

Kevin Hazell

BUSHFIRE PLANNING

Bushfire Planning Assessment

Amendment c120 Maffra Structure Plan

Final Report

4 NOVEMBER 2025

Version 1

Prepared for Wellington Shire Council

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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 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.

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Version Control

Version	Date	Comment	Name
v0.1	3/10/24	Draft Report	Kevin Hazell Town Planner
v1.0	4/11/2025	Final Report	Kevin Hazell Town Planner

1. Introduction

Kevin Hazell Bushfire Planning has been engaged by Wellington Shire Council (the 'Council') to prepare a bushfire planning assessment for Amendment c120 to the Wellington Planning Scheme (the 'planning scheme'). Amendment C120 relates to the Maffra Structure Plan (2022). Amendment C120 has been exhibited.

The bushfire planning assessment includes an assessment of the bushfire hazard and considers bushfire policies in *c13.02-1S Bushfire Planning* of the planning scheme. The bushfire planning assessment is essentially a review of the Maffra Structure Plan and the planning scheme changes arising from it as intended to be implemented through Amendment C120.

This report and its recommendations, where implemented, would enable the Council to demonstrate that *c13.02-1S Bushfire Planning* have been considered and given effect to in Amendment c120.

1.1 Study area

The Study Area is the settlement of Maffra as defined by the settlement boundary included in the Maffra Structure Plan. Surrounding land is included where relevant to capture the bushfire hazard and other contextual information relevant to planning for Maffra.

See:

Figure 1-1: Study Area

1.2 Structure of this report

This report is structured as follows:

- Section 2 provides context on the Maffra, the Maffra Structure Plan and C120.
- Section 3 provides an overview of bushfire content in the planning scheme, including the strategies in *c13.02-1S Bushfire Planning*.
- Section 4 describes landscape bushfire hazards that may influence the locality, similar to the approach for a bushfire hazard landscape assessment described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017).
- Section 5 describes the landscape-scale bushfires to be anticipated and applies bushfire landscape types. The bushfire landscape types enable locational policies in *c13.02-1S Bushfire Planning* to be considered based on the landscape risk as well as appreciating the relative risk between places.
- Section 6 describes the bushfire hazard at the neighbourhood and local scale. This is 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).
- Section 7 includes a discussion on design responses to bushfire using *Design Guidelines: Settlement Planning at the Bushfire Interface* (DELWP 2020).
- Section 8 includes a planning assessment using *c13.02-1S Bushfire Planning* and other relevant assessment frameworks to inform planning recommendations.
- Section 9 includes recommendations which can be used to inform adjustments to Amendment C120.
- Section 10 includes the views of the relevant fire authority.
- Section 10 includes a conclusion.
- Attachment 1 includes suggested explanatory report content for Amendment C120.
- Attachment 2 includes CFA correspondence in relation to Amendment C120.

1.3 A note about the bushfire assessments

The bushfire assessments have been prepared to inform decision making associated with strategic planning and the strategic application of *c13.02-1S Bushfire Planning*. The bushfire assessments do not consider bushfire for the purpose of planning applications, including under *c44.06 Bushfire Management Overlay* of the planning scheme.

Figure 1-1: Study area



2. Context on the Maffra, the Maffra Structure Plan and C120

2.1 Background to planning for Maffra

The planning scheme provides context on Wellington Shire and planning for Maffra.

The Wellington Shire municipality has an area of nearly 11,000 square kilometres and is located approximately 200 kilometres east of Melbourne. It is situated in Central Gippsland, between the Latrobe Valley and East Gippsland. Wellington's key transport routes include the Princes Highway, South Gippsland Highway and the Bairnsdale-Melbourne rail corridor.

Wellington's 2019 population of approximately 43,000 people is expected to increase to over 45,000 by 2036.

Over 60 percent of Wellington's population resides in and around the six main urban centres of Sale, Maffra, Rosedale, Yarram, Stratford and Heyfield. The remaining townships fulfil a service role to the rural areas across Wellington as well as being centres of commerce, industry and employment. The Ninety Mile Beach coastal area includes several settlements stretching from Loch Sport to Port Albert.

2.2 Zones

Planning scheme policies are given effect through the application of Zones. Zones provide an indication of the overall planning structure of the Study Area.

See: **Figure 2-1: Zones**

2.3 Maffra Structure Plan

The Maffra Structure Plan (2022) describes its purpose as follows:

The Maffra Structure Plan (the Plan) has been developed to manage growth, facilitate change, and guide infrastructure provision in Maffra over the next 20 years. It is the first major strategic direction for Maffra since the Wellington Residential & Rural Residential Strategy – Maffra & Environs was adopted in July 2003. Since that time there has been considerable changes in Maffra, and several key policies introduced, which further triggers a need to prepare this Plan for a growing town.

See:

Figure 2-2: Maffra Structure Plan

Figure 2-3: Maffra Structure Plan, Figure 12: Theme 1 – Growth Directions Plan

Figure 2-4: Maffra Structure Plan, Figure 27: Proposed Zoning Plan

2.4 Amendment C120

Amendment C120 to the planning scheme has been exhibited. The explanatory report includes the following description of what the amendment does:

The amendment proposes to translate the recommendations of the Maffra Structure Plan (Mesh, 2022) into the Wellington Planning Scheme by introducing new planning policy, rezoning land to a new Maffra specific Schedule to the General Residential Zone Schedule 2 (GRZ2), updating the Development Plan Overlay Schedule 1 (DPO1) which applies to land across Wellington Shire, correcting policy neutral zone and overlay anomalies, and adding future projects to the list of further strategic work to be undertaken.

Specifically, the amendment makes the following changes:

Planning Scheme ordinance

- Amends Clause 11.01-11 (Maffra) to update the strategic directions for Maffra.
- Inserts a new Schedule 2 to Clause 32.08 (General Residential Zone) to include neighbourhood character objectives and decision guidelines specific to Maffra Residential Area (General Residential Zone area).
- Amends the Schedule 1 to Clause 43.04 (Development Plan Overlay) to update Sections 1-4 and remove Section 5 (to be consistent with Ministerial Direction The Form and Content of Planning Schemes).
- Amends the Schedule to Clause 72.08 (Background Documents) to insert the following background documents:
 - Maffra Structure Plan (Mesh, 2022)
- Amends the Schedule to Clause 74.02 (Further Strategic Work) to include recommendations for future work outlined in the Maffra Structure Plan (Mesh, 2022).

Zoning maps

- Amends Planning Scheme Map Nos 51, 53, 54, 55 and 56 to rezone all land in the Maffra township boundary currently in the General Residential Zone 1 (GRZ1) to the new General Residential Zone 2 (GRZ2) 'Maffra Residential Area'.
- Amends Planning Scheme Map Nos 54, 55 and 56 to selected properties to correct mapping anomalies.

Overlay maps

- *Amends Planning Scheme Map Nos 50DPO, 51DPO, 52DPO, 53DPO and 54DPO to remove the Development Plan Overlay Schedule 1 (DPO1) from certain parcels of land within the Maffra township boundary, specifically:*
 - *From the majority of land to the north of Sandy Creek Road which is within the Rural Living Zone Schedule 2 (RLZ2) and covered by the Development Plan Overlay 1 (DPO1). The land is below the minimum lot size for development, and accordingly it is appropriate to remove the DPO1 from these sites.*
 - *Scattered properties within Maffra which have been developed as per the endorsed Development Plan for that area.*

See:

