection for life from the harmful effects of bushfire:

- *Ensuring the availability of, and safe access to, areas assessed as a BAL-LOW rating under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia) where human life can be better protected from the effects of bushfire.*
- *Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.*

Chapter 6 identified the BAL:Low land in settlements in Alpine Shire. The policy references the need for safe access to these areas as an indicator of acceptable risk. This bushfire assessment considers that such access should be within a settlement and not travel between settlements. Where within a settlement, access should generally be on foot and not through significant hazard areas that might prevent movement.

Giving effect to this element of *c13.02-1S Bushfire Planning*, the strategic approach to responding to bushfire in Chapter 10:

- Directs greenfield development to settlements with an area of BAL:Low, being Myrtleford, Dederang, Mount Beauty and Porepunkah. Greenfield development will also enable more BAL:Low land to arise.
- Directs consolidation only to settlements with an area of BAL:Low, being Myrtleford, Mount Beauty and Porepunkah.
- Takes a nuanced approach to consolidation in Bright, recognising its linear nature and area of BAL:Low land not being all that proximate to all parts of the settlement, resulting in only the Commercial 1 Zone land being emphasised for consolidation.

Using the above, settlement planning creates or takes advantage of land with access to a location that providers shelter from the harmful effects of flame contact and radiant heat from a moving bushfire. Access will be immediate and available by walking.

Any area of BAL:Low land may and likely will in Alpine Shire be exposed to ember attack at high levels. The presence of an area of BAL:Low is not of itself an indicator of acceptable risk outcomes but needs to be considered alongside other policies in *c13.02-1S Bushfire Planning*.

11.1.3 Site based exposure

c13.02-1S Bushfire Planning provides directions for planning authorities about the level of acceptable exposure for new development enabled by a planning scheme amendment:

- *Not approving any strategic planning document, local planning policy, or planning scheme amendment that will result in the introduction or intensification of development in an area that has, or will on completion have, more than a BAL-12.5 rating under AS3959-2018.*
- *Directing population growth and development to low risk locations, being those locations assessed as having a radiant heat flux of less than 12.5 kilowatts/square metre under AS3959-2018 Construction of buildings in bushfire-prone areas (Standards Australia).*

The assessment of site based exposure prepared for each settlement in Chapter 9 confirms that the strategic approach to responding to bushfire in Chapter 10 would only direct development to locations which can be set back from bushfire hazards to achieve a radiant heat flux of less than 12.5kw/sq.m in completed development.

Based on this, exposure of future development would be consistent with *c13.02-1S Bushfire Planning*. Each planning scheme amendment subsequently arising would need to confirm that site-based exposure is managed in development being enabled, with this typically being confirmed in the structure planning process.

11.1.4 Areas of high biodiversity conservation value

c13.02-1S Bushfire Planning provides directions on situations where bushfire and high biodiversity conservation values correlate:

- *Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement growth and development in bushfire affected areas that are of high biodiversity conservation value.*

The extensive covering of the Bushfire Management Overlay means that low hazard outcomes are required by the planning scheme in most settlements, in any event, through the automatic operation of *c53.02 Bushfire Planning*. In its operation, bushfire vegetation management will override any other vegetation management or protection requirement or preference.

Some growth would be directed to locations outside of the Bushfire Management Overlay (for example, Dederang). In the landscape setting of Alpine Shire, low hazard outcomes should be assumed as a condition of planning approval. Settlement and structure planning should require all new development to be low hazard consistent with vegetation management requirements in *c53.02 Bushfire Planning*. This will apply to any new greenfield development in Dederang or any development that seeks to take advantage of Landscape type 2 locations in the longer term, irrespective of whether the Bushfire Management Overlay applies.

It is beyond the scope of this report to assess the biodiversity conservation value of vegetation that may need to be removed or managed because of bushfire requirements. However, it will be necessary that where there is an unacceptable conflict it be resolved with development not proceeding and not a reduction in bushfire protection.

11.1.5 No increase in risk

c13.02-1S Bushfire Planning provides an overall view of acceptable risk:

- *Ensuring the bushfire risk to existing and future residents, property and community infrastructure will not increase as a result of future land use and development.*
- *Achieving no net increase in risk to existing and future residents, property and community infrastructure, through the implementation of bushfire protection measures and where possible reduce bushfire risk overall.*

The preparation of this bushfire assessment has been cognisant throughout of seeking to provide no increase in risk overall and where possible, reduce risk.

Underpinning this is the strategic approach to responding to bushfire in Chapter 10. By integrated a series of actions, some increasing the risk and some reducing the risk, it may be possible to demonstrate that overall and over a 10-20 year period, bushfire risk is not increased and potentially is reduced (at the planning scheme level).

As an integrated strategy, it is not the intention that only parts are progressed, including the parts that might support development. Both the parts that support development, the parts that seek to manage development, and the parts that restrict development, need to be progressed together as an integrated strategy.

This does not mean all in one planning scheme amendment. But some things cannot be deferred to an unknown timeline. In considering the strategic approach to responding to bushfire in Chapter 10 , it must be viewed as a package seeking to credibly respond to *c13.02-1S Bushfire Planning* and to a standard that would withstand scrutiny through planning processes.

Where this is done so, no increase in bushfire risk and a potential reduction in bushfire risk emerges in the strategic approach to responding to bushfire. It is not a like for like comparison, as some risk change is apparent relatively quickly (new homes in greenfield areas) and some risk change is only apparent over time (for example, settlement wide resilience if bushfire planning scheme designations are adjusted), and some change whilst administrative is strategically significant (for example, settlement boundaries where necessary are fixed in perpetuity).

Central to embedding risk management and risk reduction is the recalibration of bushfire planning scheme designations set out in Attachment 2. These are significant interventions to respond to landscape bushfire risk and will over time deliver a step change in settlement outcomes. They provide the baseline of risk change / reduction that other proposals can build on.

A core element of the strategic approach to responding to bushfire is to confirm now the long term approach to settlement boundaries, including that Bright, Myrtleford & Tawonga South and Porepunkah (once short-term greenfield development is delivered) would have a fixed settlement boundary in perpetuity and would no longer be recognised or revisited as preferred locations for greenfield development.

Such an approach is essentially a risk reduction tool based on the past approach to planning in Alpine Shire, where even recent rezonings (i.e. Bright) indicate incorrectly that outward growth is acceptable as an ongoing strategy.

