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BUSHFIRE PLANNING

Bushfire assessment to inform the Horsham South Structure Plan

Final Report

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Version 1.0

Prepared for:

Mesh Planning

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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.

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Disclaimer

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Version Control

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v0.1	9 September 2022	Draft for Client review	Kevin Hazell Town Planner
v0.2	6 October 2023	Draft for Client and CFA review	Kevin Hazell Town Planner
v1.0	21 March 2024	Final report	Kevin Hazell Town Planner

1. Introduction

Kevin Hazell Bushfire Planning has been engaged by Mesh Planning to prepare a bushfire assessment that will inform the Horsham South Structure Plan (the '**Structure Plan**'). Mesh Planning is preparing the Structure Plan on behalf of Horsham Rural City Council (HRCC).

1.1 The Structure Plan project

The *Horsham Structure Plan Emerging Options Discussion Paper 2021* (HRCC) describes the Structure Plan as follows:

Horsham Rural City Council has identified that a strategic approach to plan for future development in Horsham South is needed. Unplanned and uncoordinated development has placed pressure on services and infrastructure and created land use conflicts and amenity impacts in some areas.

The Horsham South Structure Plan will be a strategic document that establishes a shared vision and framework for future growth, development and character of Horsham South.

The Horsham South structure planning process is intended to:

- *Coordinate future subdivision and development.*
- *Identify the zoning of land and the layout of roads and open space for the area.*
- *Identify and facilitate the resolution of strategic infrastructure issues.*

1.2 About the study area

The Study Area for this report was provided in the scope of work and is shown on Figures 1A – 1e. The *Horsham Structure Plan Emerging Options Discussion Paper 2021* (HRCC) describes the study area (in part) as follows:

Horsham South and Haven are characterised by low density and rural living style residential development. Horsham South is home to the municipality's primary industrial areas, which are well located near the main roads of Henty Highway and Western Highway and provide significant employment for local residents. Protecting employment and providing rural living opportunities is of key importance to Council and the community.

A key feature of the Horsham area is the Wimmera River and the open space corridor along its banks that provide a valuable asset to the community. The river and adjacent area are a landscape of Aboriginal cultural heritage significance and any future development of the area needs to have regard to protecting the cultural heritage.

While the character of this area is valued, to date, there has been limited coordinated planning of the area. The unplanned development pattern has not allowed Council to strategically plan for infrastructure needs, particularly for sewerage and water. It has also placed pressure on Council services such as road maintenance and rubbish collection and created land use conflicts and amenity impacts in some areas.

See:

Figure 1A: Locality map with study area

Figure 1B: Locality aerial photo with study area (with Roads)

Figure 1C: Zones

Figure 1D: Bushfire Management Overlay and Bushfire Prone Areas

Figure 1E: Development Plan Overlay

1.3 The emerging Structure Plan

Since an initial draft of this report was prepared in 2022, the Structure Plan project has evolved, and an emerging Structure Plan diagram has been prepared. This includes emerging Structure Plan proposals for change to Zones and minimum lot sizes.

An existing residential density density plan has also been prepared, which assists to appreciate the changes from the current planning scheme to the emerging Structure Plan.

This version of the report uses the emerging Structure Plan content as a basis for the assessments in Sections 6 and 7.

1.4 Methodology

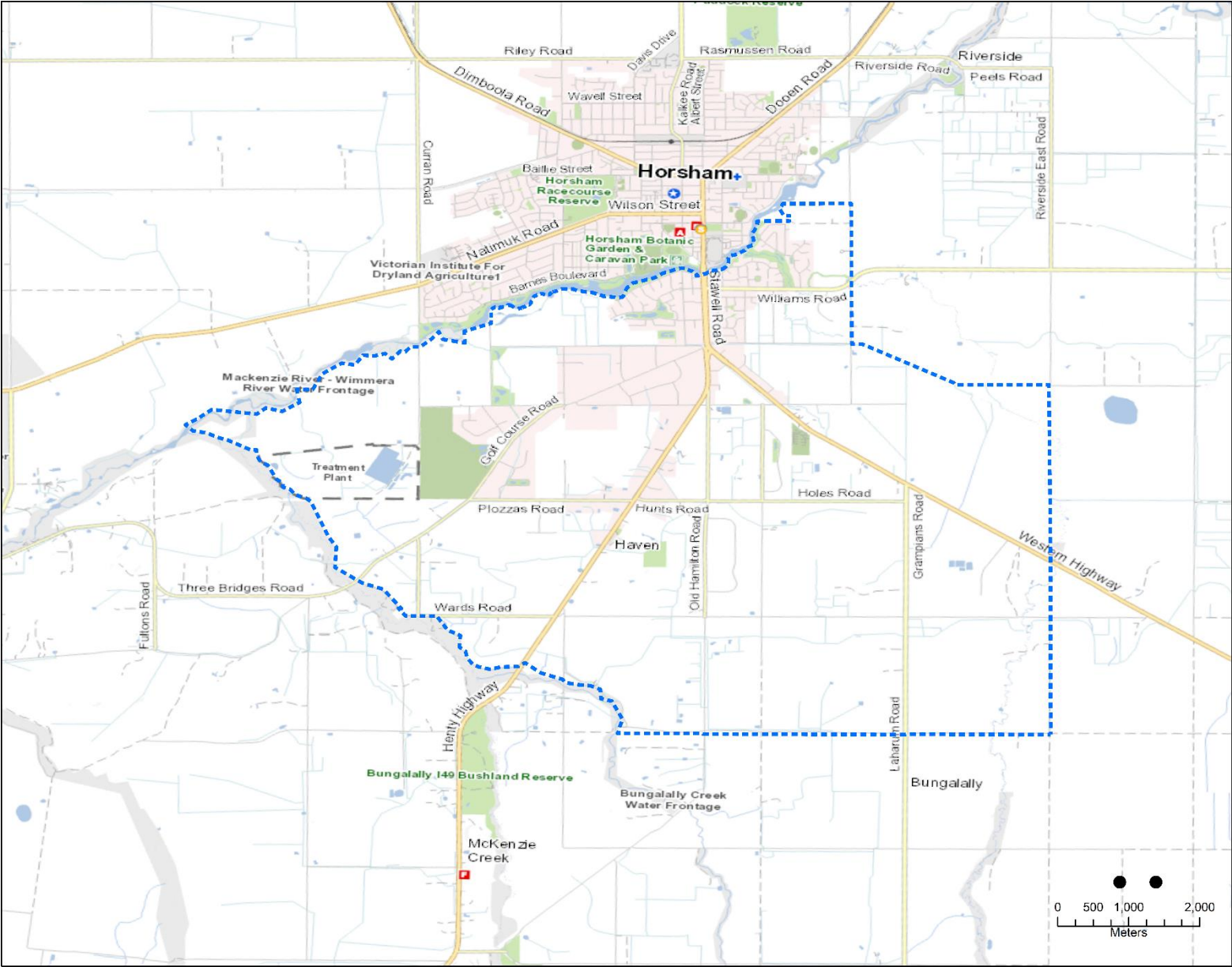
c13.02-1S Bushfire Planning includes strategies that inform how bushfire hazards are to be assessed and for considering where and how growth and new development should occur. Having regard to these strategies, this report responds to the scope of work as follows:

- 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 discusses preliminary matters that are informative to the *c13.02-1S Bushfire Planning* assessment in Section 7.
- Section 7 includes a discussion and recommendations. The objectives and strategies in *c13.02-1S Bushfire Planning* are used to inform the recommendations.
- Section 8 includes a summary of the recommendations.

1.5 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 (WITH ROADS)



 Study area

Date: 14/03/2024

FIGURE 1C: ZONES

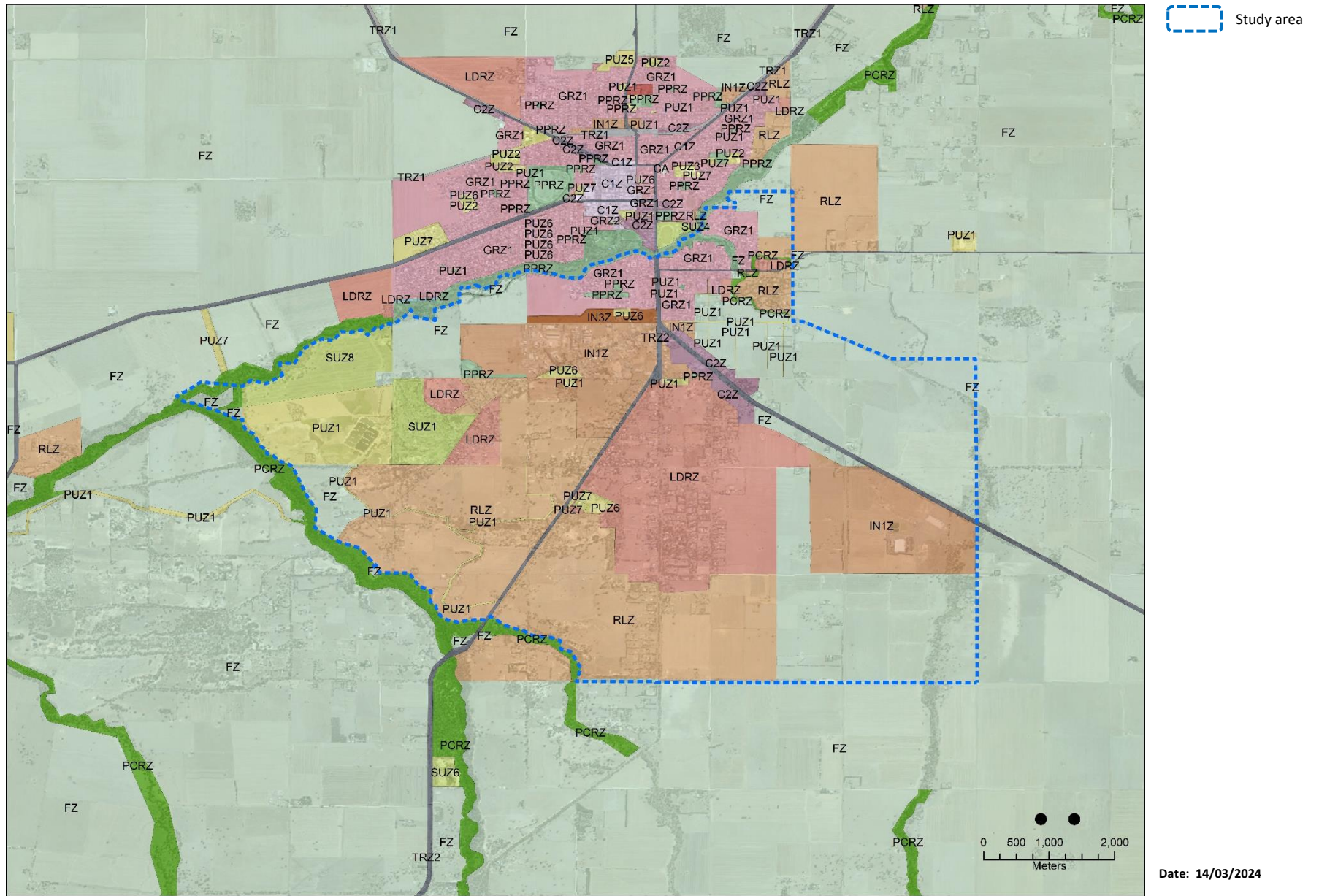
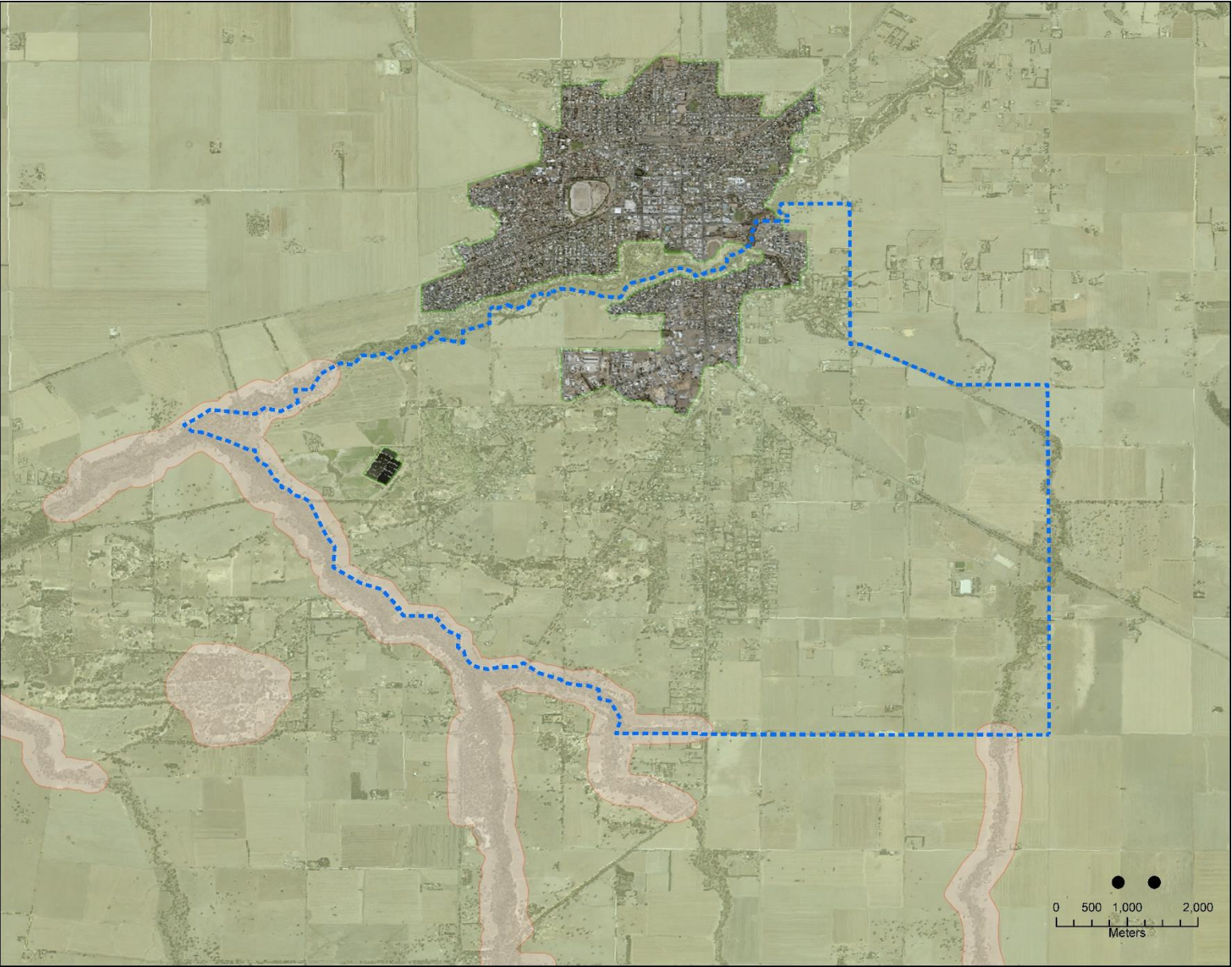