Figure 2-5: Amendment C120 – proposed Clause 11.01-1L Maffra

Figure 2-6: Amendment C120 – proposed Schedule 1 to the Development Plan Overlay

Figure 2-1: Existing Zones

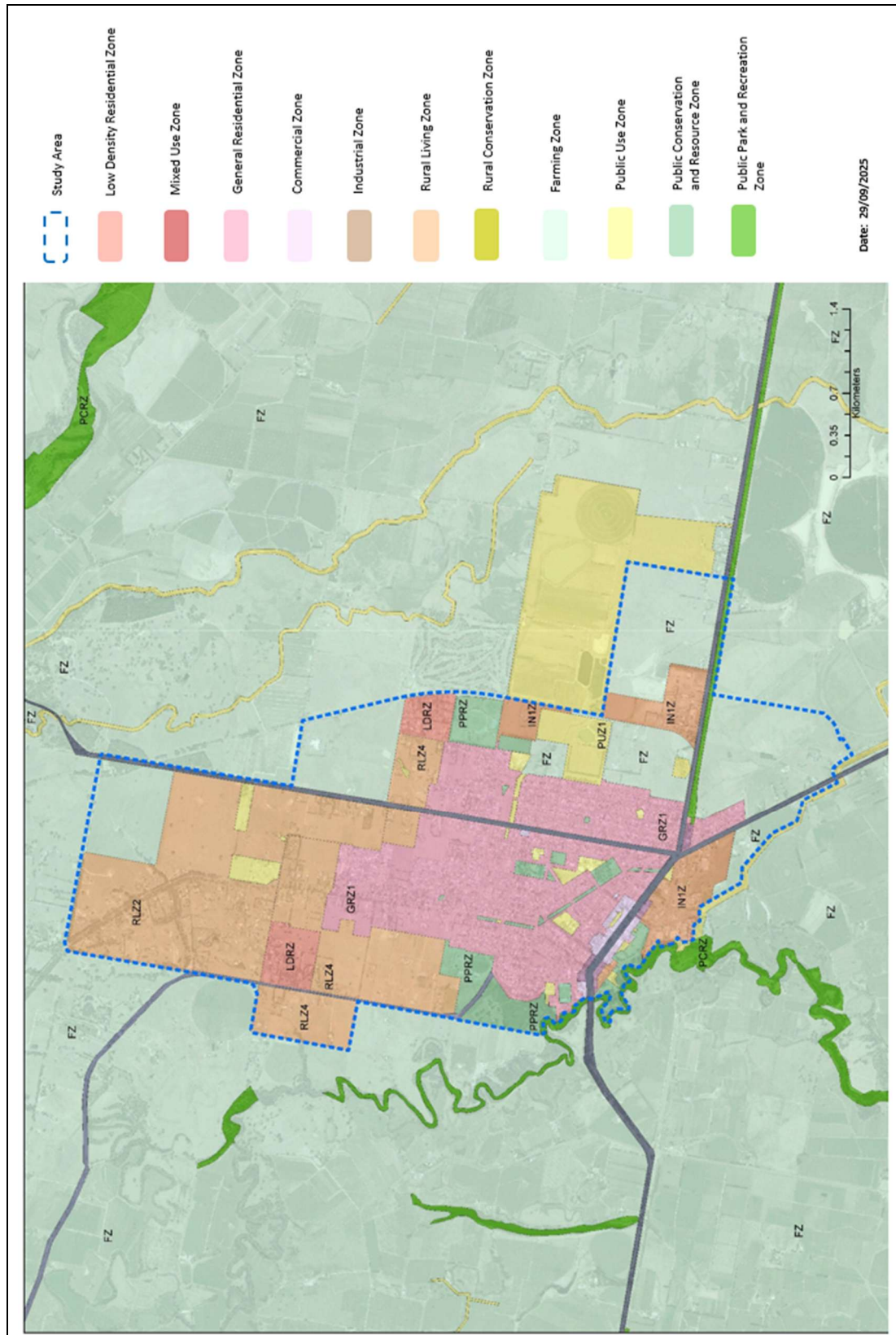


Figure 2-2: Maffra Structure Plan diagram

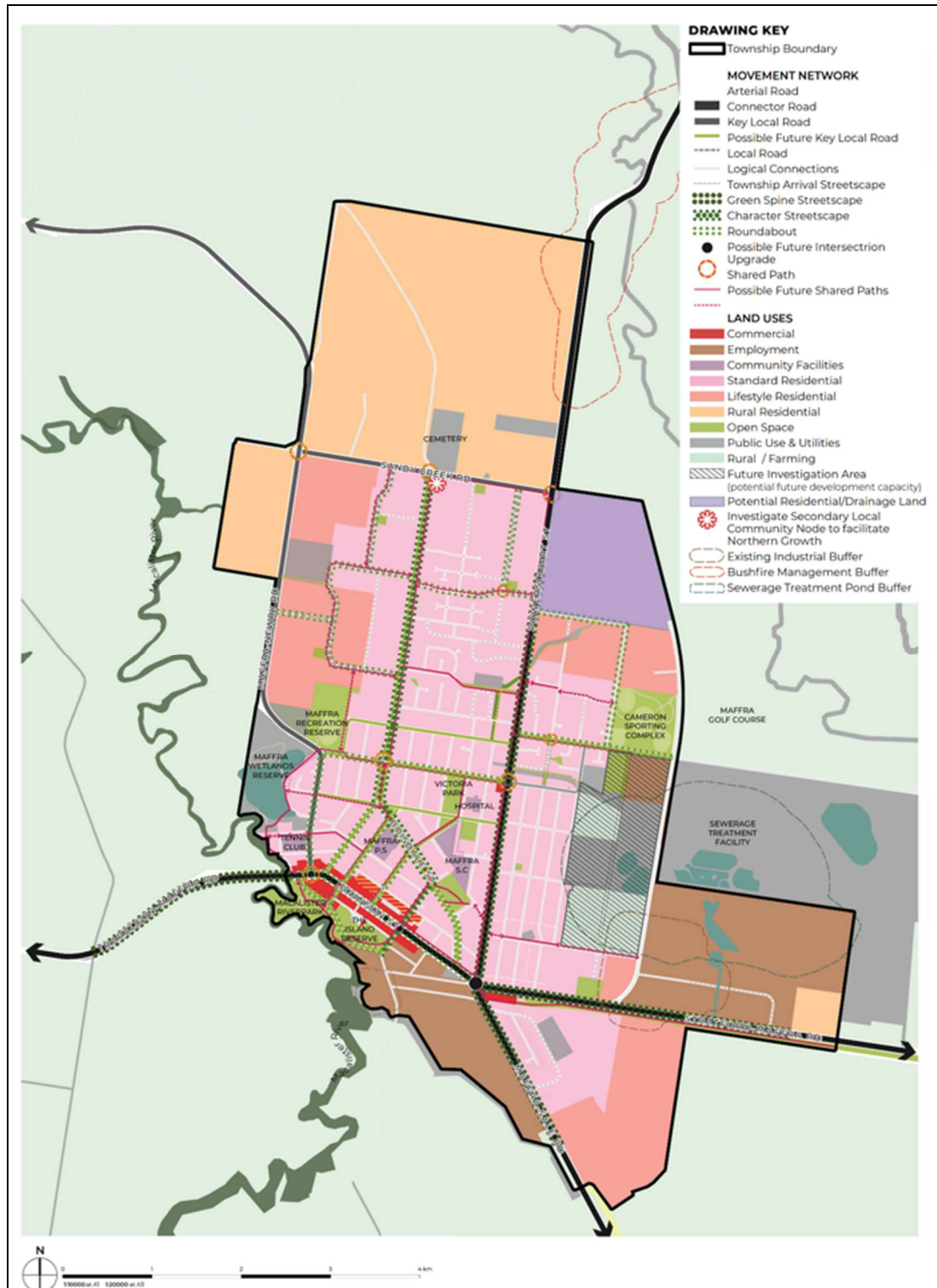


Figure 2-3: Maffra Structure Plan, Figure 12: Theme 1 – Growth Directions Plan

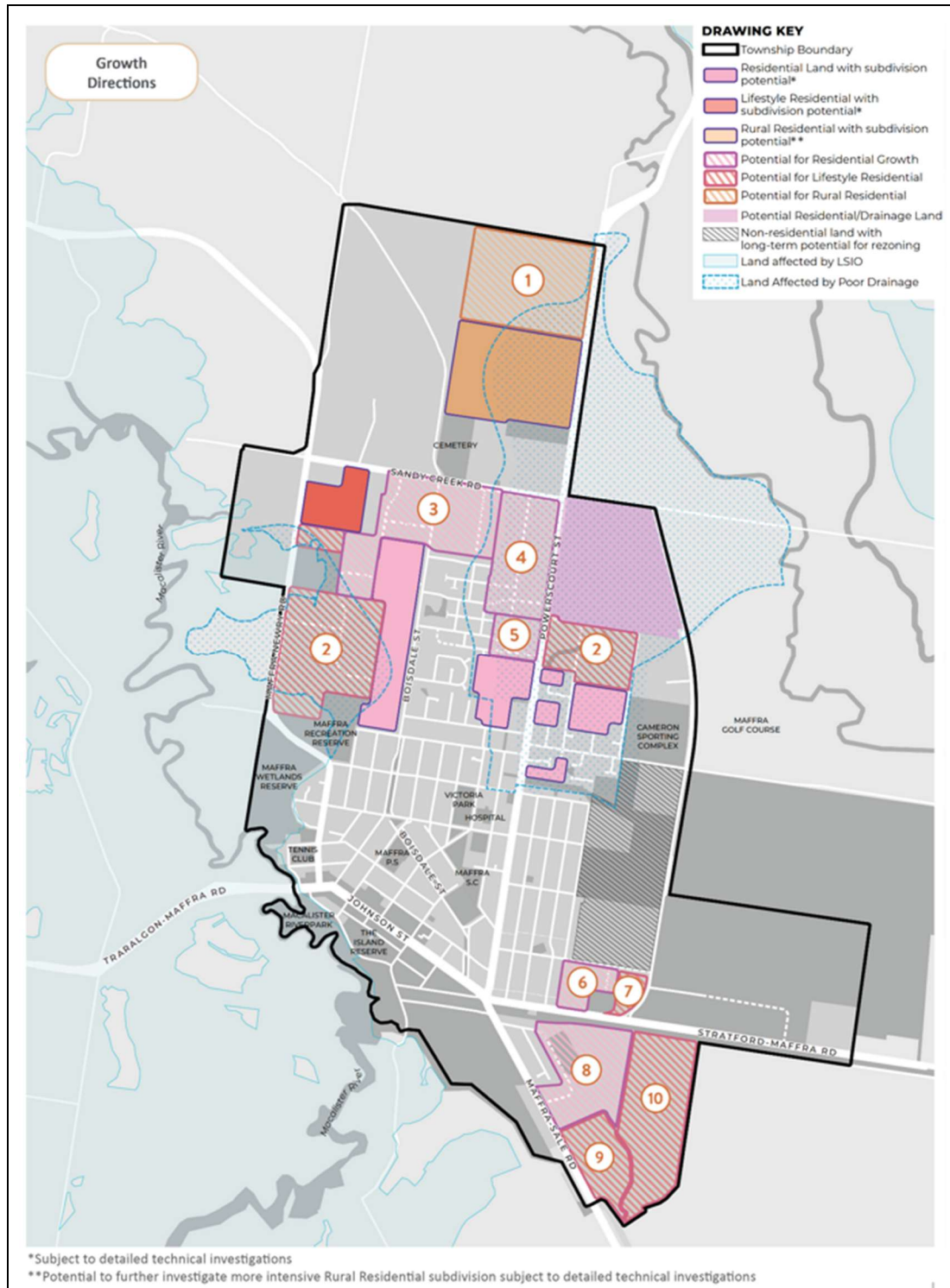


Figure 2-4: Maffra Structure Plan, Figure 27: Proposed Zoning Plan

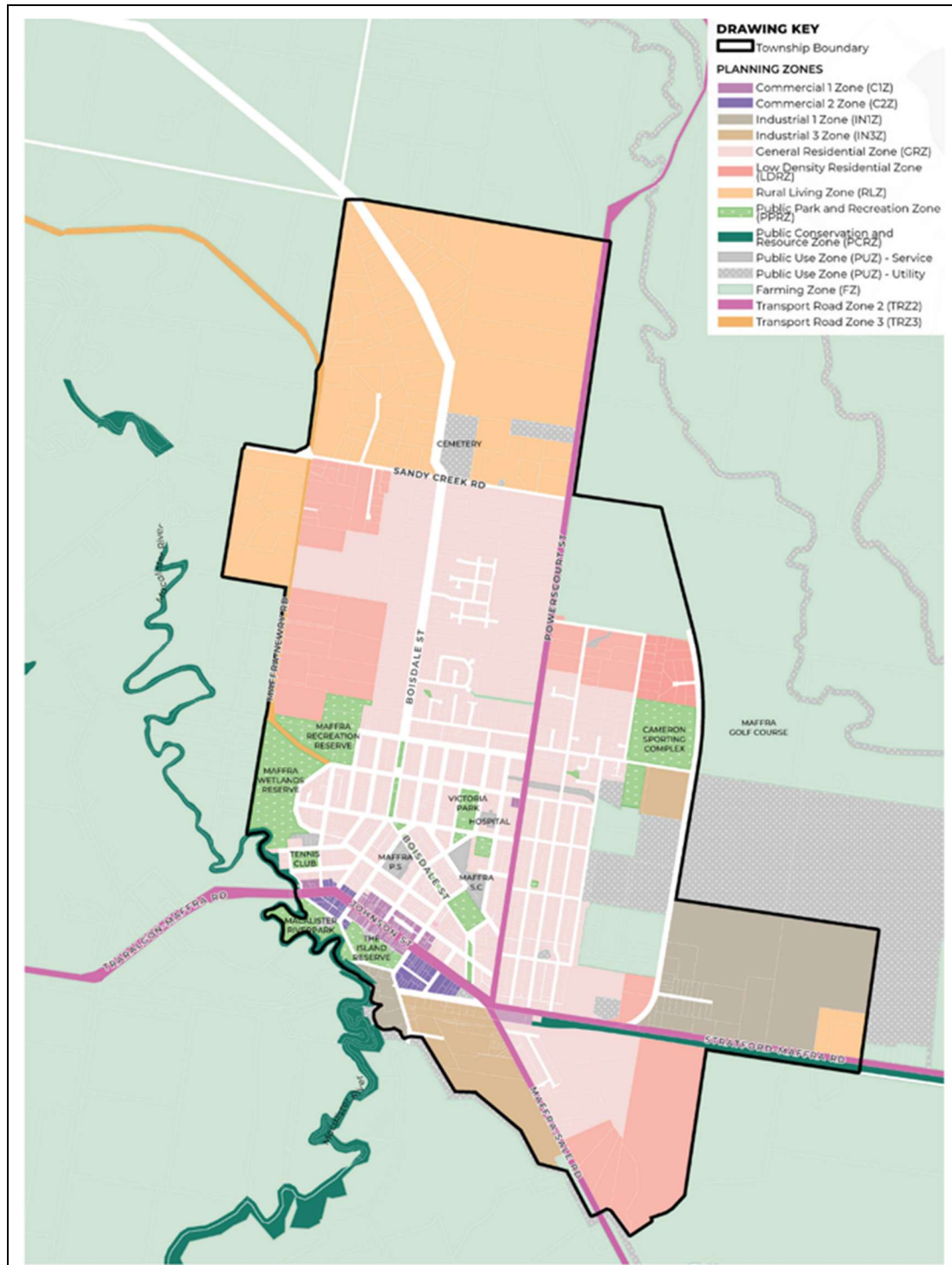
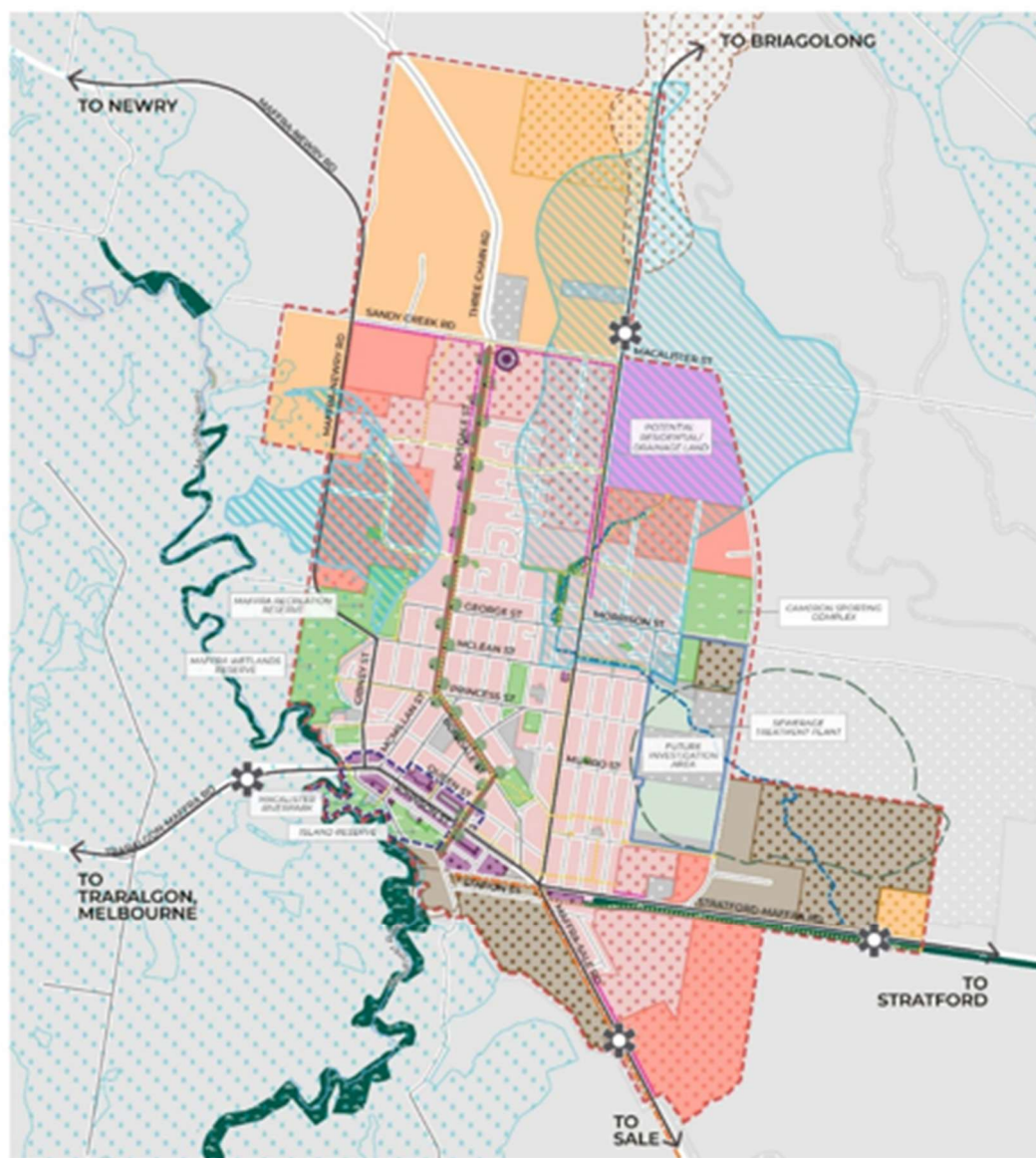


Figure 2-5: Amendment C120 – proposed Clause 11.01-1L Maffra

11.01-1L <i>Amendment</i> Proposed C120well	Maffra Policy application This policy applies to the area within the settlement boundary identified in the Maffra Strategy Plan contained within this Clause. Objective To maintain Maffra's identity as a vibrant and growing township with a small country town feel. Strategies ▪ Ensure that new development considers connectivity to existing and future settlement/residential areas and discourages cul-de-sacs. ▪ Limit and consolidate access to key roads as identified on the <i>Maffra Strategy Plan</i> to this Clause. ▪ Encourage building heights of up to three stories and street level activation (such as retail shop fronts and outdoor dining) along Johnson Street and between Thomson Street and Foster Street. ▪ Support the creation of a local commercial centre within the Northern Growth Area, adjacent to Boisdale Street and Sandy Creek Road, to service future residential areas. ▪ Encourage housing within existing and future commercially zoned areas along Queen Street that can be easily converted to commercial premises. ▪ Strengthen Maffra's existing employment base through the eastward expansion of the Fulton Road Industrial Precinct where larger lot sizes are encouraged. Policy Document <i>Maffra Structure Plan</i> (Mesh, 2022)
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Maffra Strategy Plan



DRAWING KEY

- MAFFRA SETTLEMENT BOUNDARY
- WATERWAY
- TOWNSHIP GATEWAY
- TOWN CENTRE

LAND USE

- RESIDENTIAL
- RESIDENTIAL ZONE
- FUTURE RESIDENTIAL ZONE
- LOW DENSITY RESIDENTIAL ZONE
- FUTURE LOW DENSITY RESIDENTIAL ZONE
- RURAL LIVING ZONE
- FUTURE RURAL LIVING
- COMMERCIAL
- COMMERCIAL ZONE
- FUTURE COMMERCIAL ZONE

0 0.5 1km
N

- AGRICULTURE / RURAL
- FARMING ZONE
- INDUSTRIAL
- INDUSTRIAL ZONE
- FUTURE INDUSTRIAL ZONE
- COMMUNITY INFRASTRUCTURE / OPEN SPACE
- PUBLIC OPEN SPACE
- FUTURE PUBLIC OPEN SPACE
- SERVICE / COMMUNITY / CIVIC USE
- PUBLIC / UTILITY LAND
- GREEN SPINE STREETSCAPE
- INVESTIGATE SECONDARY LOCAL COMMUNITY NODE TO FACILITATE NORTHERN GROWTH

MOVEMENT

- MAJOR ROADS
- KEY LOCAL ROADS

- LOCAL ROADS
- POSSIBLE FUTURE KEY LOCAL ROAD
- DEFINED PEDESTRIAN PATHWAYS
- POSSIBLE FUTURE SHARED PATHS

OTHERS

- FUTURE INVESTIGATION AREA
- LAND SUBJECT TO INUNDATION OVERLAY / FLOOD OVERLAY
- CONSERVATION
- AREAS AFFECTED BY POOR DRAINAGE
- BUSHFIRE MANAGEMENT OVERLAY
- HIGH PRESSURE PIPELINE
- POTENTIAL RESIDENTIAL/DRAINAGE LAND
- MAJOR OVERLAND DRAINAGE ROUTE
- SEWERAGE TREATMENT POND BUFFER
- LIMIT & CONSOLIDATE ACCESS TO KEY ROADS

WELLINGTON PLANNING SCHEME	
SCHEDULE 1 TO CLAUSE 43.04 DEVELOPMENT PLAN OVERLAY	
Shown on the planning scheme map as DPO1 .	
DEVELOPMENT PLAN AREAS	
1.0 Objectives	
To create integrated and coordinated developments that achieve high-quality land use outcomes.	
2.0 Requirement before a permit is granted	
A permit may be granted to use or subdivide land, construct a building or construct or carry out works prior to the approval of a development plan so long as the granting of a permit does not prejudice the future, orderly use and development of the area affected by the Development Plan Overlay, to the satisfaction of the responsible authority.	
3.0 Conditions and requirements for permits	
None specified.	
4.0 Requirements for development plan	
A development plan must include the following requirements:	
▪ A site analysis plan. ▪ Overall plan of subdivision which shows proposed lot layout and sizing, street networks, walking and cycling networks and public open space areas, as appropriate. ▪ Open space plan / landscape plan, which details open space improvements and landscaping, as appropriate. ▪ Bushfire assessment and management plan (if the land is within a Bushfire Management Overlay or Bushfire Prone Area). ▪ Flora and Fauna Assessment. ▪ Cultural Heritage Assessment (if the land is within an area of Cultural Heritage Sensitivity). ▪ Drainage Impact Assessment. ▪ Traffic Impact Assessment. ▪ Identification of infrastructure requirements, including timing and funding mechanisms. ▪ Management plan, indicating the proposed staging of the development, as appropriate.	
Any of the abovementioned components of the development plan can be varied at the discretion of the responsible authority.	
A development plan can be undertaken in stages, to the satisfaction of the responsible authority.	
The development plan should be developed with an appropriate level of community participation, as determined by the responsible authority.	
The approved development plan may be amended to the satisfaction of the responsible authority.	

Page 1 of 1

3. 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 section provides an overview of these provisions. Figure 3-1 summarises the considerations.

See:

Figure 3-1: Planning scheme bushfire provisions and supporting material

3.1 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.

3.2 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.*

3.3 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.

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.*

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.*

3.4 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.

The Bushfire Management Overlay only applies to a small part of the north-east part of the Study Area.

3.5 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.*

3.6 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.

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.

3.7 Use and development control in a 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:

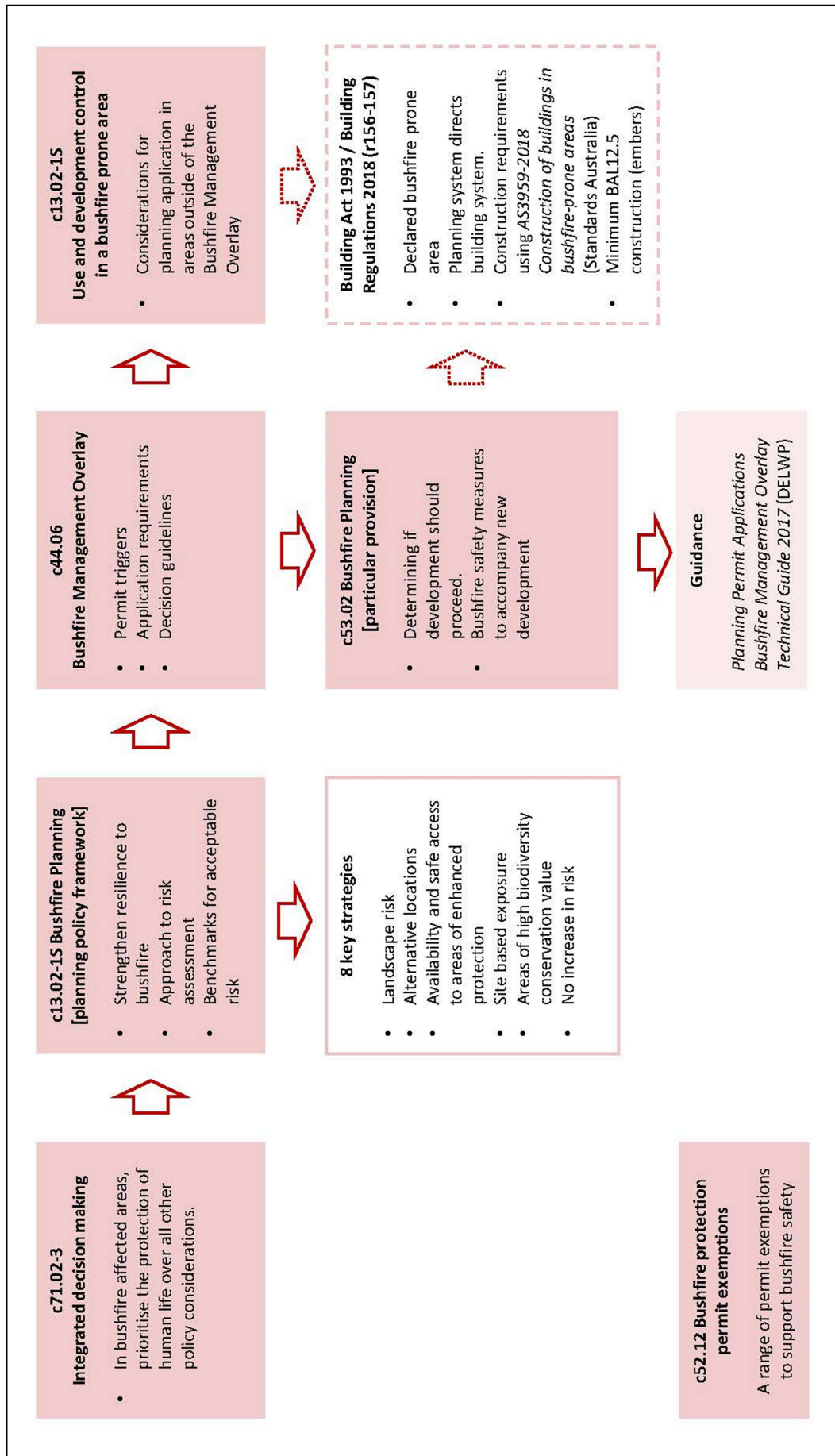
- *Consider the risk of bushfire to people, property and community infrastructure.*
- *Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity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

3.8 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 defensible 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 defensible space for a dwelling under the Bushfire Management Overlay, where the defensible 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 defensible 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 3-1: Planning scheme bushfire provisions and supporting material



4. Bushfire hazard landscape assessment

4.1 About the bushfire hazard landscape assessment

Bushfire hazards are formed from vegetation, slope / topography and weather. This chapter provides information on the landscape bushfire hazards affecting the Study Area. The extent of the surrounding landscape relevant 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. Consistent with the spatial emphasis in *c13.02-1S Bushfire Planning*, the landscape can include the local area (up to a kilometre around a proposal) and a much wider area (20-75kms around a proposal), depending on the bushfire hazards that are present.