There are many settlements in Victoria that do not have an outward growth trajectory. These settlements continue to deliver homes and sustainable communities but in ways that reflects various constraints, including bushfire. Examples include Marysville, selected settlements on the Great Ocean Road and in the Dandenong Ranges. Other places are constrained by policy, including settlements in green wedges or settlement boundaries arising from the Victorian Government distinctive areas and landscapes project (Torquay, Bellarine Peninsula) and (emerging) Bass Coast.

At the planning scheme level, confirming the long term approach to settlement boundaries is a significant risk management intervention, recognising them in statutory planning as not preferred locations for greenfield development or outward expansion in future.

Further elements include adjusting the trajectory of settlement planning in Alpine Shire by reconsidering non-bushfire constraints on settlement growth in lower risk locations, avoiding using past trends to predict future growth and working with the community to understand what a sustainable but constrained settlement looks like.

Over time, these actions will create virtuous and reinforcing bushfire responsive outcomes through many different strategic planning projects. Concurrently, they will also provide the basis for delivering strategic planning projects more effectively.

Enabling greenfield development on land to the north of Mount Beauty and Dederang can be low risk, not contributing to any risk increase as understood in Planning and Environment Act 1987 decision making.

Porepunkah has a comprehensive package of interventions that seek to demonstrate that overall there is no increase in risk at the settlement-scale, despite limited new greenfield development and consolidation. It is envisaged that the future of Porepunkah is likely to the main point of decision for relevant fire authorities and the Department of Transport and Planning within the strategic approach to responding to bushfire. This is because achieving no increase in risk and a risk reduction, where possible, is subjective. This report provides a basis for that subjective decision to be made.

Consolidation is directed to Myrtleford, Mount Beauty, Porepunkah and small parts of Bright, taking advantage of existing low hazard land where human life can be better protected from bushfire if site-based bushfire protection (i..e. a home) fails. The presence of the low hazard land can help to demonstrate that whilst neighbourhood scale destruction may arise, people have a credible option to be safe.

Change in Myrtleford and Porepunkah is premised on grasslands surrounding each settlement not being compromised over time with the introduction of non-grassland hazards. Chapter 9 (settlement chapters) identify these areas. Bushfire management planning, the day to day activities of the Council, CFA and land managers will support this.

However, planning decision making should be cognisant of this and not enable the introduction of bushfire hazards through planning decision making. A planning scheme designation of these areas will mitigate the risks by identifying these areas as strategically significant for the bushfire protection of the settlements.

There are precedents for such approached being taken in planning schemes, including c22.12 of the Yarra Ranges Planning Scheme that includes a mapped 'strategic fire break area' for Healesville. The recently adopted Surf Coast Statement of Planning Policy identifies bushfire landscape areas for strategic planning purposes on its framework plan.

When taken as a package, the strategic approach to responding to bushfire in Chapter 10 can demonstrate that settlement planning in Alpine Shire is giving effect to *c13.02-1S Bushfire Planning* and working to demonstrate that overall, bushfire risk is not increased and potentially is reduced (at the planning scheme level).

11.2 c44.06 Bushfire Management Overlay

Most of Alpine Shire is within the Bushfire Management Overlay. *c53.02 Bushfire Planning* will impose bushfire considerations and, if development proceeds, bushfire protection measures on conjunction with new development.

The recalibration of planning scheme bushfire designations to reflect landscape risk would involve some BAL12.5 areas becomes BAL29 areas. In the operation of the planning scheme, this automatically flows to planning approvals if the Minister for Planning agrees with the changes outlined in Attachment 2.

The requirements of *c53.02 Bushfire* can usually be met as they relate to the following site-based approved measures, including:

- AM2.2 - Siting of development within a proposed lot.
- AM2.3 – Building design.
- AM3.1 - Defendable space and construction standards.
- AM4.1 - Water supply and emergency vehicle access.
- AM5.3 - Perimeter road adjoining permanent hazards.

Unless within a schedule to the Bushfire Management Overlay (single dwellings only), the Bushfire Management Overlay will require landscape bushfire to be considered in determining whether the risk in any proposal is acceptable. The more definitive proposals are at the structure planning stage means necessary risk acceptance can be made strategically rather than each proposal / planning application having to re-revisit or demonstrate landscape bushfire outcomes.

Any developed enabled by a planning scheme amendment must ensure site-scale exposure to bushfire of no more than 12.5kw/sq.m of radiant heat. This is a tougher standard than required for a planning permit application under the Bushfire Management Overlay, enhancing bushfire safety. It will be necessary that the exposure standard is included in structure plans and each planning scheme amendment to ensure any future planning permit application does not default back to Bushfire Management Overlay requirements.

Approved Measure AM3.2 will require a perimeter road on all interfaces with bushfire hazards. This will provide a highly resilient interface to permanent bushfire hazards around greenfield development and new subdivisions. The requirement applies to low density development as it does to urban density development.

11.3 c13.02 Use and development control in a bushfire prone area

Planning consideration is required under the *c13.02-1S Use and development control in a bushfire prone area* for the proposal. The use and development control requires that when assessing a planning permit application:

- *Consider the risk of bushfire to people, property and community infrastructure.*
- *Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity impacts.*

The Use and development control in a bushfire area will apply to future planning applications to subdivide the land into more than 10 lots and where large numbers of people will gather. For the areas of Alpine Shire where the Bushfire Management Overlay does not apply, the Use and development control will assist to derive comparable outcomes to those for land within the Bushfire Management Overlay (which is entirely justified based on the landscape bushfire risk).

Due to the potential for large, landscape bushfires to arise, planning scheme requirements for vegetation management for bushfire purposes in *c53.02 Bushfire Table 6 Vegetation management requirements* can be applied to settlement land within the Bushfire Prone Area. This would only be Dederang and the core areas of Myrtleford. In combination with the Bushfire Management Overlay, this will mean all land being rezoned will be low-hazard.

Perimeter roads will need to be provided on grassland interfaces in Dederang. This would enable continuity to what is required in the Bushfire Management Overlay and would support an effective grassland interface arising. This outcome is typical in grassland areas, including in Melbourne's growth areas and arising from precinct structure plans and CFA requirements.