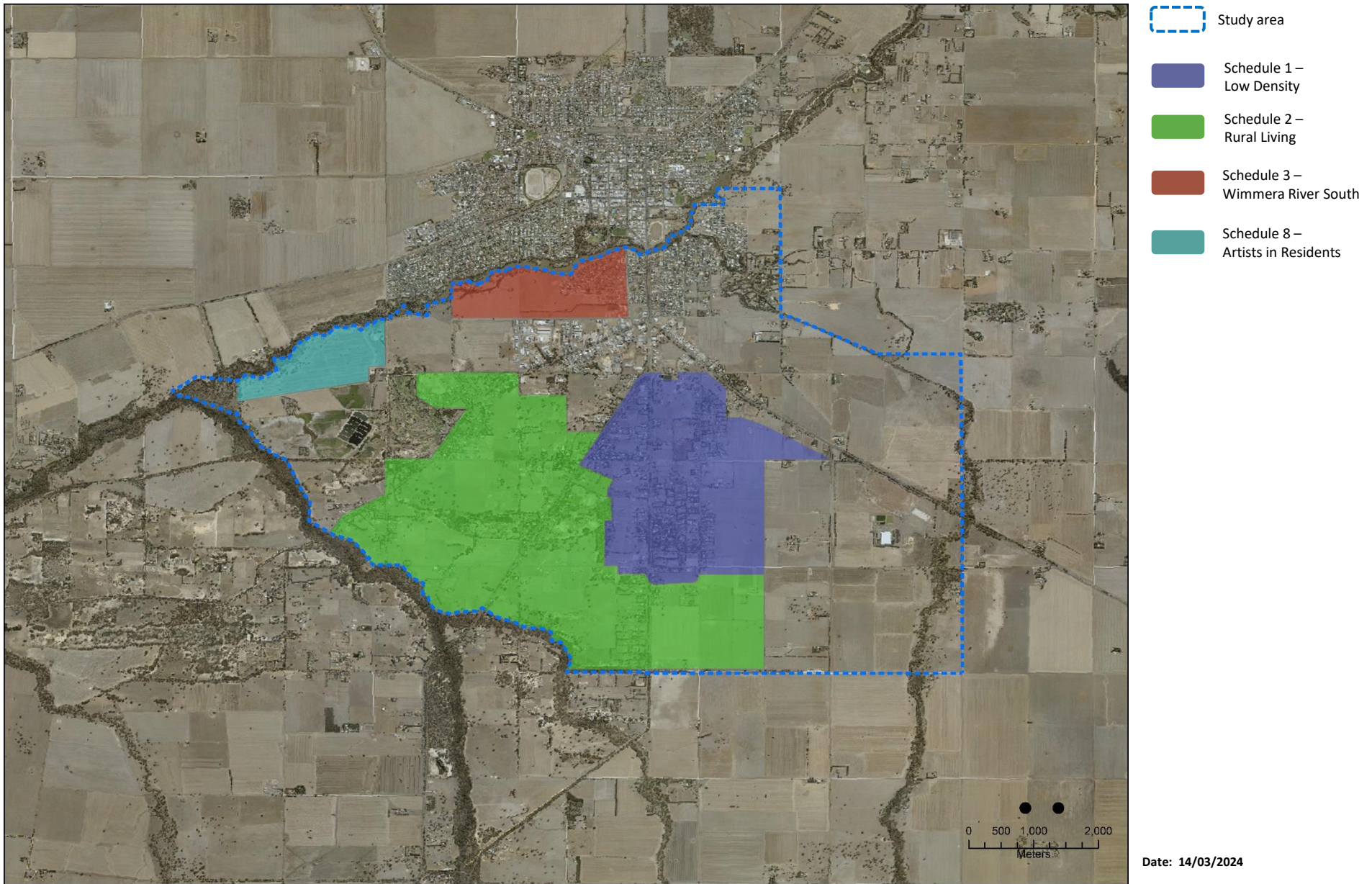
FIGURE 1D: BUSHFIRE MANAGEMENT OVERLAY AND BUSHFIRE PRONE AREA



-  Study area
-  Bushfire Prone Area
-  Bushfire Management Overlay

Date: 14/03/2024

FIGURE 1E: DEVELOPMENT PLAN OVERLAY



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:

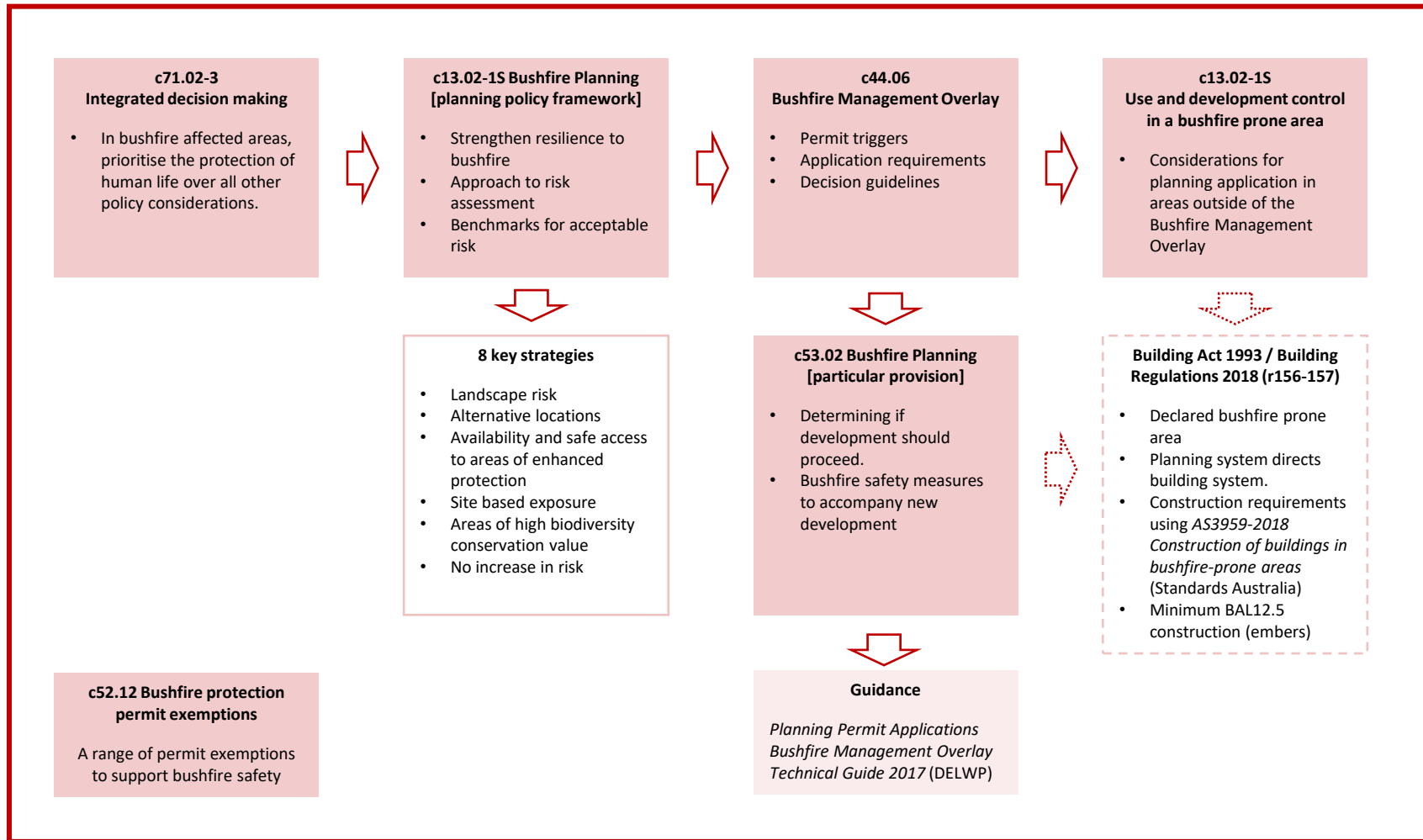
- *Consider the risk of bushfire to people, property and community infrastructure.*
- *Require the implementation of appropriate bushfire protection measures to address the identified bushfire risk.*
- *Ensure new development can implement bushfire protection measures without unacceptable biodiversity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

DELWP 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 *Grampians 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 Grampians Region, does not have areas within the top 70% of simulated risk of house loss.

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 south-western edge of the Study Area is included in the Bushfire Management Overlay, which is applied to hazardous vegetation in Mackenzie River and Bungalally Creek.

3.3.2 Bushfire prone area

A bushfire prone area is 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.

For the Study Area, grasslands are included in the Bushfire Prone Area whilst low and lower fuel parts of the southern edges of Horsham are excluded except for a 50m buffer on the grassland edges of the settlement. These excluded areas comprise urban lots and industrial land that is low or no fuel.

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.

The VFRR identifies the grassland interfaces of the southern part of Horsham as being a medium risk. High risk is identified in selected parts of the lower density residential parts of the Study Area.

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

3.5 Regional bushfire planning assessment

The *Regional Bushfire Planning Assessment Grampians 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 lower density residential lots adjoining Horsham Golf Club.

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.

There are interventions along parts of Mackenzie River.

There are no other interventions in or close to the Study Area reflecting the lack of non-grassland hazards and the lack of large areas of hazardous public land where management interventions are usually directed.

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

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).

The potential for bushfire in and around the study area is demonstrated by bushfire history which includes a 2009 bushfire that affected large parts of the Study Area. The *2009 Victorian Bushfires Royal Commission* (VBRC) identified the following in its review of this fire:

- 13 house losses
- 2,346 hectares burnt
- Maximum temperature recorded was 47.6 degrees at Horsham.

See:

Attachment 1 Figure 1D-1: Bushfire history

Attachment 1 Figure 1D-2: Bushfire history – VBRC extracts

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

Landscape bushfire hazards are from grasslands.

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 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.

Mackenzie River and Bungalally Creek contain non-grassland hazards forming the south-western edge of the Study Area. These are configured in a linear strip, consistent with being located within riparian corridors. In parts they can be up to 300m wide, in other parts they can be narrower. The Council is also aware that decommissioned irrigation and water supply channels remain in the area and have in the past contributed to the spread of bushfire.

These hazards are significant at a site and local scale, but their impact on a landscape scale is less significant and clearly sub-ordinate to the grassland hazards which will be the main driver of bushfire behaviour in the landscape.

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 the grasslands around the Study Area.

4.2 Likely landscape bushfire scenarios

The extent of grasslands means a larger grassfire is capable of approaching the Study Area, most likely under the influence of a north-westerly wind and/or a south-westerly wind on the wind change typical in Victoria's bushfire weather. The 2009 bushfire correlates with the type of bushfire to be expected in the Study Area.

Due to the extent of rural living development in the Study Area, some land may be more or less managed at the time of a grassfire, meaning it may not travel consistently across the Study Area. This is evident in the 2009 bushfire also.

The northern part of the Study Area that is low fuel, comprising urban lots and industrial land, do not contain sufficient hazards where grassfire would likely penetrate the urban area. The threat from grassfire is more likely at the grassland / settlement edges in these parts of the Study Area.

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

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

4.3 Low fuel areas

BAL:Low places are 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-fuel land in the Study Area.

This reinforces two important factors for strategic planning:

- Smaller, urban lots generally contain less fuels, and enable low fuel areas (or precincts) to arise in any event (therefore being a form of passive mitigation).
- Larger rural living and low density residential lots have the potential for carry hazardous vegetation and preclude these areas from having low or lower fuel areas. This applies to most of the Study Area and shows, from a bushfire perspective, the challenges of larger lots for residential uses in managing hazards.

Recent development east of Horsham Golf Club had the potential for be a location of low fuel, although it is observed on field inspections that new development includes vegetation. Much of this is in a managed setting, but there are sufficient evidence of fuels being progressively introduced that it cannot be reliably assessed as low fuel.

See **Figure 4B: Landscape bushfire analysis** that shows low fuel land and BAL:Low land

Other places of shelter

A designated neighbourhood safer place is located at Sawyer Park in Horsham. This is located north of Wimmera River with a single road bridge providing access from the Study Area.

See **Figure 4B: Landscape bushfire analysis** that shows the NSP location

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.

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 bushfire study areas based on a neighbourhood scale of assessment.

The following landscape types are assessed for the Study Area.

Landscape type is assessed in the northern part of the Study Area, correlating with low fuel residential and industrial land. 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 2 is assessed immediately adjoining the Landscape type 1 areas in the northern part of the Study Area. Landscape 2 is described by DELWP (2017) as follows:

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

There are some problems with assessing Landscape type 2 in these areas as they are not currently low fuel. The emphasis in assessing them as Landscape type 2 is based on their proximity to low fuel areas to the north, with all areas being (at worst) no more than 1.5km from these low fuel areas. The lack of low fuel areas and the need for them will be discussed later in this report.

Landscape type 3 is assessed in the balance of the Study Area. Landscape 3b is described by DELWP (2017) as follows:

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

It is more ordinary for Landscape type 3 to arise in places affected by hazards other than grasslands. However, the lack of fuel management and immediate access to low fuel areas, even in this grassland setting, warrants an assessment of Landscape type 3 in this Study Area. More instructively, the potential to manage fuels in conjunction with new development is highly achievable in grassland areas and can, over time, create a Landscape type 1 outcome. Achieving this outcome is discussed later in this report.

See:

Figure 4B: Landscape bushfire analysis

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.

