

Kevin Hazell

BUSHFIRE PLANNING

## **Bushfire assessment to inform the Talbot Structure Plan**

Final report

3 April 2023

**Version 1.0**

**Prepared for:**

Central Goldfields Shire Council

22 Nolan Street

Maryborough VIC 3465

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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 extensive experience working on bushfire planning at State and local levels in Victoria.

## *Kevin Hazell Bushfire Planning*

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## Disclaimer

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## Version Control

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v0.1	23 August 2022	Draft for Council review	Kevin Hazell Town Planner
v0.2	20 September 2022	Draft for CFA engagement	Kevin Hazell Town Planner
v1.0	3 April 2023	Final Report	Kevin Hazell Town Planner

# 1. Introduction

Kevin Hazell Bushfire Planning has been engaged by Central Goldfields Shire (the 'Council') to prepare a bushfire assessment for the township of Talbot. The bushfire assessments will inform the Talbot Structure Plan (the 'Structure Plan') and work associated with a sewerage scheme proposal.

## 1.1 Scope of work

The bushfire assessment is intended to support strategic planning that will facilitate growth of the township in appropriate areas, while mitigating bushfire risk in accordance with relevant sections of the Central Goldfields Planning Scheme (the 'Planning Scheme').

The Council describes the scope of work as follows:

*CGSC is preparing a Structure Plan and Sewerage Scheme Proposal, with funding from the Victorian Government. A bushfire risk assessment is required as an input to inform this planning.*

*Key objectives are to:*

- *identify areas where future growth via rezoning to TZ (or GRZ) should be directed;*
- *identify areas where rezoning from RLZ to LDRZ should be supported (proximity to town being a priority while not compromising potential TZ/GRZ uses);*
- *establish an urban growth boundary;*
- *propose mitigation measures in response to bushfire risk.*

*As well as supporting the Structure Plan process, this would assist in managing development within the existing urban area – particularly on the town fringe.*

*The CFA has advised that a township-level assessment is an appropriate approach.*

Outputs of the bushfire assessment include a strategic landscape assessment of the study area, including mapping and documentation to identify:

- Landscape-level bushfire hazards that contribute to risk;
- Relative risk in different areas;
- A preferred town boundary and areas to consider for development from a bushfire risk management perspective;

- Proposed planning measures to mitigate bushfire risk, including but not limited to:
  - Buffers and 'hard edges' to development;
  - Areas where residential development should be avoided (and whether alternative uses such as industrial could be considered);
  - Preferred density of development in certain areas (e.g. General Residential Zone/urban; Low Density Residential Zone; Rural Living Zone; other);
  - Appropriate use of Clause 13.02 measures such as BAL-rating approaches;
  - Other local policy responses to mitigate risk.

## 1.2 About the study area

The Study Area for this bushfire assessment was defined in the scope of work and includes land within the Township Zone, land within the Rural Living Zone in close proximity to the centre of Talbot, and land in the Farming Zone to the east of Talbot.

See **Figure 1A: Locality map with study area**

See **Figure 1B: Locality aerial photo with study area**

See **Figure 1C: Zones**

See **Figure 1D: Bushfire Management Overlay and Bushfire Prone Areas**

## 1.3 Methodology

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

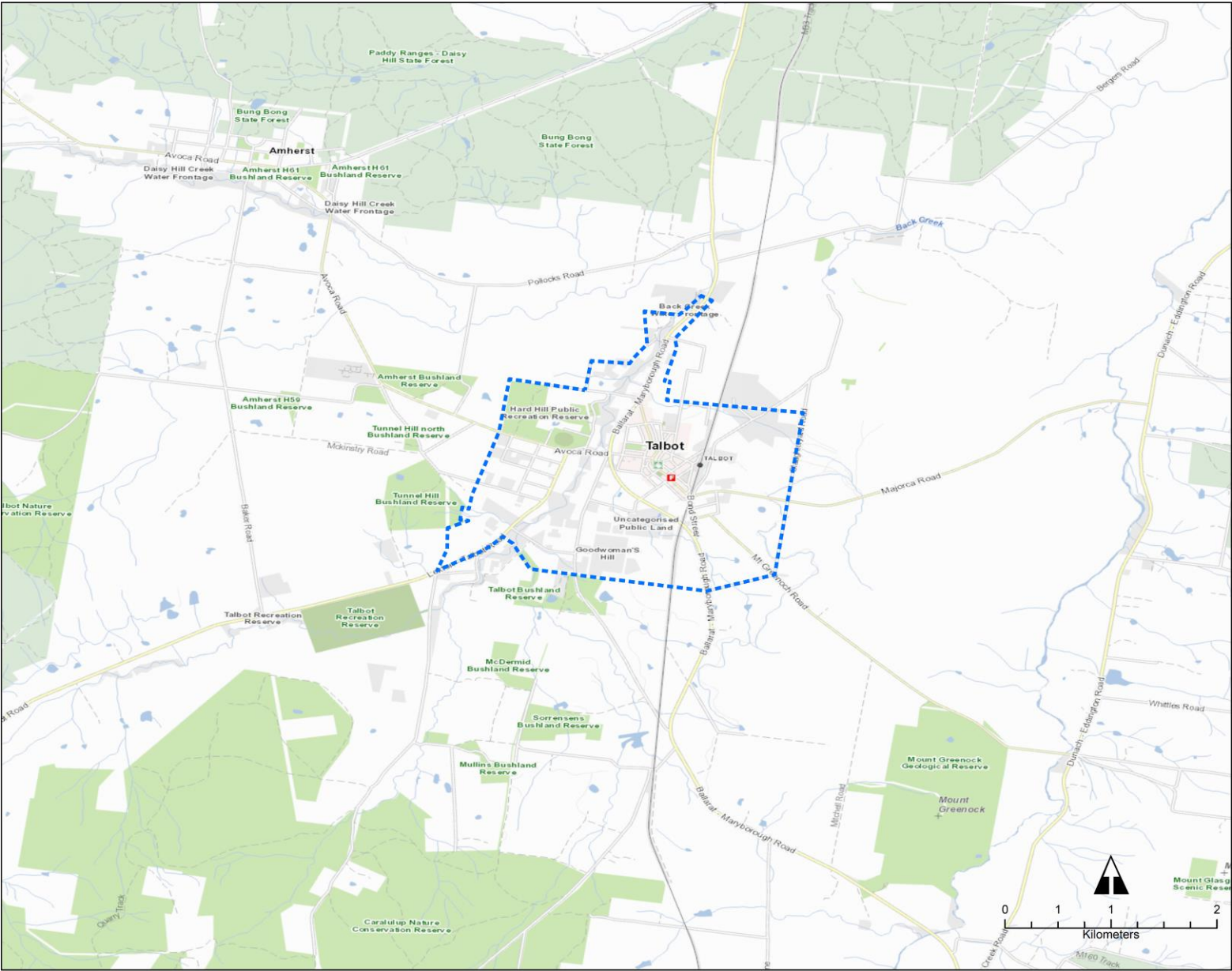
- Section 2 provides an overview of bushfire content in the planning scheme, including the strategies in *c13.02-1S Bushfire Planning*.
- Section 3 describes the bushfire context using a range of information sources, mostly arising from the work of public authorities such as fire authorities and the Council.
- Section 4 describes landscape bushfire hazards that may influence the locality, similar to a bushfire hazard landscape assessment described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017). This includes the identification of landscape types that help understand the relative risk between different places.

- Section 5 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 6 includes a discussion and recommendations. The objectives and strategies in *c13.02-1S Bushfire Planning* are used to inform the recommendations.
- Section 7 includes a summary of the recommendations.

#### **1.4 A note about the bushfire assessments**

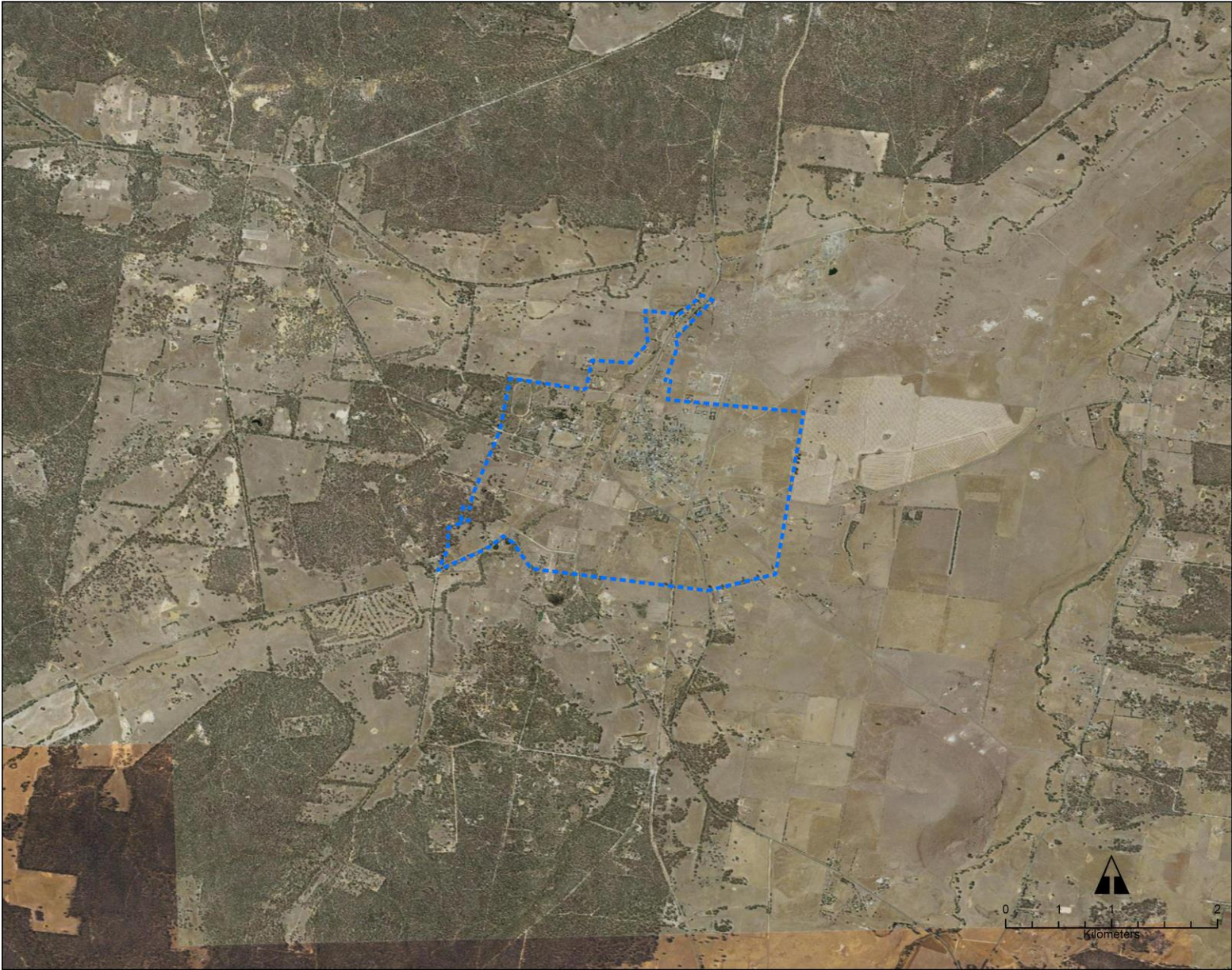
The bushfire assessments have been prepared to inform decision making associated with strategic planning and the strategic application of *c13.02-1S Bushfire Planning*. The bushfire assessments do not consider bushfire for the purpose of individual planning applications.