12. Recommendations

Based on the assessments in this report, it is possible to provide high-level recommendations to inform on-going settlement and structure planning in Alpine Shire having regard to *c13.02-1S Bushfire Planning*. The recommendations are especially derived from the assessed landscape types from Chapter 7 and the strategic approach to responding to bushfire in Chapter 10.

Recommendations need to be read alongside the commentary in the report.

12.1 Myrtleford

- Deploy existing urban Zone land for greenfield development, where available on the northern edge of the settlement.
- Recalibrate bushfire planning scheme designations to reflect landscape-scale risk, by applying the Bushfire Prone Area to all of Myrtleford as recommended in Attachment 2.
- Plan for consolidation in the low hazard parts of Myrtleford.
- Prepare for the long-term by acting now to recognise the outward expansion of Myrtleford for new homes is constrained by bushfire in perpetuity.
- Carefully consider in structure planning the role of non-permanently occupied development in the future growth of Myrtleford, including for tourism and industrial uses.
- Introduce into the planning scheme a strategic designation that identifies the grasslands around Myrtleford as important to bushfire safety and not to have new hazards introduced because of planning decisions.

12.2 Mount Beauty and Tawonga South

- Recognise capacity on existing urban Zone land for greenfield development in Tawonga South only if a planning permit has been granted.
- Recalibrate bushfire planning scheme designations to reflect landscape-scale risk by changing BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Tawonga South, as recommended in Attachment 2.
- Direct greenfield development to the north of Mount Beauty, being land assessed as Landscape type 2.
- Plan for consolidation in the low hazard parts of Mount Beauty, subject to considering in structure planning if more intensely developed land should be included into a BMO Schedule 2 (BAL29) (see Attachment 2).
- Prepare for the long-term by acting now to recognise the outward expansion of Tawonga South for new homes is constrained by bushfire in perpetuity.

12.3 Bright

- Recognise capacity on existing urban Zone land for greenfield development in Bright only if a planning permit has been granted.
- Recalibrate bushfire planning scheme designations to reflect landscape-scale risk by changing BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Bright) as recommended in Attachment 2.
- Direct limited greenfield development to the north of the Great Alpine Road (as shown in the LDS 2023) only if the larger greenfield land to its south is granted a planning permit for urban subdivision.
- Plan for consolidation in the existing Commercial 1 Zone land, subject to the recalibration of planning scheme bushfire designations as recommended in Attachment 2.
- Prepare for the long-term by acting now to recognise the outward expansion of Bright for new homes is constrained by bushfire in perpetuity.
- Consider an integrated approach to the presence of plantations to achieve risk reductions for Bright.

12.4 Porepunkah

- Direct limited greenfield development to the north of Porepunkah through Option A, being one or three rows of new lots adjoining the existing Township Zone land, with the outcome being considered and resolved in structure planning.
- Plan for consolidation in the low hazard parts of Porepunkah, subject to considering in structure planning if more intensely developed land should be changed from BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) (see Attachment 2).
- Prepare for the long-term by acting now to recognise the outward expansion of Porepunkah for new homes, once limited greenfield development to the north is completed, is constrained by bushfire in perpetuity.
- Introduce into the planning scheme a strategic designation that identifies the grasslands around Porepunkah as important to bushfire safety and not to have new hazards introduced because of planning decisions.

12.5 Dederang

- Direct greenfield development to the south and west of Township Zone land in Dederang.

12.6 Using landscape types to inform settlement planning

Settlement planning should direct growth to lower risk locations on a municipal scale of assessment, which is land generally described as Landscape type 2 as assessed in this report. This includes considering the opportunities for bushfire responsive outcomes on land around Dederang and orientated to the north-east of Alpine Shire.

13. Views of the relevant fire authority

c13.02-1S Bushfire Planning identifies that a key element of a risk assessment is to:

- *Consult[…] with […] the relevant fire authority early in the process to receive their recommendations and implement appropriate bushfire protection measures.*

The Country Fire Authority (CFA) were consulted during the preparation of the LDS 2023 and at that time (March 2023) sought for bushfire to be considered through a more strategic and *c13.-02-1S Bushfire Planning* approach. This advice was a key driver to this bushfire study being commissioned.

The CFA and Council participated in a joint field inspection of settlements in Alpine Shire as part of preparing this report, held on 18 March 2024. The engagement from the CFA assisted in appreciating their perspective on the bushfire hazard and planning in Alpine Shire.

This bushfire study can provide the basis for further CFA engagement as strategic planning proceeds in Alpine Shire.

14. Conclusions

This report has considered bushfire for the purpose of settlement planning in Alpine Shire, with a focus on Myrtleford, Tawonga South & Mount Beauty, Bright, Porepunkah and Dederang.

The bushfire assessments and *c13.02-1S Bushfire Planning* have informed a strategic approach to responding to bushfire as set in Chapter 10. Through this, an integrated series of actions have arisen that seek to demonstrate to decision makers an approach which effectively manages bushfire risk for the purpose of Planning and Environment Act 1987 decision making.

Bushfire is necessarily nuanced. Different scales of assessment (regional, sub-regional, municipal, settlement and site) provide different perspectives on risk. Bushfire is also a dynamic hazard, with models and calculations rarely capturing the true nature of risk that has so often been realised in Victoria over the past 100 years.

This report seeks to provide a basis for the Council to consider settlement planning in a bushfire responsive way, to engage with the CFA, and to find acceptable risk outcomes that have confidence of being authorised for a planning scheme amendment, withstand scrutiny at a planning panel, and capable of being approved by the Minister for Planning.

Based on the assessments undertaken, the strategic approach to responding to bushfire as set in Chapter 10 can demonstrate that settlement planning has:

- Considered and applied *c13.02-1S Bushfire Planning*.
- Future development being enabled can give effect to *c44.06 Bushfire Management Overlay* and the *c13..02-1S Use and development control in a bushfire prone area* in future planning applications.
- Delivered an acceptable level of bushfire risk in the short and long term in what is one of the highest risk municipalities in Victoria.