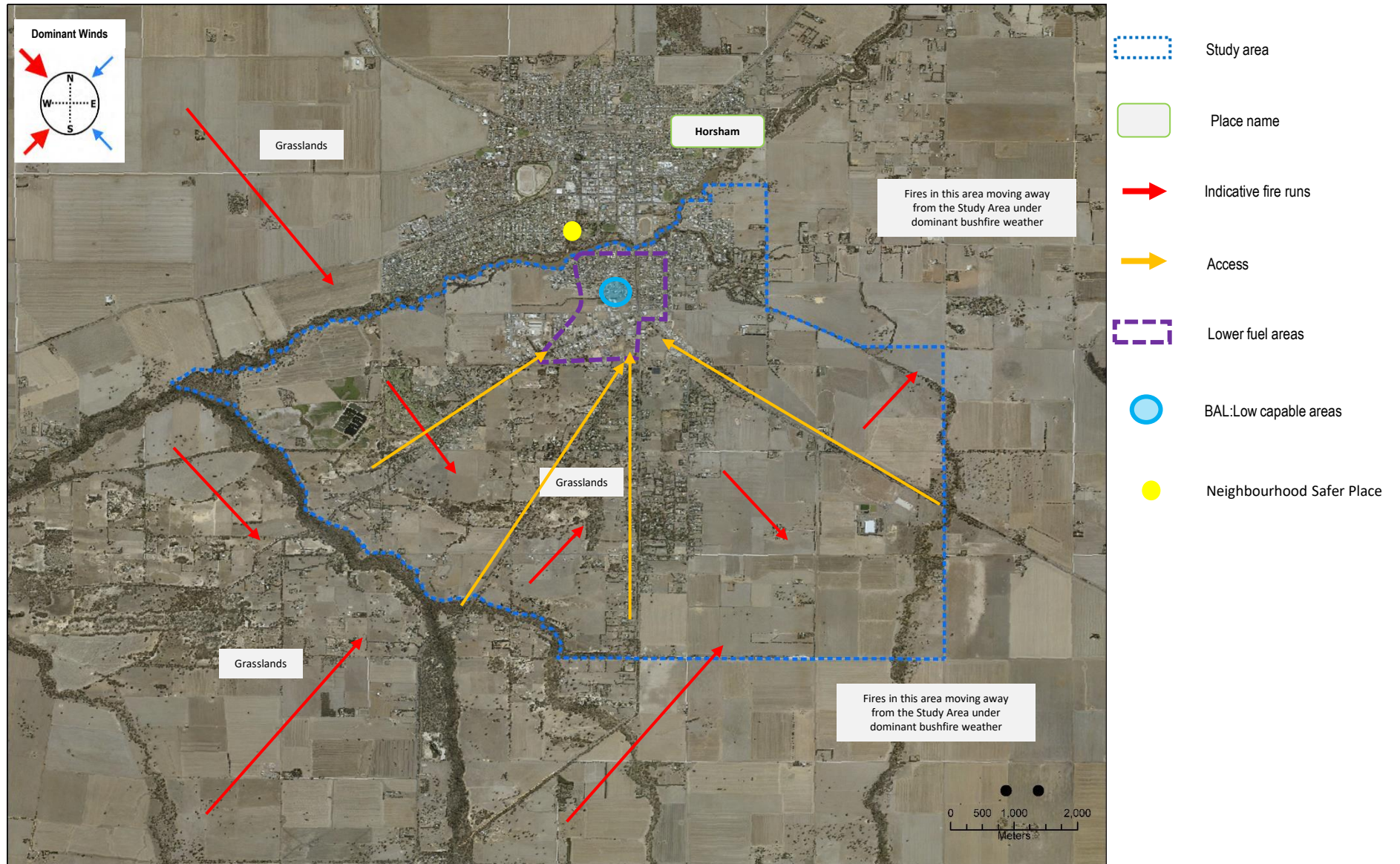
Landscape types when applied provide a spatial representation of how different areas are affected by landscape scale bushfire considerations. Based on this, places that are relatively higher or lower risk emerge.

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"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site • Bushfire can approach from more than aspect • The area is located in an area that is not managed in a minimal fuel condition • Access to an appropriate place that provides shelter from bushfire is not certain 	<ul style="list-style-type: none"> • The broader landscape presents an extreme risk • Bushfires may have hours or days to grow and develop before impacting¹ • Evacuation options are limited or not available
<p>Lower risk from the bushfire landscape</p>		<p>Higher risk from the bushfire landscape</p>	

¹ Adapted by author

FIGURE 4B: LANDSCAPE BUSHFIRE ANALYSIS



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

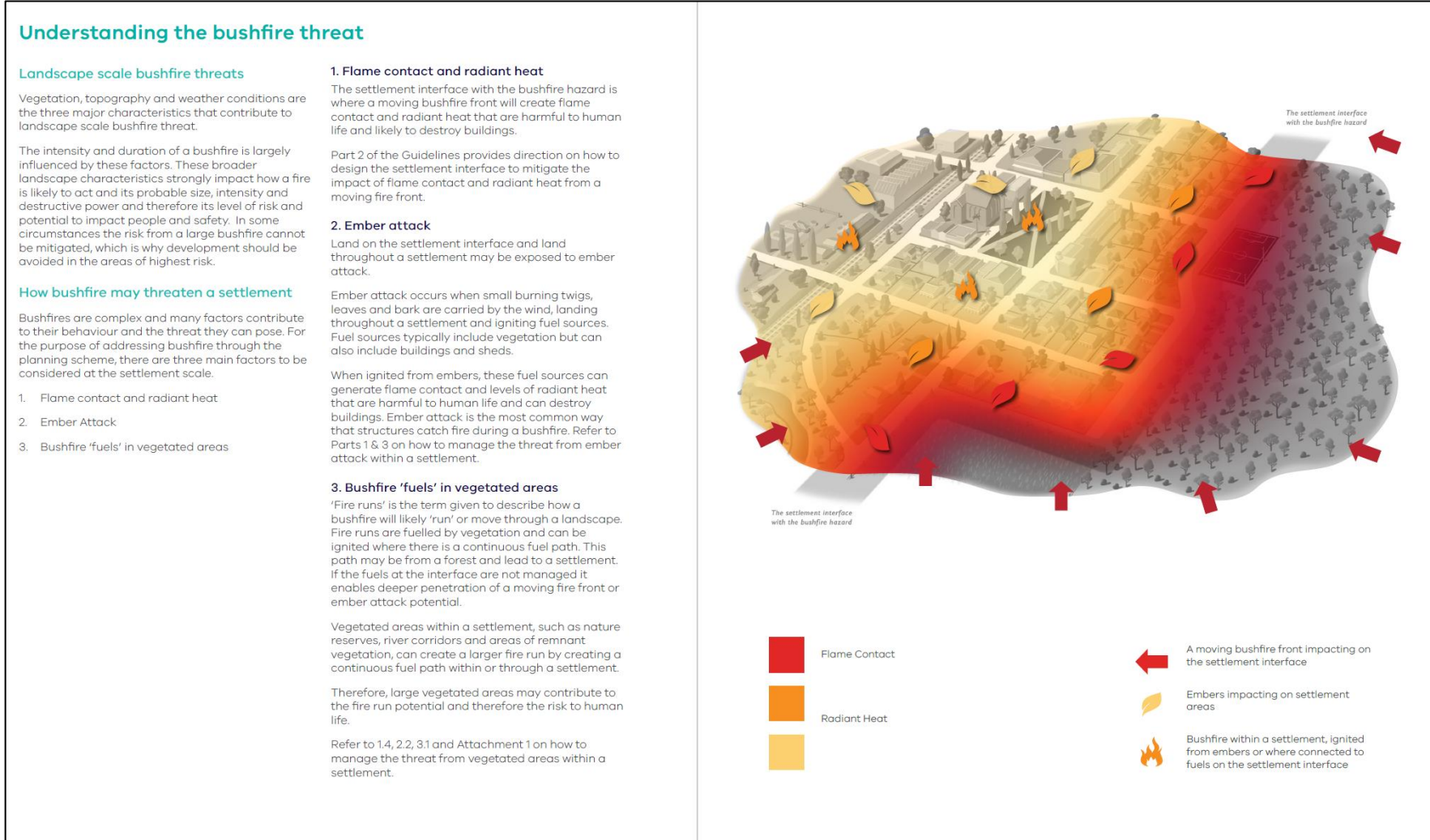
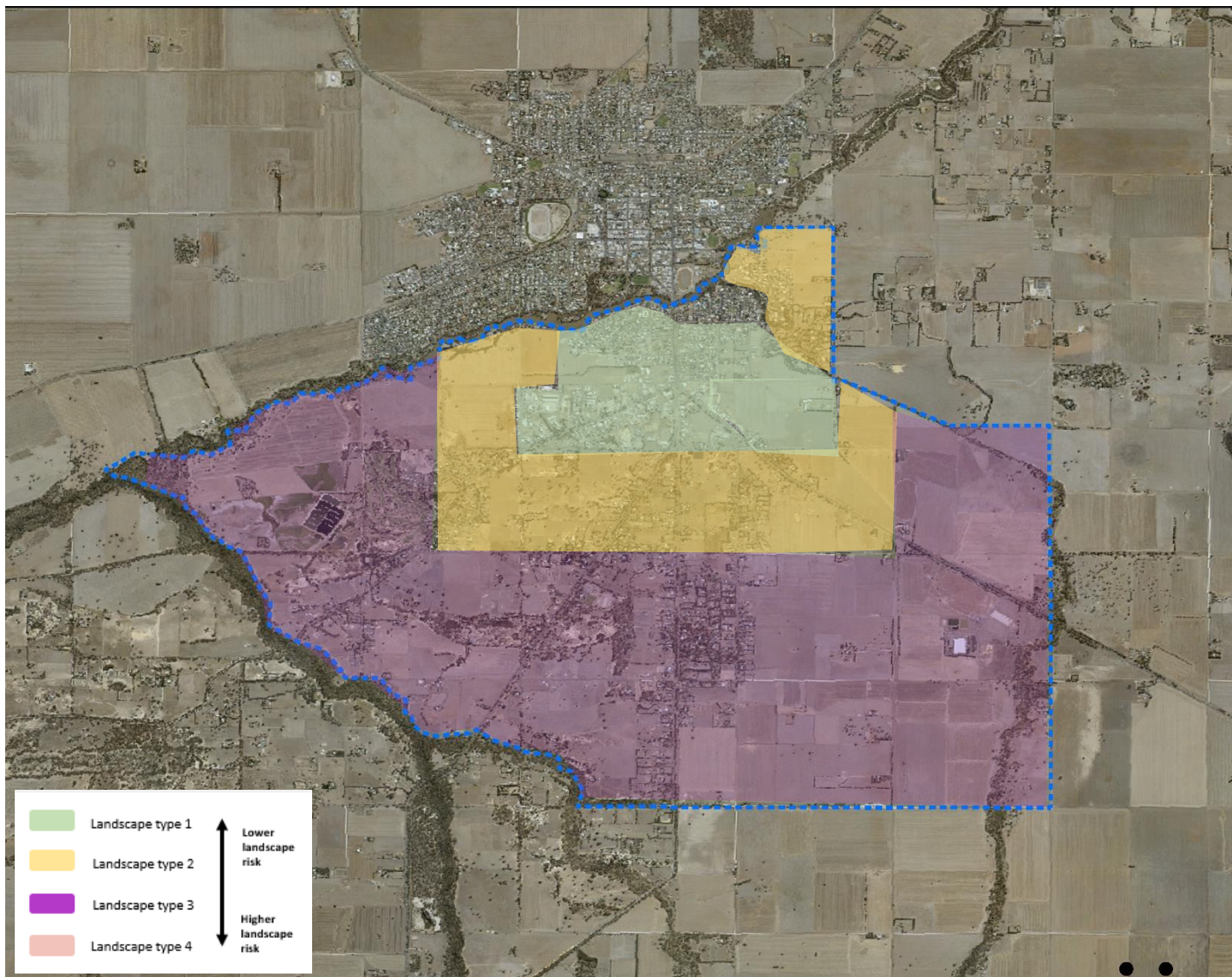


FIGURE 4D: SCHEMATIC LANDSCAPE TYPE AREAS



Study Area

Applied Landscape types (notional)



Landscape type 1



Landscape type 2



Landscape type 3

No Landscape type 4 is assessed

- Landscape type 1
 - Landscape type 2
 - Landscape type 3
 - Landscape type 4
- ↑ Lower landscape risk
↓ Higher landscape risk

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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:

- Black Box Lignum Woodland
- Damp Sands Herb-rich Woodland
- Grassy Woodland
- Plains Riparian Shrubby Woodland
- Plains Woodland
- Riparian Woodland
- Riverine Chenopad Woodland
- Sand Ridge Woodland
- Shallow Sands Woodland

See **Figure 5A: 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 5B: Elevation based on 10m contour

Figure 5C: 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*.

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 the Framework 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.