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. This includes whether neighbourhood scale destruction could arise. These characteristics help understand how planning decision making can respond to bushfire hazards.

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

4.2 Bushfire weather in Victoria

Weather conditions influence the size, intensity, speed, and predictability of bushfires and how dangerous they can be. The Department of Environment, Land, Water and Planning (DELWP) in *Measuring Bushfire Risk in Victoria* (2015) identifies key features relevant to bushfires 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.

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.

4.3 Bushfire weather and climate change

DELWP in the regional *Bushfire Management Strategy (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.

4.4 Vegetation-related elements of the landscape bushfire hazard

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

4.4.1 Ecological Vegetation Classes

Ecological vegetation classes (2005) are identified in some parts of the Study Area and its surrounds. They include (but are not limited to):

- Dry Forests.
- Lowland Forests.
- Plains Grasslands and Chenopod Shrublands.
- Plains Woodlands or Forests.

- Riparian Scrubs or Swampy Scrubs and Woodlands.
- Riverine Grassy Woodlands or Forests.
- Wetlands.

See:

Figure 4-1: Ecological Vegetation Classes

4.4.2 Grasslands

Grasslands are present in most of the non-urban parts of the Study Area and the surrounding land. 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.

Due to the highly modified environment grassland areas are often in a managed setting either because of agricultural activities or managed as part of the gardens associated with rural living and low-density residential development. For considering the landscape risk associated with grassland areas, it is assumed that the grasslands are unmanaged.

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.

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 landscape bushfire behaviour in these grassland areas

4.5 Slope and topography

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. 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.

Vegetated areas in steep and rugged terrain correlate with where more extreme bushfire behaviour can arise.

See:

Figure 4-2: Slope based on the 10m contour

Figure 4-3: Elevation based on the 10m contour

4.6 Extreme fire behaviour

Analysis 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. 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).

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) is 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 lack of forested areas and no steep and rugged terrain within the Study Area, extreme bushfire behaviour as understood in planning decision making is not a reasonable bushfire scenario.

4.7 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 Joint Fuel Management Program is published by Forest Fire Management Victoria.

There are no interventions relevant to the landscape bushfire risk to the Study Area.

See:

Figure 4-4: Joint Fuel Management Program

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

There is limited bushfire history in the surrounding landscape relevant to the locality. Bushfire history includes a grassfire in 1978 to the east of Maffra. It also includes a 1965 fire which indicates a large, forest fire 15-20kms to the north came out of the forest and resulted in a large grassfire to the north of Maffra (although the scale of the town would have been smaller at that time). This fire is instructive however to how large grassfires may arise to the north.

See:

Figure 4-5: Bushfire history

4.9 Victorian Fire Risk Register

The Victorian Fire Risk (VFRR) is a data set prepared by fire authorities and local councils that identifies assets at risk of bushfire. 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 should not be over-emphasised in planning decision making as it has not been prepared for this purpose, only considers existing risks and does not contemplate new risk that might arise because of a planning decision.

The VFRR identifies:

- Rural living style lots to the north of the Study Area as a high risk.
- Rural living style lots within the northern part of the Study Area as a medium risk.
- The settlement – grassland interfaces on the north-west, north and eastern interfaces of Maffra as a medium risk.

The VFRR is broadly reflecting the same risk as is being identified in this report, being at the grassland interfaces of the settlement and where non-urban lots are not low-hazard & may carry a grassfire into and through them.

See:

Figure 4-6: Victorian Fire Risk Register human settlement

4.10 Planning scheme bushfire designations

Planning schemes identify potentially bushfire affected land through the inclusion of land in 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).

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 a small part of the outer north-east edge of the Study Area where an area of non-grassland vegetation exist, with the 150m buffer applied.

See: **Figure 4-7: Bushfire Management Overlay and Bushfire prone areas**

Schedules to the Bushfire Management Overlay

There are no areas of Bushfire Management Overlay included into a schedule.

Bushfire prone area

The bushfire prone area applies to all land within the Bushfire Management Overlay along with grasslands on all sides of the Study Area, with a 150m or 50m buffer being applied (forming part of the ember protection buffer).

See: **Figure 4-7: Bushfire Management Overlay and Bushfire prone areas**

4.11 Low hazard land

c13.02-1S Bushfire Planning defines low hazard land as BAL:Low. 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).

Low hazard (BAL:Low) land is where human life can be better protected from the harmful effects of bushfire. They can provide protection by enabling people to move away from bushfire hazards if they need to.

BAL:Low land is present in most parts of the existing settlement where more than 50m away from grasslands. For the Study Area, the land not included in a Bushfire prone area is a credible estimate of land that is capable of being assessed as BAL:Low. It provides a reliable assessment of low hazard land.

See:

Figure 4-8: Low Hazard land

4.12 Designated places of shelter

There are no designated places of safety in the landscape (for example, a neighbourhood safer place). This is expected given the relatively lower landscape risk and the available of low-hazard land as part of urban areas.

Figure 4-1: Ecological Vegetation Classes 2005

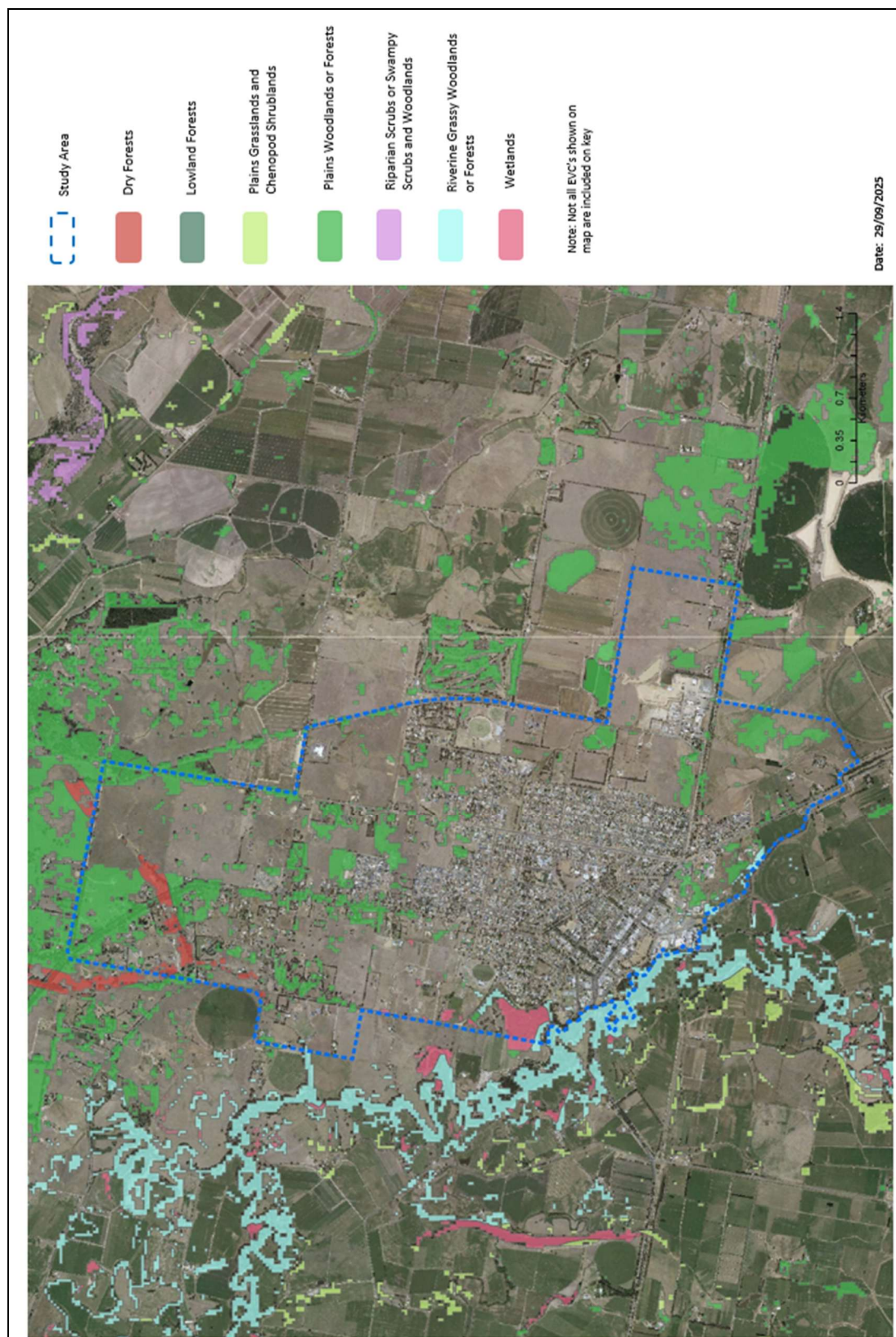


Figure 4-2: Slope based on a 10m contour

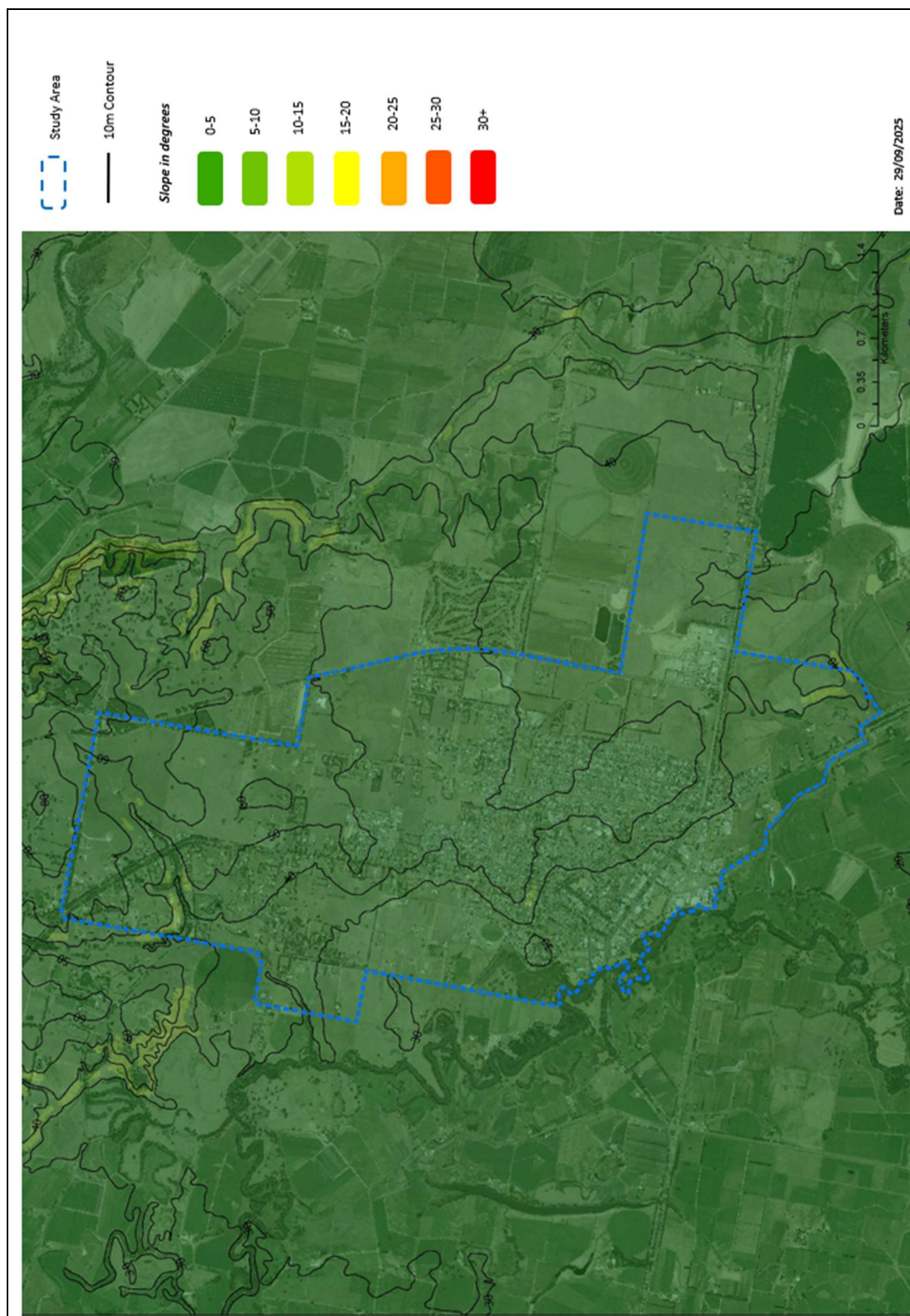


Figure 4-3: Elevation based on the 10m contour

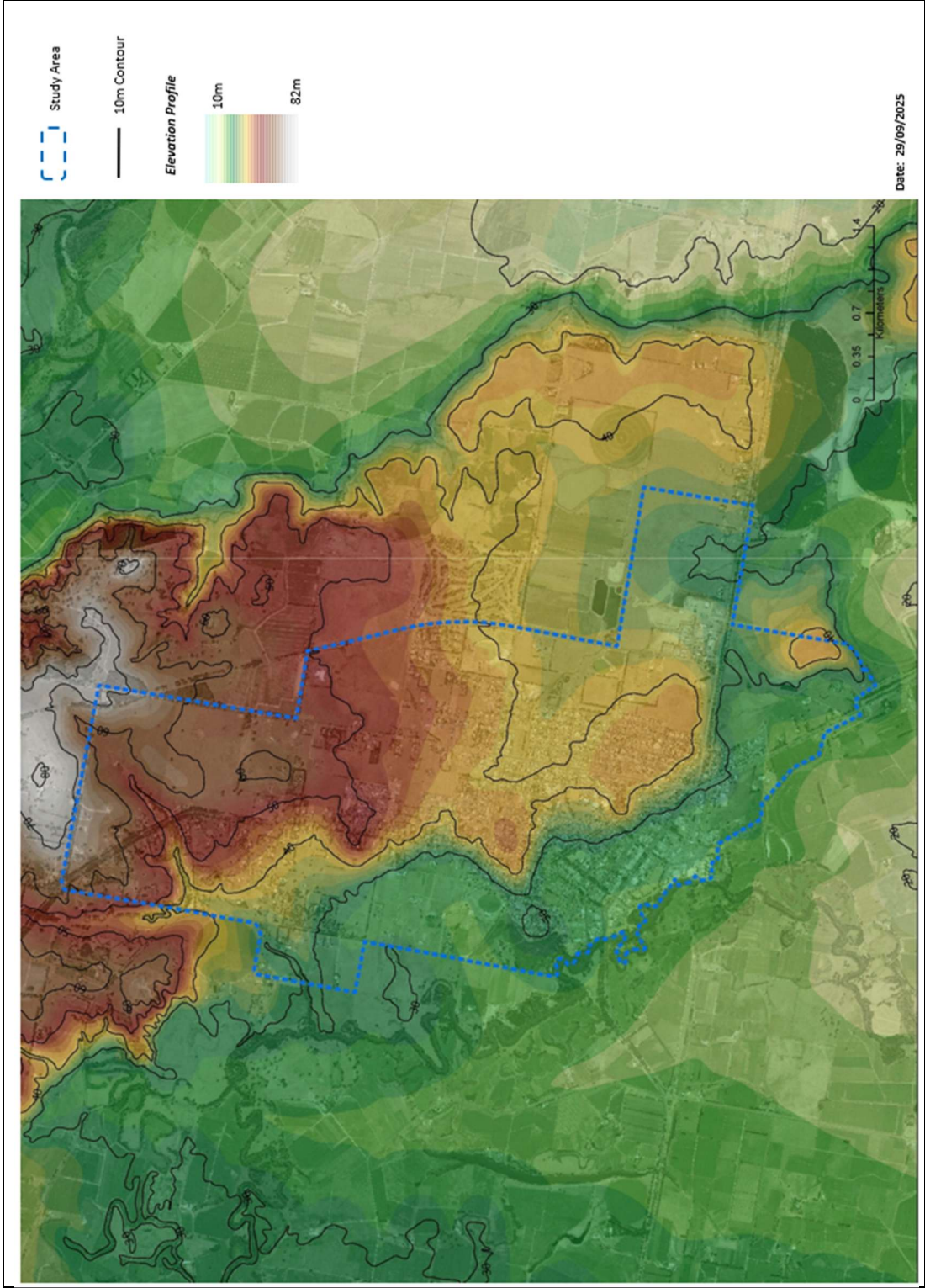


Figure 4-4: Joint fuel management plan (Forest Fire Management Victoria)