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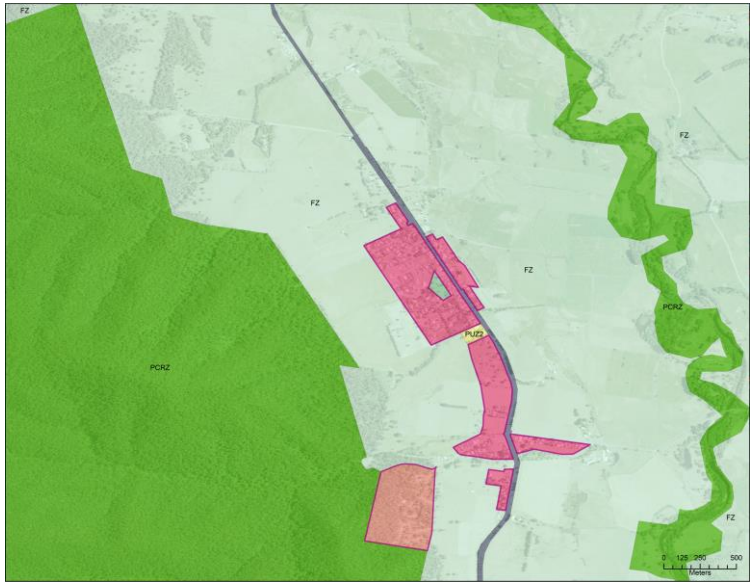
Attachment 1: Contextual information for settlements not assessed in Chapter 9

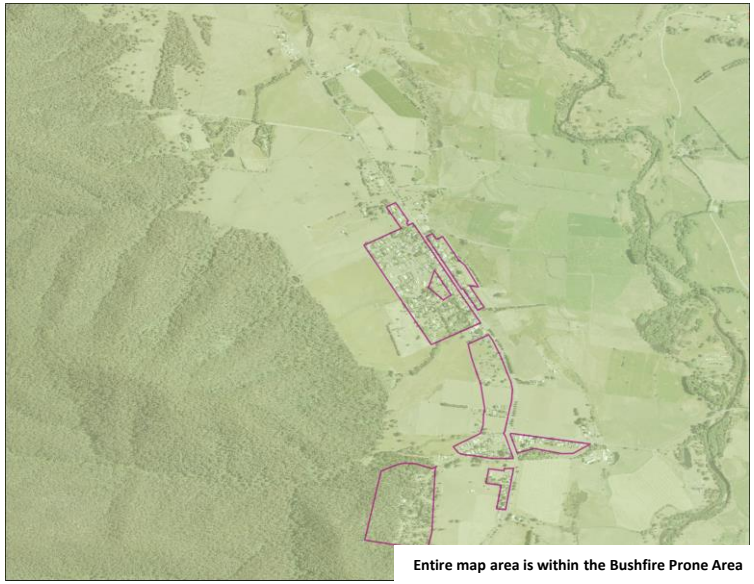
Figure attachment 1-1: Tawonga bushfire contextual information

Zones



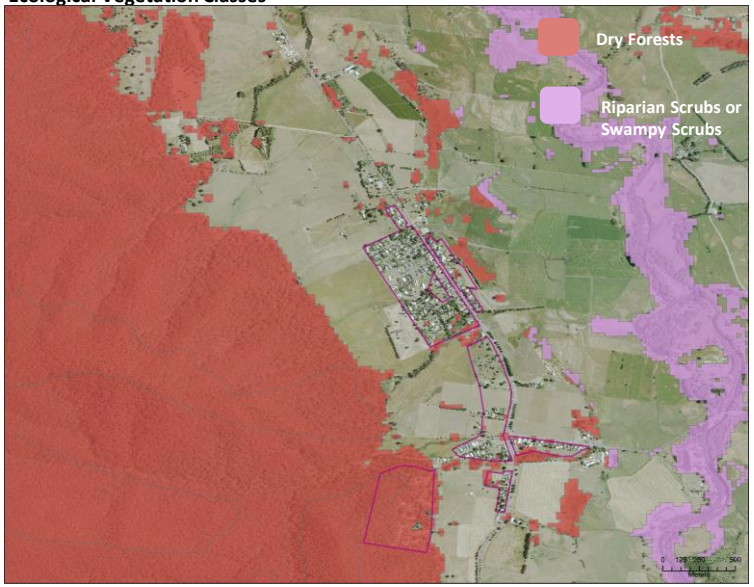
Bushfire Management Overlay

Bushfire Prone Areas



Entire map area is within the Bushfire Prone Area

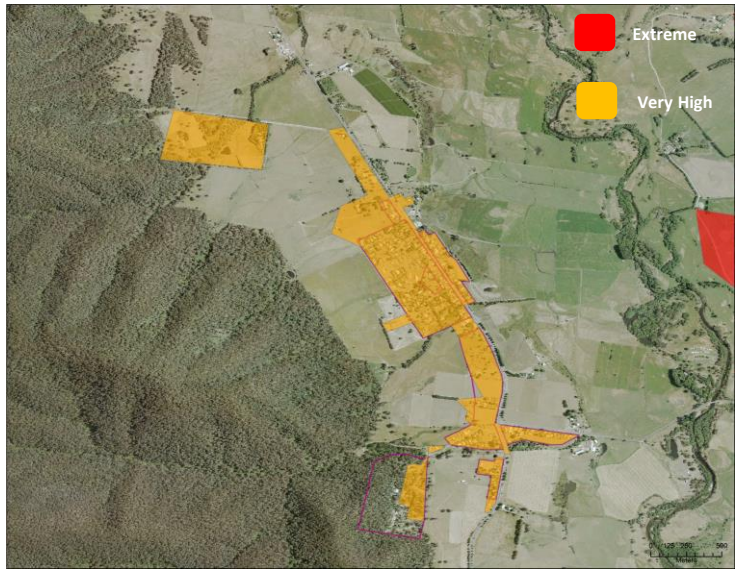
Ecological Vegetation Classes



Date: 11/03/2024

Figure attachment 1-1: Tawonga contextual information (continued)