See **Figure 5D: indicative site assessment diagram prepared at the settlement scale**

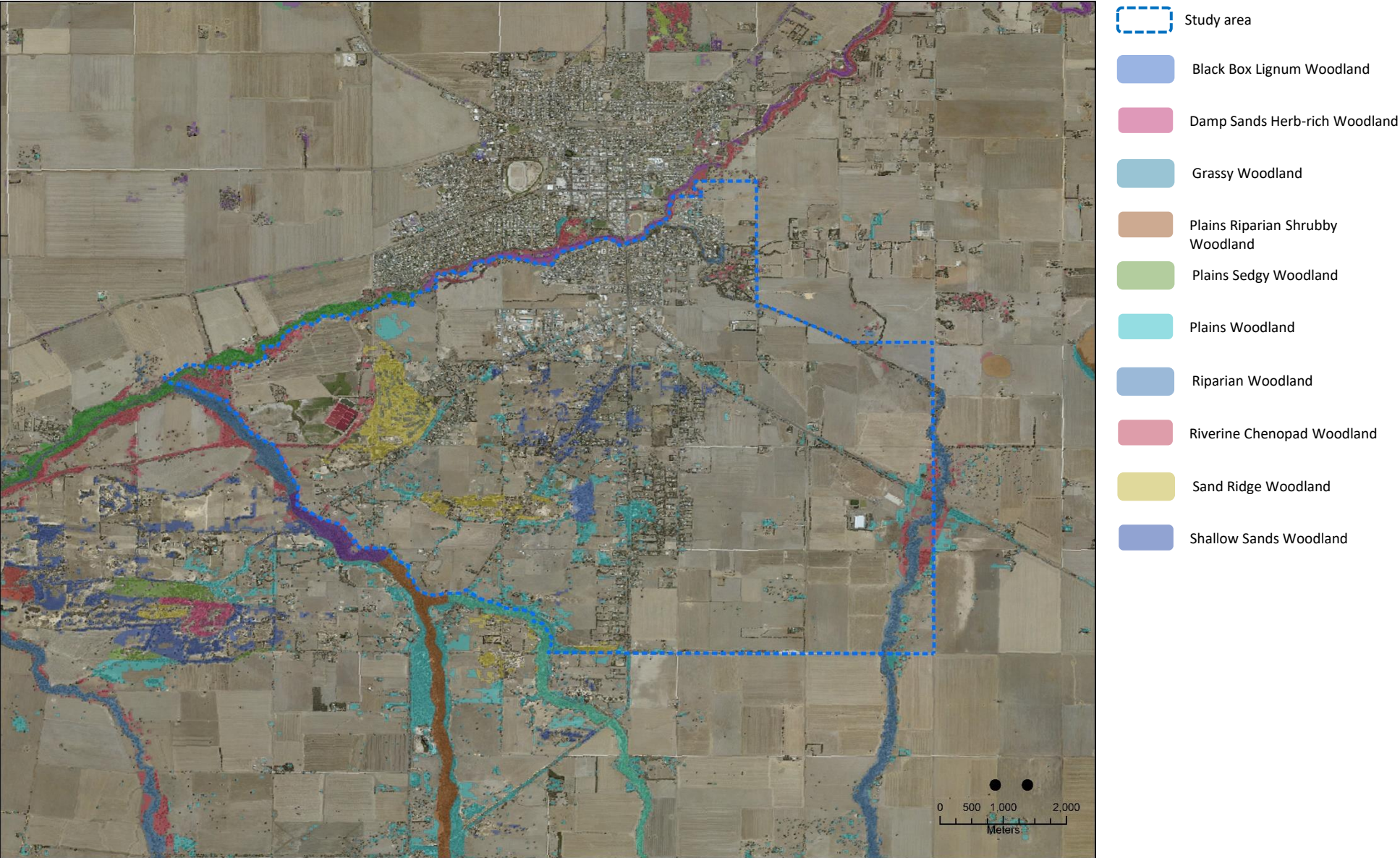
Woodland or Forest is assessed in the waterway corridors. The canopy separation cover would indicate an assessment of Forest, whereas the likely fire behaviour based on the configuration of vegetation and vegetation type is indicative of woodland. In either event, the difference in outcome is 15m which is not strategically significant at the Structure Plan preparation level.

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 20-30m).

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.

However, at a Structure Plan level and in determining where to direct growth, the above are sufficient benchmarks based on the vegetation present in and around the settlement.

FIGURE 5A: ECOLOGICAL VEGETATION CLASSES



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FIGURE 5B: ELEVATION BASED ON 10m CONTOUR

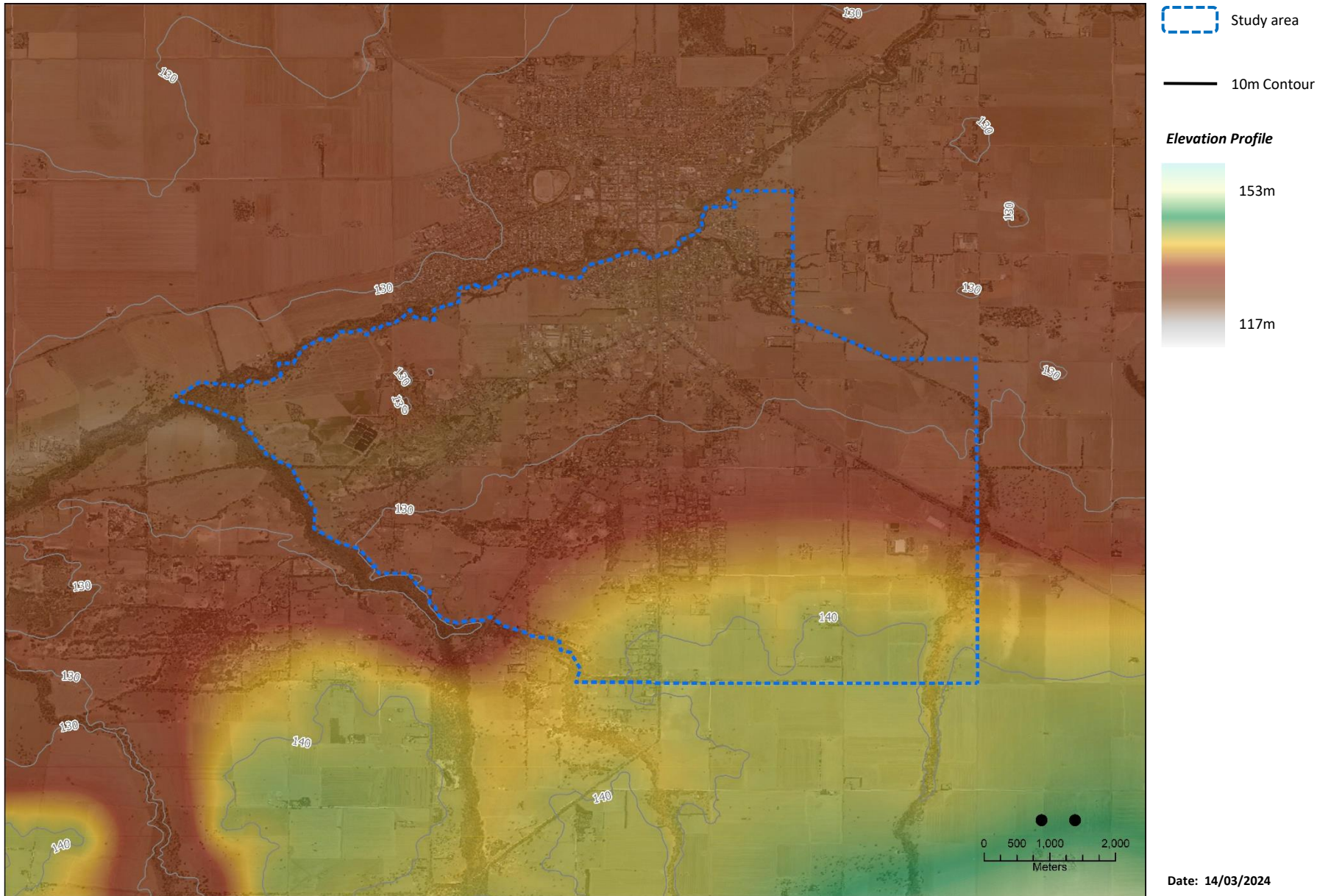


FIGURE 5C : SLOPE BASED IN A 10M CONTOUR

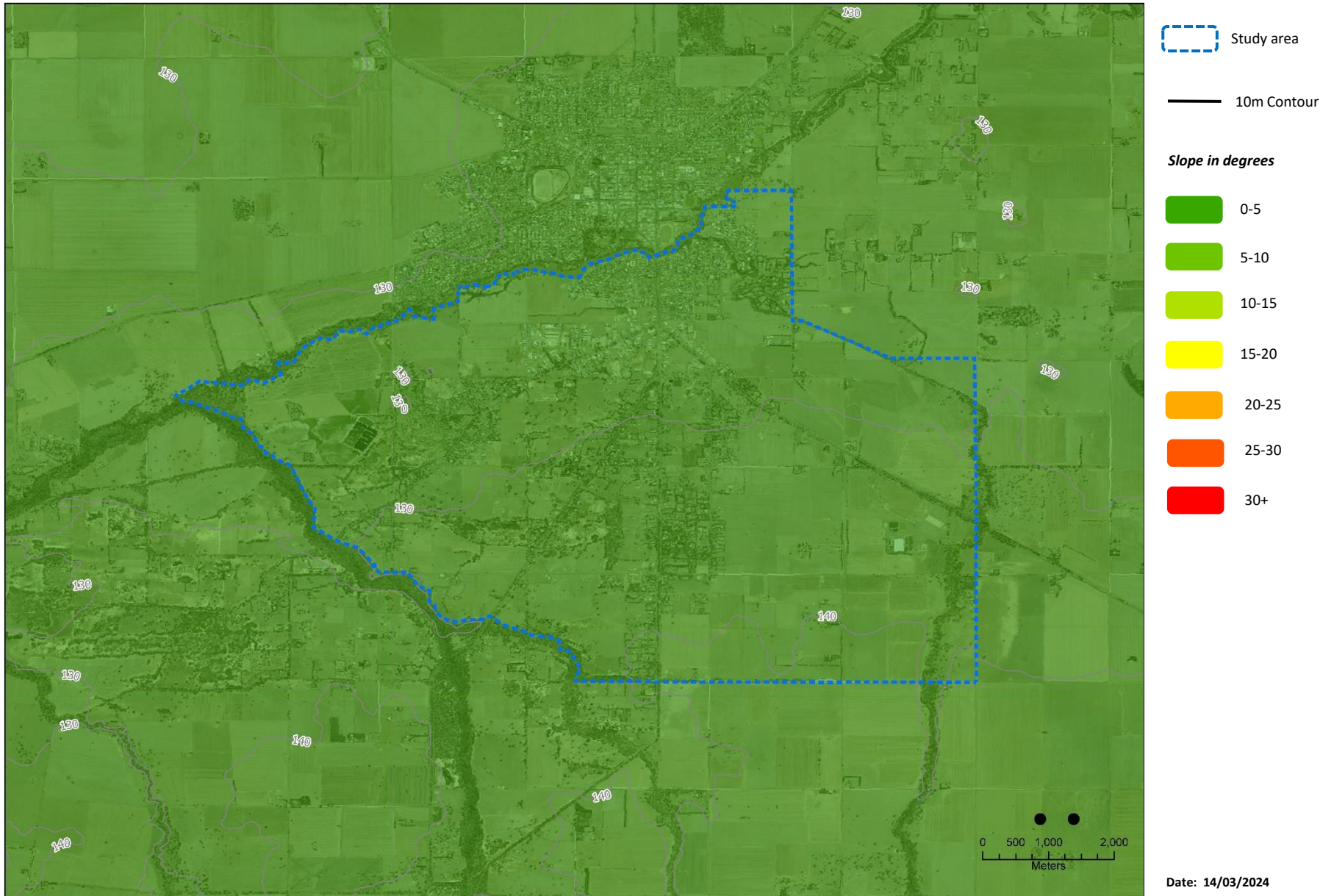
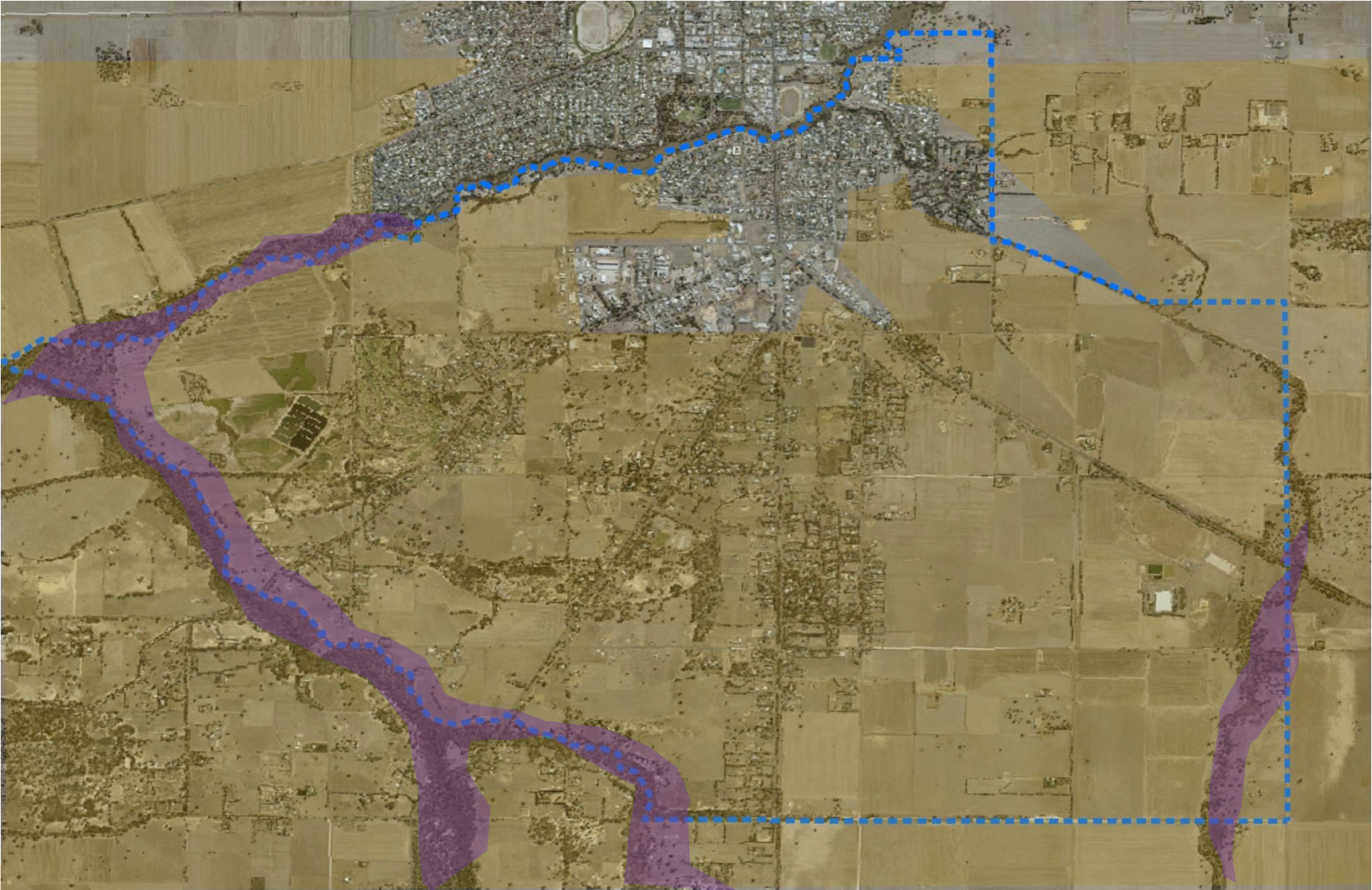


FIGURE 5D: INDICATIVE SITE ASSESSMENT DIAGRAM PREPARED AT THE SETTLEMENT SCALE



Study Area



Grassland



Forest or Woodland

Date: 14/03/2024

6. Preliminary matters informative to structure planning

Prior to undertaking an assessment of the emerging Structure Plan against *c13.02-1S Bushfire Planning*, it is necessary to address several matters which are informative to how the Structure Plan will need to respond to bushfire. These can then be used as a baseline to the *c13.02-1S Bushfire Planning* assessment in the next chapter.