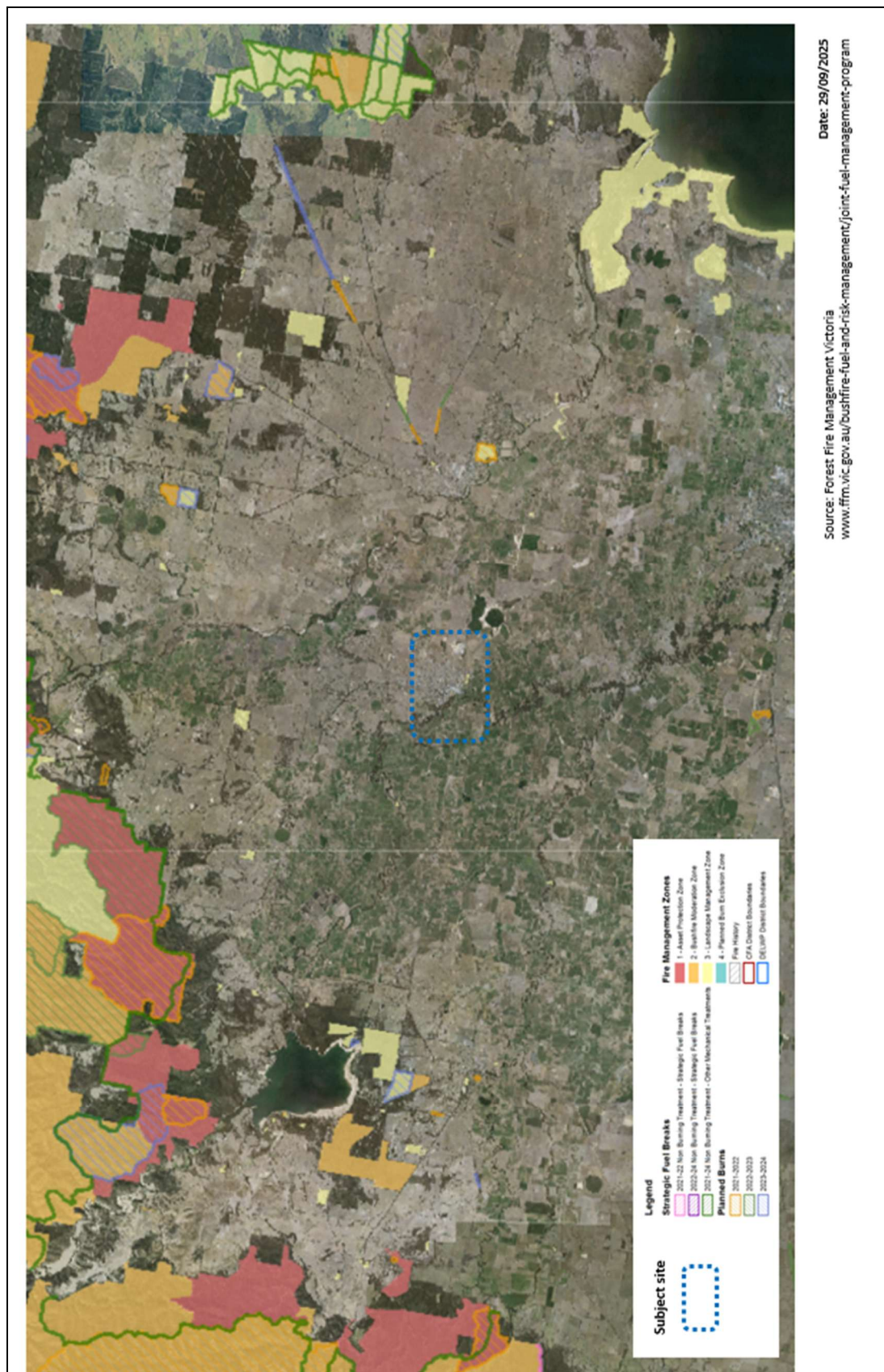


Figure 4-5: Bushfire history

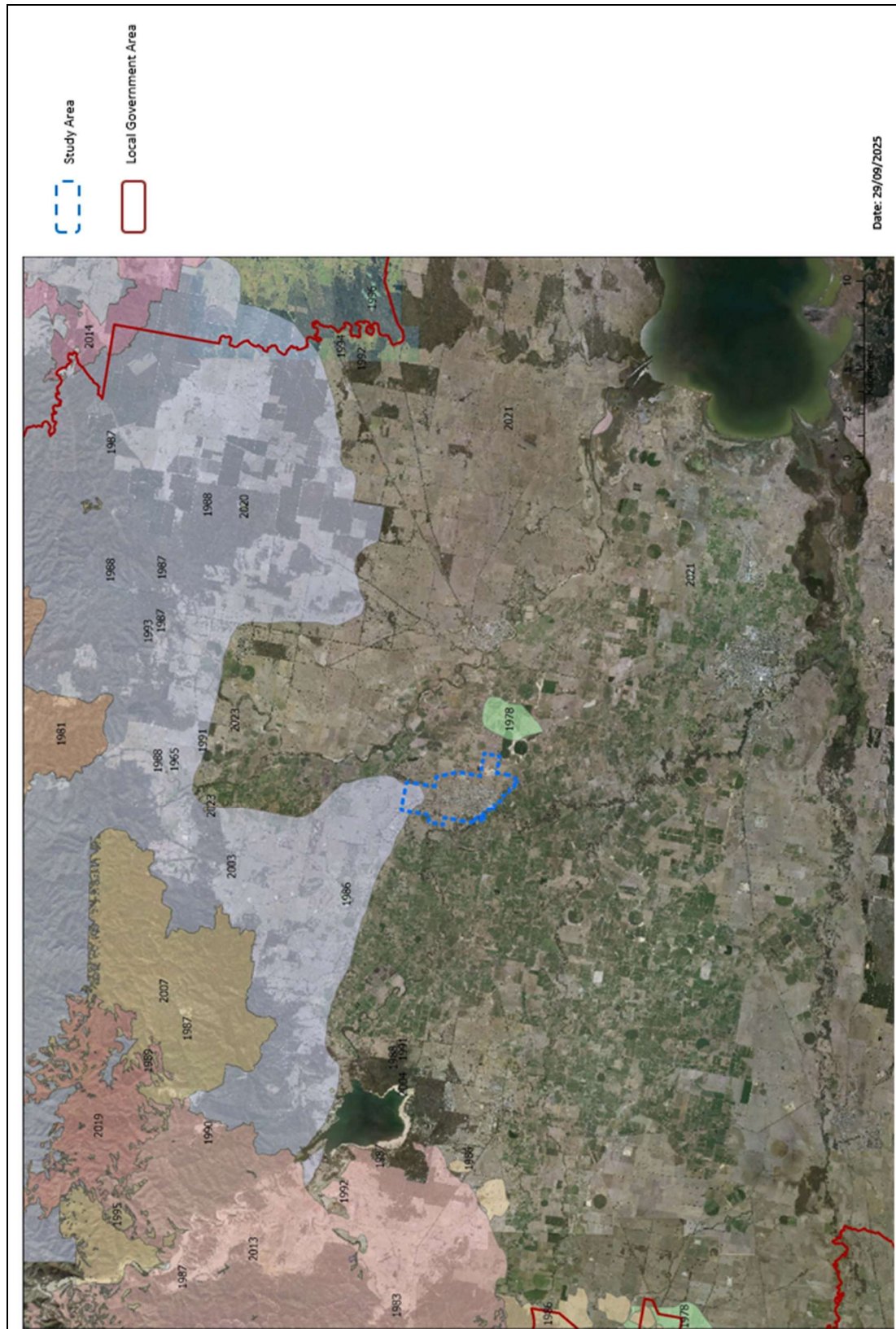


Figure 4-6: Victorian Fire Risk Register Human settlement



Figure 4-7: Bushfire Management Overlay and Bushfire prone area

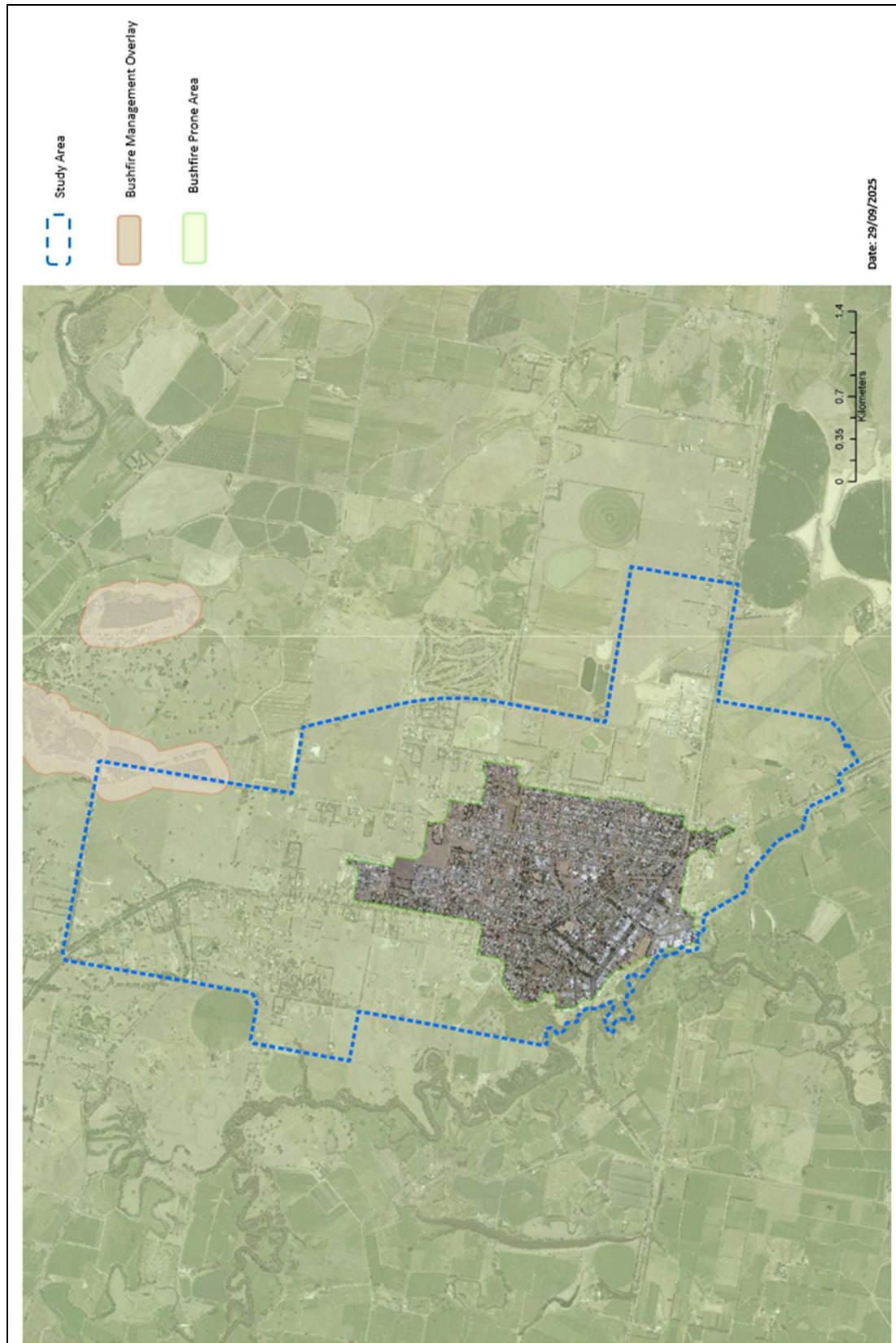
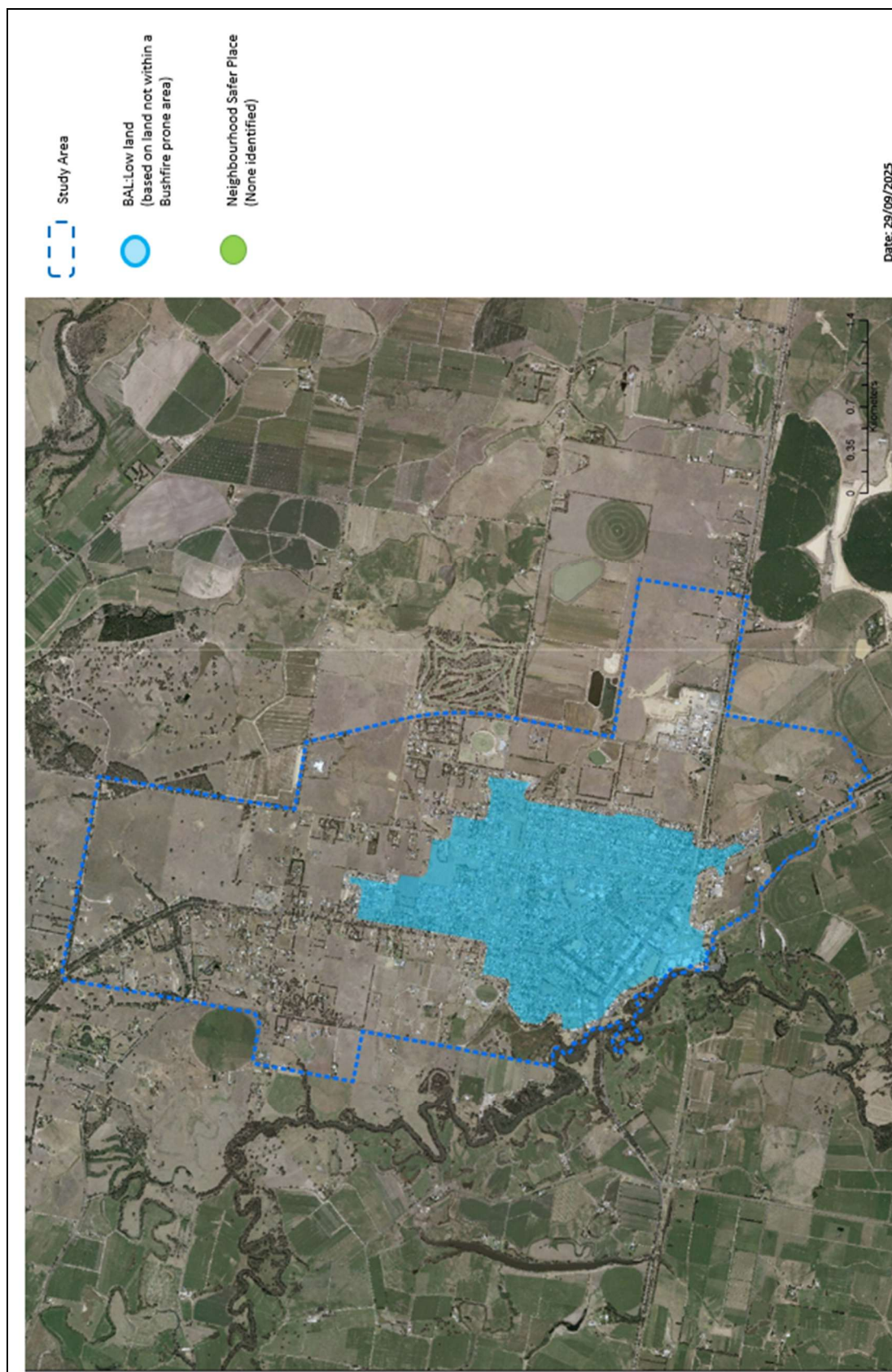


Figure 4-8: Low Hazard Areas & Neighbourhood Safer Places



5. Landscape bushfire anticipated and bushfire landscape types

This section describes landscape bushfire hazards. Having regard to the contextual information in Section 4, it considers how the bushfire hazard in the landscape may affect the Study Area.

5.1 Hazard areas of landscape significance and likely landscape bushfire scenarios

Grassland is the only bushfire hazard of landscape significance.

Due to the highly modified environment grassland areas are often in a managed setting either because of agricultural activities or managed as part of the gardens associated with rural living and low-density residential development. For considering the landscape risk associated with grassland areas, it is assumed that the grasslands are unmanaged.

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

Fire runs in the hazard are up to many kilometres. This includes fire runs located north-west and south-west of the Study Area where prevailing bushfire weather in Victoria is likely to move a fire towards the Study Area. Fire runs are available on other aspects, but these are least likely to bring a bushfire towards the subject site under Victoria's dominant bushfire weather.

The hazard areas include rural living and low density type lots and undeveloped land within the Study Area that contain grasslands. A grassfire can move into the Study Area up until where urban density lots and low hazard urban land are present.

The hazard area in comprising only grassland is unlikely to generate extreme fire behaviour due to the lack of rugged terrain, the vegetation type and the extent of non-grassland vegetation.

See: **Figure 5-2: Landscape bushfire analysis**

5.2 Bushfire landscape types

Bushfire landscape types are derived from considering likely bushfire scenarios, the potential for neighbourhood scale destruction and the availability and access to safer areas. The landscape types enable locational policies in *c13.02-1S Bushfire Planning* to be considered based on the landscape risk as well as appreciating the relative risk between places in the Study Area. Landscape types 1 to 4 are described in *Planning Permit Applications Bushfire Management Overlay Technical Guide (DELWP, 2017)*. Generally, as the Bushfire landscape types progress through 1 to 4, the landscape risk increases.

Landscape types consider strategic and locational policies only. Planning schemes require local, neighbourhood and site bushfire hazards and policies to also be considered, with the potential that at the different scales of assessment different risks may be identified. The identified landscape types 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 as a stepping off point for discussions and further investigations.

See:

Figure 5-1: Overview of landscape types

Figure 5-3: Assessed Bushfire landscape types

5.3.1 Land not within a bushfire prone area

Land where the bushfire risk is sufficiently low is not included in a bushfire prone area. This means the planning scheme already confirms there is insufficient hazard and insufficient risk to warrant any pre-designation of these areas as being exposed to bushfire or grassfire.

5.3.2 Landscape type 1

Landscape type 1 describes locations that are at the lowest end of the landscape risk spectrum using the landscape types approach. 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).*

Landscape type 1 is assessed in grasslands and designated Bushfire prone areas within the Study Area. The area of Bushfire Management Overlay is also included in Landscape type 1 as this area of Bushfire Management Overlay does not contain bushfire hazards of landscape significance.

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*.