Victorian Fire Risk Register



Slope based on a 10m contour

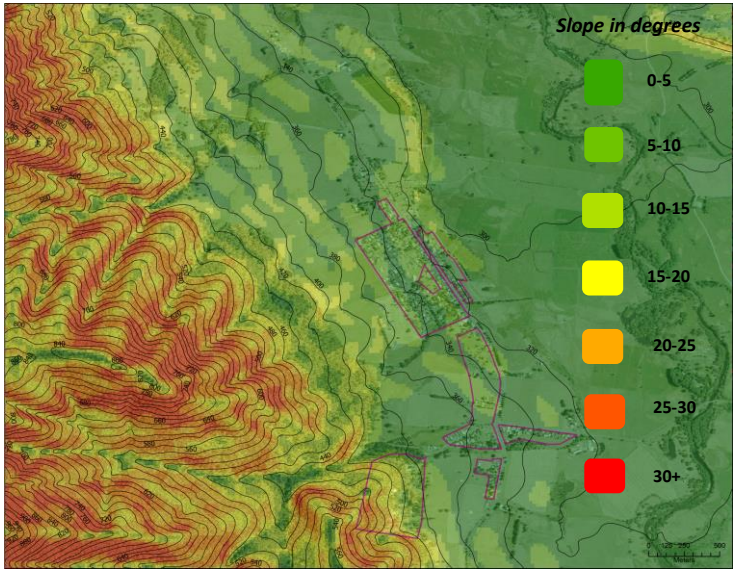
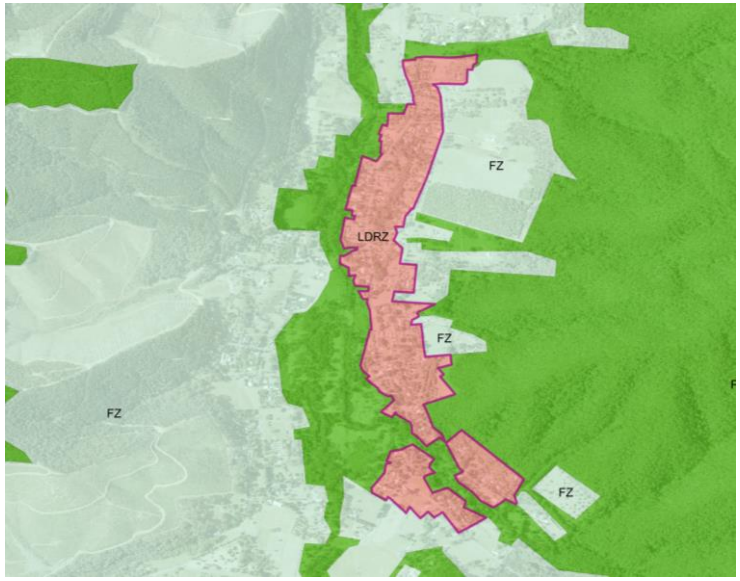
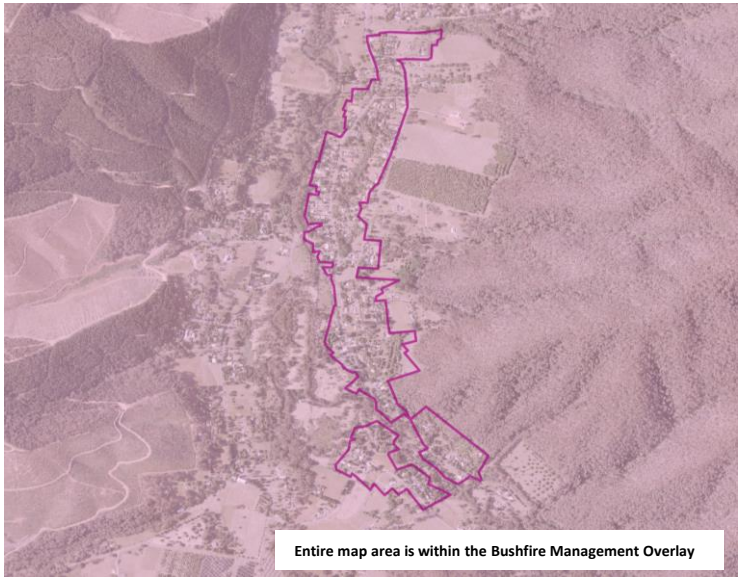