6.1 Change proposes in the emerging Structure Plan

The emerging Structure Plan seeks to make changes to Zones and minimum lot sizes. These are shown on Figure 6A. As can be seen, a series of minimum lot size increases, decreases and no changes are envisaged in the Structure Plan.

Figure 6A: Draft Structure Plan Land Use – Minimum Lot Size Changes plan

6.2 Appreciating how lot sizes affect bushfire outcomes

Design Guidelines: Settlement Planning at the Bushfire Interface (DELWP 2020) (the ‘*Design Guidelines*’) provides design advice on how lot sizes affect 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.

The above commentary is highly informative to the Structure Plan, as the changes to lot sizes mostly relate to lots larger than 2,000sq.m and would reinforce most of the Study Area as lower density residential development.

The landscape risk to the Study Area is from grasslands, as described in the Bushfire Hazard Landscape Assessment. As seen in the 2009 fire, there is potential for large grassfires to penetrate the Study Area and spread throughout land that is not low fuel (which is most of the area). As proximity to low fuel areas in the north of the Study Area diminishes, travel to safer places on roads is likely to be affected by bushfire.

Introducing additional development into these areas is higher risk, reflective of the Landscape type 2 and 3 assessment of these areas in this report. Without planning scheme intervention, new development will be exposed to the same risk as existing development and would not contribute to effective risk management or, as sought by *c13.02-1S Bushfire Planning*, achieve a reduction in risk overall.

Based on the typology of lot sizes being larger lots, passive mitigation provided by smaller urban lots is not delivered. Intervention through planning scheme controls is needed in this context. It is not especially relevant whether minimum lot sizes are increasing or decreasing within a larger lot typology, the risk reasonably requires management as larger lots can carry bushfire hazards owing to their typology.

Concurrently, the grassland setting provides opportunity to address this issue through policy and implementation requirements that can, progressively, shift the Study Area to one that is more consistently and reliably lower fuel, even in the context of larger residential lots continuing to be dominant.

To achieve this, bushfire vegetation management specified in *c53.02 Bushfire Planning*, Table 6 should be applied to subdivisions (although a 2m canopy tree separation can be used rather than 5m). Importantly, this should be applied not only around each future dwelling but to all land where lots larger than 2,000sq.m are proposed (which is most of the Structure Plan area).

This would be designed to achieve neighbourhood-wide fuel reductions and work to prevent moving grassfires penetrating within and around areas developed under the planning scheme or any new growth enabled by the Structure Plan.

Over time, as different sites come forward and are subject to bushfire planning conditions to achieve low fuel outcomes, there can be a step change in the life-safety environment within which additional people are being introduced. This includes the creation of new lower and low fuel precincts, providing more areas of enhanced safety that can be found in more parts and not just in the dense urban areas in the north of the Study Area.

The application of bushfire vegetation management to all new subdivisions, similar to what occurs in the Bushfire Management Overlay or as part of denser urban development, will require local planning scheme content as most of the Study Area is not subject to the Bushfire Management Overlay. It will not arise without planning scheme content that requires it be included in planning permits.

The Development Plan Overlay already applies to many parts of the Study Area and already include area wide approaches to selected issues, including wastewater treatment and roads. The introduction of bushfire content into these could be readily achievable. Any gaps in spatial coverage can be addressed through expanded application of Overlays such as these.

See **Figure 1E: Development Plan Overlay**

Area-wide vegetation management for bushfire purpose when subdividing land is necessary in reaching the overall conclusion in the next chapter that development is acceptable in the Study Area.

It is recognised that larger lots are envisaged in the south and south-west of the Study Area, including maintaining existing planning scheme subdivision requirements. The practical ability to manage all land within these lots is likely limited. Where this is the case, vegetation management around a dwelling only is likely necessary. Recommendations in this report enable this to be considered at the time subdivision is proposed.

These larger lots are located outside of the land identified as benefiting from the perimeter road (See Section 7), so are assumed to not be managed in a low fuel condition in any event.

It will be important that the Planning Authority and Horsham Rural City Council (if acting separately under non-planning legislation) consider the resource implications of this recommendation and the likely need for a compliance regime to achieve the desired outcomes that works across land use planning and fire management planning.

Both the 2009 Victorian Bushfires Royal Commission and a recent Victorian Auditor General report identified low levels of compliance with bushfire-related planning conditions, highlighting the risks to human life when non-compliance arises. Alternatively, where compliance is achieved a step-change in life safety outcomes can be delivered for the Study Area.

6.3 Managing exposure to satisfy planning scheme requirements

c13.0-2-1S Bushfire Planning requires new development enabled by a strategic planning document or planning scheme amendment to be exposed a radiant heat flux of less 12.5 kilowatts/square metre. This equates to development (subdivisions) being setback from bushfire hazards for the distance specified in *c53.02 Bushfire Planning*, Table 2, Column A.

There are some emerging Structure Plan changes which enable an increase in the number of lots in some areas and some which envisage a decrease in the number of lots in some areas.

The *c13.02-1S Bushfire Planning* exposure requirement would readily apply to proposals where increase lot potential is envisaged. However, it may be less clear whether the exposure requirement applies where less lots are envisaged than what the planning scheme currently permits (i.e., the change is to be more restrictive than the current planning scheme). There is therefore a judgement to be made as to how the *c13.02-1S Bushfire Planning* exposure requirement should be applied in the Structure Plan and then the subsequent planning scheme amendment.

The *c13.02-1S Bushfire Planning* exposure requirement is generally achievable in the Study Area due there being limited areas of non-grassland vegetation combined with larger lots where setbacks to achieve the exposure requirement (19m) can generally be met through effective siting of a dwelling on a lot / building envelopes). There is also the strategic need to manage a locality where larger lots are proposed in the context of these being somewhat sub-optimal from a bushfire perspective.

On balance, having regard to *c13.02-1S Bushfire Planning* and the relative ease with which the exposure requirement can be met, it is recommended that it should be applied to all land in the Study Area. No distinction should be made between land where additional lots are proposed, no change land and land where fewer lots are proposed (relative to the current planning scheme controls).

The exposure requirement should be included in the Structure Plan to give effect to *c13.02-15 Bushfire Planning* and operationalised through a local planning scheme provisions (see discussion later an approach to this).

6.4 Consequences of managing hazards in new development

The effect of applying bushfire vegetation management requirements to all land in subdivisions across the Study Area is that new development will be lower fuel (hazards) than would otherwise occur. A highly vegetated outcome would not be envisaged. It is important that other Structure Plan proposals do not provide for the introduction of vegetation (hazards) beyond what the bushfire vegetation management would permit.

The main practical impact of bushfire vegetation management are:

- The canopy separation requirement, which means there must be a gap between each tree canopy.
- Shrubs must be planted under tree canopies.
- The need to manage grass through regular mowing.

There are parts of the Study Area where vegetation is not configured in a bushfire management condition. These are shown in Figure 6C. The intention of bushfire vegetation management being required is that these outcomes are avoided in future.

See **Figure 6B: Sub-optimal Bushfire Outcomes to avoid by Bushfire Vegetation Management requirements being applied to new development**

FIGURE 6A: DRAFT STRUCTURE PLAN LAND USE – MINIMUM LOT SIZE CHANGE AREAS (MESH – NOVEMBER 2023)

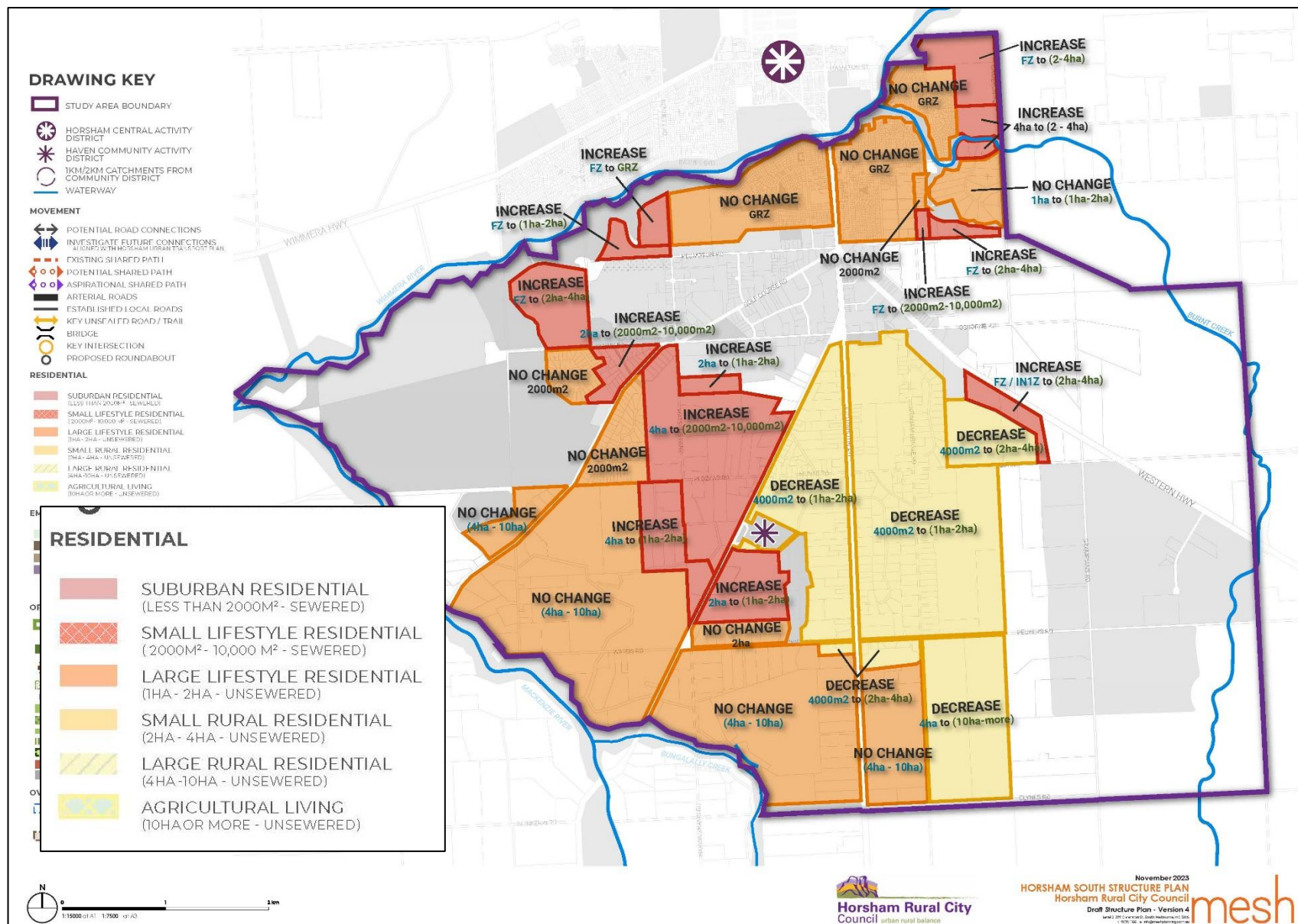


FIGURE 6B: SUB-OPTIMAL BUSHFIRE OUTCOMES TO AVOID BY BUSHFIRE VEGETATION MANAGEMENT REQUIREMENTS BEING APPLIED TO NEW DEVELOPMENT



Figure A

Bushfire hazards throughout lower density residential areas, where canopy separation of trees is not provided, trees are close to and overhang dwellings, likely more difficult to mow the grass underneath denser areas of trees.



Figure B

Bushfire hazards on adjoining land connect with bushfire hazards on a lot that enables a fire to move close to a dwelling



Figure C

Perimeter planting create hazard paths deeper into lower density residential areas

7. 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. The report has also discussed preliminary matters which are informative to how the Structure Plan will need to respond to bushfire.

This section uses this information to consider *c13.02-1S Bushfire Planning* and other planning scheme bushfire provisions.

7.1 *c13.02-1S Bushfire Planning*

7.1.1 Landscape bushfire considerations

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

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

The bushfire hazard landscape assessment has considered the bushfire hazard at the strategic and landscape scales as required by these policies. The residual risk at the landscape scale is from grassfire. Grassfire is most likely to arise from the north-west, west and south-west of the subject site under dominant bushfire weather in Victoria.

Mitigating the landscape impact of grassfire is highly achievable through the separation of development from unmanaged grassland areas and the planning of development to be low-fuel, preventing grassfire from penetrating the urban and residential areas (including rural living areas) and providing the ability for people to move away from the hazard interface. These outcomes are highly achievable and are recommended in Chapter 6 of this report.

The identified landscape types are landscape type 1, 2 and 3 in different parts of the Study Area. Landscape type 1 areas are positioned at the lowest end of bushfire risk in Victoria and are acceptable places to develop.

Landscape type 2 and 3 areas are less optimised based on existing conditions as land is generally not low fuel. As you move further away from the north of the Study Area, proximity to lower fuel areas diminishes and would require travel on roads affected by grassland hazards to access relatively safer places.

The recommendations in Chapter 6 for vegetation management for bushfire purposes on all land in a subdivision is designed to mitigate the areas of elevated landscape risk (type 2 and 3) and support the creation of Landscape type 1 outcomes in completed new development in most of the Study Area being enabled for further subdivision.

Where this occurs, it is reasonable to conclude that minimum lot size changes can be directed to all parts of the Study Area. Over time, as many lots / sites individually develop, enhanced neighbourhood-scale resilience arises that would deliver a step-change in bushfire safety in the Study Area.

Where vegetation management for bushfire purposes is applied to subdivisions, the Study Area can respond to bushfire risk consistent with landscape-scale bushfire considerations.