Figure 5-1: – Overview of landscape types

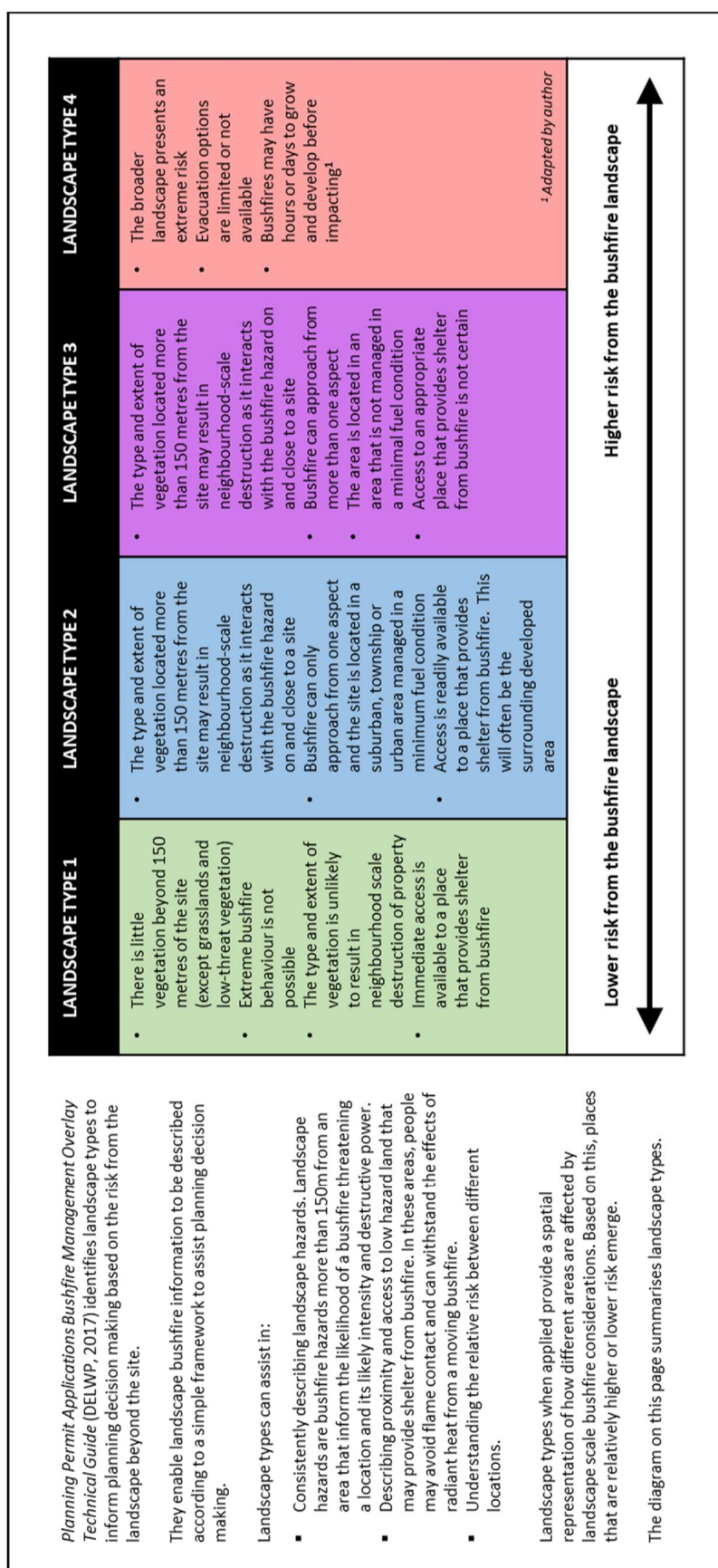


Figure 5-2: Landscape bushfire assessment diagram

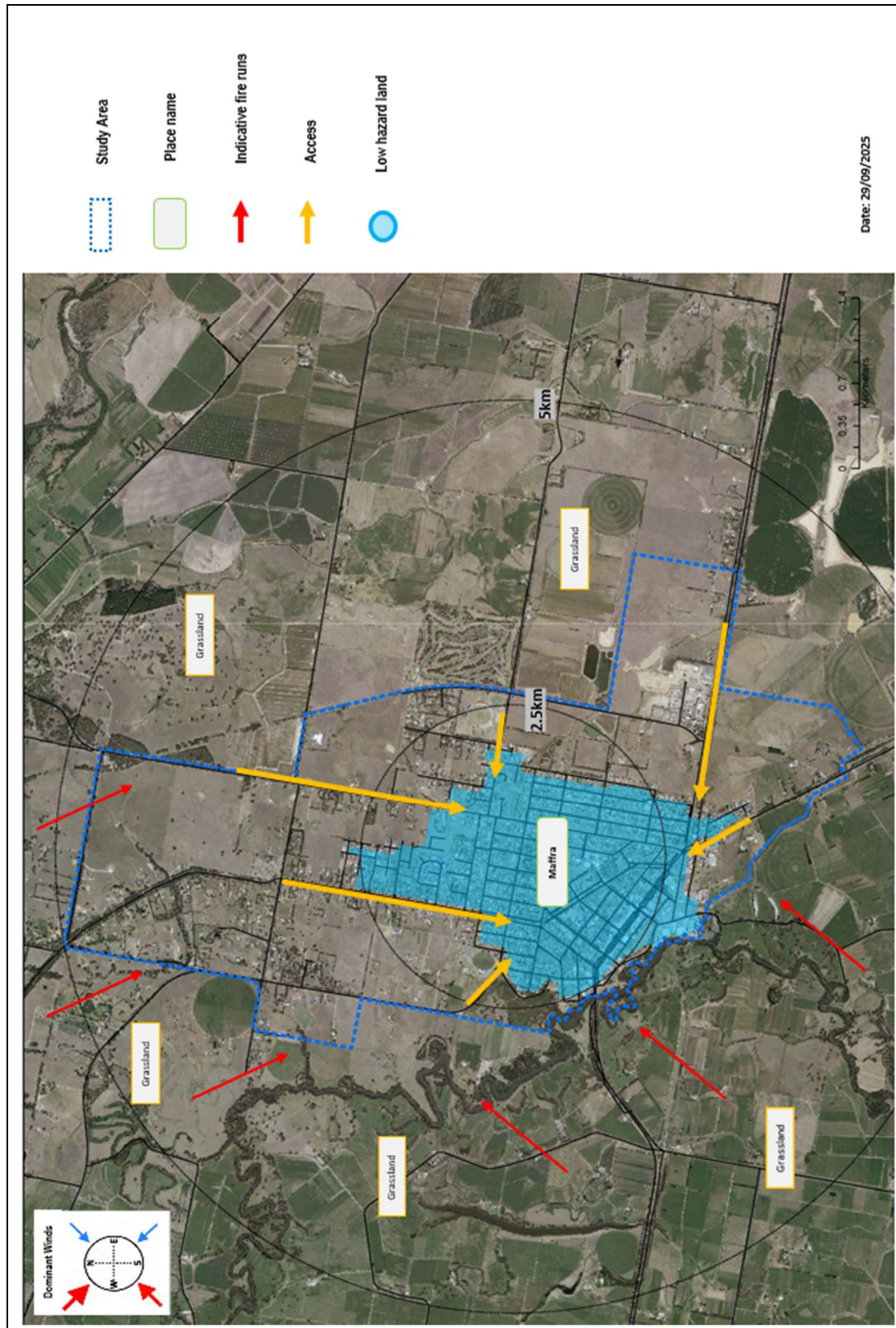
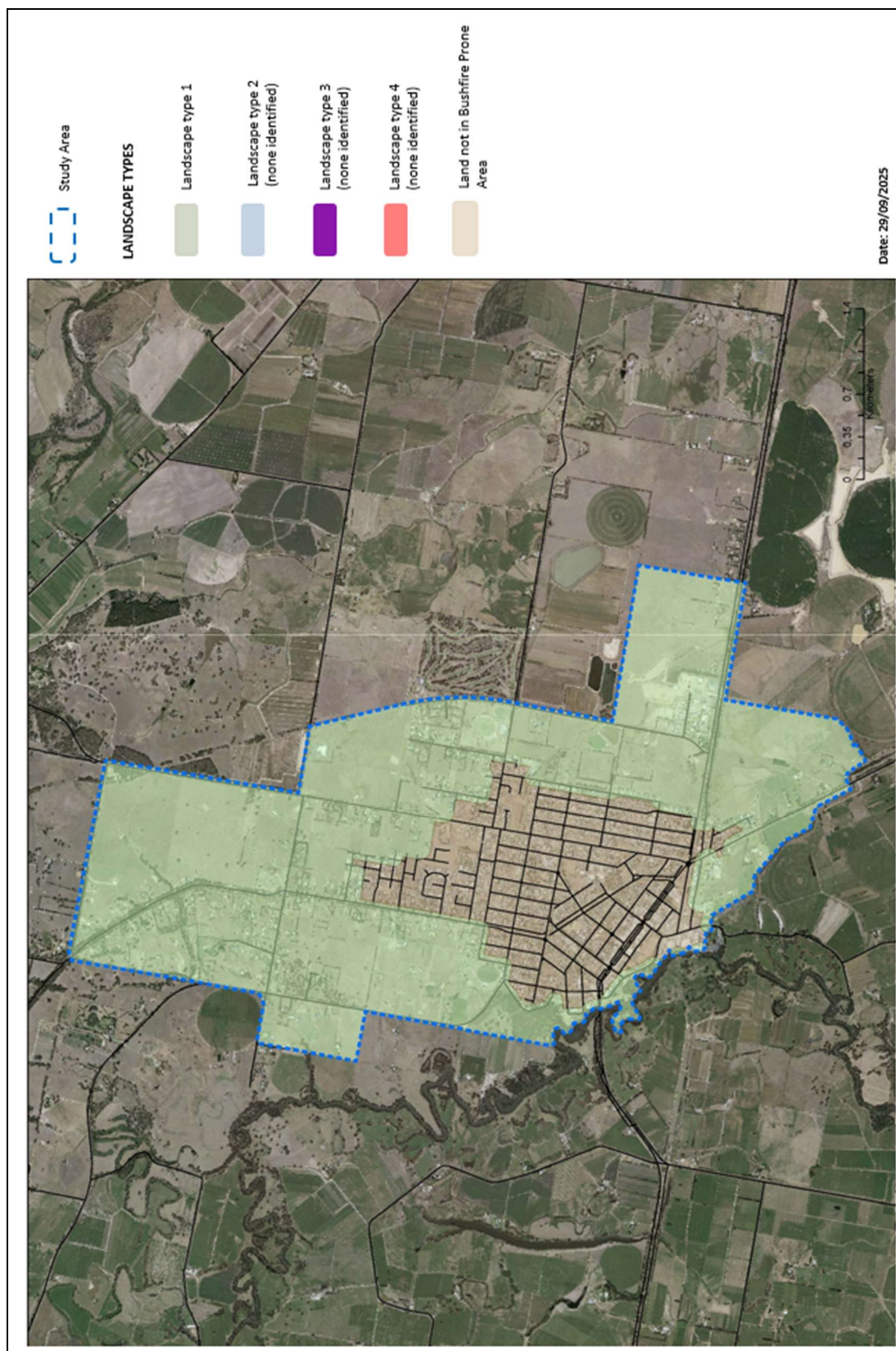


Figure 5-3: Assessed Bushfire landscape types



6. Exposure to bushfire at the neighbourhood and local scale

Exposure to bushfire at the neighbourhood and local scale assesses the level of radiant heat likely to arise from hazardous vegetation within and in proximity (150m) to a specific site or area. Considering exposure to bushfire enables new development to be separated from hazardous vegetation so that radiant heat of less than 12.5kw/sq.m arises, as required by *c13.02-1S Bushfire Planning* for new development provided for in a strategic planning document and/or enabled by a planning scheme amendment.

This section enables key strategies in *c13.02 Bushfire Planning* to be considered. These strategies include the following:

Site based exposure

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 exposure to bushfire and determining land likely to be exposed to less than 12.5kw/sq.m of radiant heat is based on vegetation type (for example, forest, woodland) and the slope of land under hazardous vegetation. The information obtained from the bushfire hazard site assessment is used to determine the separation (or setback) required between development and hazardous vegetation.

6.1 Methodology to determine exposure to bushfire

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) informs the assessment. Key assumptions include a Fire Danger Rating of 100 and a flame temperature of 1080°C.

The assessment of exposure to bushfire and determining land likely to be exposed to less than 12.5kw/sq.m of radiant heat is based on vegetation type (for example, forest, woodland) and the slope of land under hazardous vegetation (using the 10m contour). The information is used to determine the separation required between development and hazardous vegetation.

Setbacks from hazardous vegetation were applied based on Column A in Table 2, *c53.02-3 Bushfire Planning*. These setbacks provide for exposure a radiant heat flux of less than 12.5 kilowatts/square metre, as required by *c13.02-1S Bushfire Planning* for a strategic planning document or planning scheme amendment.

There are two types of assessment included to respond to the scope of work, as described below.

6.2 Generalised assessment

A generalised assessment has been prepared of whether land within the Study Area could satisfy the exposure requirement. This uses high level simplified inputs to confirm that there is no significant barrier to bushfire setbacks being provided in conjunction with new development. It is not focused on specific development sites included in the Maffra Structure Plan.

The setbacks used are based on hazards on the edge of the Study Area and include:

- A generalized 30m setback from grassland hazards, which covers slopes up to 15 degrees, taking a very conservative approach to any localised areas of slope.
- A setback of 48m from forests in the north-east Study Area based on flat/upslope.
- A setback of 33m from woodland in the west of the Study Area based on flat/upslope, taking a very conservative approach to vegetation in the waterway corridor.

At the site-scale, variations to the above may arise especially in the slope and any localised areas of hazard. At a strategic scale as assessed in this report, the differences that may arise are relatively limited (for example, setbacks may vary 10-20m). In the context of the Study Area as a whole, these are not material. Most of the Study Area can manage exposure from hazards with relatively standard bushfire setbacks. Areas where exposure to less than 12.5kw/sq.m of radiant heat can be achieved, if new development was proposed and bushfire setbacks and vegetation management was implemented.

A component of the implementation of the Maffra Structure Plan is applying Schedule 2 to the General Residential Zone to existing General Residential Zone (without a schedule) land. Proposed Schedule 2 includes neighbourhood character objectives and decision guidelines, as required by DTP, but otherwise specifies no content that varies Clause 54 and Clause 55 standards. Whilst the General Residential Zone generally correlates with the area of land where exposure to less than 12.5kw/sq.m of radiant can be achieved, the introduction of a schedule is not a material planning scheme for bushfire purposes and need not satisfy the requirement in any event, as the land is already within the General Residential Zone.

See:

Figure 2-4: Maffra Structure Plan, Figure 27: Proposed Zoning Plan

6.3 Neighbourhood-scale assessment

An assessment has been prepared of selected sites as identified in the Maffra Structure Plan as being subject to possible future planning scheme changes, including for example the rezoning of land. This assessment confirms in more detail for these selected sites that bushfire setbacks can be achieved if development was proposed.

The potential for variation in vegetation types and slope necessitates a bushfire hazard site assessment being prepared for any individual planning scheme amendment that seeks to rezone land. This is required under the ordinary approach to preparing a planning scheme amendment in a bushfire prone area, in any event. To reinforce this, a recommendation in this report is included to this effect.

6.4 Land exposed to a radiant heat flux of less than 12.5kw/sq.m

Land likely to be exposed to no more than 12.5kw/sq.m of radiant heat emerges from applying the above methodology. This land would be exposed to a radiant heat flux of less than 12.5 kilowatts/square metre, as required by *c13.02-1S Bushfire Planning*, including because of bushfire setbacks and vegetation management being included as part of future planning scheme amendments to rezone land.

There is no real question as to whether bushfire setback can be met. They can be if the setbacks are provided based on current hazards or through hazard removal.