Figure attachment 1-2: Wandiligong bushfire contextual information

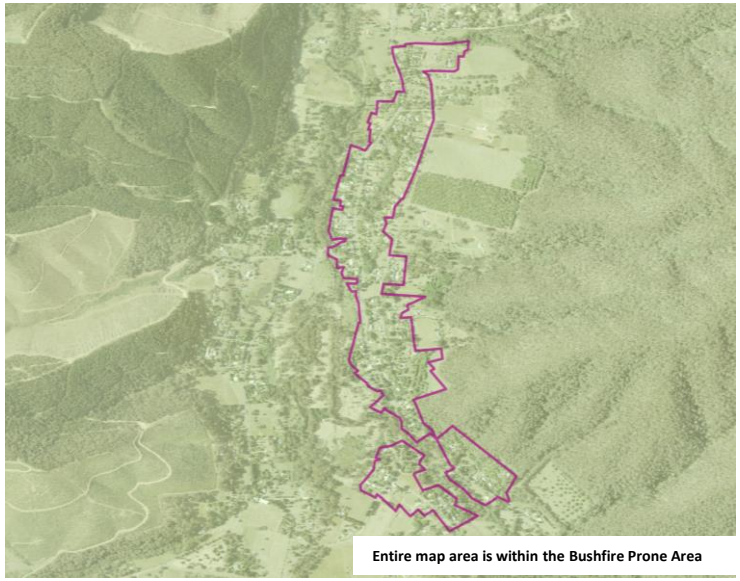
Zones



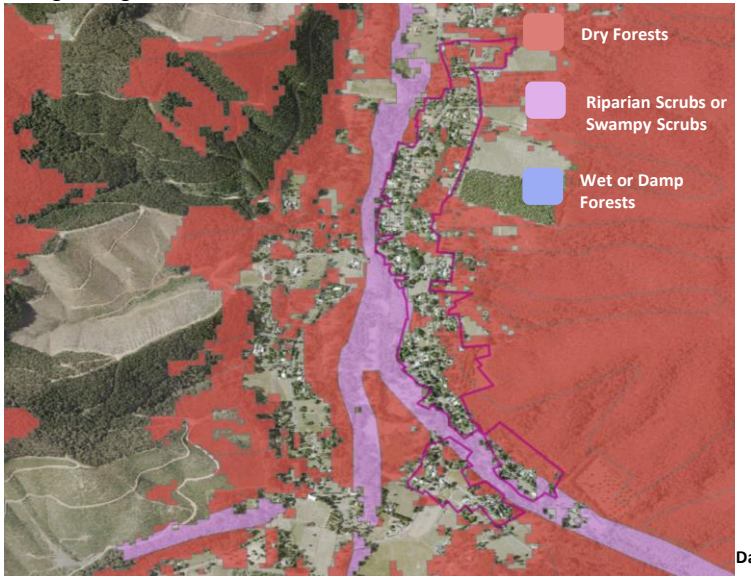
Bushfire Management Overlay



Bushfire Prone Areas



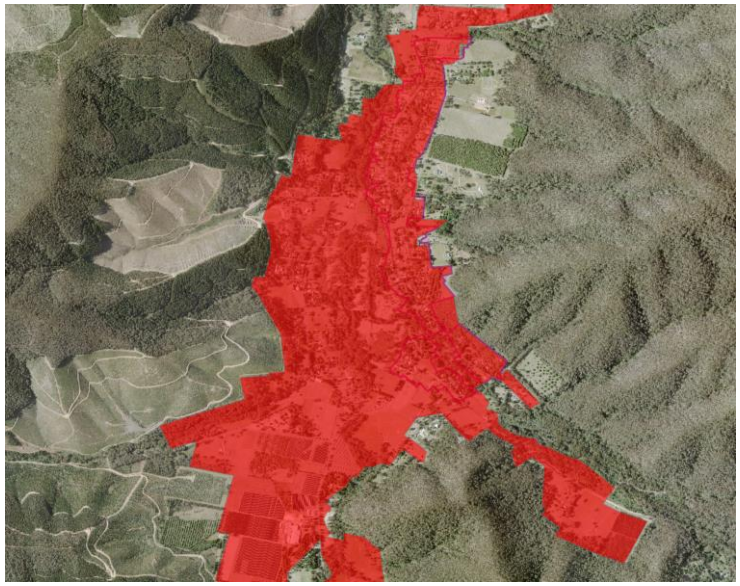
Ecological Vegetation Classes



Date: 11/03/2024

Figure attachment 1-2: Wandiligong contextual information (continued)

Victorian Fire Risk Register (Extreme)



Slope based on 10m contour

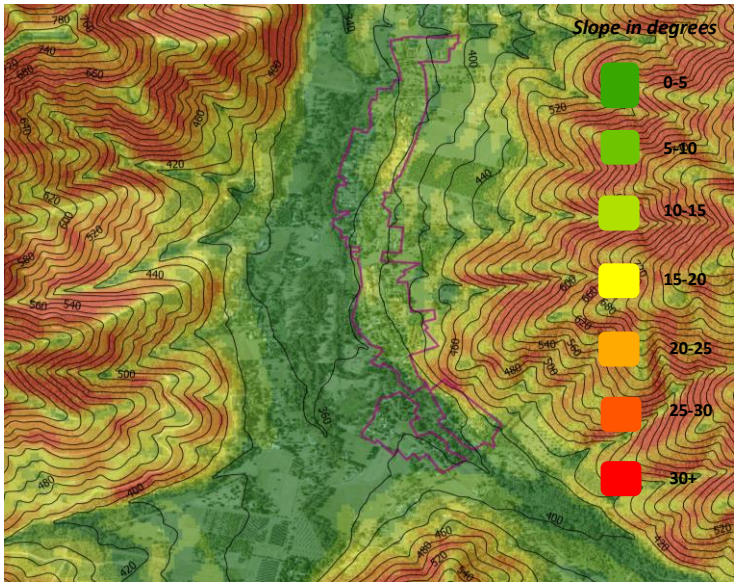
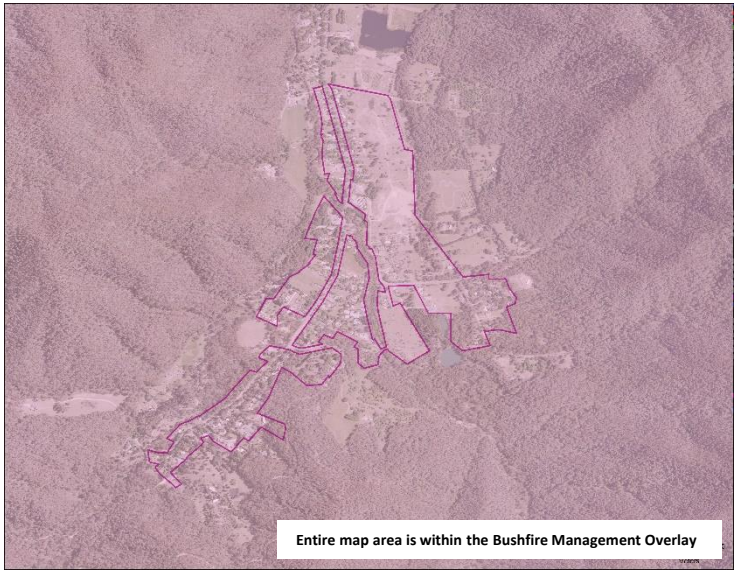


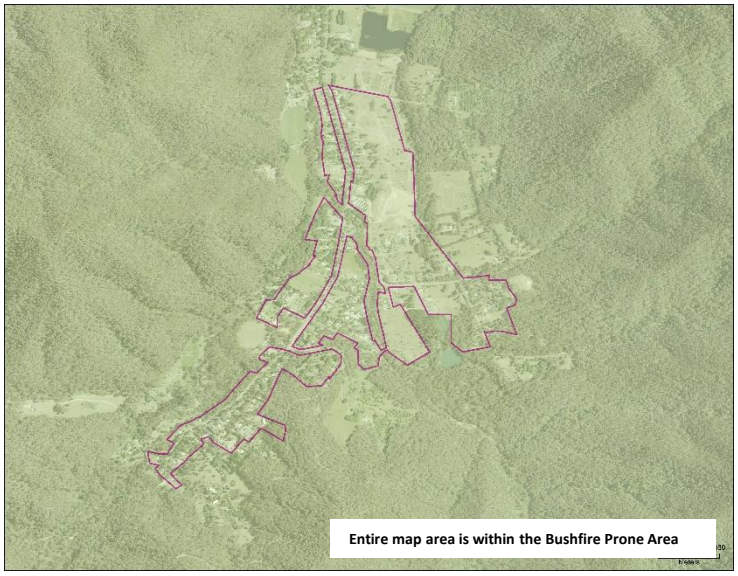
Figure attachment 1-3: Harrietville bushfire contextual information