7.1.2 Alternative locations for development

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

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

The residual risk is from grassfires. This is a routine risk area in Victoria and is where most new growth is directed, including for example Melbourne's growth areas. However, the Structure Plan is mostly reinforcing larger lots in a grassland area, meaning the risk will likely continue whereas in growth areas with smaller urban lots, the hazard is removed in conjunction with new development and the risk is either entirely removed or remains only on the edges of settlements.

Vegetation management for bushfire purposes being applied to all land in new lots created, as recommended in Chapter 6, is intended to address this to the extent that the outcome in completed development is low fuel and does prevent a moving bushfire from penetrating into residential areas (including those with larger lots). Recommendations in this report do however recognise that especially larger lots (for example, in the Rural Living Zone) are difficult to manage and flexibility can be considered to only manage land close to a dwelling.

It is reasonable to conclude that the Study Area can be considered acceptable locations to develop, including having regard to alternatives which are equally at risk of grassfire on all sides of Horsham. It is also important to note that the proposed management of bushfire hazards through requirements on new subdivisions would reduce bushfire risk from what exists currently, meaning there is a risk reduction in directing development to the Study Area if the recommended mitigation is given effect to.

The proposed management of hazards works in combination with a location that otherwise avoids proximity to non-grassland hazards (like forests) where extreme fire behaviour may arise.

7.1.3 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 areas are currently oriented to the northern part of the Study Area. Lower fuel areas are also located in the northern part of the Study Area. This means most of the Study Area does not have immediate access to a low fuel area and requires travel to access such a location on roads affected by grassland hazards.

It is therefore necessary that additional BAL:Low areas arise in other parts of the Study Area so that progressively all areas for new development are within or are adjoining a low fuel area that avoids the need for movement on the road network. Concurrently, such areas also work to stop the spread of grassfires in the first place.

Most of the Study Area in the emerging Structure Plan will remain lower density residential areas. Limited reliance can therefore be placed on hazards being removed as would occur if smaller, urban lots were envisaged (see discussion in Chapter 6). It will therefore be important that each subdivision provides low fuel (hazard) land. The need to provide this is a key driving of the recommendations that vegetation management for bushfire purposes is applied to new subdivisions (i.e., there are multiple policy considerations directing that this outcome occur).

Over time, as subdivision occurs, more areas of BAL:Low will arise and the need to enter the movement network and travel longer distances for shelter will reduce.

7.1.4 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 future development on a new lot can generally 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*. Within the grassland setting, setbacks of 19m will generally arise from unmanaged grasslands although larger areas of low fuel land will arise as bushfire vegetation management is proposed on all land within a development.

7.1.5 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 because of bushfire requirements. Given the lack of vegetation at a Study Area wide scale, it is reasonable to assume that development can accommodate bushfire protection measures.

Within a development proposal, it will be possible to moderate the vegetation management for bushfire with vegetation protection on a case-by-case basis, as is routinely done in the Bushfire Management Overlay. For example, pockets of vegetation could be retained but they would be assessed as a hazard and would need to be enclosed by other low fuel / non-hazardous land and in some cases, a perimeter road.

It is important to recognise that if moderation of vegetation does not achieve the required bushfire safety outcomes, development should not proceed. The principle of bushfire vegetation management being applied cannot be compromised as they underpin the acceptability of additional development being directed to the Study Area in the first place.

7.1.6 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.*

The proposal with recommended mitigation is consistent with the bushfire policies and directions contained in the planning scheme. There is no planning scheme bushfire factor that would warrant the proposal not proceeding. The risk from bushfire can be managed in accordance with standard planning scheme responses to bushfire hazards and the recommendations in this report.

It must also be noted that the recommended bushfire vegetation management will reduce risk from the current situation by providing for hazard removal and over time, a reduction of hazards across the Study Area as lots are further subdivided and recommended planning scheme requirements are applied and implemented. This will reduce the potential for a moving bushfire to travel through the area.

7.2 c44.06 Bushfire Management Overlay

Any land to be developed in the Study Area along the south-west edge is within the Bushfire Management Overlay. A planning permit will be required to subdivide the land. The requirements of *c53.02 Bushfire* can be met as they relate to the following approved measures, including:

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

The planning scheme requirements for vegetation management for bushfire purposes in *c53.02 Bushfire Table 6 Vegetation management* requirements will be applied to all developed areas subject to the Bushfire Management Overlay. The result of this is that all of the developed part of the Study Area will be low fuel. This supports site-based exposure requirements being met and delivers a low fuel area within the site capable of being assessed as BAL:Low.

Based on the assessments contained in this report, the parts of the Study Area within the Bushfire Management Overlay can comply with its requirements. It will be important however that each application demonstrates compliance, as this report only considers bushfire matters at the Study Area and neighbourhood scale and not for each lot in the Study Area.

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

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

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

The Use and development control in a bushfire area will apply to future planning applications to subdivide the land into more than 10 lots, as well as Accommodation and other bushfire-sensitive uses if a planning permit is triggered under the planning scheme. As the Bushfire Management Overlay does not apply to all of the Study Area, the Use and development control will assist to derive comparable outcomes

Section 6 has already identified the need for bushfire vegetation management on all land within a new subdivision. It has identified the need for areas of low fuel land to arise as lots are further subdivided. These provide the most important bushfire outcomes that need to be derived by using the Use and development control in a bushfire prone area.

However, to ensure the exercise of discretion in future delivers the required outcomes, bushfire requirements as recommended in this report should form part of local planning scheme content. Section 6 identified that the DPO that already apply to large parts of the Study Area provides a good basis for the introduction of bushfire content.

For development other than a subdivision, the Use and development control in a bushfire prone areas provides a basis to manage bushfire risk.

Perimeter roads

Perimeter roads are typically provided on permanent hazard interfaces. There are often complexities in defining and planning for this in a low density residential or rural living setting as there may not always be a definable interface like what is more obvious in an urban / settlement context where smaller urban lots adjoin obviously hazardous rural land / grasslands.

Development adjoining the riparian corridors on the west and southwest boundary of the Study Area, by being within the Bushfire Management Overlay, will need to deliver perimeter roads if they create 10 or more lots (c53.02, Approved Measure 5.3). This will likely not be the case.

It will be important that permanent hazard interfaces deliver perimeter roads, using either exiting roads or including perimeter roads as part of new subdivisions.

Within the Study Area there is a mix of minimum lot sizes envisaged and it is difficult to establish at this time where a permanent hazard edge might be for establishing perimeter roads for bushfire purposes. It is recognised that perimeter roads in the lower density residential setting may in fact be existing roads in the neighbourhood and would not be provided on each lot being further subdivided.

To provide some guidance to the preparation of the Structure Plan, perimeter roads could be defined based on:

- Land being enabled for further subdivision at lot sizes smaller than currently permitted (Figure 6A shows this);
- Existing land within the Low Density Residential Zone;
- Land exposed to a north-west, west or south-west fire run, which are dominant in Victoria; and
- The use of existing roads to act as perimeter road where closely aligned to the above.

When combined, perimeter roads emerge based on Mackles Road to the south, Henty Highway, Plozzas Road, Golf Course Road to the west, and what would be new roads in subdivisions filling in the gaps where exiting roads and road reserves do not exist.

See **Figure 8C: Perimeter road defining the permanent hazard edge**

It will be necessary for each site proposed for subdivision to consider whether it adjoins a location requiring a perimeter road as defined in the Structure Plan and to respond accordingly to take advantage of an existing road or to provide a perimeter road as part of the subdivision.

7.4 Conclusion

The proposal is consistent with the bushfire policies and directions contained in the planning scheme. There is no planning scheme bushfire factor that would warrant the proposal not proceeding. More specifically, the proposal has considered and complies with:

- *c13.02-1S Bushfire Planning.*
- *c44.06 Bushfire Management Overlay.*
- *c13..02-1S Use and development control in a bushfire prone are.*

Recommendations in this report are intended to reiterate the key design outcomes that should be integrated into the planning scheme, driven by content in the Structure Plan. These should operate in the planning scheme as local content.

7.5 View of the relevant fire authority

The views of the relevant fire authority were sought on 6 October 2023. At the time of this report being issued (March 2024), no response had been received. The views of the relevant fire authority can be obtained in subsequent stages of the Structure Plans development, including any planning scheme amendment arising from the work.

8. Recommendations

Based on the assessments contained in this report, the following recommendations should be accommodated in the Structure Plan and given effect to in the planning scheme through local content.

Recommendation 1: Vegetation management for bushfire purposes in new subdivisions

c53.02 Bushfire Planning, Table 6 Vegetation management requirements should be applied to all land within a lot proposed in a subdivision. For completeness, this includes land around a future building but also all other land within a lot being further subdivided.

Alternative hazard management approaches can be developed to the satisfaction of the relevant fire authority in conjunction with future planning and planning applications, including:

- A 2m canopy tree separation can be used rather than 5m specified in c53.02.
- The use of passive mitigation if lot sizes for Accommodation are less than 1,200sq.m or industrial land is proposed. This would apply to the land being rezoned to the General Residential Zone.
- Using bespoke landscaping arrangements where bushfire requirements are given effect to through a landscaping guide or similar and which takes a strategic approach to hazard management and the introduction of new vegetation if required for non-bushfire purposes.
- Where lots are sufficiently large where their use is more aligned to agricultural or a form of rural living, vegetation management could be located around a dwelling only and not all land within a lot.

Notes:

Recommendation 1 provides Study Area wide bushfire protection outcomes that address the elevated landscape risk currently present, as indicated by Landscape type 2 and 3 areas shown on Figure 4D. This includes the creation of precincts and neighbourhoods that contain low fuel land.

Bushfire vegetation management requirements are shown on Figure 8B. A bushfire hazard site assessment should be prepared for subdivisions to confirm vegetation type, slope and final setbacks.

Recommendation 2: Interfaces with a bushfire hazard

Subdivisions show future development on a lot set back from assessed 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 can be used:

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

The setback can be demonstrated through building envelopes being included on new lots being created.

Notes:

Recommendations 1 and 2 combined demonstrate that development enabled by the Structure Plan would be exposed to less than 12.5kw/sq.m of radiant heat and a construction standard of no more than BAL:12.5 will arise. This satisfies key elements of c13.02-1S Bushfire Planning. Constructed (perimeter) roads can be used as part of the above setbacks.

Recommendation 3: Direct development to lower risk locations

New growth and development can be directed to any part of the Study Area where all recommendations in this report are included in the Structure Plan and given effect to in the planning scheme.

Recommendation 4: Perimeter roads on permanent hazard interfaces

A perimeter road should be established within the Structure Plan to define a future hazard / settlement interface. Each site proposed for subdivision should consider whether it adjoins a location requiring a perimeter road as defined in the Structure Plan and to respond accordingly to take advantage of an existing road or to provide a perimeter road as part of the subdivision.

Note:

Hazard interface treatments are indicatively shown on Figure 8A. Perimeter roads defining a permanent hazard edge are shown on Figure 8C, as an input to structure planning.

Recommendation 5: Planning scheme controls

The recommendations in this report should form part of the planning scheme, within the Structure Plan itself and through local planning scheme content such as Overlays.

FIGURE 8A: EXPECTED INDICATIVE TREATMENT WHERE PERIMETER ROADS PROVIDED

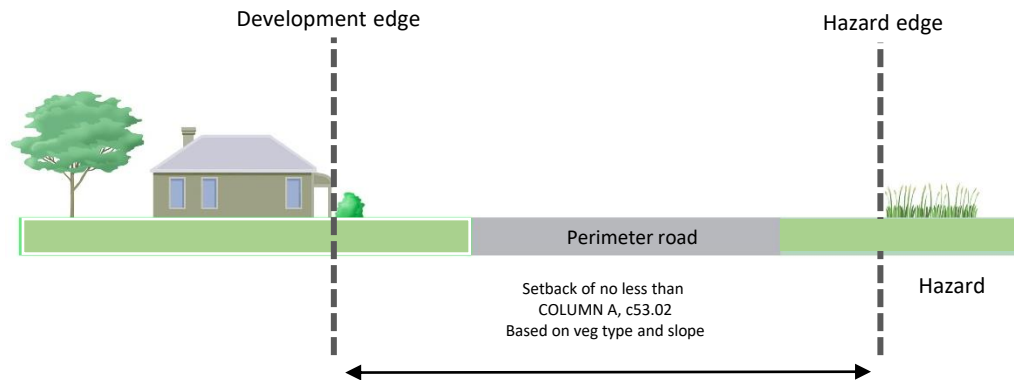
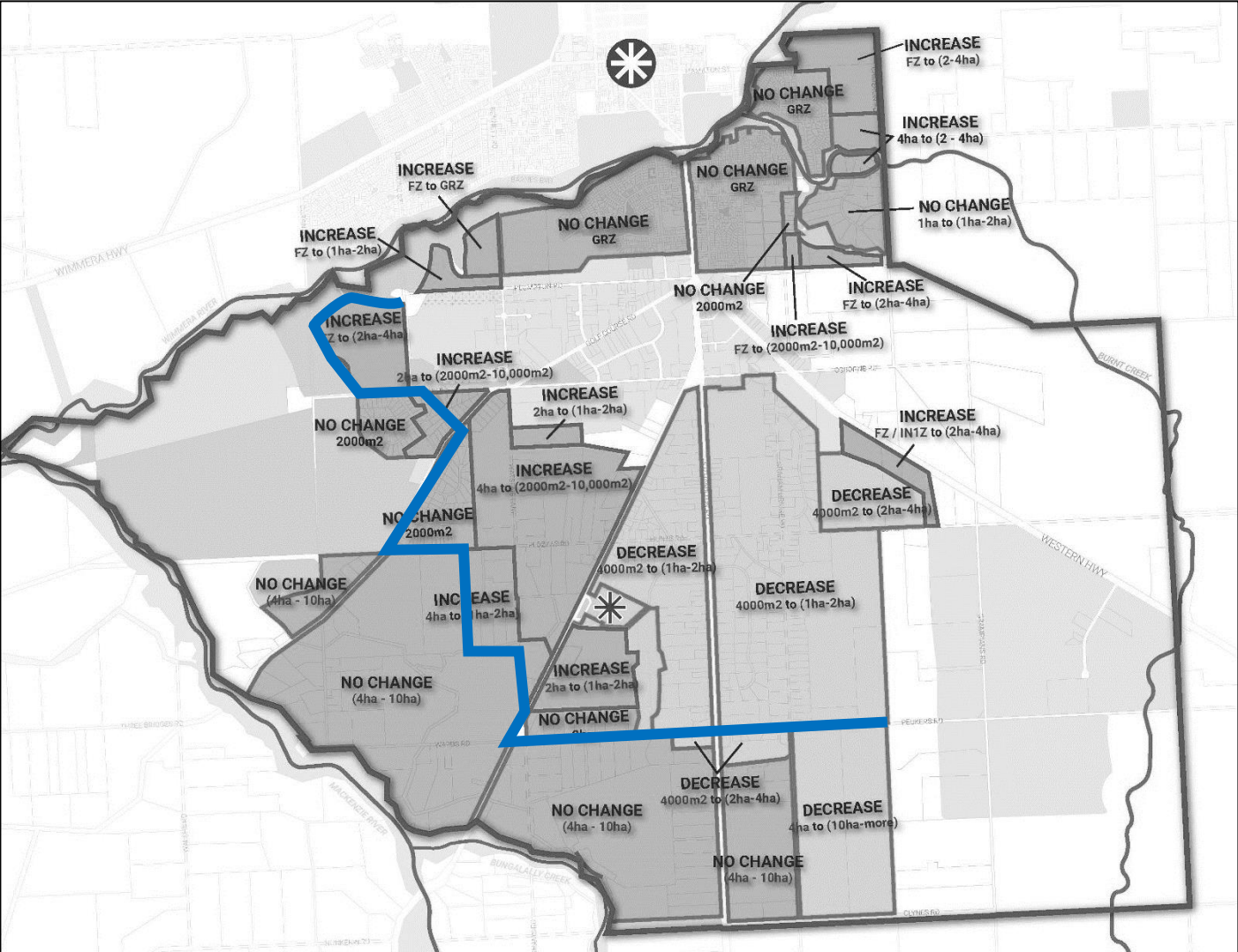


FIGURE 8B: TABLE 6, c53.02 BUSHFIRE PLANNING BUSHFIRE VEGETATION MANAGEMENT STANDARDS (DEFENDABLE SPACE)

- 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.