See:

Figure 6-1: Land likely to be exposed to a radiant heat flux of less than 12.5kw/sq.m

Figures 6-3a-e: Selected sites: Bushfire setbacks and land exposed to a radiant heat flux of less than 12.5kw/sq.m

Figure 6-1: Land likely to be exposed to no more than 12.5kw/sq.m of radiant heat

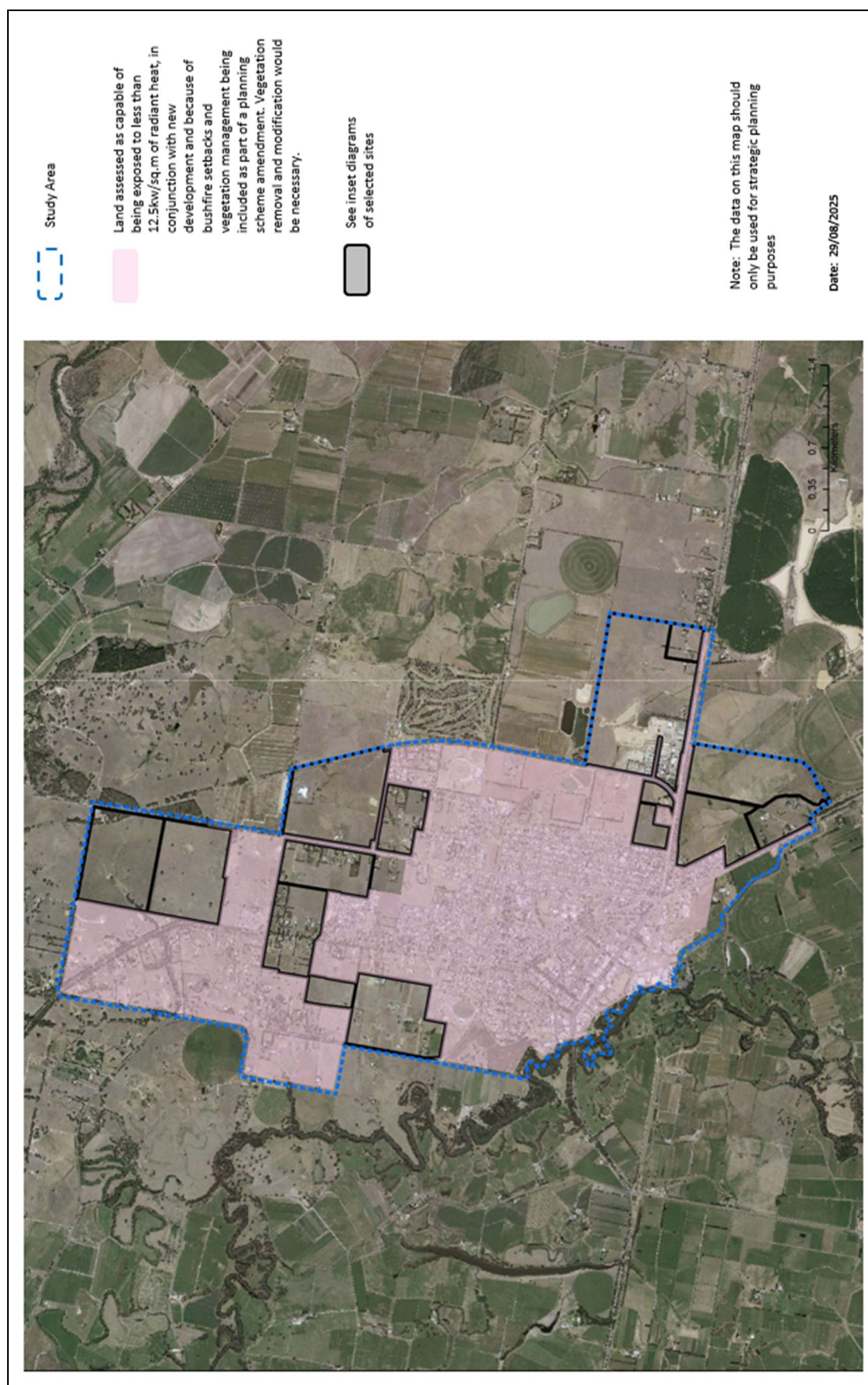


Figure 6-2: Clause 53.02-5 Table 6 Vegetation management requirement (defendable space)

Defendable space is provided and is managed in accordance with the following requirements: • Grass must be short cropped and maintained during the declared fire danger period. • All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period. • Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building. • Plants greater than 10 centimetres in height must not be placed within 3 metres of a window or glass feature of the building. • Shrubs must not be located under the canopy of trees. • Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres. • Trees must not overhang or touch any elements of the building. • The canopy of trees must be separated by at least 5 metres. • There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Selected Sites

Contour (10m)

Classifiable vegetation

Grassland

Excludable vegetation

(e) Non-vegetated areas
(f) Low-threat vegetation

Setbacks

XXm Set back required from hazardous vegetation

Exposure to radiant heat

Land likely to be exposed to no more than 12.5kw/sq.m of radiant heat.

Perimeter roads used as setbacks where they exist, resulting in a 0m setback.

A 19m setback on internal boundaries between lots may arise, depending on the timing of development. This has not been illustrated on this figure.

Figure 6-3b: North of Stratford-Maffra Road:
Bushfire setbacks and land exposed to a radiant heat flux of less than 12.5kw/sq.m

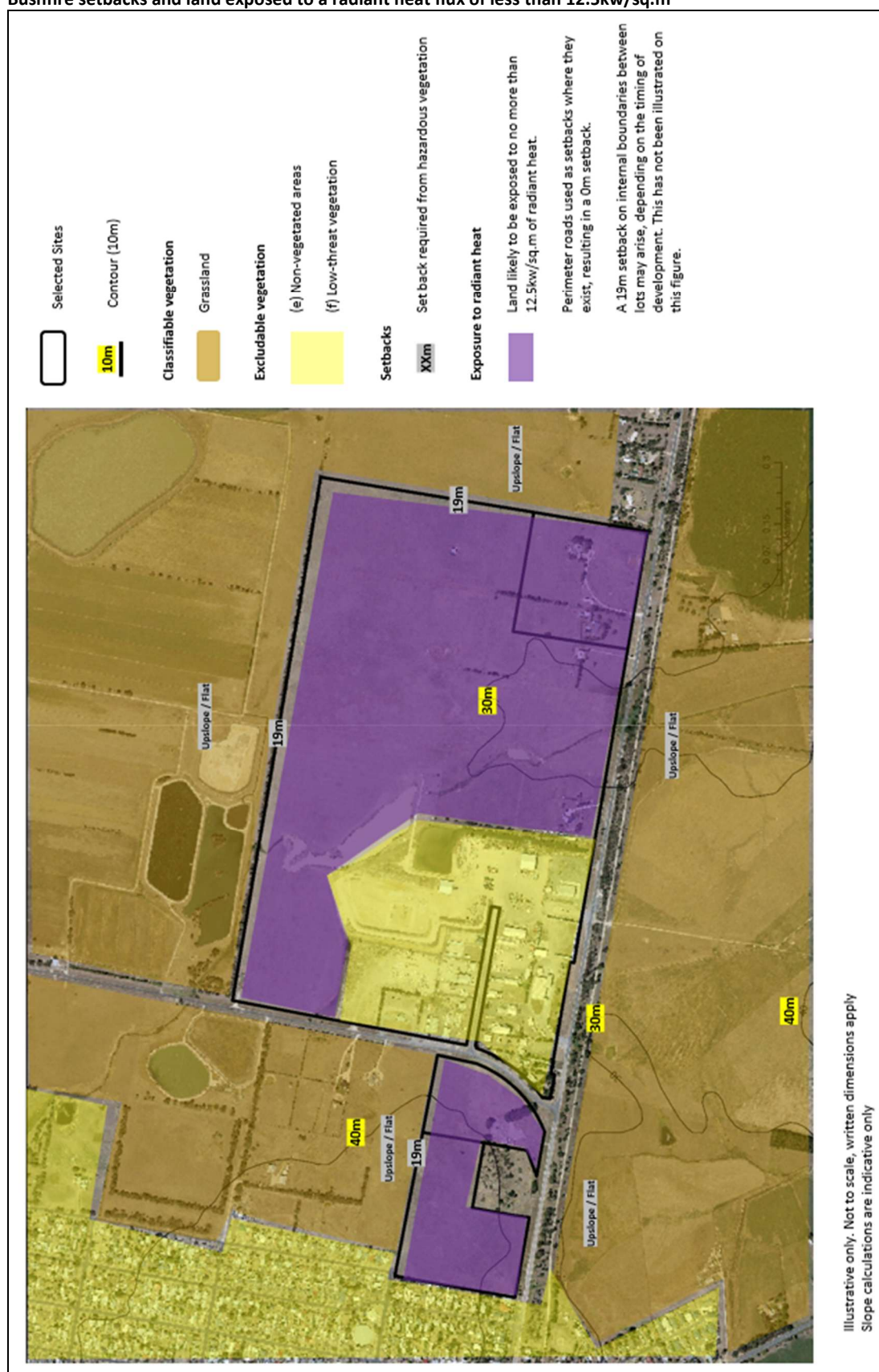


Figure 6-3c: East of Maffra-Briagolong Road:
Bushfire setbacks and land exposed to a radiant heat flux of less than 12.5kw/sq.m

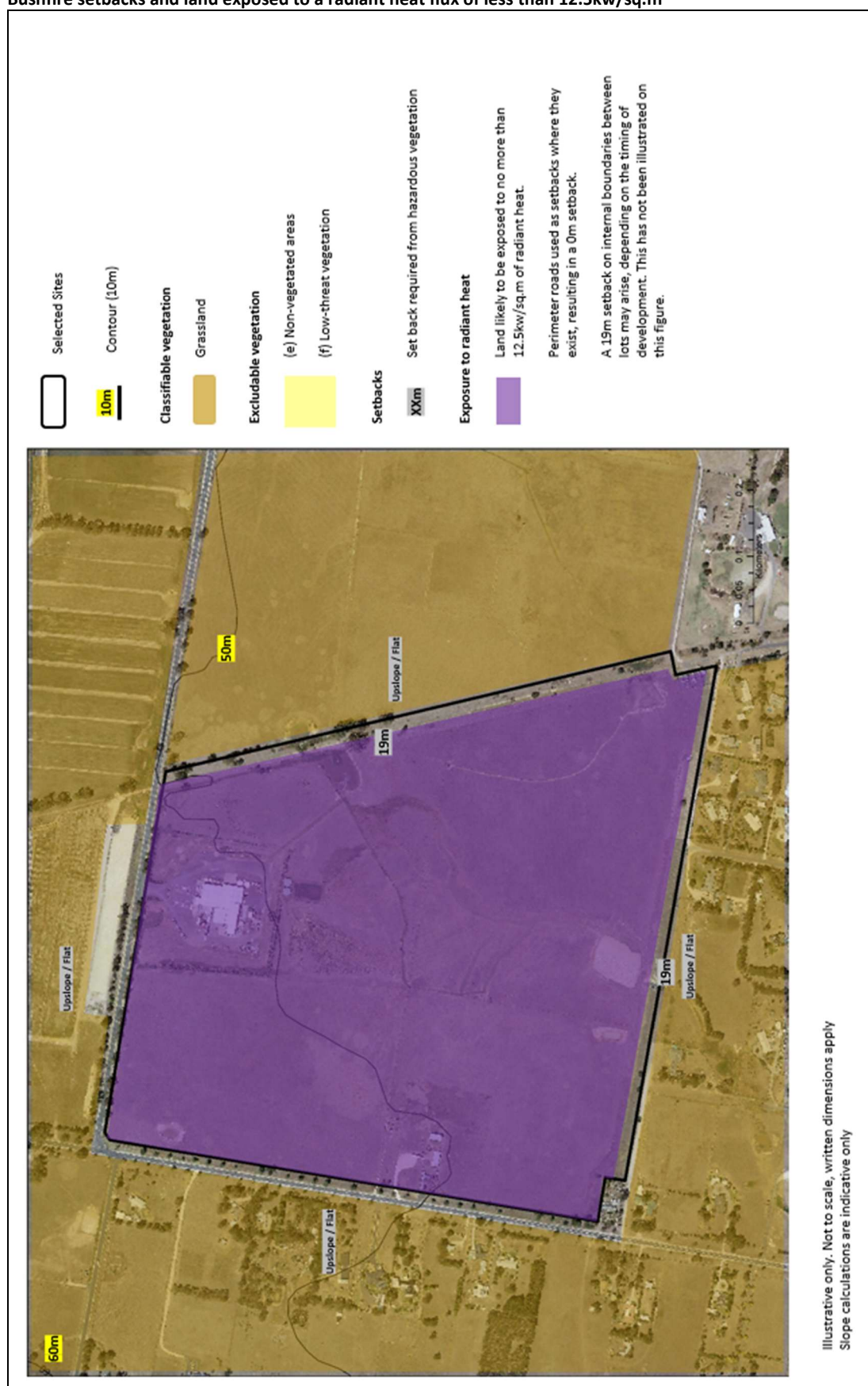


Figure 6-3d: Edges of Maffra

Bushfire setbacks and land exposed to a radiant heat flux of less than 12.5kw/sq.m

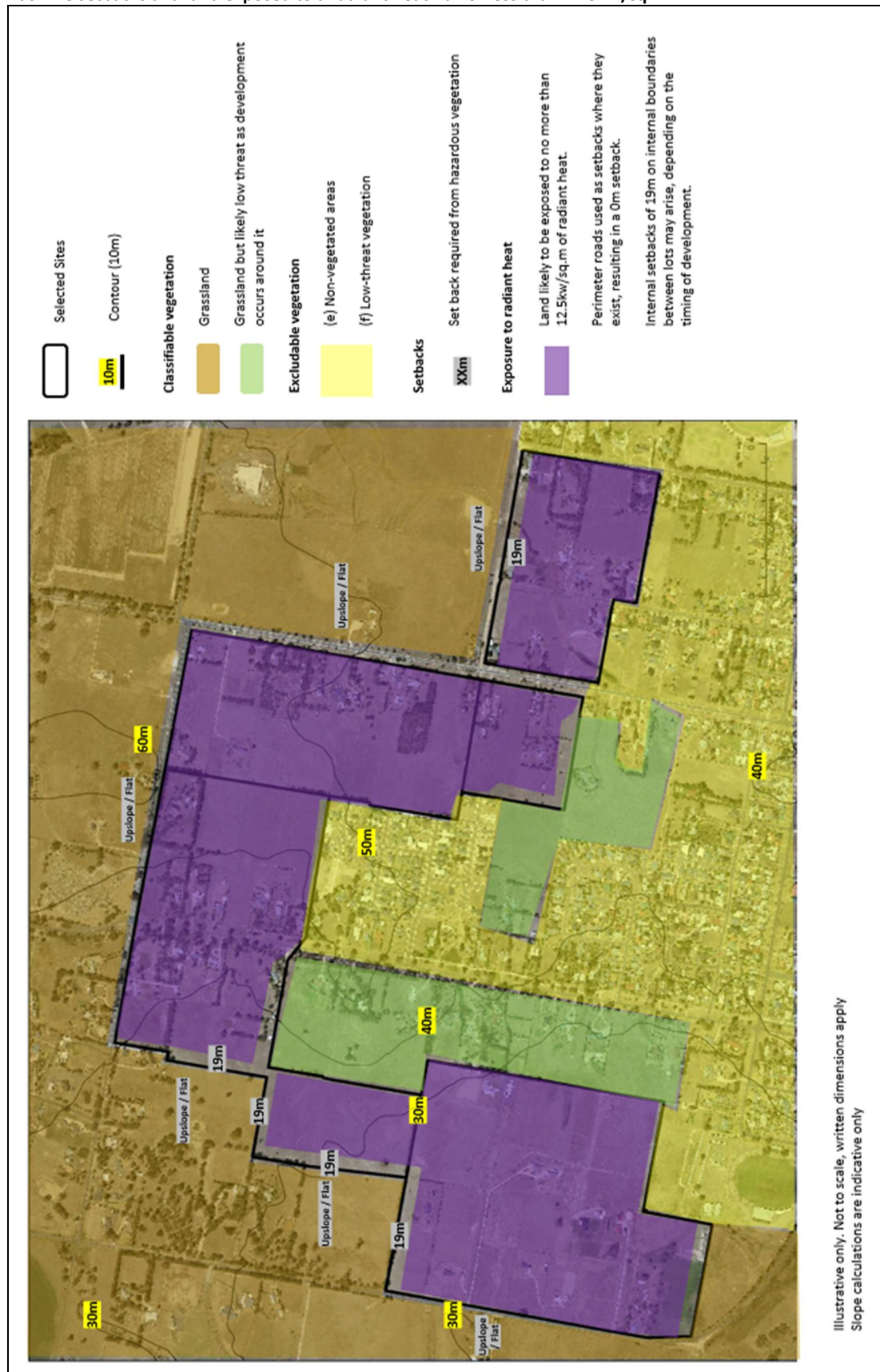
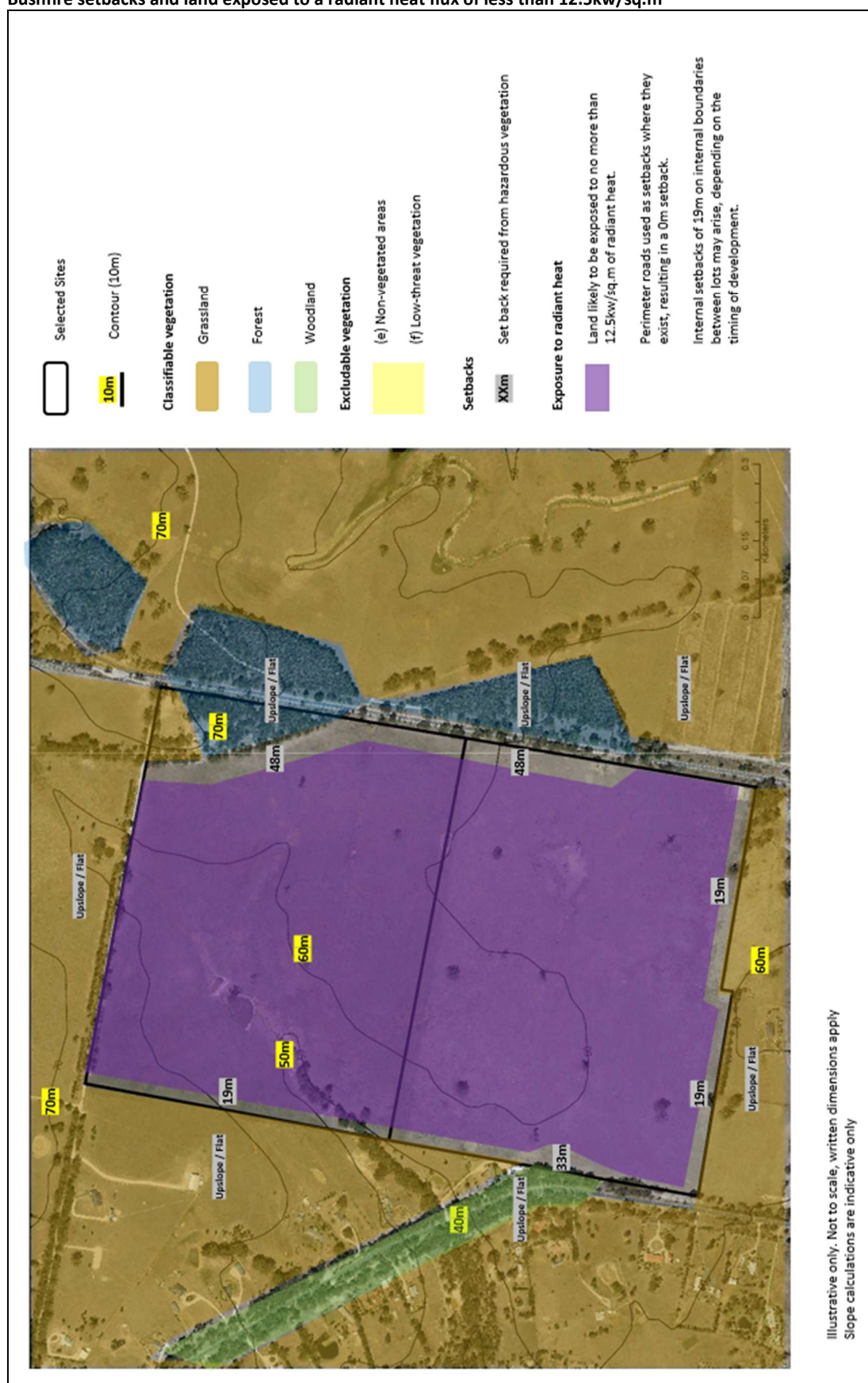


Figure 6-3e: West of Maffra-Briagalong Road:
Bushfire setbacks and land exposed to a radiant heat flux of less than 12.5kw/sq.m



7. Design responses in bushfire hazard areas

Design Guidelines: Settlement Planning at the Bushfire Interface (DELWP 2020) (the 'Design Guidelines') provide an appreciation of the bushfire threat and how bushfire may affect a settlement, supported by design advice on settlement planning set out according to three themes:

- Part 1: The form and structure of settlements.
- Part 2: The settlement interface.
- Part 3: Bushfire protection measures across a whole settlement.