FIGURE 1A: LOCALITY MAP



 Study Area

FIGURE 1B: LOCALITY AERIAL PHOTO



 Study Area

FIGURE 1C: ZONES

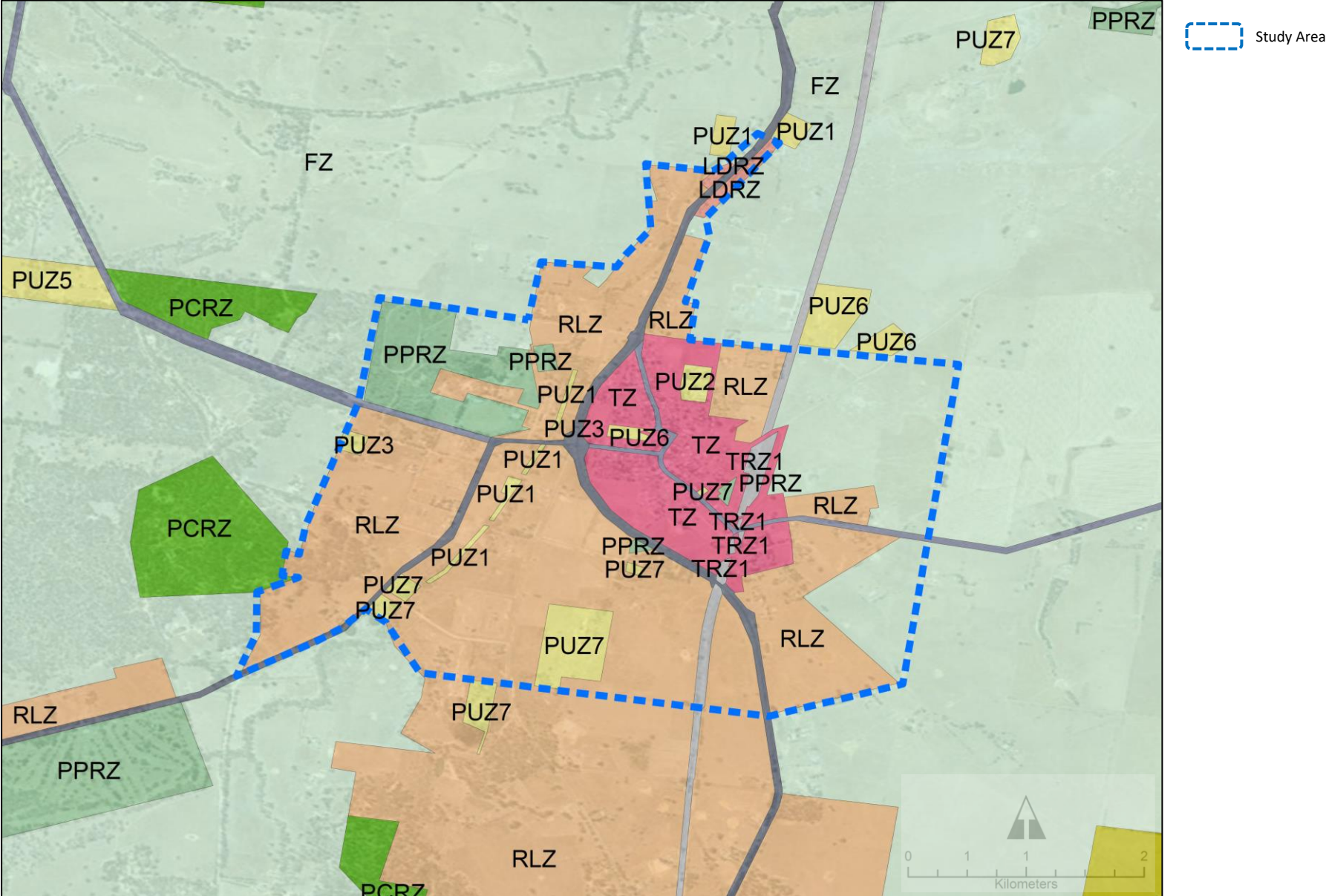
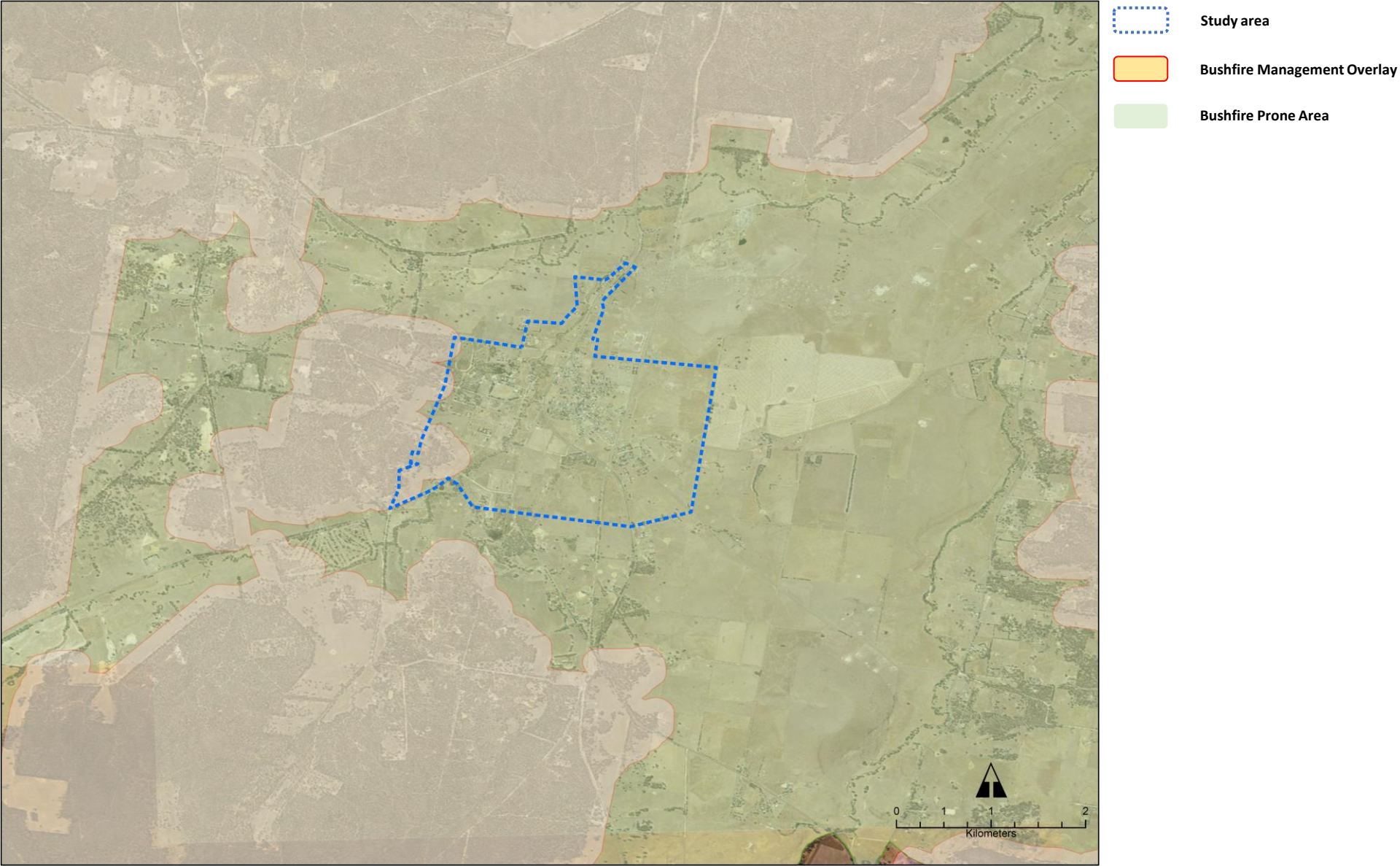


FIGURE 1D: BUSHFIRE MANAGEMENT OVERLAY AND BUSHFIRE PRONE AREA





## 2. Planning scheme bushfire context

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

### 2.1 Integrated decision making (c71.02-3)

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

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

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

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

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

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

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

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

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

The objective of the State planning policy for bushfire is:

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

The key strategy that directs bushfire decision making is:

*Give priority to the protection of human life by:*

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

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

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

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

#### 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.*

### **2.4 Bushfire Management Overlay (c44.06)**

The purpose of the Bushfire Management Overlay is:

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

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

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

## 2.5 Bushfire Planning (c53.02)

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

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

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

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

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

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

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

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

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

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

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

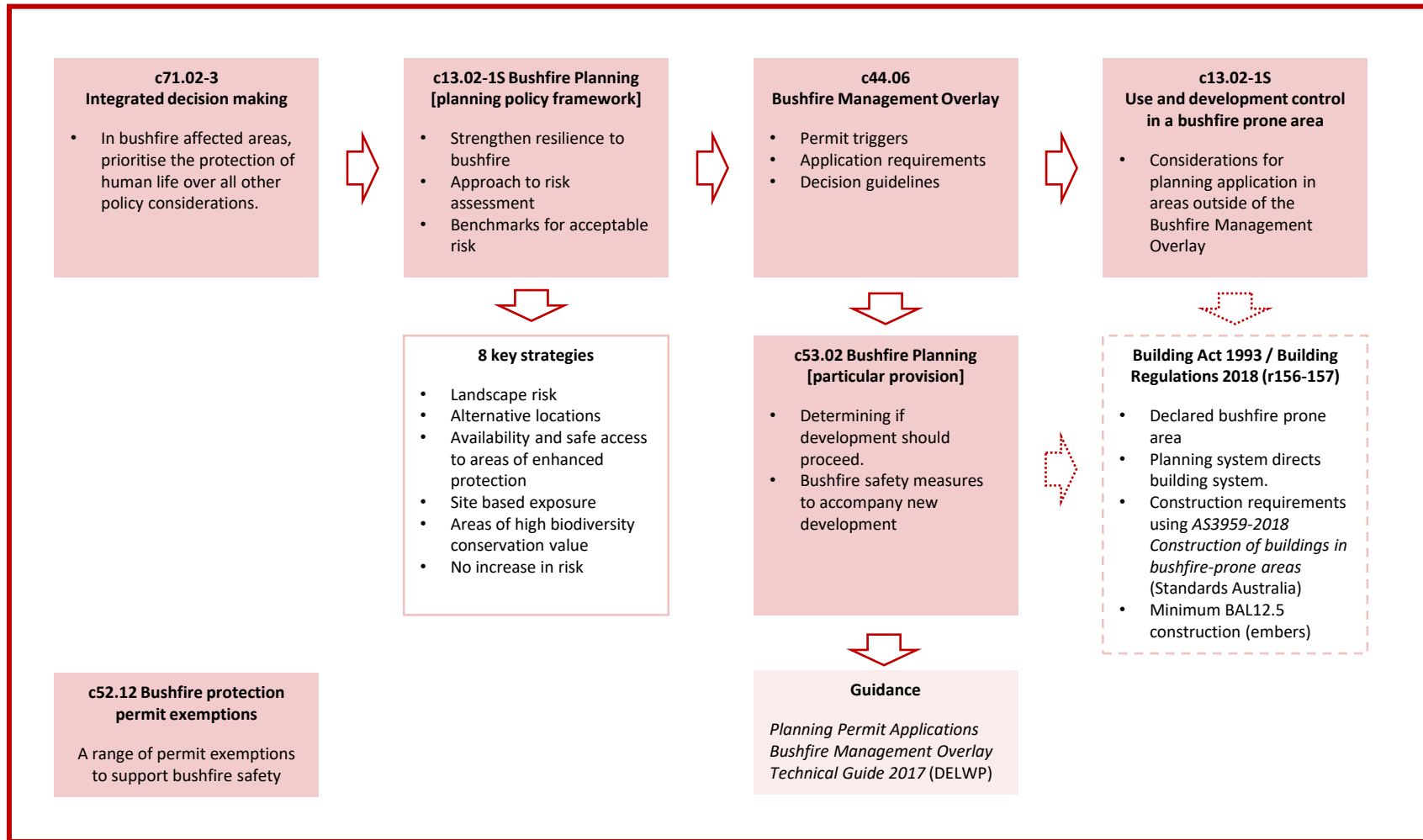
- *Consider the risk of bushfire to people, property and community infrastructure.*
- *Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity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

## 2.8 Bushfire protection permit exemptions (c52.12)

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

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

**FIGURE 2: PLANNING SCHEME BUSHFIRE PROVISIONS AND SUPPORTING MATERIAL**



### 3. Bushfire context

This section 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* (DELWP 2017).

Spatial information on the bushfire context is included in Attachment 1.

#### 3.1 Bushfire conditions in Victoria

The Department of Environment, Land, Water and Planning (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.

These conditions can create bushfires with powerful convection columns. Ember storms, wind-blown debris, downbursts, fire tornadoes and explosive flares of igniting eucalyptus vapour are likely to arise.

DELWP (2015) notes that these weather conditions are representative of where a bushfire does most of its damage in a single day. The greatest loss of life and property in Victoria have historically been caused by such single day bushfires.

DELWP (2020) further notes 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).

#### 3.2 Bushfire management strategy guiding public agencies

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

The bushfire management strategy includes simulations of house loss to identify areas across a landscape where bushfires could have the greatest impact. The outputs from these simulations show that the Study Area, comparative to other locations in the Loddon Mallee Region, does not have houses modelled in the top 70% of bushfire risk relative to other areas of the region.

See **Attachment 1 Figure A: Modelled house loss bushfire risk**

#### 3.3 Planning scheme bushfire designations

Planning schemes identify potentially bushfire affected land through the inclusion of land into the Bushfire Management Overlay or within a designated bushfire prone area (referenced in *c13.02-1S Bushfire Planning* and approved under the Building Act 1993).

##### 3.3.1 Bushfire Management Overlay

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

The Bushfire Management Overlay applies to the western outer edges of the Study Area where larger areas of non-grassland vegetation exist, with the 150m buffer applied.

##### 3.3.2 Bushfire prone area

The criteria for the Bushfire prone area requires that it be applied to all land within the Bushfire Management Overlay along with grassland areas, smaller patches of non-grassland vegetation and land usually within 150m or 50m of these areas.

Grasslands are included in the Bushfire Prone Area along with the entirety of the settlement areas of Talbot, which means all of the Study Area is included in a Bushfire Prone Area.

See **Figure 1D: Bushfire Management Overlay and bushfire prone area**

### 3.4 Victorian Fire Risk Register

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

The VFRR is useful to the extent that it shows current assets (for example, settlements) at risk, according to fire authorities and the local council. The VFRR should not however be over-emphasised in planning decision making as it has not been prepared for this purpose and does not contemplate new risk that might arise because of a planning decisions or the bushfire protection measures that may be delivered that reduces the bushfire risks.

The VFRR identifies the settlement areas of Talbot being at high risk.

See **Attachment 1 Figure B: Victorian Fire Risk Register human settlement polygons**

### 3.5 Regional bushfire planning assessment

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

Identified areas apply to the following locations:

- 13-002 Grassfires are a known bushfire hazard in the Talbot area.
- 13-003 Cluster of medium rural-residential lots to the south of Talbot township in or in close proximity to bushfire hazard (this identified area is referring to land outside of the Study Area).