Zones

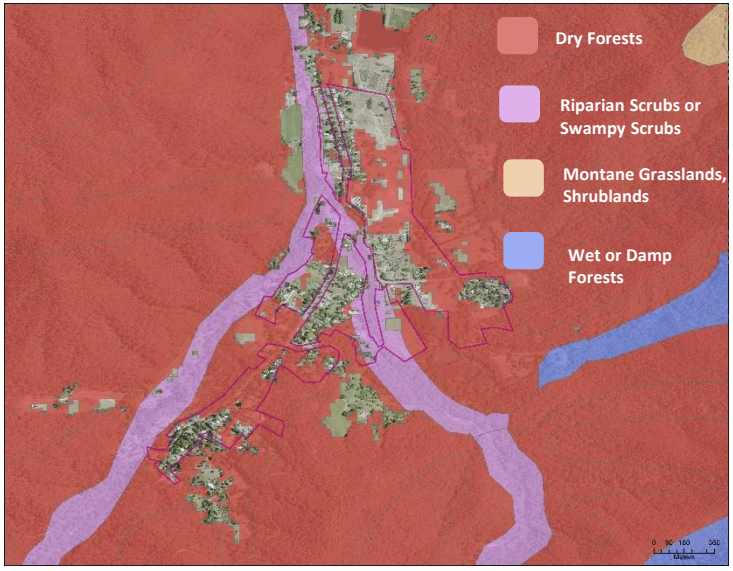
Bushfire Management Overlay



Bushfire Prone Areas



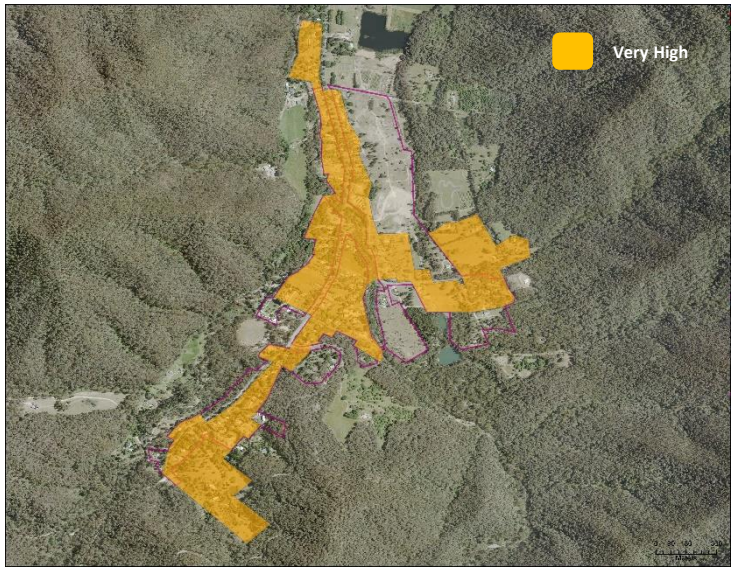
Ecological Vegetation Classes



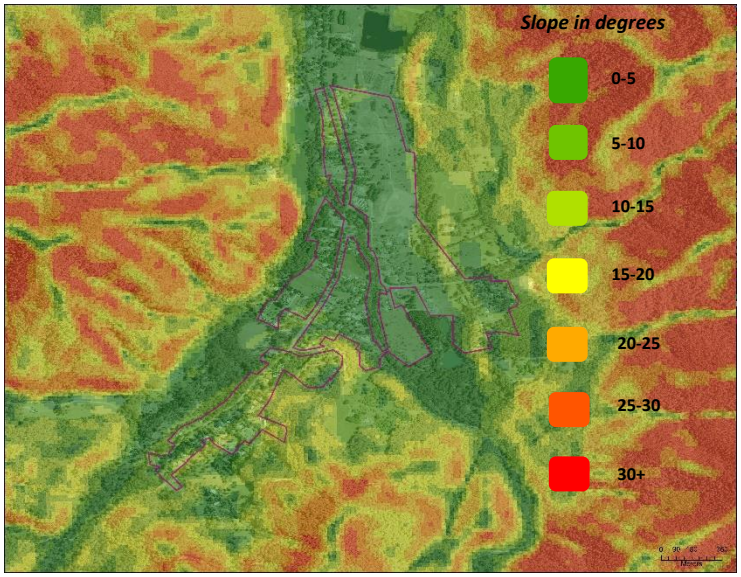
Date: 11/03/2024

Figure attachment 1-3: Harrietville contextual information (continued)

Victorian Fire Risk Register



Slope based on a 10m contour



Date: 11/03/2024

Attachment 2: Review of planning scheme bushfire designations

Planning scheme bushfire designations comprise the Bushfire Management Overlay, schedules to the Bushfire Management Overlay and the Bushfire Prone Area (noting that the Bushfire Prone Area is designated under the Building Act 1993).

Whilst under constant review by the Department of Transport and Planning (DTP) through the State-led designations approach (as recommended by the VBRC), the designations in Alpine Shire are in parts now out of date.

The lack of currency arises from:

- The development of landscape bushfire risk considerations in planning decision making since 2014, when the Alpine Shire designations were first done.
- BMO schedules (developed between 2014 and 2017) were also based on radiant heat exposure to nearby hazards and not landscape bushfire risk or consideration of extreme bushfire behaviour.
- More recent scientific discovery on extreme fire behaviour.

The result is that bushfire designations require a much stronger emphasis on:

- High to extreme levels of ember attack where a BAL29 construction standard should be provided as a minimum. BAL29 construction provides increased ember protection from the baseline BAL12.5 construction.
- The weight afforded to hazards within a settlement, including localised flammable elements such as gardens and other structures. If on fire, they create local sources of flame contact and radiant heat. Structure to structure fire is common in bushfire settlements. A BAL29 provides enhanced radiant heat protection than the baseline BAL12.5 construction.

It is also recognised that in some cases, the original 2014 designations may in part have just been wrong, having regard to designations in other parts of Victoria. This is not entirely unexpected given the entire state was mapped in 2014 for the first time as part of a single Victorian Government led project, working with all bushfire affected councils.