The Design Guidelines include a generalised appreciation of how bushfire may affect a settlement.

See: **Figure 7-1: Understanding the bushfire threat**

The Design Guidelines provide a logical approach to considering good design in settlement planning, supporting many of the objectives and approved measures in *c53.02 Bushfire Planning* and the policy emphasis in *c13.02-1S Bushfire Planning*. The Design Guidelines are not incorporated into the planning scheme.

This section considers selected parts of the Design Guidelines to inform the planning assessment in the next chapter.

7.1 Part 1: Form and structure of settlements

The bushfire hazard in directing growth

Key design considerations:

- *Settlement planning should direct growth to locations that are less exposed to a bushfire.*
- *Settlement growth should be directed to locations that avoid bushfire risk where possible, including the highest risk aspect(s) where large bushfires will occur.*
- *Settlement growth should also be directed to locations that avoid the most hazardous locations.*
- *Directing new growth to higher risk areas should be carefully considered. Consulting with the relevant fire authority as part of strategic and settlement planning is crucial.*

The exposure to bushfire hazards on all sides of the Study Area is grasslands. With bushfire planned interfaces with new development, low risk outcomes (as defined in planning scheme decision making) can be created on grassland interfaces.

There is no value in directing growth to locations that avoid the relatively higher risk western aspect of the settlement in a grassland setting. In fact, directing growth to the west can provide an overall risk reduction to the settlement where a contemporary settlement interface is developed to replace an interface that may be undeveloped or development without bushfire protection measures being included.

The bushfire hazard in directing growth

Key design considerations:

- *Development that may be occupied by vulnerable people should be located away from the settlement interface and in some locations may not be suitable at all.*
- *Hazardous uses should be located away from the settlement interface and away from locations exposed to a north-west of south-west bushfire. Locating them on the eastern side of a settlement means that winds would tend to push smoke away, rather than towards more populated areas.*

There is no emphasis in the Maffra Structure Plan to encourage vulnerable people or hazardous uses to the Study Area. In a grassland setting, fairly standard bushfire responses can be implemented to manage vulnerable people and hazardous uses, subject to the detail of specific proposals if any are ever proposed.

Lot sizes in settlement layout

The Design Guidelines include discussion on lot sizes in settlements. These are re-produced in full below.

A key bushfire risk to many settlements is from ember attack. Ember attack may ignite fuel sources and create many smaller fires throughout the settlement. Lot sizes are an important mechanism to support the management of fires ignited from ember attack. Different lot sizes support different bushfire outcomes.

Residential lots

Smaller urban lots, for example less than 800sq.m in size, are less likely to enable fuel sources (including vegetation) due to the limited area of open space. They contribute positively to achieving lower-fuel settlements. However, smaller lots result in structures closer to together, increasing the risk of structure to structure fire.

Larger lots, for example 0.2ha- 4ha in size, have the capacity for more localised fuel sources (particularly vegetation) due to more extensive open space areas. They require more extensive management by individual landowners. They also tend not be large enough for landowners to have specialised equipment (for example, tractors) that would make management more practical. Houses, however, are separated further apart minimising the risk of structure to structure fire.

An optimum lot size of between 800sq.m-1,200sq.m provides a good balance. This minimises available open space for fuel sources while enabling a good separation between individual structures (ideally more than 10m).

Many parts of Victoria encourage the provision of low-density and rural living lots of 0.2ha and above. They are often justified in locations that do not have reticulated services or as a transitional land use from rural to urban (for example, on the edges of settlements).

These style of lots present a unique bushfire risk as they have not historically resulted in a well-planned settlement interface or an edge to the bushfire hazard. Bushfires and grassfires can penetrate larger lots and create bushfire pathways into denser residential areas. This can include a moving bushfire front entering a settlement. They may also make it more difficult for firefighting (for example, for the setting up of containment lines) and for the monitoring and enforcement of vegetation management on private land.

Where lots larger than 800sq.m - 1,200sq.m are provided, the guidance in this document should be fully considered, especially Part 2: Designing the settlement interface. This will ensure a well-planned settlement interface is created along with an edge to the bushfire hazard.

Commercial and industrial lot sizes

At the settlement planning stage lot sizes for non-residential lots could be relevant. However, the future form of development is more variable and usually subject to further planning approvals. It is important however that Part 12 of the Guidelines is fully considered in locating land identified for industrial and commercial zoning

The Maffra Structure Plan proposes larger lot sizes in the northern parts of the Study Area, in the form of the re-subdivision of existing rural living and low density residential lots (i.e. intensifying these areas) and new areas of rural living and low density residential development. It refers to these areas as 'lifestyle residential'. Larger lots sizes than those optimised for bushfire, as set out in the Design Guidelines, are therefore proposed.

Whilst the Maffra Structure Plan promotes these areas as a 'transition' from agricultural land outside the Study Area to urban land in the central parts of the settlement, it is essential that each proposal implements bushfire protection measures that mitigates the potential that larger lots contain bushfire hazards and enable a moving grassfire to penetrate deep into developed areas.

This is achieved by development including:

- A perimeter road on the permanent settlement / hazard interface. This can utilise existing roads if they are present but back fences on these interface roads should be avoided. This may necessitate the need for service roads.
- Bushfire setbacks on hazard interfaces.
- Bushfire vegetation management, defensible space, applied to all land within a lot created that is larger than 1,200sq.m.

In progressing with larger lot sizes, it is important to recognise that notwithstanding the larger lots, highly vegetated (and therefore hazardous) neighbourhoods are not acceptable. Instead, low hazard neighbourhoods characterised by mowed grass with other vegetation, such as trees and shrubs, carefully located will be necessary to enable a low hazard managed setting to arise.

Recommendations to give effect to the above are included in this report.

Vegetated areas within a settlement (such as parks, nature reserves and river corridors)

Key design considerations:

- *Vegetated areas can be managed so that fuels are consistent with the vegetation management requirements for bushfire. This involves either removing fuels or ensuring fuels are not introduced as part of settlement planning.*
- *Areas that will not be managed for bushfire purposes effectively have their own interface with the bushfire hazard and would require setbacks and vegetation management approaches.*

The Maffra Structure Plan does not emphasise new vegetated areas, but open spaces and drainage reserves are likely to arise as part of new development. Where these arise in larger lot size neighbourhoods or at the permanent edges of the Study Area, they will need to be low hazard and bushfire interfaces (development setbacks, vegetation management on adjoining lots, perimeter roads) will be necessary.

7.2 Part 2: The settlement interface

7.2.1 Apply the required development setback

Key design considerations:

- *New development should be set back from the bushfire hazards. The setback is determined based on the type of vegetation and slope under the vegetation.*
- *Permanently occupied development, such as dwellings, are not permitted in the setback area.*

Chapter 5 of this reports demonstrates that new development within the Study Area overall and the selected sites can be setback from bushfire hazards to the benchmark specified in *Clause 13.02-15 Bushfire Planning*, applicable to a planning scheme amendment. The applicable setbacks will be in the range of 19m to 48m based on the hazards within and around the Study Area. Given the existing lot sizes of the selected sites, this is achievable. Vegetation in the setback areas will need to be managed as defensible space, to prevent hazards being introduced over time that compromises the bushfire setback.

Recommendations to give effect to the above are included in this report.

See: **Figure 7-2: Indicative treatments on hazard interfaces**

7.2.2: Design the settlement interface

Key design considerations:

- *Vegetation in the setback area needs to be managed to prevent a moving bushfire front entering the settlement.*
- *Perimeter roads are the preferred design outcome on the settlement interface where a site abuts or is near a bushfire hazard. A perimeter road:*
 - *Enables a no fuel area to form part or all of the interface.*
 - *Enables development to front the bushfire hazard, orienting the rear of lots away from it. The rear of lots is often where introduced fuels create a localised bushfire hazard.*
 - *Provides an effective location from which fire authorities can establish positions to attack a bushfire and for land managers to undertake fuel management activities.*

A perimeter road is required on all permanent hazard interfaces. This includes in larger lot residential rural living and industrial / commercial development.

Recommendations to give effect to the above are included in this report.

See: **Figure 7-2: Indicative treatments on hazard interfaces**

7.2.3: Design access and egress

Key design considerations:

- *Ensure people living close to the settlement interface can move away from hazards to a place of relative safety.*
- *Ensuring the spacing of roads leading away from the hazard are no more than 120 metres apart (on average)*
- *Designing road widths to meet planning scheme requirements and those of the relevant fire authority*
- *Providing multiple roads. At least two different roads leading away from the hazard edge should be available to each lot*
- *Ensuring travel to and from a location is not alongside a bushfire hazard and providing multiple access and egress routes within developed areas to minimise the use of perimeter roads in the event of a bushfire*
- *Effectively connecting roads to the broader road network within the settlement.*
- *Access and egress need not always be on trafficable roads. Some access points may be provided for pedestrians and emergency vehicles only.*

The above design outcomes are relatively straight forward to apply in new development. The main issue is ensuring there is a planning scheme mechanism to require they be considered as development proposals come forward and that the design outcomes are accommodated in planning tools such as development plans.

Recommendations to give effect to the above are included in this report.

7.3 Part 3: Bushfire protection measures across a whole settlement

7.3.1: Vegetation management

Key design considerations:

- *Ensure vegetation is managed across a settlement where there is exposure to ember attack. Proper vegetation management will help reduce the potential for localised fires from ember ignition.*

Grassfires can generate ember attack, but it is far less severe than in other hazard types. Bushfire vegetation management will be necessary on all permanent hazard interfaces and where proposed lots are larger than 1,200sq.m, bushfire vegetation management should be applied to all land within a lot.

8.3.2: Building construction standards

Key design considerations:

- *Consider at the settlement scale how bushfire constructions standards are to be applied, including where enhanced protection from ember ignited localised fires and smaller lot sizes are proposed to protect against structure to structure fires.*

BAL12.5 that will be required for new development enabled by a planning scheme amendment is adequate to manage the risk from ember attack in the grassland setting.

7.3.3: Fences and other localised fuel sources

Key design considerations:

- *Designing and planting for bushfire can help manage fuels being introduced around buildings.*
- *Fences can be a key source of fuels within settlements.*

Localised fuel sources may be an on-going issue in the Study Area, especially where larger lot residential and rural living development is proposed. Each proposal should consider whether restrictions on fence materials and other localised fuel sources may be necessary. However, the need for such in the Study Area is not overly apparent, given the grassland setting.

Figure 7-1: Understanding the bushfire threat (DELWP 2020)

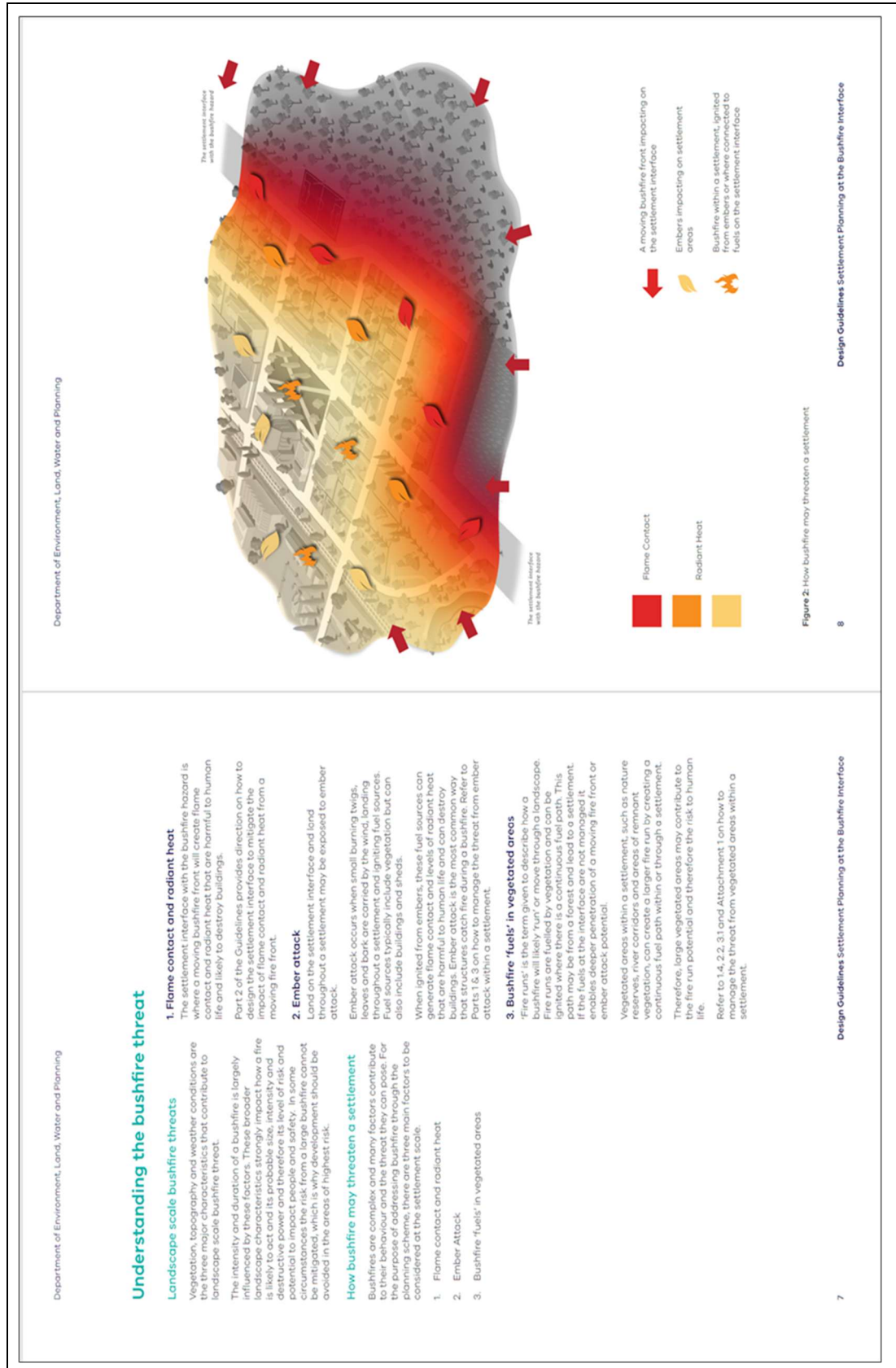


Figure 7-2: Indicative treatments on hazard interfaces

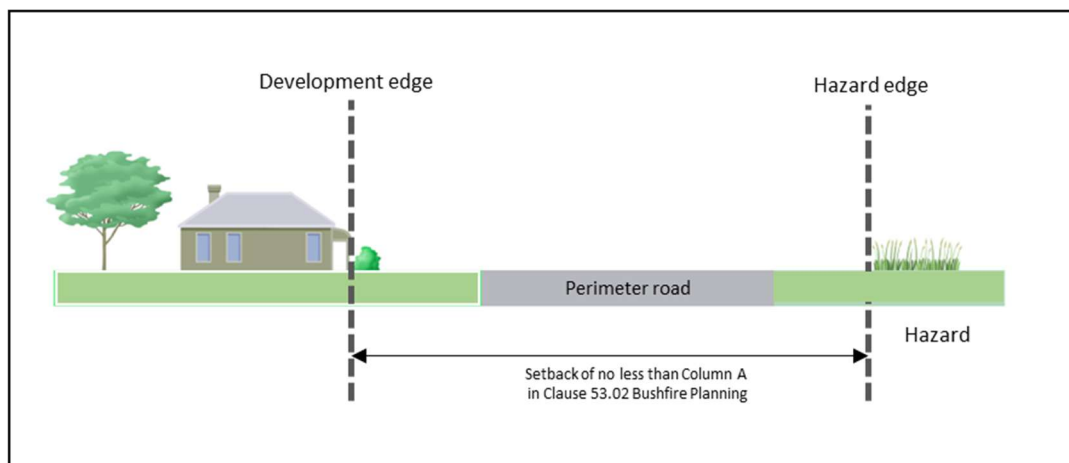


Figure 7-3: Bushfire vegetation management (defendable space) Table 6 to c53.02 Bushfire Planning

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3 metres of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

8. Planning assessments

This report has considered the bushfire context of the Study Area, the landscape bushfire hazard & bushfire landscape types and whether there are locations that could satisfy the planning scheme site-based hazard exposure requirement. The Design Guidelines have been used to consider bushfire-optimised design responses necessary in new development.

This chapter uses this information to provide a planning assessment using *c13.02-1S Bushfire Planning* and other relevant assessment frameworks to inform planning recommendations.