See **Attachment 1 Figure 1E: Regional Bushfire Planning Assessment**

### 3.6 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 over the next three years. The Joint Fuel Management Program is published by Forest Fire Management Victoria (2021).

The Joint Fuel Management Program can include the following treatments:

- Asset protection zones designed to provide localised protection to human life, property and key assets.
- Bushfire moderation zones designed to reduce the speed and intensity of bushfires.

- Landscape management zones designed to reduce overall bushfire hazard at the landscape scale, in addition to land management and ecological objectives.

At the landscape scale, there are extensive treatments in public land all around the Study Area.

See **Attachment 1 Figure C: Joint fuel management program**

### 3.7 Bushfire history

Bushfire history can be informative to understanding possible 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 and planning decision making is required to respond to bushfire hazards on this basis.

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

Bushfire history includes many small fires occurring periodically. However, bushfire history is dominated by the 1985 Avoca fire, which started north of Avoca and progressed towards Talbot and Maryborough. This bushfire followed the typical bushfire in Victoria, dominated by north-westerly winds followed by the south-easterly wind change. The total area burnt was 50,800ha.

Forest Fire Victoria (2022) provides contextual and descriptive content on past bushfires. The following discusses the impact of wind change:

*Due to lightning on 14 January, 111 fires started on this day and took two weeks to bring under control. A significant fire in Central Victoria burned 50,800 hectares, including 17,600 hectares of crown land. Three people died, and more than 180 houses, 500 farms, and 46,000 stock destroyed. Areas affected including Avoca, Maryborough and Little River. Fires also affected the alpine region at Mt Buffalo, burning 51,400 hectares.*

The review of this bushfire prepared by the Department of Conservation, Forests and Lands (Research Report No., 23) included the following contextual information:

*At about 1350 hrs on 14 January 1985, a fire started approximately 1 km north of Avoca and just east of the North-Western Highway. [...] Because of the extreme conditions the fire developed very rapidly and it was beyond control within minutes.*

*Mass short distance spotting was a major feature of this fire. Under extreme conditions with an unstable atmosphere spot fires were starting up to 2 km downwind, developing very rapidly, initiating further spotting and often creating new fronts.*

*Prior to the wind change a well structured convection column had developed over the fire to an altitude of more than 6000 metres. Following the south-westerly change this strong convection column persisted [...] although a low level inversion [...] tended to trap smoke, so that down wind of the fire visibility was very poor.*

See **Attachment 1 Figure 1D: Bushfire history**

## 4. Landscape and strategic bushfire considerations

This section describes landscape bushfire hazards. Having regard to the contextual information in Section 3, it considers how the bushfire hazard in the surrounding landscape may affect the study area.

Landscape bushfire hazards are important because they help to understand how bushfire may impact on a location, including the likelihood of a bushfire threatening a location, its likely intensity and destructive power, and the potential impact on life and property.

The extent of the surrounding landscape that is 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. The extent of bushfire hazard relevant may be 1-2km or up to 50km, depending on the locality.

The landscape analysis in this section takes a similar approach to a bushfire hazard landscape assessment described in *Planning Permit Applications Bushfire Management Overlay Technical Guide* (DELWP 2017). This includes the identification of landscape types that help understand the relative risk between different places.

See **Figure 4A: Overview of landscape types**

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

### 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.*

### 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.*

Landscape areas schematically illustrated in this section are derived from two key variables :

- Landscape bushfire hazards and their potential to generate extreme fire behaviour and neighbourhood scale destruction; and
- Availability and access to low fuel areas that may provide shelter from the harmful effects of bushfire.

See **Figure 4B: Landscape bushfire analysis**

### **4.1 Landscape bushfire hazards**

Talbot is within a broader bushfire landscape that comprises extensive areas of forest hazards. Fire runs in the hazard are up to 10-15km, with fire runs to the north-west and south-west of the Study Area, aspects where prevailing bushfire weather in Victoria is likely to move a bushfire towards the Study Area.

Based on the extent of vegetation and some areas of steeper terrain, the hazard has the potential to enable bushfires to grow large and to generate elements of extreme fire behaviour. This includes ember generation and the potential for embers to travel longer distances.

The Study area itself interfaces with forest vegetation to the west and south/south-west. On other interfaces, grassland hazards are present. The Country Fire Authority (2022) identify the following grassfire characteristics:

- Grassfires can start and spread quickly and are extremely dangerous.
- Grassfires can travel up to 25 km per hour and pulse even faster over short distances.
- Grass is a fine fuel and burns faster than bush or forests.



- Grassfires tend to be less intense and produce fewer embers than bushfires, but still generate enormous amounts of radiant heat.
- The taller and drier the grass, the more intensely it will burn.
- The shorter the grass, the lower the flame height and the easier the fire will be to control.
- Grassfires can start earlier in the day than bushfires, because grass dries out more quickly when temperatures are high.

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

The large forested areas have the potential to generate ember attack into surrounding areas, including grassland hazard areas. It therefore increases the potential for grassfires in the locality.

See **Figure 4B: Landscape bushfire analysis**

#### 4.2 Likely landscape bushfire scenarios

The extent of hazard and the available fire runs means there is potential for fire behaviour that may include:

- Bushfire impacting on the edge of settlement areas and where hazards continue, bushfire may penetrate deep into settlement areas. (for example, into areas within the Township Zone).
- Ember attack into settlement areas, resulting in localised fires. Localise fires may include vegetation in gardens, parks and on roadsides being on fire and structures being on fire.
- Smoke throughout the landscape.

Bushfire is likely to move out of the forested hazard areas into grassland and smaller patches of hazard closer to and adjoining the Study Area. Bushfire is likely to be a single day bushfire. These types of bushfire, especially under the influence of the late afternoon wind change, is when Victoria's most destructive bushfire arise.

Bushfire history from 1985 provides a highly credible proximation for the likely bushfire to be anticipated in Talbot.

Figure 4E provides a generalised understanding of how bushfire threatens settlements.

See **Figure 4E: Generalised understanding of how bushfire threatens settlements**

#### 4.3 Low fuel areas

An assessment has been made of the location and access to places that are lower fuel where human life can be better protected from the harmful effects of bushfire. Low fuel areas can provide protection by enabling people to move away from bushfire hazards if they need to.

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

In BAL:Low places, people sheltering in the open air will not be exposed to flame contact and the highest levels of radiant heat from a moving bushfire, although radiant heat from some hazards may still be life threatening. BAL:Low places may also be subject to localised fires, which could include gardens and structures on fire. BAL:Low places do not consider ember attack, which may arise in these areas.

BAL:Low places are present in the central core of Talbot, oriented around Scandinavian Crescent. Despite the presence of other more urban areas in Talbot, the lack of defined hazard edges and undeveloped land in the Township Zone means there is a more limited basis to assess these as BAL:Low and therefore low fuel.

There are no low-fuel areas identified to the west of Ballarat-Maryborough Road.

See **Figure 4C: Low fuel areas and BAL:Low land**

#### Other places of shelter

A designated neighbourhood safer place is located at Talbot (Pioneer Reserve). This is within the same area assessed as being BAL:Low.

Consistent with CFA advice, designated places of safety are not afforded any weight in this bushfire assessment. This is because designated places of safety are not a justification to enable new risk to be introduced that is otherwise not consistent with planning scheme policies.

All areas within the landscape, including BAL:Low areas and designated neighbourhood safer places, are likely to be subject to ember attack. Sheltering in these locations and traveling to these locations during a bushfire may be uncomfortable for people.

#### 4.4 Landscape types

Based on the likely bushfire scenarios, the potential for neighbourhood scale destruction and the availability and access to low fuel areas, landscape types can be applied. The identified landscape types are necessarily strategic and are not intended to be scaled to apply to individual properties. They do however provide an indication on the relative risk in different parts of the Study Areas.

The following landscape types are assessed for the Study Area.

Landscape type 2 aligns with the **central part of Talbot and its immediate surrounds**. The characteristics of this landscape type include:

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

This positions these areas at the middle end of bushfire risk in Victoria using the landscape typologies approach. This landscape type is consistent with the Bushfire Management Overlay not being applied to these parts of the Study Area.

Landscape type 3 aligns with the landscape around the Study Area and **land generally to the west of Ballarat-Maryborough Road**. The characteristics of this landscape type include:

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

This positions these areas at the middle to higher end of bushfire risk in Victoria using the landscape typologies approach.

See Figure 4D: Schematic landscape type areas

**FIGURE 4A: OVERVIEW OF LANDSCAPE TYPES**



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

Landscape types assist in:


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

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

The diagram on this page summarises landscape types.

LANDSCAPE TYPE 1	LANDSCAPE TYPE 2	LANDSCAPE TYPE 3	LANDSCAPE TYPE 4
<ul style="list-style-type: none"> <li>• There is little vegetation beyond 150 metres of the site (except grasslands and low-threat vegetation)</li> <li>• Extreme bushfire behaviour is not possible</li> <li>• The type and extent of vegetation is unlikely to result in neighbourhood scale destruction of property</li> <li>• Immediate access is available to a place that provides shelter from bushfire</li> </ul>	<ul style="list-style-type: none"> <li>• The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site</li> <li>• Bushfire can only approach from one aspect and the site is located in a suburban, township or urban area managed in a minimum fuel condition</li> <li>• Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area</li> </ul>	<ul style="list-style-type: none"> <li>• The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site</li> <li>• Bushfire can approach from more than one aspect</li> <li>• The area is located in an area that is not managed in a minimal fuel condition</li> <li>• Access to an appropriate place that provides shelter from bushfire is not certain</li> </ul>	<ul style="list-style-type: none"> <li>• The broader landscape presents an extreme risk</li> <li>• Bushfires may have hours or days to grow and develop before impacting<sup>1</sup></li> <li>• Evacuation options are limited or not available</li> </ul>
 <b>Lower risk from the bushfire landscape</b>		 <b>Higher risk from the bushfire landscape</b>	