Finally, consolidation of settlement areas is not well contemplated in bushfire designations but is emerging as a strategic issue, given the strategic emphasis on this in the LDS 2023 and the consideration of consolidation in settlements where outward growth is constrained. As consolidation occurs, logically structures are placed closer together. The potential for structure-to-structure fires would increase where consolidation occurs.

This Attachment provides a suite of changes to bushfire designations. The changes in summary are:

- Apply the Bushfire Prone Area to all of Myrtleford.
- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Bright.
- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Tawonga South.

If consolidation is progressed as a planning policy in Mount Beauty and Porepunkah and existing urban Zone land is to be more intensely developed, the following changes are proposed:

- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Mount Beauty.
- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Porepunkah.

For the Council to progress changes, this report can be provided to DTP. There is no statutory 'decision' required for this to occur. The Council would simply be providing information for consideration by DTP in refining bushfire designations in Alpine Shire.

Once within the State-led process, DTP will make its own investigations working with the CFA and will recommend to the Minister for Planning whatever changes it sees fit. Changes to designations would occur at the State-level as part of the regular designation updates. If DTP chooses not to proceed with any changes, that is a matter for them.

Changes to bushfire designations are prospective and not retrospective, they would apply to new development seeking a planning or building permit after any changes were made.

Figure Attachment 2-1 Adjustments to the Bushfire Prone Area in Myrtleford

- Apply the Bushfire Prone Area to all of Myrtleford

Justification for consideration by DTP

- Land is within a high-risk bushfire landscape capable of generating extreme fire behaviour.
- There is a likelihood of ember across all parts of Myrtleford which would warrant all development having bushfire construction requirements included through the building regulations.
- The effect of the change would require a minimum BAL12.5 construction outcome. This would include ember protection.
- Myrtleford's exclusion from a Bushfire Prone Area is anomalous when compared to other settlements in Alpine Shire and in Victoria (for example, Mount Beauty, Anglesea, Healesville) included in their entirety, with similar landscape risk profiles.

Figure Attachment 2-2 Adjust BMO Schedules in Tawonga South

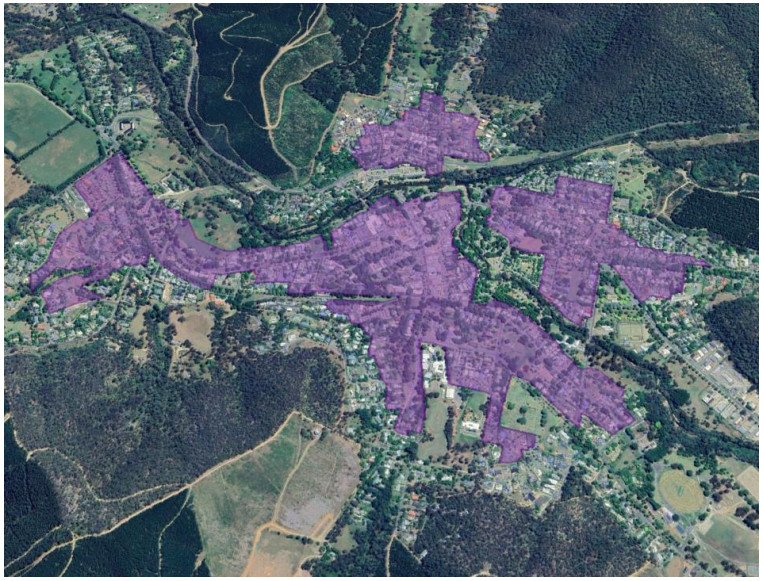
- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Tawonga South

Justification for consideration by DTP

- Land is within a high-risk bushfire landscape capable of generating extreme fire behaviour.
- There is a likelihood of ember attack at high to extreme levels in these areas which would warrant all development having bushfire construction requirements that include strengthened ember protection as provided for in a BAL29. BAL12.5 construction standard is not responsive to the landscape bushfire risk.
- Comparatively to other places in Victoria (for example, Marysville, Cockatoo, Anglesea) included in a BAL29 schedule, the BMO Schedule 1 in Tawonga South is anomalous.

Figure Attachment 2-3 Adjust BMO Schedules in Bright

- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Bright



Justification for consideration by DTP

- Land is within a high-risk bushfire landscape capable of generating extreme fire behaviour.
- There is a likelihood of ember attack at high to extreme levels in all parts of Bright which would warrant all development having bushfire construction requirements that include strengthened ember protection as provided for in a BAL29.
- The presence of localised hazards within the settlements, including vegetation and other structures, would be better responded to in a BAL29 that provides strengthened radiant heat protection.
- Comparatively to other settlements in Victoria (for example, Marysville, Cockatoo, Anglesea) included only in a BAL29 schedule with no BAL12.5 schedule land, the BMO Schedule 1 in Bright is anomalous.

Figure Attachment 2-4 Adjust BMO Schedules in Mount Beauty alongside structure planning

- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Mount Beauty

Justification for consideration initially by Council in preparing a structure plan

Context

- Land is within a high-risk bushfire landscape capable of generating extreme fire behaviour.
- Whilst somewhat removed from the immediate hazard interface, high levels of ember across all settlement areas are likely and likely to be sustained for many hours.
- Mount Beauty is a significant low hazard settlement for the protective benefit of people across Mount Beauty / Tawonga South and likely in the much broader rural landscape. Sheltering in the town in the open air is reasonably contemplated. Enhanced resilience at the settlement-wide level would be desirable.

Change

- A structure planning proposals to consolidate this settlement should trigger consideration of whether strengthened construction requirements should accompany any intensification of the settlement.

Figure Attachment 2-5 Adjust BMO Schedules in Porepunkah alongside structure planning

- Change BMO Schedule 1 (BAL12.5) to BMO Schedule 2 (BAL29) in Porepunkah

Justification for consideration initially by Council in preparing a structure plan

Context

- Land is within a high-risk bushfire landscape capable of generating extreme fire behaviour.
- Whilst somewhat removed from the immediate hazard interface, high levels of ember across all settlement areas are likely and likely to be sustained for many hours.
- Porepunkah is a significant low hazard settlement for the protective benefit of people across this part of Alpine Shire, including in relation to Bright. Sheltering in the town in the open air is reasonably contemplated. Enhanced resilience at the settlement-wide level would be desirable.

Change

- A structure planning proposals to consolidate this settlement should trigger consideration of whether strengthened construction requirements should accompany any intensification of the settlement.

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