Note: A 2m canopy tree separation can be used rather than 5m specified in c53.02

FIGURE 8C: PERIMETER ROAD DEFINING A PERMANENT HAZARD EDGE FOR INPUT TO STRUCTURE PLANNING



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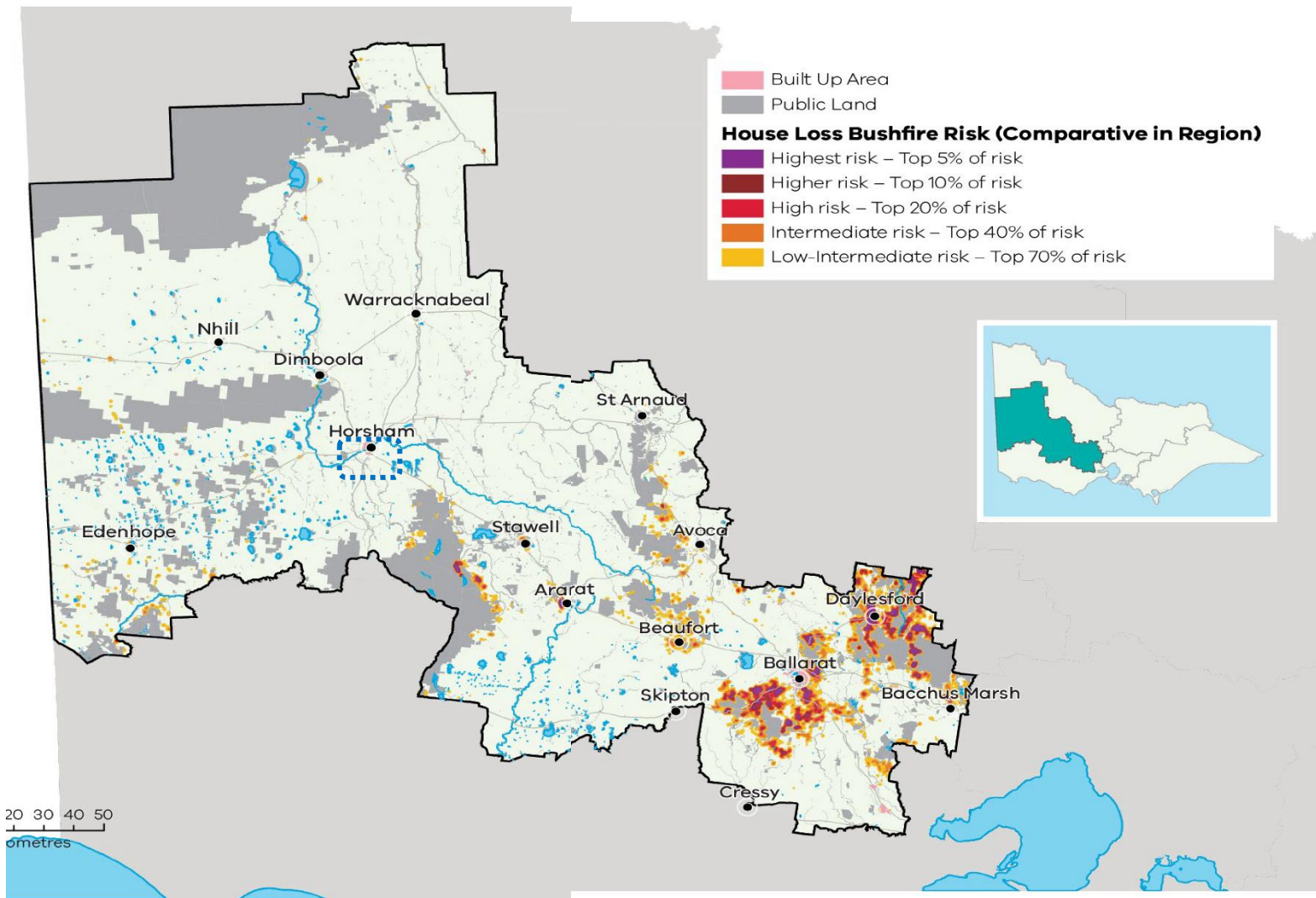
Horsham Planning Scheme

2009 Victorian Bushfires Royal Commission final report (July 2010)

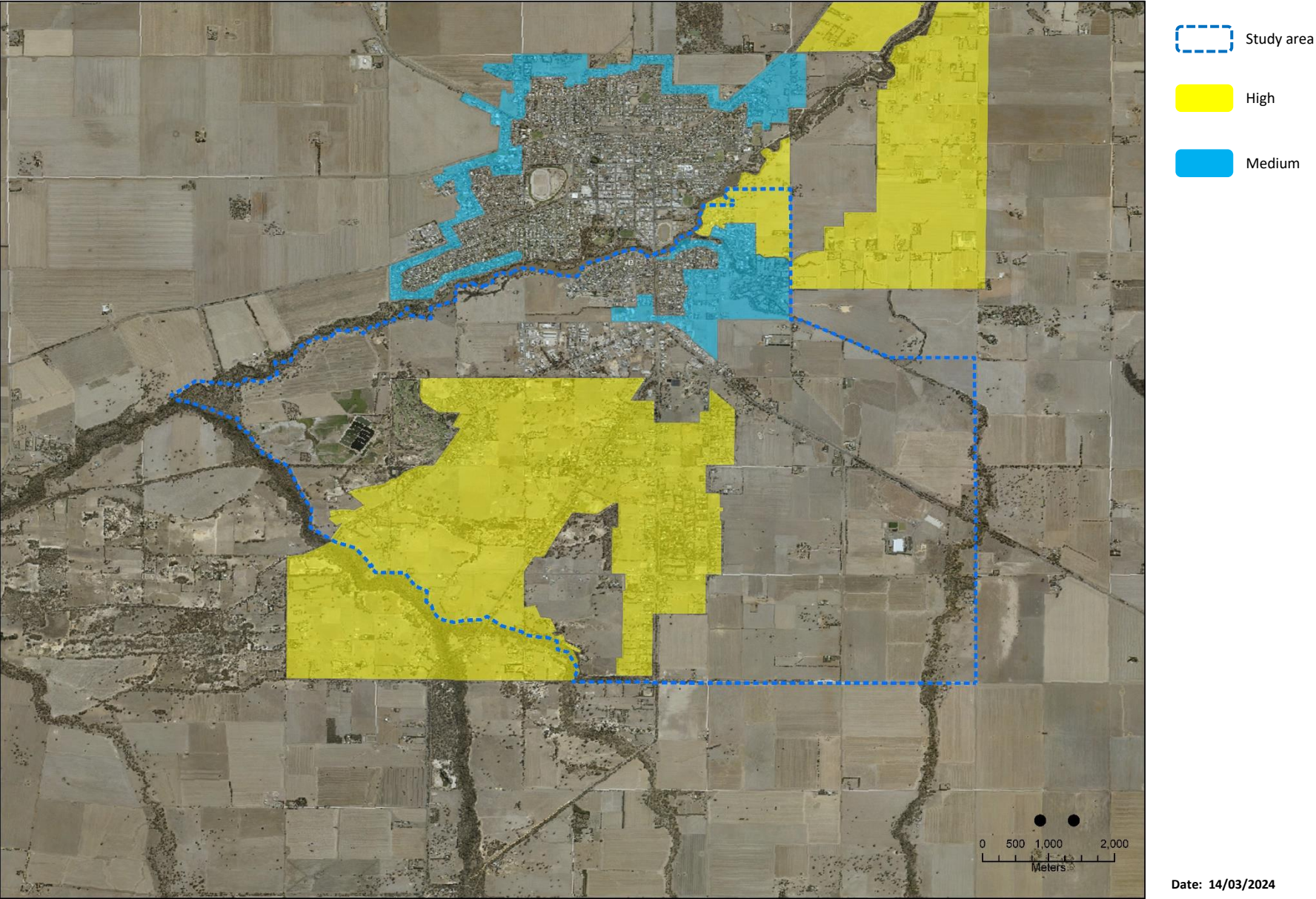
Attachment 1: Bushfire Contextual Information