  
**Study Area (part)**

  
**Study Area (part)**

<sup>1</sup> Adapted by author

FIGURE 4B: LANDSCAPE BUSHFIRE ANALYSIS

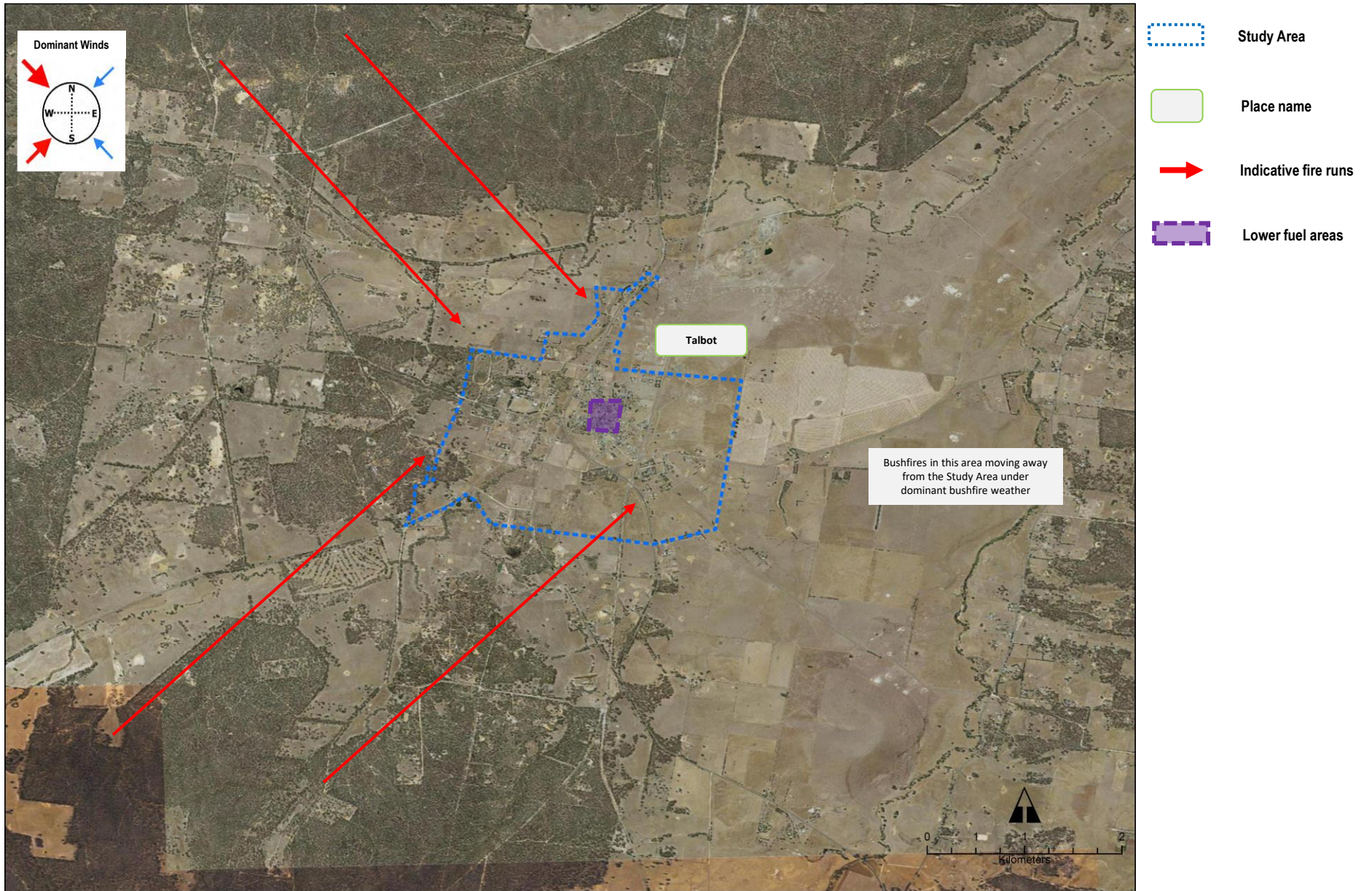


FIGURE 4C: LOWER FUEL AREAS






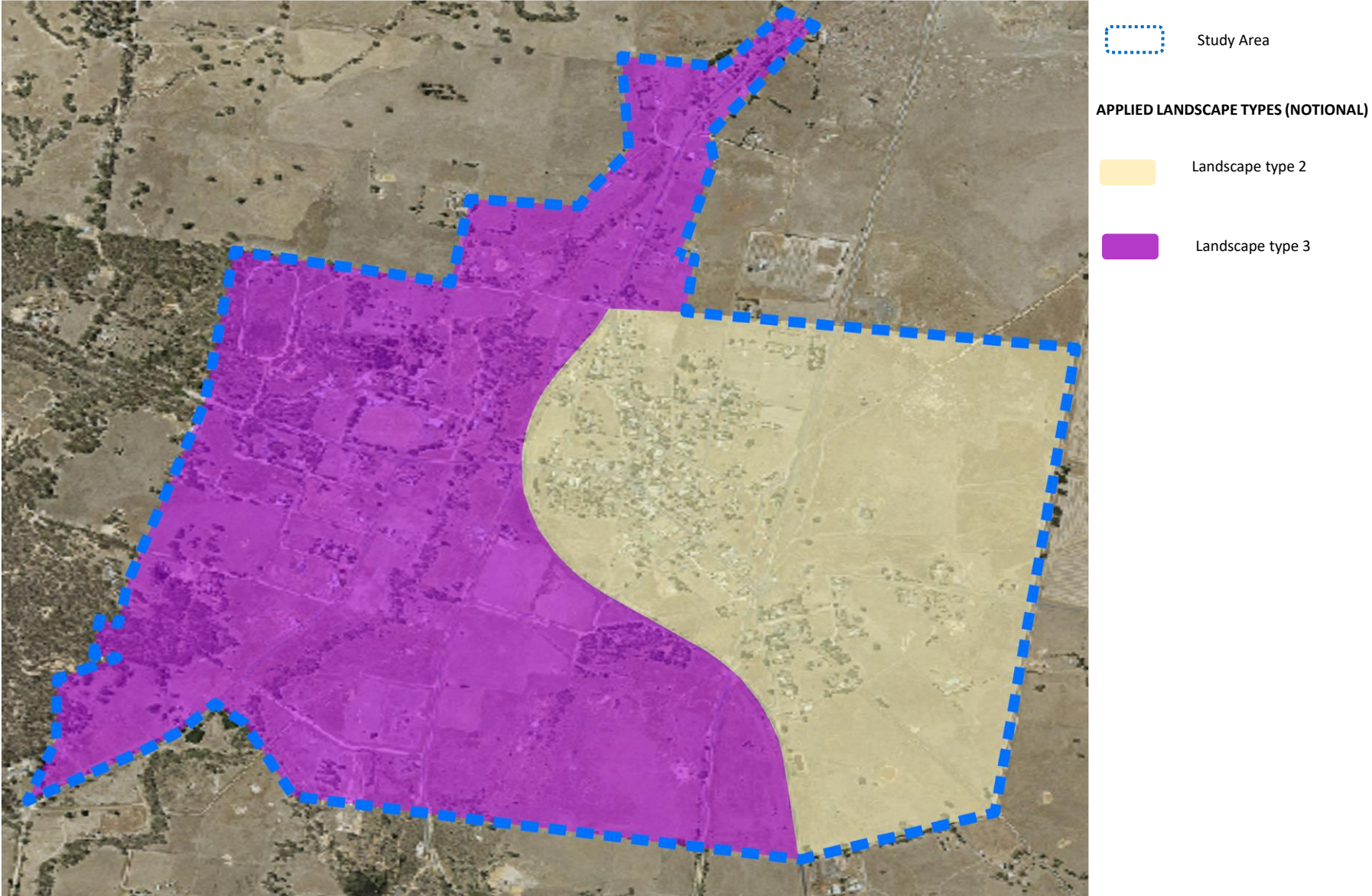
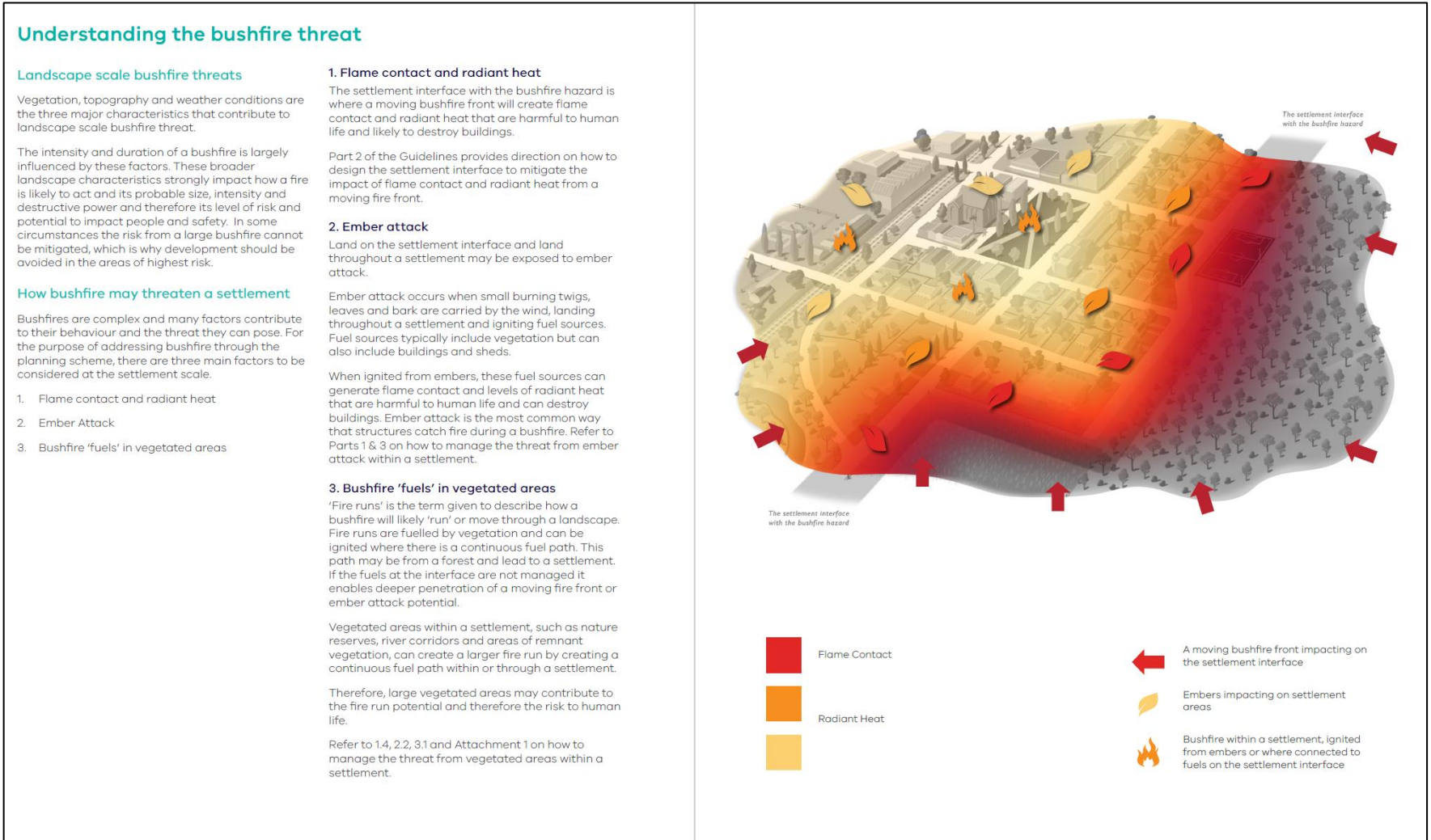
-  Study area
-  BAL:Low capable areas
-  Neighbourhood Safer Place

FIGURE 4D: SCHEMATIC LANDSCAPE TYPE AREAS



**FIGURE 4E: GENERALISED UNDERSTANDING OF HOW BUSHFIRE THREATENS SETTLEMENTS (DELWP 2020)**



## 5. Exposure to bushfire at the neighbourhood and local scale (12.5kw/sq.m of radiant heat)

Exposure to bushfire at the neighbourhood and local scale assesses the level of radiant heat likely to arise from hazardous vegetation within and in close proximity (150m) to a proposal. 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 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).*

### 5.1 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.

### Hazard identification

Hazardous vegetation was identified within and around (150m) the study area using expert judgment based on field work and aerial photography. EVC's and tree cover data sets were also reviewed.

Ecological vegetation classes (EVCs) include:

- Alluvial Terraces Herb-rich Woodland
- Box Ironbark Forest
- Creekline Grassy Woodland

- Grassy Woodland
- Grassy Woodland / Alluvial Terraces
- Plains Grassy Woodland

See **Figure 5B: Ecological vegetation classes**

Low-threat vegetation as described in *AS3959-2018 Construction of buildings in bushfire-prone areas* (Standards Australia) was excluded as it is not considered hazardous.

Slope under hazardous vegetation was assessed using the 10m contour, having regard to topographical information. Slope under hazardous vegetation informs how fast a bushfire may travel.

See **Figure 5A: Indicative site assessment diagram prepared at the settlement scale**

See **Figure 5C: Elevation based on 10m contour**

See **Figure 5D: Slope based on a 10m contour**

### 5.2 Planning scheme required bushfire setbacks

Setbacks from hazardous vegetation must meet 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 planning scheme amendment or strategic planning document.

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

Satisfying the planning scheme exposure requirement in the Study Area means development enabled by a future Structure Plan must be setback from bushfire hazards as follows:

- 19m for Grasslands, based on a slope of flat / upslope.
- 33m for Woodland, based on a slope of flat / upslope.
- 48m from Forests, based on a slope of flat / upslope.

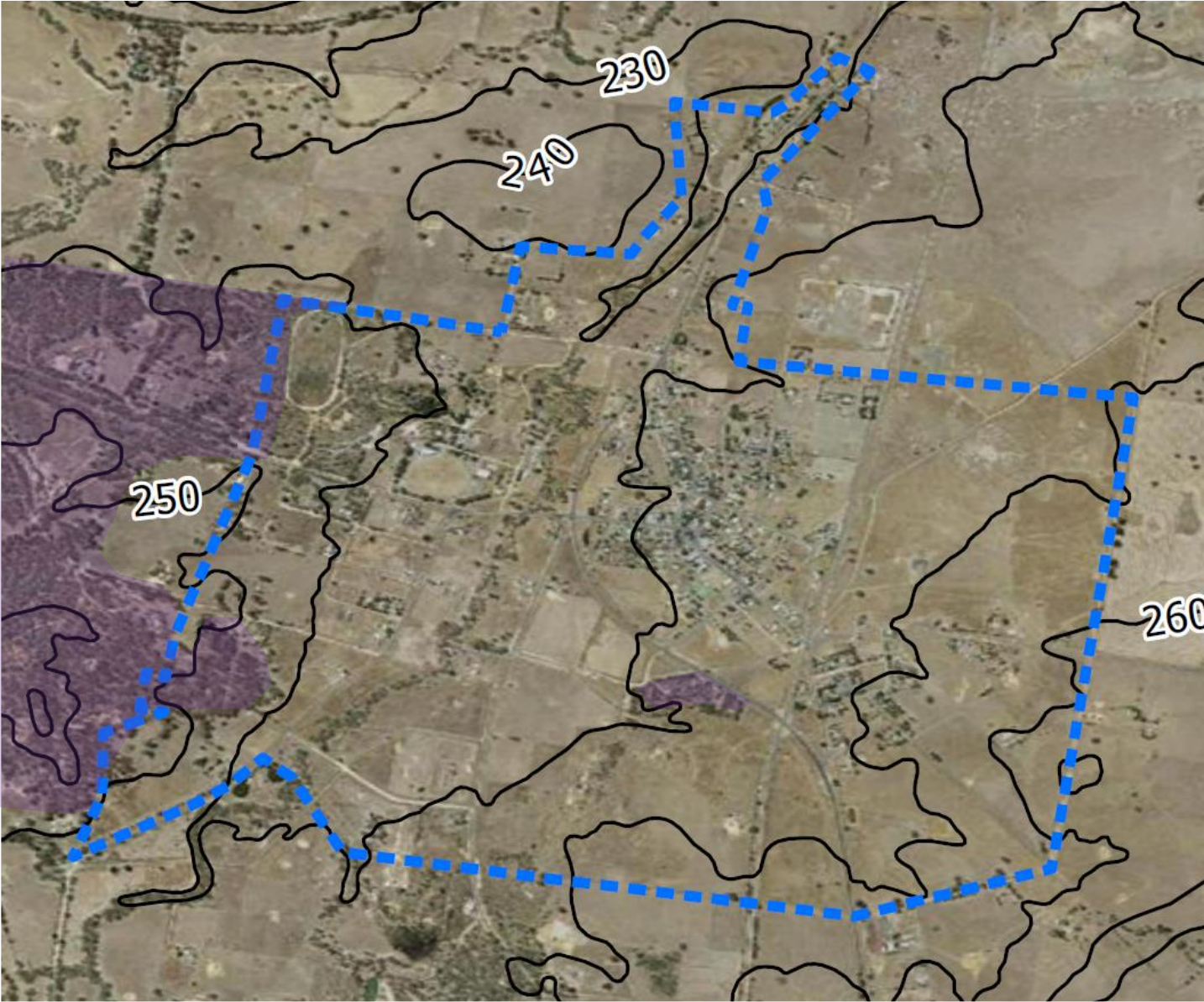
The above are derived from the assessment of hazards at the settlement scale. At the site-scale, variations may arise especially in the slope and any localised areas of hazard. At a strategic scale, the differences that may arise are relatively limited (for example, setbacks may vary 10-30m).