8.1 c13.02-1S Bushfire Planning - Landscape bushfire considerations

c13.02-1S Bushfire Planning requires a scaled and 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.*

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 landscape.

This report includes bushfire hazard landscape information, including assessed Landscape types. This has considered the bushfire hazard at the strategic and landscape scales as required by these policies.

Landscape type 1 is assessed for the Study Area. Landscape type 1 describes locations that are at the lowest end of the landscape risk spectrum using the landscape types. Landscape type 1 reflects that grasslands comprise the landscape bushfire risk to the Study Area. Grassfire is most likely to arise from the north-west, west and south-west under dominant bushfire weather in Victoria, but can arise on all aspects too. Due to the lack of non-grassland landscape scale hazards, the potential for extreme bushfire behaviour is avoided.

Mitigating the landscape risk of grassfire is highly achievable through the separation of development from unmanaged hazard areas and the planning of development to be low hazard, preventing grassfire from penetrating into developed areas, and providing the ability for people to move away from hazard interfaces. These outcomes are achievable in Maffra.

Planning scheme directions that seek to direct growth to Landscape type 1 locations can be favourably assessed against landscape and locational policies in *c13.02-1S Bushfire Planning*.

8.2 c13.02-1S Bushfire Planning - 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.*

The Study Area is at the lowest end of landscape risk in Victoria, with Landscape type 1 being assessed. Grassland is the only landscape-scale hazard. Maffra is well set up with a dense, non-hazardous core where shelter can be provided from a bushfire. There is good access to low-fuel areas and areas capable of being assessed as BAL:Low where human life can be better protected from a bushfire, if evacuation was ever required.

Within a grassland landscape bushfire setting with a large of low hazard available in a settlement context, there is no need to consider alternative locations for growth as they would be at equal risk to Maffra where they are also within a grassland setting (such as Sale, Heyfield and Stratford). There is no relative risk benefit in directing development away from Maffra on the basis of the grassland landscape hazard.

Maffra is more than 11km away from landscape-scale forest hazards to the north / north-west, a distance that means the presence of these forest hazards are not material to Maffra's acceptability for growth.

8.3 Availability of safe areas

c13.02-1S Bushfire Planning requires a location in easy reach that provides absolute 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.*

BAL:Low land in the Study Area comprises the dense urban core of Maffra. These areas are large and are in proximity to the whole settlement. Further areas of low hazard land will emerge in completed new development where the recommendations of this report are implemented.

8.4 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).*

An assessment of site based exposure prepared as part of this report (Section 5) made recommendations that can ensure new development enabled by the Maffra Structure Plan satisfies the site-based exposure elements of *c13.02-1S Bushfire Planning*.

The settlement, neighbourhood and local assessments prepared show that exposure of future development to no more than 12.5kw/sq.m of radiant heat can be achieved generally for the Study Area and specifically for selected sites identified in the Maffra Structure Plan as potentially subject to a future planning scheme amendment. A BAL12.5 can arise in new development.

Achieving the bushfire exposure standard requires bushfire setbacks and bushfire vegetation management to be applied to new development. Recommendations in this report provide for this.

8.5 c13.02-1S Bushfire Planning - 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.*

It is beyond the scope of this report to assess the biodiversity conservation value of vegetation that may need to be removed or managed as a result of bushfire requirements. However, given the greenfield environment and the availability of land within the Study Area, it is reasonable to assume that development can accommodate the setbacks required from any vegetation that might be retained for biodiversity purposes.

8.6 c13.02-1S Bushfire Planning - 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.*

Directing development to Maffra is a credible bushfire planning strategy on a regional, sub-regional and Shire-wide basis. It is a lower risk location optimised for bushfire resilience due to the lack of non-grassland hazards, existing developed areas being low hazard, and the potential for people on the hazard interface to move to places of enhanced safety.

Maffra is optimised through existing conditions to ensure new development does not increase the bushfire risk, and through new development implementing bushfire protection measures, there should be no net increase in risk. Through new development with contemporary bushfire protection measures, there is actually potential for an overall risk reduction as older hazard interfaces are replaced by new development.

Where development is directed to Maffra as envisaged in the Maffra Structure Plan, it would be consistent with the bushfire policies and directions contained in the planning scheme. The risk from bushfire can be managed with relatively standard planning responses. Specific proposals for development including as part of a planning scheme amendment would need to demonstrate that bushfire mitigation would be delivered in conjunction with the development it enables.

8.7 Bushfire protection measures to be factored into new development

There is a need to operationalise into the planning scheme the bushfire response for Maffra, to ensure new development as it emerges delivers bushfire mitigation to enable low risk outcomes to arise. There is only a very limited area of Bushfire Management Overlay in Maffra, which will not be of utility to secure bushfire protection measures in new development across the Study Area.

Proposed Amendment C120 to the planning scheme includes updates to *Clause 11.01-1L Maffra* in the planning policy framework, as well as Schedule 1 to the Development Plan Overlay which is being amended (provisions) whilst not at this time changing where it is applied. There is no rezoning of land to enable new development areas proposed in Amendment C120.

The recommendations in this report can be given effect to through adjustments to proposed Amendment C120.

Clause 11.01-1L Maffra

The Amendment C120 local policy can be supplemented by a strategy relating to bushfire.

See:

Figure 2-5: Amendment C120 – Clause 11.01-1L Maffra

Whilst *Clause 13.02-1S Bushfire Planning* provides a comprehensive policy framework which concurrently applies, there is benefit in enabling local policy to focus on what is locally specific. For Maffra, as concluded in this report, the focus is on securing bushfire protection measures in new development (rather than any concern about the principle of development proceeding).

An additional strategy could be added to proposed adjusted *Clause 11.01-1L Maffra* as follows:

Ensure new development in a bushfire prone area provides bushfire protection measures to:

- *Prevent grassfire from entering developed areas and manage exposure of new development to bushfire through perimeter roads and bushfire setbacks on permanent hazard interfaces.*
- *Enable an effective movement network for before and during a bushfire emergency.*
- *Manage new development on larger lots in a low hazard condition to prevent a grassfire moving through developed areas.*

Development Plan Overlay

The Amendment C120 Schedule 1 to the Development Plan Overlay includes the following requirement for a development plan:

- *Bushfire assessment and management plan (if the land is within a Bushfire Management Overlay or Bushfire Prone Area).*

The Schedule would be enhanced by specifying what bushfire outcomes need to be included in a development plan. These can be derived from this report. Updated bushfire content could be added to the Development Plan Overlay schedule as follows:

For land within a Bushfire prone area

- *The development plan must be derived from a bushfire hazard site assessment that assesses bushfire hazards in accordance with AS3959-2018 Construction of buildings in Bushfire prone areas (Standards Australia) and which demonstrates that bushfire requirements will be achieved in completed development.*
- *New buildings must be set back from bushfire hazards to ensure that the radiant heat exposure is no more than 12.5 kilowatts per square metre and a minimum construction standard of BAL 12.5 can be achieved in accordance with AS3959-2018 Construction of buildings in bushfire prone areas (Standards Australia, 2018).*

Note: The setback required equates to Column A, Table 2 in Clause 53.02 Bushfire Planning.

- *Vegetation in the required setback must be managed as defensible space in accordance with the vegetation standards set out in Clause 53.02 Bushfire Planning. All land in lots larger than 1,200sq.m must also be managed in accordance with the vegetation standards set out in Clause 53.02 Bushfire Planning.*
- *A movement network that enables people living close to the hazard interface to move away to places of relative safety by:*
 - *Ensuring the spacing of roads leading away from the hazard are no more than 120 metres apart (on average).*
 - *Providing multiple roads. At least two different roads leading away from the hazard edge should be available to each lot.*
 - *Effectively connecting roads to the broader road network within the settlement.*
 - *Ensuring travel to and from a location is not alongside a bushfire hazard and providing multiple access and egress routes within developed areas to minimise the use of perimeter roads in the event of a bushfire.*
- *Subdivision layout and design considers Design Guidelines: Settlement Planning at the Bushfire Interface (DELWP 2020).*

It is noted that the C120 Schedule 1 does not contain application requirements or decision guidelines. There is no compelling reason to include any for bushfire, the above requirement are self-explanatory and can be included in a development plan application in a relatively straight forward way. Where inputs are necessary, such as a bushfire hazard site assessment to determine if the bushfire setbacks satisfy the exposure benchmark, the need for these to support the preparation of a development plan is self-evident.

Some practice in Victoria on specifying local content includes actual vegetation classifications and bushfire setbacks specified in metres. This report does not endorse that approach, instead setting the Clause 13.02-1S Bushfire Planning requirement against which a proposal can be assessed. It is considered that this is preferable as development will come forward over many years, if not decades, and the hazard may change over that time.

Design Guidelines: Settlement Planning at the Bushfire Interface (DELWP 2020) provides design advice on settlement planning and can be used to support development plan preparation.

There is no need to specify a construction standard as a condition within a development plan as achieving the required BAL12.5 will arise under the Building Act 1993 as a result of bushfire setbacks and vegetation management being applied, as required in the proposed adjusted content above.

See:

Figure 2-6: Amendment C120 – Schedule 1 to the Development Plan Overlay

8.8 Overall conclusion

The assessments in this report demonstrate that the Maffra Structure Plan is generally sound as it relates to bushfire. The directions it sets, including land for new development, satisfy *Clause 13.02-1S Bushfire Planning*.

Amendment C120 in proposing to update local policy for Maffra and give effect to some parts of the Maffra Structure Plan can be enhanced through the introduction of bushfire content, as recommended in this report. This is in the form of updated local policy and adjusted content in Development Plan Overlay, Schedule 1.

The strategic directions set in the Maffra Structure Plan and the proposed adjusted content in Amendment C120, in combination, would enable the Council to demonstrate that *Clause 13.02-1S Bushfire Planning* has been considered and applied in preparing the planning scheme amendment.

Recommendations in this report are in the form of the adjustments to Amendment C120, outlined above. Given the lower landscape bushfire risk setting of Maffra, there is no spatial nuance necessary. The local policy and Development Plan Overlay schedule can operate for all proposed new development envisaged in the Maffra Structure Plan.

9. Recommendations

Based on the assessments in this report, the following recommendations are made in response to the Maffra Structure Plan and proposed Amendment C120 to the Wellington Planning Scheme.

Recommendation 1: Locations for new development

Maffra is an acceptable location for new development from a bushfire perspective. This includes all land within the township boundary as shown in the Maffra Structure Plan, including the selected sites where a planning scheme amendment may in future be required to enable new development.

Recommendation 2: Changes to Amendment C120

Amendment C120 can be adjusted to better support bushfire outcomes in future development. Adjustments to proposed local policy at *Clause 11.01-1L Maffra* and Development Plan Overlay Schedule 1 would ensure that bushfire mitigation is provided in new development.

An additional strategy be added to proposed adjusted *Clause 11.01-1L Maffra* as follows:

Ensure new development in a bushfire prone area provides bushfire protection measures to:

- *Prevent grassfire from entering developed areas and manage exposure of new development to bushfire through perimeter roads and bushfire setbacks on permanent hazard interfaces.*
- *Enable an effective movement network for before and during a bushfire emergency.*
- *Manage new development on larger lots in a low hazard condition to prevent a grassfire moving through developed areas.*

Updated bushfire content be added to the Development Plan Overlay Schedule 1 as follows:

For land within a Bushfire prone area

- *The development plan must be derived from a bushfire hazard site assessment that assesses bushfire hazards in accordance with AS3959-2018 Construction of buildings in Bushfire prone areas (Standards Australia) and which demonstrates that bushfire requirements will be achieved in completed development.*
- *New buildings must be set back from bushfire hazards to ensure that the radiant heat exposure is no more than 12.5 kilowatts per square metre and a minimum construction standard of BAL 12.5 can be achieved in accordance with AS3959-2018 Construction of buildings in bushfire prone areas (Standards Australia, 2018).*

Note: The setback required equates to Column A, Table 2 in Clause 53.02 Bushfire Planning.

- *Vegetation in the required setback must be managed as defensible space in accordance with the vegetation standards set out in Clause 53.02 Bushfire Planning. All land in lots larger than 1,200sq.m must also be managed in accordance with the vegetation standards set out in Clause 53.02 Bushfire Planning.*
- *A movement network that enables people living close to the hazard interface to move away to places of relative safety by:*
 - *Ensuring the spacing of roads leading away from the hazard are no more than 120 metres apart (on average).*
 - *Providing multiple roads. At least two different roads leading away from the hazard edge should be available to each lot.*
 - *Effectively connecting roads to the broader road network within the settlement.*
 - *Ensuring travel to and from a location is not alongside a bushfire hazard and providing multiple access and egress routes within developed areas to minimise the use of perimeter roads in the event of a bushfire.*
- *Subdivision layout and design considers Design Guidelines: Settlement Planning at the Bushfire Interface (DELWP 2020).*

Recommendation 3: Updates to the Amendment C120 explanatory report

The Amendment C120 explanatory report can be updated to reflect the outcomes of this bushfire assessment. Suggested content is included in **Attachment 1**.

Recommendation 4: Bushfire hazard site assessment for future planning scheme amendments

A bushfire hazard site assessment be required for future planning scheme amendments, such as rezonings, to confirm the bushfire setbacks and bushfire vegetation management necessary to manage exposure to bushfire.

10.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 CFA received notice of Amendment C120 and advised that it did not support the amendment. It advised that the amendment '*is lacking adequate response to the bushfire policy in Cause 12.03-1S [Bushfire Planning]*'.

The Council in response to the CFA advice has commissioned this bushfire assessment.

This bushfire assessments sought to provide the CFA with information in response to their advice as follows:

- Bushfire hazard landscape assessment.
- Bushfire hazard site assessment.
- Considering of the *Design Guidelines: Settlement Planning at the Bushfire Interface 2020* (DWELP).
- Assessment against *Clause 13.02-1S Bushfire Planning*.

Recommendations are included which enable bushfire to feature in adjustments to Amendment C120, including:

- Specifying the *Clause 13.02-1S Bushfire Planning* exposure benchmark for new development.
- Requiring bushfire vegetation management at the hazard interfaces and on lots larger than 1,200sq.m.
- Requiring perimeter roads on permanent hazard interfaces.
- Require a bushfire-effective movement network.
- Requiring the *Design Guidelines: Settlement Planning at the Bushfire Interface* to be considered in future development.

The bushfire assessments and recommendations enable the Council to demonstrate to the CFA that *Clause 13.02-1S Bushfire Planning* has been considered and given effect to.

The CFA were provided with a draft of this report in advance of a Council and CFA meeting held on 20 October 2025. At the meeting, the CFA were briefed on the bushfire assessment and the recommendations. The CFA were supportive of the Council preparing a bushfire assessment and confirmed that it enabled the CFA to form a final view on the amendment.

A change arising from the discussion was to include a requirement in the Development Plan Overlay Schedule 1 for a bushfire hazard site assessment to be prepared to inform the development plan. This has been accommodated within the recommendations of this report.

It is anticipated that the CFA will provide its final advice on Amendment C120 to the Council following the completion of this final report.

11. References

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- Forest Fire Management Victoria (2025) *Strategic Bushfire Management Planning* (accessed at <https://bushfireplanning.ffm.vic.gov.au/>)
- Standards Australia, *AS3959:2018 Construction of buildings in Bushfire prone areas*
- Tolhurst, Kevin, 2011, *Busting bushfire myths: Expert Briefing - Kevin Tolhurst* (accessed in July 2021 at www.youtube.com/watch?v=9xhIKITggQ0)
- Wellington Planning Scheme*

Attachment 1: Suggested updated explanatory report content

A bushfire assessment has been prepared to support the planning scheme amendment. The assessment includes a bushfire hazard landscape assessment, a bushfire hazard site assessment and an assessment against *Clause 13.02-1S Bushfire Planning* of the planning scheme.

Landscape-scale assessment

The landscape risk is assessed as Landscape type one under the landscape methodology in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP, 2017). Landscape type one is the lowest landscape risk arising under the landscape typology approach. The subject site represents a relatively lower risk location which is a suitable place for development contained in the Maffra Structure Plan.

Site-scale assessment

New development promoted in the Maffra Structure Plan can satisfy the *Clause 13.02-1S Bushfire Planning* site-based exposure benchmark of 12.5kw/sq.m of radiant heat. A requirement for this to be achieved is included in Development Plan Overlay Schedule 1 forming part of the amendment.

The amendment through Development Plan Overlay Schedule 1 requires bushfire vegetation management at the hazard interfaces and on lots larger than 1,200sq.m. These design features support the management of site based exposure to bushfire to the level anticipated in *Clause 13.02-1S Bushfire Planning*.

Safer areas / Low hazard land

Low hazard (BAL:Low) land is where human life can be better protected from the harmful effects of bushfire. They can provide protection by enabling people to move away from bushfire hazards if they need to. Low hazard land is present in most parts of the existing settlement. The low hazard land is in proximity to all parts of Maffra.

Bushfire protection measures in new development

The amendment includes bushfire protection measures for new development, in both the proposed *Clause 11.01-1L Maffra* and in the Development Plan Overlay Schedule 1, including those designed to:

- Prevent grassfire from entering developed areas and manage exposure of new development to bushfire through perimeter roads and bushfire setbacks on permanent hazard interfaces.
- Enable an effective movement network for before and during a bushfire emergency.
- Manage new development on larger lots in a low hazard condition to prevent a grassfire moving through developed areas.

The bushfire protection measures work in combination with the lower-risk landscape setting of Maffra. Any development plan prepared would be derived from a bushfire hazard site assessment that assesses bushfire hazards in accordance with AS3959-2018 Construction of Buildings in a Bushfire Prone Area (Standards Australia) and which demonstrates that bushfire requirements within Development Plan Overlay Schedule 1 will be achieved in completed development.

Conclusion

The proposal has been assessed and is consistent with the bushfire policies and directions contained in the planning scheme, including *Clause 13.02-1S Bushfire Planning*.

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