The potential for variation necessitates a bushfire hazard site assessment being prepared for any individual planning scheme amendment or development proposal. This is required under the ordinary approach to preparing a planning scheme amendment, in any event, and is likely required for planning applications also.

At a Structure Planning level and in determining where to direct growth, the above are sufficient benchmarks based on the vegetation present in and around the settlement for strategic decisions to be made. Variation can otherwise be managed in future planning processes.

FIGURE 5A: INDICATIVE SITE ASSESSMENT DIAGRAM PREPARED AT THE SETTLEMENT SCALE



Study Area



Forest or Woodland

*Balance of map area is Grassland or Low-threat vegetation, and subject to a bushfire hazard site assessment at the time development is proposed*

Not to scale, written dimensions apply

FIGURE 5B: ECOLOGICAL VEGETATION CLASSES

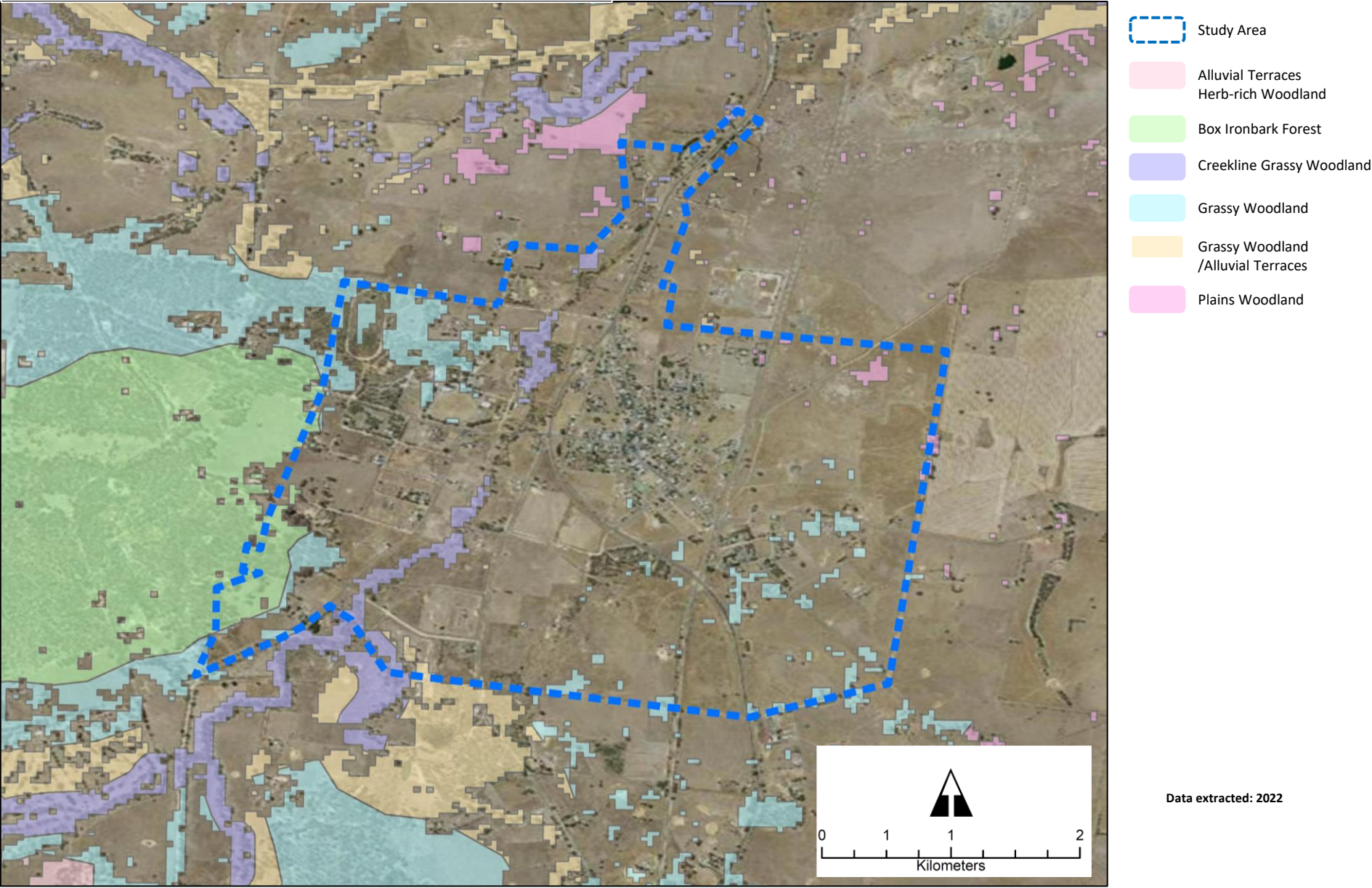
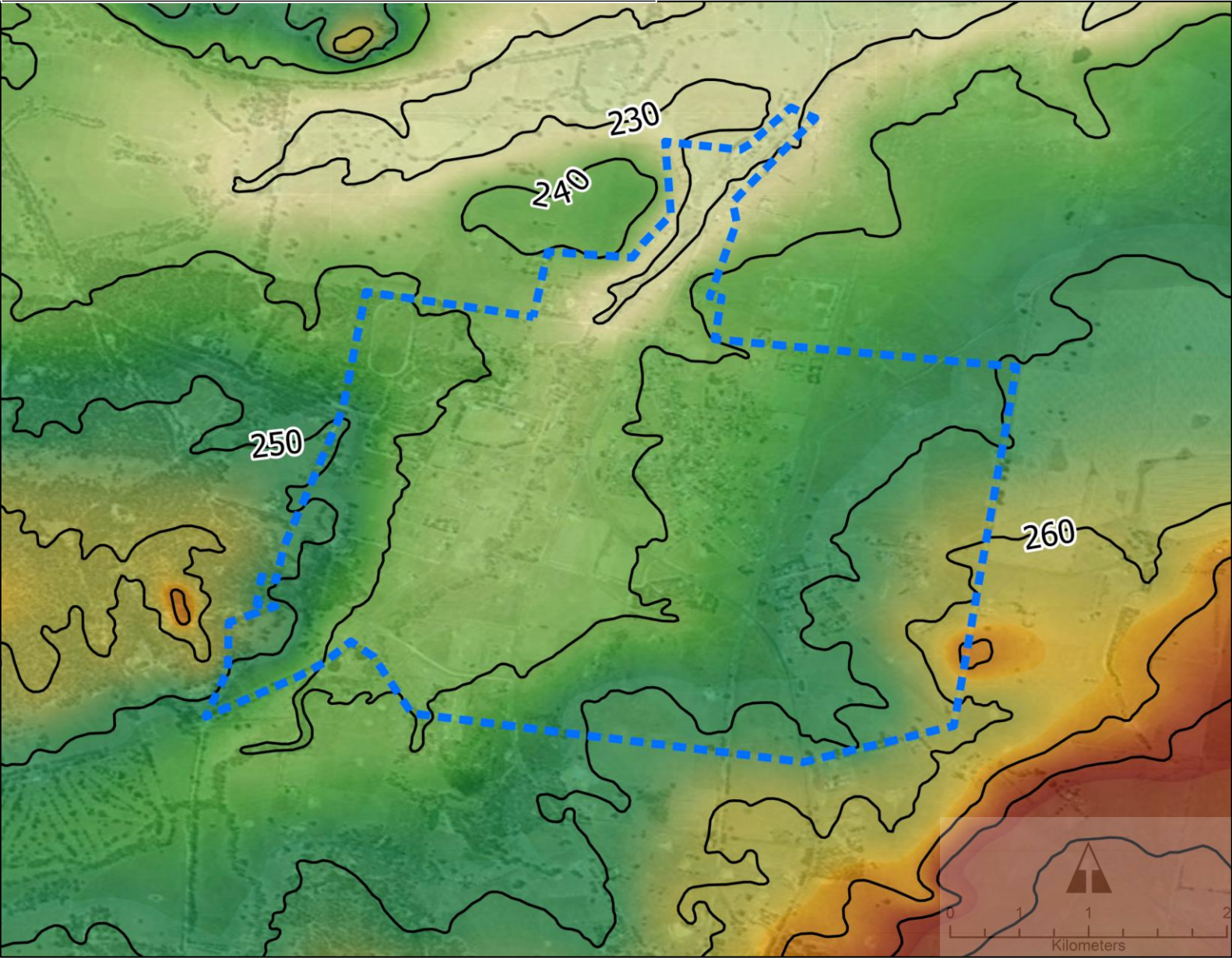
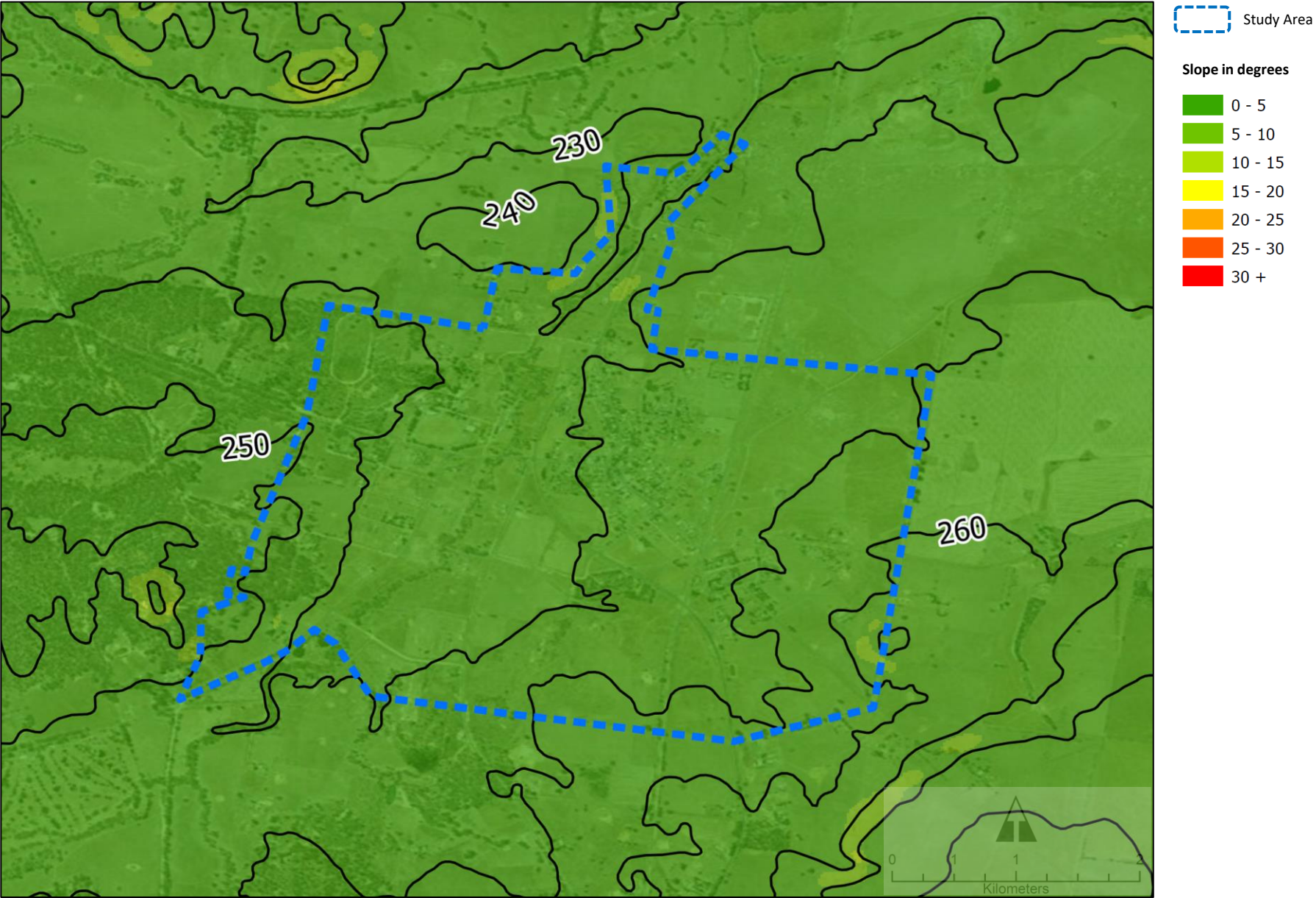


FIGURE 5C: ELEVATION BASED ON 10m CONTOUR



Study Area

FIGURE 5D : SLOPE BASED IN A 10M CONTOUR



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

This report has considered the bushfire context of the study area, the landscape hazard, the availability of low fuel areas and whether there are locations that could satisfy the *c13.02 Bushfire Planning* exposure requirement. This section uses that information to consider strategic and settlement policies in *c13.02-1S Bushfire Planning*.

### 6.1 *c13.02-1S Bushfire Planning*

#### 6.1.1 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.*

Talbot is located within a high risk bushfire landscape. This is reflected in bushfire contextual information and is readily demonstrated by the 1985 bushfire history.

Long fire runs are available in the landscape bushfire hazard. This includes fire runs being in forested hazards that are not dominated by steep and rugged terrain where the most extreme forms of bushfire behaviour are likely. Instead, the landscape hazard is likely to be generally consistent with the assumptions for bushfire integrated into the bushfire setbacks included in planning schemes (in *c52.03 Bushfire Planning* based on an FDI100 and flame temperature of 1080’).

The main areas of landscape bushfire hazards other than grasslands are located 1-4km from the Study Area. With this separation, whilst Talbot is located within a higher risk bushfire landscape, the residual risk at the edge of Study Area is from grasslands and more localised areas of bushfire hazard (for example, forested areas abutting the west of the Study Area).

#### *Landscape type 2 areas*

Talbot benefits from areas assessed as Landscape Type 2, located east of Ballarat – Maryborough Road. They are relatively lower risk given their hazard interface is from grasslands only. Located here are the areas of lower fuel and BAL:Low.

Mitigating the landscape impact of grassfire is highly achievable through the separation of development from unmanaged grasslands and the planning for development to be low-fuel, preventing grassfire from penetrating urban areas and providing the ability for people to move away from the hazard interface. These outcomes are highly achievable in Landscape type 2 areas, taking advantage of existing features in Talbot.

The beneficial elements in the Landscape type 2 areas means it is possible to direct growth to these areas in a way that effectively manages life safety.

Having regard to the municipal scale of Central Goldfields Shire, other settlements including Dunolly and Maryborough are similarly affected by bushfire hazards to Talbot. There is not likely to be any meaningful risk reduction achieved in directing development to these places rather than the Landscape type 2 areas of Talbot.

Talbot, east of Ballarat-Maryborough Road and where aligning with the characteristics of Landscape type 2, is optimised to be favourably assessed against *c13.02-1S Bushfire Planning* as a location for growth and development having regard to alternative locations in the municipality and alternative areas within the Study Area.

#### *Landscape type 3 areas*

Other parts of the Study Area have an elevated landscape risk, reflected in being assessed as Landscape type 3. Factors driving this include closer proximity to non-grassland hazards, interfaces with grassland areas likely to be carrying large grassfires, and less certainty on access to low fuel areas to the east of Ballarat-Maryborough Road.

These areas are also within the Rural Living Zone and are highly fragmented by legacy subdivisions and land patterns. Once land is fragmented, it can mean that individual development sites need to rely on adjoining land developing to create safe communities, however there can be no certainty this would occur in a reasonable timeframe or at all.

It is considered that these areas are less suited to new growth and development, having regard to lower risk opportunities to the east of Ballarat-Maryborough Road.

Talbot, generally west of Ballarat-Maryborough Road and where aligning with the characteristics of Landscape type 3, is less favourably assessed against *c13.02-1S Bushfire Planning* as a location for growth and development having regard to alternative locations within the Study Area.

### 6.1.2 Landscape bushfire considerations

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

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

The bushfire hazard landscape assessment has considered the bushfire hazard at the strategic and landscape scales as required by these policies.

The areas assessed as Landscape Type 2, located east of Ballarat – Maryborough Road, benefit from low fuel areas and areas of BAL:Low. They are relatively lower risk given their hazard interface is from grasslands only.

Mitigating the landscape impact of grassfire is highly achievable through the separation of development from unmanaged grasslands and the planning of development to be low-fuel, preventing grassfire from penetrating urban areas and providing the ability for people to move away from the hazard interface. These outcomes are highly achievable in Landscape type 2 areas, taking advantage of existing features in Talbot.

Strategic planning that directs development to Landscape type 2 areas would be consistent with *c13.02-1S Bushfire Planning* directions. This is because it has favourable bushfire characteristics including:

- A lower landscape bushfire risk
- Low fuel areas and access to low fuel areas from most areas
- Places that can satisfy the bushfire exposure requirement (12.5kw/sq.m).

Other areas are assessed as Landscape type 3 to reflect their elevated landscape risk. This report does not recommend they be promoted for growth and development having regard to the alternative opportunities available in the Landscape type 2 areas east of Ballarat – Maryborough Road.

### 6.1.3 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 places are present in the central part of Talbot, oriented around Scandinavian Crescent. Areas to the east of Ballarat-Maryborough Road have good access to these areas of BAL:Low, included any new areas of growth to the east of the existing Township Zone. This is a significant of them being assessed as Landscape Type 2.

New development in Talbot can deliver further low fuel areas, including those capable of being assessed as BAL:Low. Recommendations in this report seek to ensure this is delivered in conjunction with new development, which would support more areas of BAL:Low arising.

BAL:Low areas will provide future occupants of development with access to a location that provides shelter from the harmful effects of flame contact and radiant heat from a moving bushfire. Access will be immediate and available by walking, where new growth and development is directed to land east of Ballarat-Maryborough Road.

### 6.1.4 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).*

The assessment of site based exposure prepared as part of this report confirms that development can be set back from bushfire hazards to achieve a radiant heat flux of less than 12.5kw/sq.m in completed development. Based on this, exposure of future development would be consistent with *c13.02-1S Bushfire Planning*.

It is essential that this outcome be given effect to in the Structure Plan and the planning scheme. Recommendations later in this report outline how this can be achieved.

### 6.1.5 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 lack of vegetation east of Ballarat-Maryborough Road, it is reasonable to assume that development can accommodate bushfire protection measures.

### 6.1.6 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 Landscape type 2 areas is consistent with the bushfire policies and directions contained in the planning scheme. There is no planning scheme bushfire factor that would warrant not directing growth and development as recommended in this report. The risk from bushfire can be managed in accordance with standard planning scheme responses to bushfire hazards in the lower risk areas of Talbot.

The recommended areas for growth and development, generally east of Ballarat-Maryborough Road, arise in part because they benefit from:

- The existing separation from landscape hazards (other than grasslands) located west of Ballarat-Maryborough Road.
- The low fuel areas in the core areas of Talbot.

It is imperative that the existing low fuel areas in the core or Talbot are preserved and not compromised over time. The same applies to land west of Ballarat-Maryborough Road.

Bushfire management planning, the day to day activities of the Council, CFA and land managers, will support this. However, planning decision making should be cognisant of this and not enable the introduction of bushfire hazards through planning decision making.

It is therefore recommended that the Structure Plan spatially include the existing low fuel areas and land to the west of Ballarat-Maryborough Road as a mapped area and emphasising the need for the introduction of bushfire hazards to be avoided.

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

See **Figure 7A: Spatial Recommendations**

## **6.2 Bushfire mitigation**

The Bushfire Management Overlay does not apply to areas recommended for growth and development in this report and cannot therefore be relied on to deliver mitigation.

Planning consideration is required under the *c13.02-1S Use and development control in a bushfire prone area* for most new development, including subdivision for more than 10 lots. The use and development control requires that when assessing a planning permit application:

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

The Use and development control, along with *c13.02-1S Bushfire Planning*, provides a planning scheme mechanism to ensure future development fully considers bushfire at the planning application stage. However, it specifies no actual requirements and its consideration is discretionary.

It is recommended that mitigation be included into the Structure Plan and subsequently given effect to in local planning scheme content. This will enable the Planning Authority, when the Structure Plan forms part of a planning scheme amendment, to demonstrate through planning scheme content that bushfire has been fully addressed.



The following mitigation is recommended:

- Requiring future subdivision (building envelopes) to achieve the *c13.02-1S Bushfire Planning* exposure requirement. There is no other mechanism in the planning scheme that will deliver this outcome. This will necessitate a bushfire hazard site assessment being prepared to support any specific development proposal enabled by the Structure Plan, including rezoning of land or a development proposal. The assessment should be a requirement within the Structure Plan.
- Where subdivision would create lot sizes for Accommodation that are larger than 1,200sq.m, *c53.02 Bushfire, Table 6 Vegetation management requirements* should be applied. This will provide for a low fuel outcome and not enable hazards to increase over time. Other bespoke approaches to hazard management in areas proposed for larger lots can be investigated and determined at subsequent stages and to the satisfaction of the relevant fire authority.

New lots for Accommodation smaller than 1,200sq.m mostly avoid hazards being introduced due to the lot size itself. Lot size becomes a passive form of mitigation.

See **Figure 7C: Table 6, c53.02 Bushfire Planning Vegetation Management Standards (Defendable Space)**

- Perimeter roads be provided when subdividing land on permanent hazard edges. This outcome is now typical in grassland areas, including in Melbourne's growth areas and arising from precinct structure plans and CFA requirements. It will support preventing a moving grassfire from entering developed areas.

See **Figure 7B: Expected indicative treatment of hazard interfaces**

The above mitigation can be included into the Structure Plan and would support the effective consideration of bushfire in future planning applications.

The Study Area is within and is expected to remain entirely with a designated Bushfire Prone Area under the Building Regulations 2018. A dwelling within the Bushfire Prone Area is required to be constructed to a BAL12.5 (focused on ember protection). This enhances protection, delivered outside of the planning system.

### 6.3 Other matters

The following considers other matters included within the scope or work.

#### Preferred density of development

Smaller lots (less than 1,250sq.m) have the benefit that they tend to be lower fuel without the need for ongoing management, as there is insufficient land within each lot for hazardous vegetation to be introduced. It is therefore a form of passive mitigation.

Alternatively, larger lots do provide sufficient land where hazardous vegetation may arise over time. Planning conditions, in a planning permit and/or s173 agreement, can be used to minimise this occurring but come with on-going obligations for each landowner and a need for the Council to monitor and enforce non-compliance. It requires active mitigation, each year and throughout the fire danger period.

Recent reviews, including the Black Saturday Royal Commission and reviews undertaken by the Victorian Auditor General, have concluded that significant non-compliance with bushfire-related planning permit conditions exists across Victoria.

Whilst lots smaller than 1,250sq.m are preferred, it is likely that at the planning scheme level larger lots with bushfire vegetation management requirements achieves the same outcome despite concerns about compliance and enforcement.

It is therefore not possible to recommend a preferred density beyond recognising that passive mitigation through lots less than 1,250sq.m is likely to be more viable over time than the active mitigation and land management needed on larger lots.

#### Preferred Zone

Land identified as being suitable for directing growth and development can be included in either the Township Zone, General Residential Zone or Neighbourhood Residential Zone. There is no bushfire factor driving which of these zones is applied.

#### Rural Living Zone (RLZ) to Low Density Residential Zone (LDRZ)

Large parts of the Study Area are within the RLZ. These areas, located in Landscape type 3, generally west of Ballarat-Maryborough Road, have an elevated landscape risk and are not recommended for growth and development. This includes for more intense development that may arise by applying the LDRZ.

The LDRZ will not afford passive approaches to securing low-fuel outcomes, and community wide approaches are problematic where land is already fragmented and coordination of change is difficult. Once land is fragmented, it can mean that individual development sites rely on adjoining land developing to create safe communities, however there can be no certainty this would occur in a reasonable timeframe or at all.

On balance, it is considered that land to the west of Ballarat-Maryborough Road is not a preferred location for growth or development enabled by a planning scheme amendment and proposals to increase the intensity of these areas through the LDRZ should be avoided.

The proposed identification of land to the west of Ballarat-Maryborough Road in the Structure Plan as needing to avoid the introduction of additional bushfire hazards should support the exercise of discretion if planning permits are sought for development. This may require bushfire vegetation requirements to be applied, which would be advantageous to Talbot as a whole but also to people living in the rural living areas.

#### **6.4 Conclusion**

Directing development and growth to land generally located east of Ballarat – Maryborough Road is consistent with the bushfire policies and directions contained in the planning scheme. This can comply with *c.13.02-1S Bushfire Planning* when combined with bushfire mitigation being included into the Structure Plan and subsequent planning scheme amendment.

Recommendations in this report are intended to reiterate the bushfire requirements that should be integrated into the Structure Plan and future decisions. These should operate in the planning scheme as local content.

## 7. Recommendations

Based on the assessments contained in this report, the following recommendations should be accommodated in updated strategic planning and planning scheme content for Talbot.

### Recommendation 1: Direct development to lower risk locations

New subdivisions to enable growth should be directed to land east of Ballarat-Maryborough Road, as generally described as Landscape type 2 areas and shown on Figure 7A.

### Recommendation 2: Interfaces with a bushfire hazard

New subdivisions (building envelopes) be set back from bushfire hazards for a distance no less than that required to ensure exposure is less than 12.5kw of radiant heat. This equates to Column A in Table 2 to *c53.02 Bushfire* in the planning scheme. For strategic planning purposes, the following setbacks can be used:

- A minimum 19m from grassland assessed vegetation.
- A minimum 33m from forest assessed vegetation.
- A minimum 48m from forest assessed vegetation.

Constructed (perimeter) roads can be used as part of the above setbacks.

A bushfire hazard site assessment should be prepared for development enabled by the Structure Plan to confirm vegetation type, slope and final setbacks.

### Recommendation 3: Vegetation in completed development

*c53.02 Bushfire Planning, Table 6 Vegetation management requirements* should be applied to new lots for Accommodation which are larger than 1,200sq.m. Alternative hazard management approaches can be developed to the satisfaction of the relevant fire authority in conjunction with future planning.

#### Notes:

*As a result of Recommendations 2 and 3, the Structure Plan can demonstrate that development is exposed to less than 12.5kw/sq.m of radiant heat and a construction standard of no more than BAL:12.5 will arise.*

*Bushfire vegetation management requirements are shown on Figure 7C.*

### Recommendation 4: Perimeter roads

Development should be separated from permanent hazards by perimeter roads on grassland interfaces.

#### Note:

*Hazard interface treatments are indicatively shown on Figure 7B.*

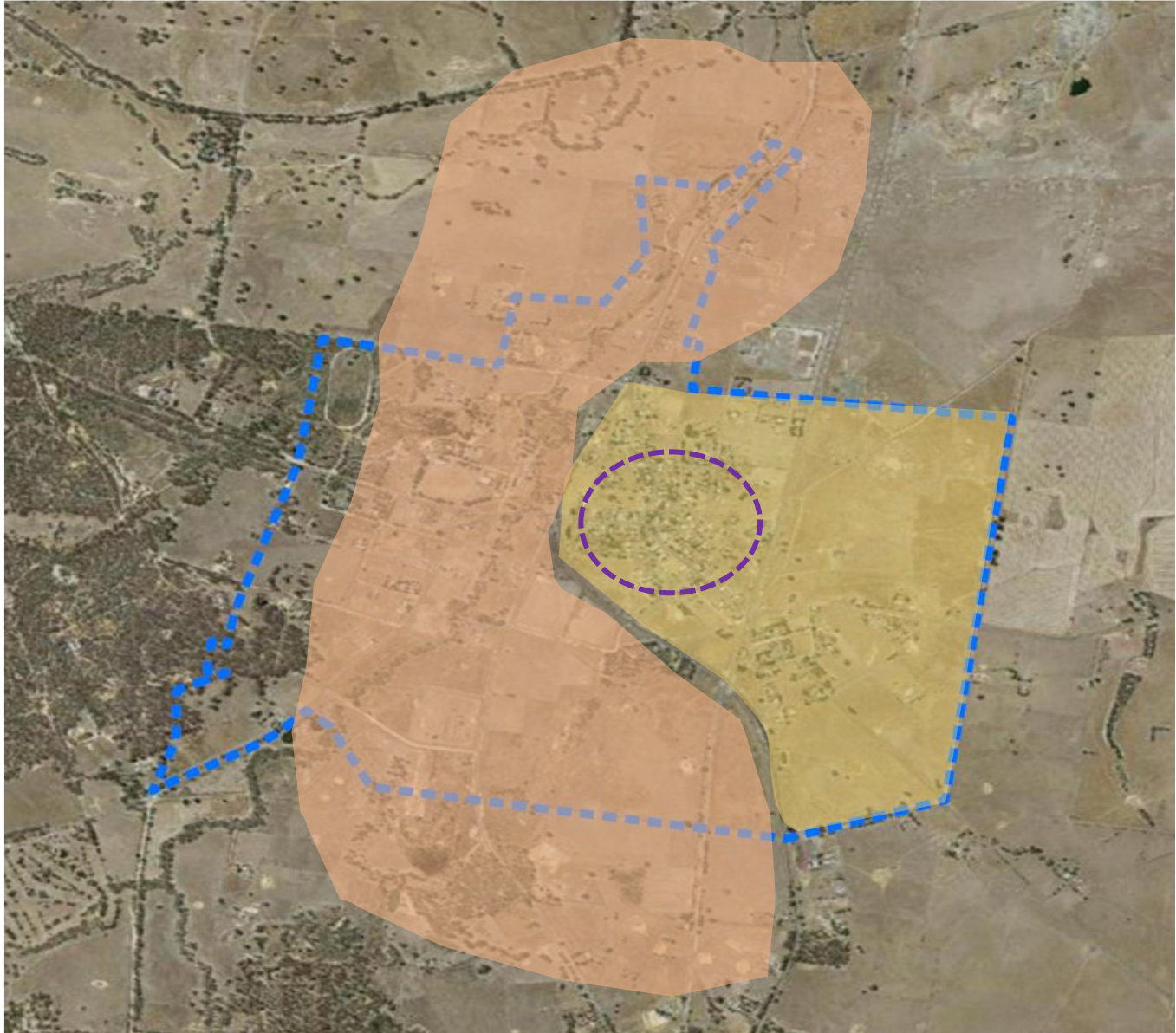
### Recommendation 5: Recognising lower fuel areas in planning decision making


The Structure Plan should spatially include existing low fuel areas in the core of Talbot and areas to the west of Ballarat-Maryborough Road as being lower fuel, emphasising the need for these not to be compromised over time based on the protective benefit they provide to Talbot and areas where growth and development are recommended to be directed in this report.


### Recommendation 6: Planning scheme controls

The recommendations in this report should form part of the planning scheme, within the Structure Plan itself if it is to be incorporated into the planning scheme or through local planning scheme content if the Structure Plan is not to be incorporated into the planning scheme.

FIGURE 7A: SPATIAL RECOMMENDATIONS




 Study Area

 Landscape type 2

Direct growth and development  
subject to planning requirements  
bushfire protection:

- Bushfire setbacks for subdivision.
- Hazard management on new lots larger than 1,200sq.m and where future use is for Accommodation

 Maintain low fuel areas  
in the core of Talbot


 Avoid introducing bushfire hazards

FIGURE 7B: EXPECTED INDICATIVE TREATMENT ON HAZARD INTERFACES: GRASSLAND HAZARDS

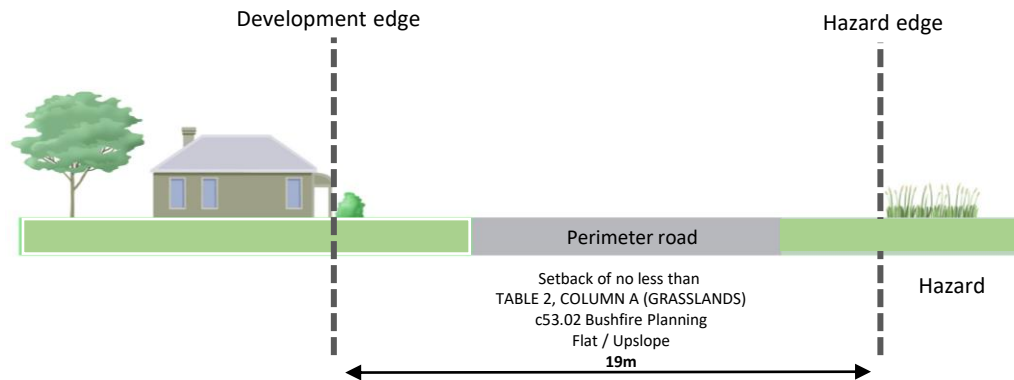


FIGURE 7C: TABLE 6, *c53.02 BUSHFIRE PLANNING* BUSHFIRE VEGETATION MANAGEMENT STANDARDS (DEFENDABLE SPACE)

- 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.

## References

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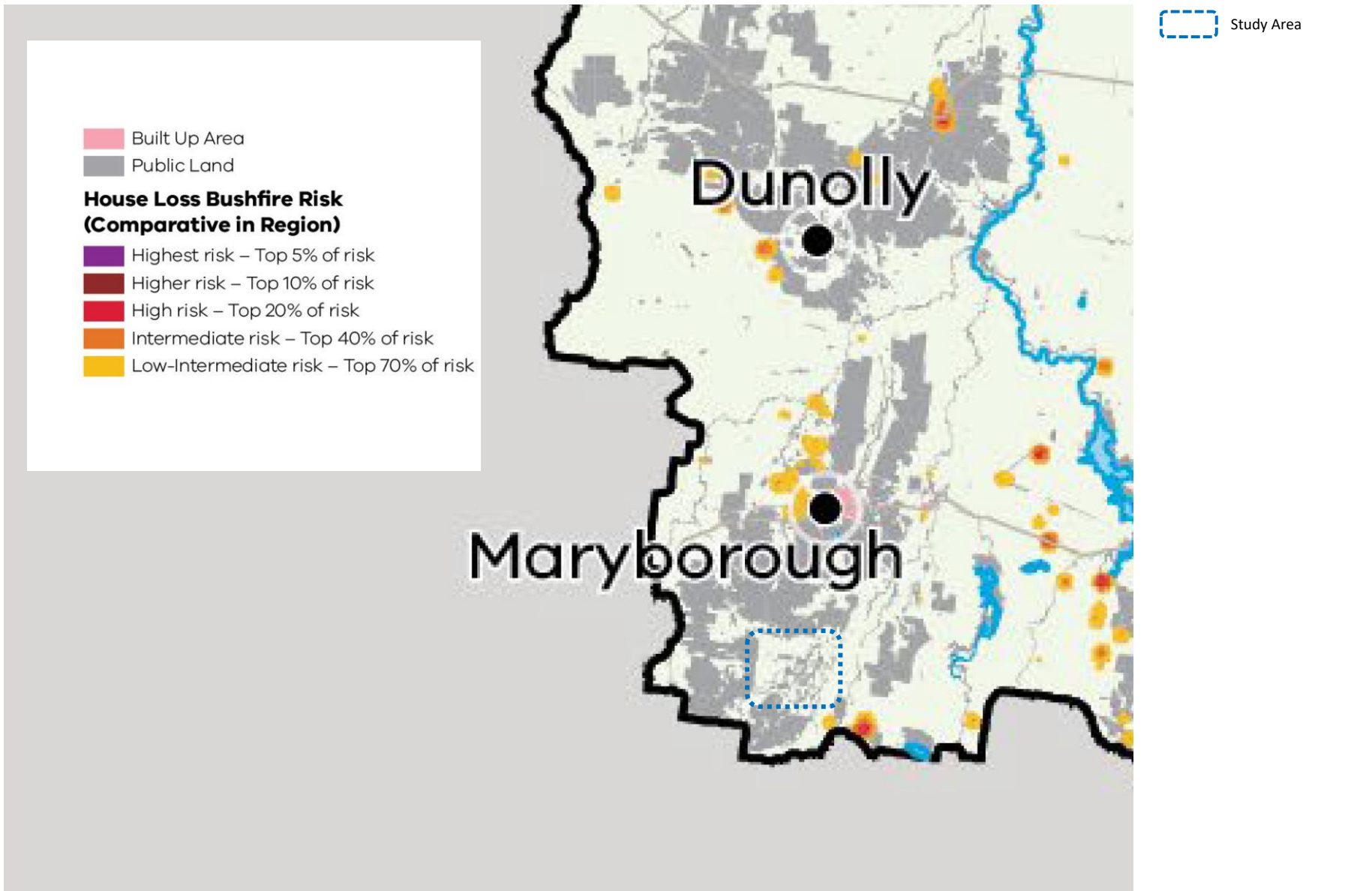
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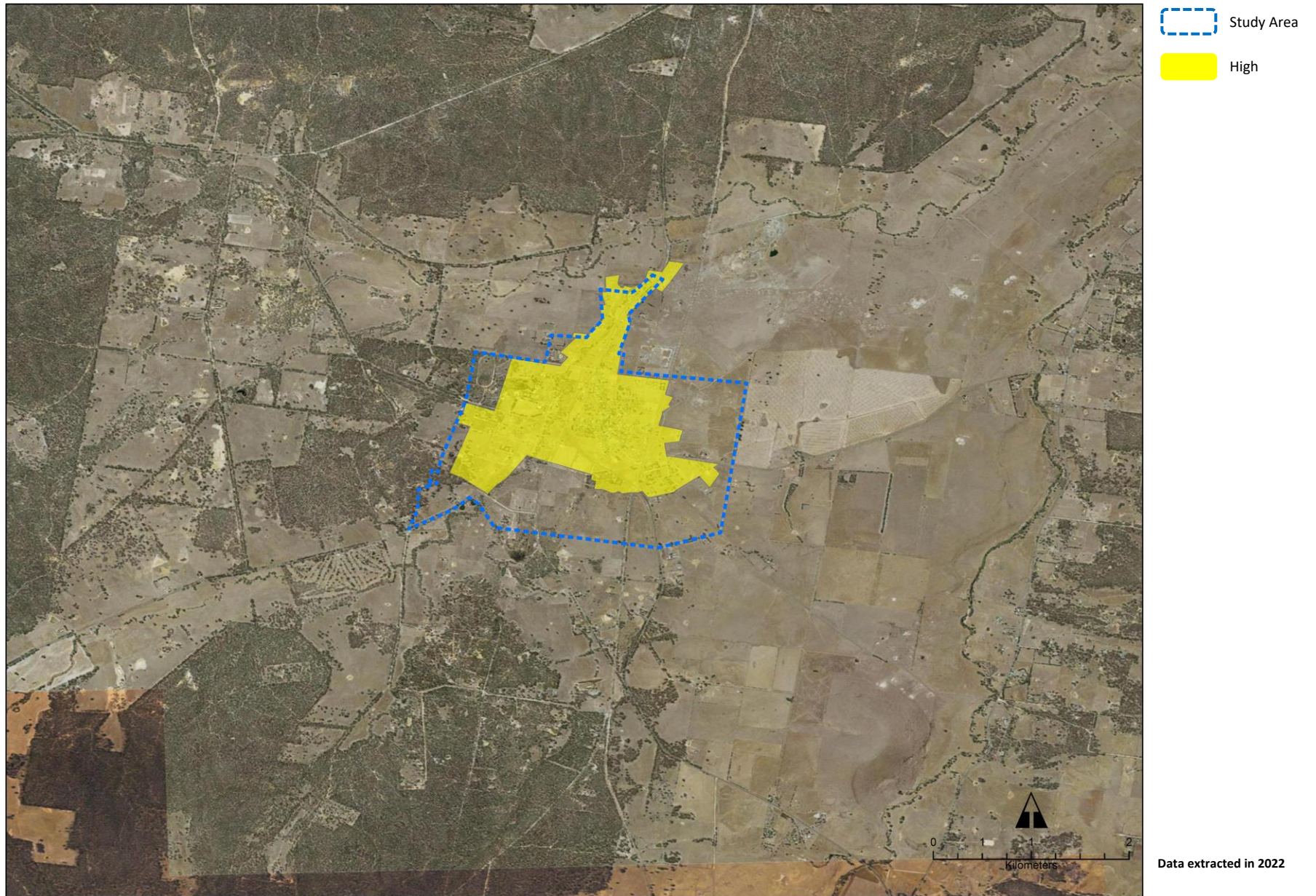


ATTACHMENT 1 FIGURE A: MODELLED HOUSE LOSS BUSHFIRE RISK (ADAPTED FROM DELWP 2020)

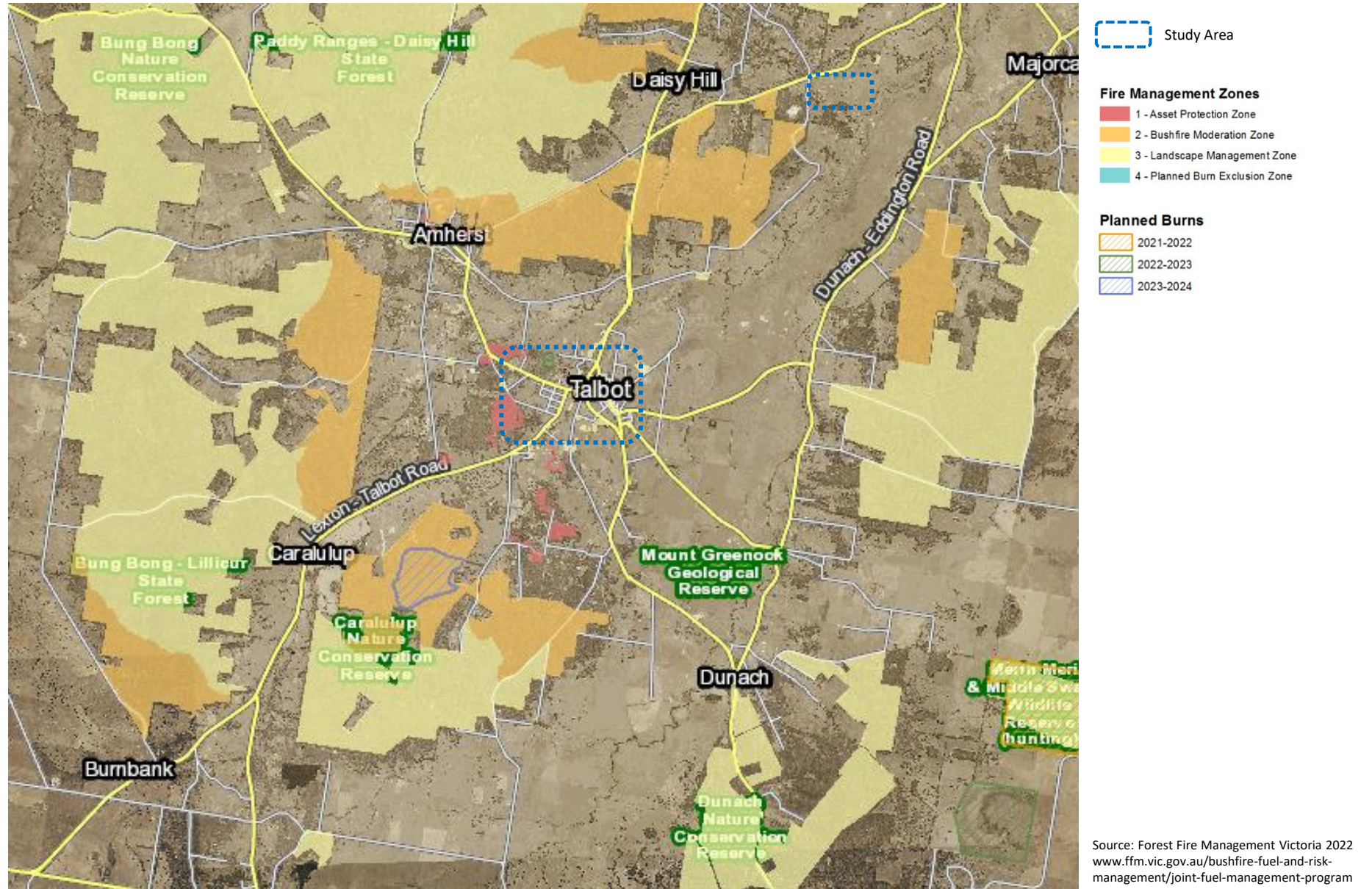




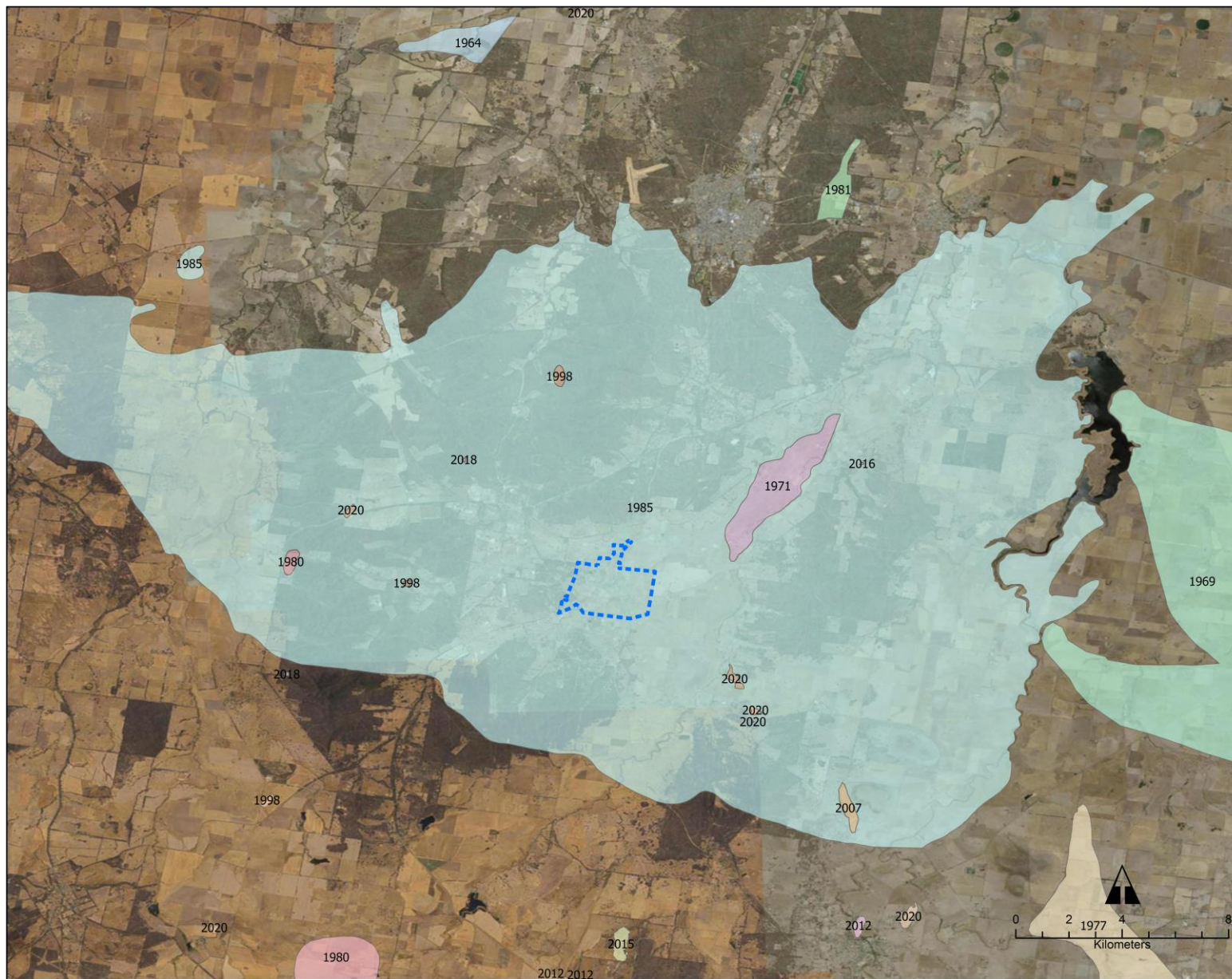
ATTACHMENT 1 FIGURE B: VICTORIAN FIRE RISK REGISTER HUMAN SETTLEMENT



ATTACHMENT 1 FIGURE C: JOINT FUEL MANAGEMENT PLAN



ATTACHMENT 1 FIGURE D: BUSHFIRE HISTORY



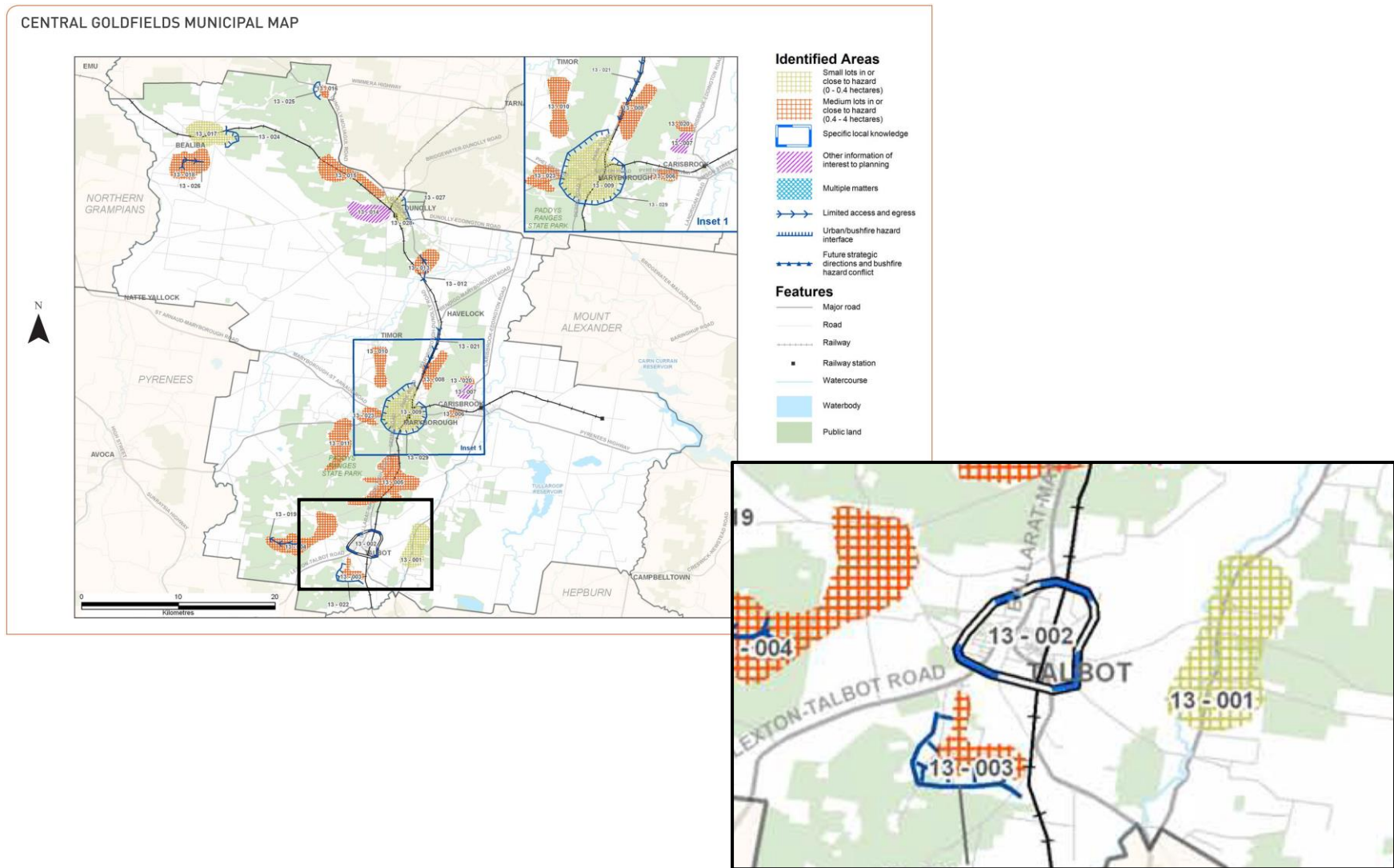
 Study Area

*Bushfire shown in blue was in 1985*



Data extracted in 2022

**ATTACHMENT 1 FIGURE E: REGIONAL BUSHFIRE PLANNING ASSESSMENT LODDON MALLEE (DPCD)**



13-002	Talbot	Grassfires are a known bushfire hazard in the Talbot area.
13-003	Talbot	Cluster of medium rural-residential lots to the south of Talbot township in or in close proximity to bushfire hazard area.

Source: DPCD 2012

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