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

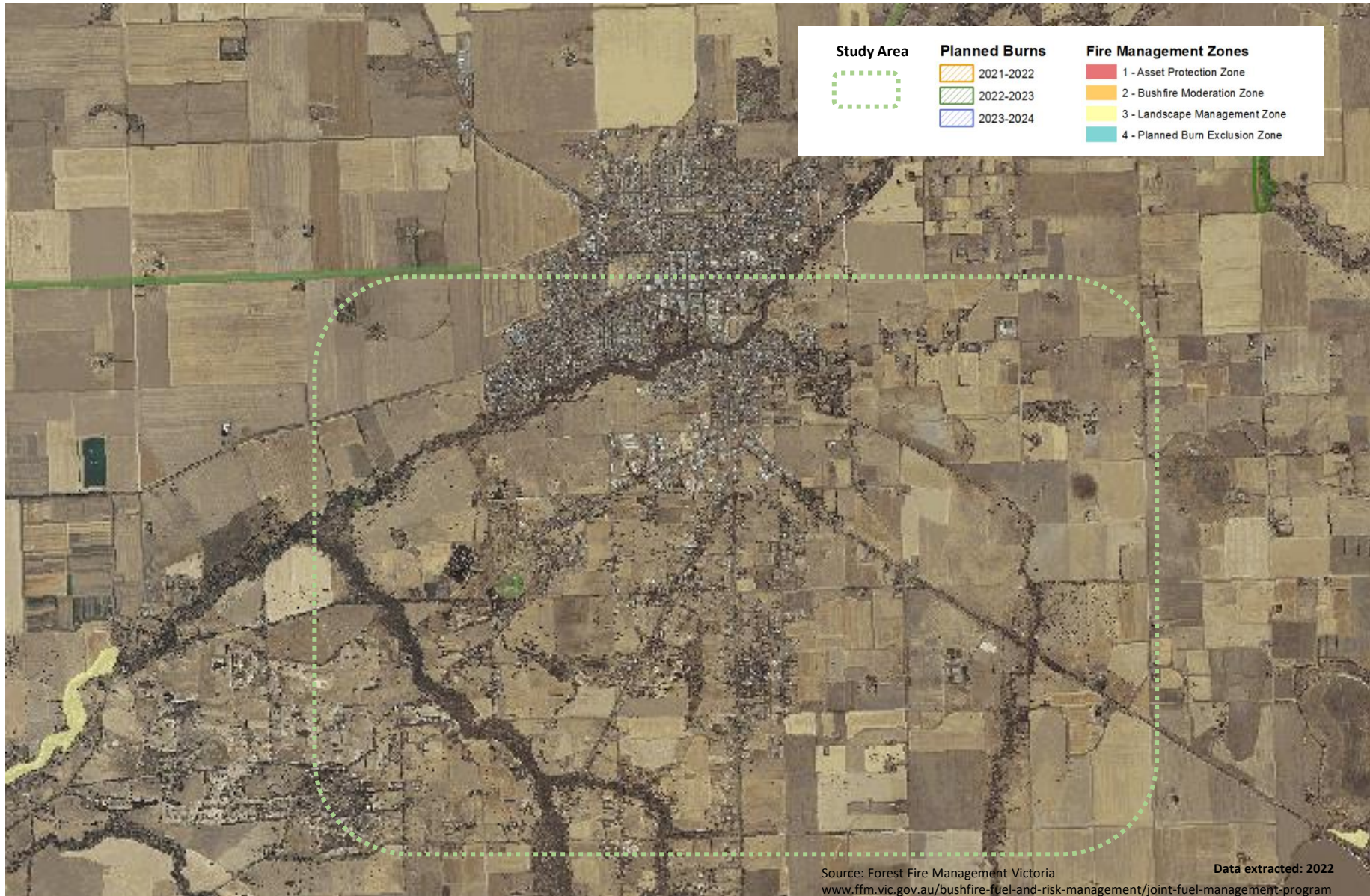
 Study area



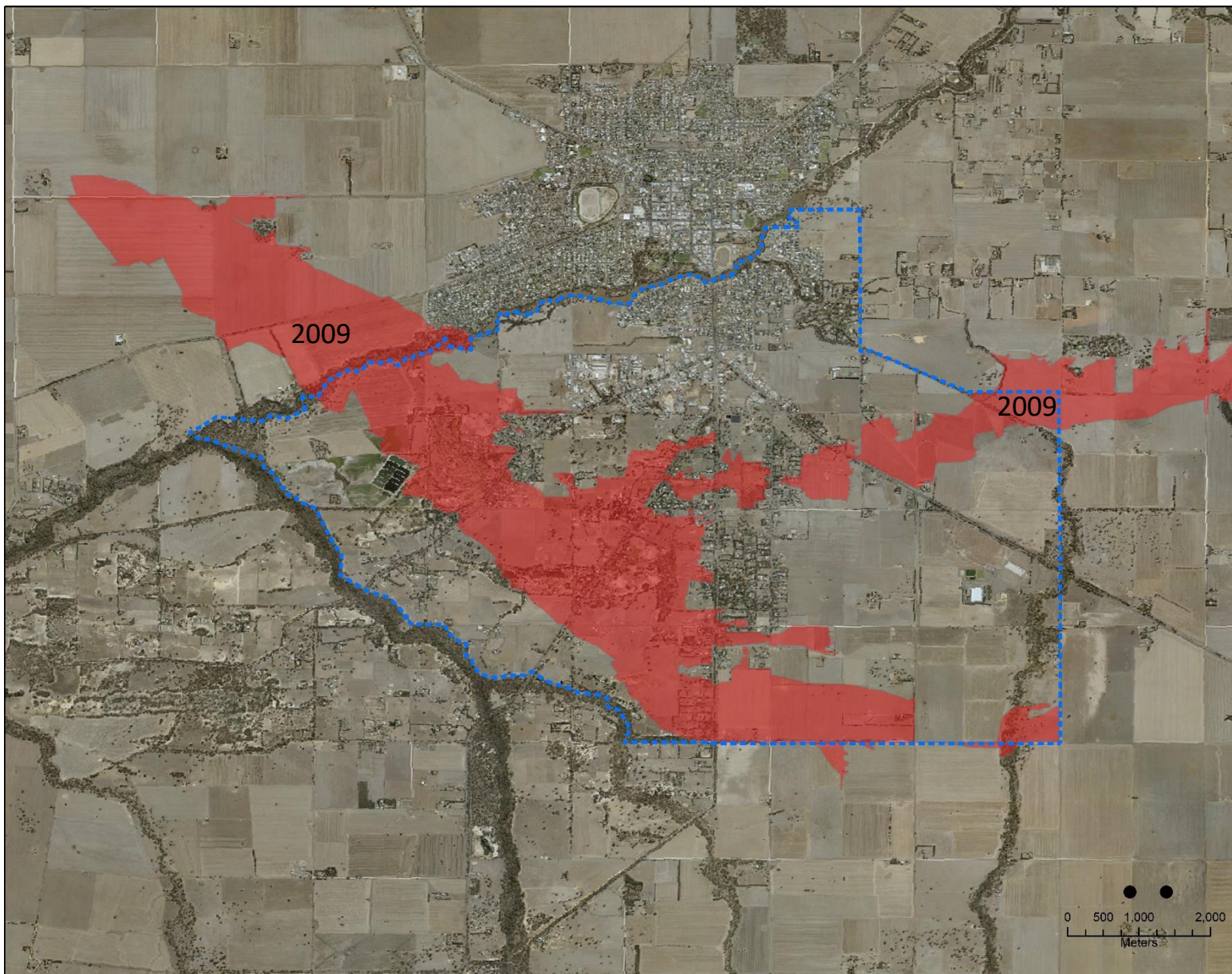
ATTACHMENT 1 FIGURE B: VICTORIAN FIRE RISK REGISTER HUMAN SETTLEMENT



ATTACHMENT 1 FIGURE C: JOINT FUEL MANAGEMENT PLAN



ATTACHMENT 1 FIGURE D-1: BUSHFIRE HISTORY



 Study area

Date: 14/03/2024

ATTACHMENT 1 FIGURE D-2: BUSHFIRE HISTORY –VBRC EXTRACTS

The Horsham fire

A single-wire earth return, or SWER, electricity line runs east-west across the Peterson property; the line is known as the Remlaw Spur and was constructed in 1963 or 1964. At some time before 7 February the first of the three coach screws that held the pole cap in place on top of pole 15 came out. The 7 February fire was started by a conductor that fell when the remaining two coach screws came loose as a result of wind-induced vibration enabling the pole cap to become detached.²⁹

The failure of the pole cap to secure the conductor on pole 15 might have been avoided had there been a shorter inspection cycle; pole 15 had not been inspected for about four-and-a-half years. The risk of failures of the kind that started the Horsham fire would be reduced if centre-phase pole-top assemblies were replaced by new P-bracket pole-top assemblies.³⁰

When the conductor hit the ground the fuse on the isolating transformer at the start of the Remlaw Spur operated as expected: it cut power by opening the circuit within 0.3 seconds. But sufficient current flowed before the fuse blew to cause the fire to start.³¹

Inspection cycles for electrical assets are discussed in Chapter 4 of Volume II.

Fire run, response and management

Because the fire began on private property, the CFA became the lead agency and Mr Russell became the Incident Controller. Mr Graham Parkes of Parks Victoria was the Deputy Incident Controller.³²

From its point of origin north of Remlaw Road in Vectis, the fire was fanned by strong winds; it moved rapidly, reaching a rate of spread averaging a little over 10 kilometres an hour in the first hour.³³

The CFA responded at 12:27 and was at the fire, close to the point of origin, at 12:30. The initial response involved four tankers—the standard ‘hot day’ response. A further six tankers were requested immediately, and 10, then 20, then 30 tankers were subsequently deployed over a relatively short period. The aerial observer was at the scene of the fire less than 10 minutes after it started.³⁴

The fire travelled south-east and, after crossing the Wimmera Highway at 12:31, entered a paddock containing only limited fuel. In favourable weather conditions there would have been a good chance of stopping the fire at this point. DSE personnel attacked the head of the fire but were unable to stop its spread.³⁵

Having travelled along the south-western edge of Horsham, the fire crossed the Wimmera River and moved away from Horsham. CFA, DSE and private firefighters put a great deal of effort into securing the eastern flank of the fire in order to prevent the fire burning into the township of Haven and were largely successful.³⁶

The first threat message for the fire was issued at 12:37, less than 20 minutes after the fire had started. The message warned that Haven, McKenzie Creek and communities through to Wonwondah might be directly affected by the fire. The Horsham Incident Control Centre issued threat messages at regular intervals throughout the afternoon.³⁷

The majority of these messages were made available through the DSE website and reported on 774 ABC radio throughout the day. A number of the threat messages were, however, either not uploaded to the CFA website or reported out of time. For example, it appears that the CFA did not release the urgent threat message issued at 13:26.³⁸

At 12:43 Mr Russell met with the operations officers in the Horsham ICC to discuss the communications plan and asked that the fire be sectorised because of the congestion on channel 77. CFA sector commander for the Haven area, Mr Robert McGinnisken, described the situation as ‘pandemonium on the fire ground radio’. The congestion occurred because 30 tankers were sought independently, not in strike teams, creating communications and coordination problems.³⁹

The Coleraine ICC contacted Mr Russell at 13:40 to ask for additional trucks to help with the Coleraine fire. Mr Russell advised that they were unable to release any trucks because of the fire at Horsham and suggested they contact the Regional Emergency Coordination Centre with the request.⁴⁰

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Volume I: The fires and the fire-related deaths

At 13:50 Mr Russell made the decision to close a 37-kilometre section of the Western Highway. By this time power company workers had already replaced the old pole cap with a new P-bracket pole-top assembly, restoring power to the area.⁴¹

Mr Russell and Mr Parkes issued a joint media release at 14:00, providing further information about the type and size of the fire and the roadblocks in operation. Shortly after this Mr Russell spoke with Mr Richard Bourke, Regional Duty Officer at the Regional Emergency Coordination Centre, about deploying strike teams to Green Lake (14 kilometres south-east of Horsham) in an effort to anticipate where the fire would go.⁴²

The fire’s run to the south stopped at 14:15. Mr Russell was informed by local brigade captain Mr Graham Hill at 14:47 that the Dimboola forward command vehicle had been involved in a burnover but that no-one had been injured. During the fire one CFA unit had requested a doorknock to notify residents of possible evacuation, but Mr Russell felt it was too dangerous to do that.⁴³

The wind changed to a west-north-westerly at 15:17 and then to a westerly at 15:30. The fire turned east and travelled close to the southern edge of Horsham.⁴⁴

An emergency relief centre was opened at Horsham Town Hall at about 15:30. About 90 people registered at the centre on 7 February; some of them had had their homes burnt.⁴⁵

At 16:19 Mr Russell spoke again with Mr Bourke, confirming that an additional four tankers available at Donald, in Region 20, would be required. These strike teams went to the staging area at Horsham showground and from there were deployed to the fire.⁴⁶

The fire then burnt into the back of the golf course and towards Golf Course Road. Once it had entered the golf course, the fanways funnelled it towards the clubhouse, which was destroyed. From Golf Course Road to Old Hamilton Road the fire ran as fingers, or tongues, rather than as a wall of flame. It was substantially checked at Old Hamilton Road, although part of it continued to the east. At times it spotted several hundred metres ahead of the main fire front.⁴⁷

Image 6.1



Source: Courtesy of Herald & Weekly Times.

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ATTACHMENT 1 FIGURE D-2: BUSHFIRE HISTORY –VBRC EXTRACTS (CONTINUED)

The Horsham fire

The wind swung further to the south-west at 16:29, and this drove the flames toward the east-north-east. The fire crossed Old Hamilton Road, spotted across Grahams Bridge Road, and continued across the Western Highway on the outskirts of Horsham, near the Wimmera Lakes Caravan Park. The rate of spread of the fire during this period was estimated at 2.2 kilometres an hour.⁴⁸

At 17:00 Mr Russell authorised a further urgent threat message. It confused the direction of the wind with the direction of the fire and as a result wrongly said the fire was burning in a westerly (rather than easterly) direction and that it was expected to change to a south-westerly (rather than north-easterly) direction.⁴⁹

ABC local radio in Western Victoria, however, appeared to have been broadcasting the correct details to the Horsham community. Throughout the afternoon Mr Parkes reported on air the effects of the wind change on the fire area, correctly naming the communities east and north-east of the fire as being at risk.⁵⁰

The fire's forward spread was stopped at about 18:00, just north of the Horsham-Lubeck road.⁵¹

Despite a downgrade message being issued at 18:35, 3AW broadcast a warning at 19:00, referring to homes having been destroyed in Horsham and blazes 'currently threatening Haven, McKenzie Creek, Bugle Alley and Green Lake'.⁵²

At 19:34 the fire in Horsham was announced as being 'less of a threat'. During an interview at 19:45 on 774 ABC radio, Mr Russell Pees, CFA Chief Officer, referred to '... a significant fire running in and around Vectis'.⁵³

At 19:38 Mr Russell spoke with Mr Parkes and police about displaced local residents who had self-evacuated or been prevented from returning home by the roadblocks. There were 25 people in the Horsham Town Hall at that time. It was agreed that those people would be escorted home in order to allay their fears and enable them to extinguish any flare-ups at their homes during the night.⁵⁴

The fire was declared contained at 13:35 on 8 February. The relief centre was closed on the same day. The Municipal Emergency Coordination Centre was de-activated on 11 February and became the Council's recovery centre.⁵⁵

The Horsham fire was a 'classic grass fire that burnt under the influence of available ground fuel and weather factors such as: the prevailing wind, relative humidity and temperature'. Mr Russell described the firefighting effort on the day as 'guerrilla' firefighting. 'It is basically house-to-house combat. We wore after assault protection. The weather was such that you could not really, in very close quarters here, mount a concerted attack on the front because there was no front as such'.⁵⁶

At the fire's height 44 CFA tankers and about 30 DSE units of various types were involved, plus earth-moving equipment and private units. Mineral earth containment lines were constructed to secure the eastern flank of the fire to stop it entering Horsham.⁵⁷

Although property was lost, the combined efforts of CFA and DSE personnel, landowners and private firefighting units, along with the absence of continuous fuel, limited the fire's impact. In all, 2,346 hectares were burnt and 13 houses were destroyed, as was the clubhouse of Horsham Golf Club. Numerous sheds, plus about 160 kilometres of fencing, 54 sheep, 226 other livestock and 484 tonnes of fodder and hay, were also lost.⁵⁸

The Commission heard evidence of radio congestion problems resulting in the air observer, Mr Trevor Coulthard, being unable to get through to the Horsham IMT. It took 20 to 40 minutes before the problem was resolved, and during this time the fire was spotting profusely. Mr Russell expressed the view that these problems could not be resolved without creating further problems with radio coverage. Both Mr Coulthard and Mr McGennisken disagreed. Mr Coulthard opined that there should be a dedicated frequency for aircraft, as there had been until the mid-1990s. Mr McGennisken suggested that an alternative solution could be to use the regional channel.⁵⁹

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Volume II: The Fires and the Fire-Related Deaths

6.2 ROADBLOCKS

Mr McGennisken described the impact of roadblocks restricting access for private firefighters: 'A lot of people were trying to get into the fire ground to gain access to give us help and were denied access. We can't afford that. We need those people here to help us. That's what makes the CFA so great, we all help each other'.⁶⁰

Sergeant Mick Salter, the Deputy Municipal Emergency Response Coordinator and Assistant Forward Commander for the police, agreed that total road closures at roadblocks were often excessive and counterproductive and that they prevented people coming in with mini-firefighting units and mopping up smaller fires behind the fire front.⁶¹ Chapter 2 in Volume II discusses the question of roadblocks.

6.3 CONCLUSIONS

The Commission was impressed with the pre-planning and pre-positioning that ultimately contributed to successful suppression of the fire.

As a result of experience with a bushfire in the Grampians in 2006, Horsham Rural City Council had a representative at the Horsham Incident Control Centre. This arrangement meant that the Municipal Emergency Coordination Centre was not always set up in the event of an emergency because the Council's presence at the Horsham ICC might be sufficient to ensure that any operational requirements were met.⁶²

On 7 February the Municipal Emergency Resource Officer, Mr Eltringham, worked out of the ICC. This appeared to be effective in improving coordination between the ICC and the Municipal Emergency Coordination Centre, although there were some communication and record-keeping problems with the operation of the MECC. Sergeant Ferran attended the Horsham Police Operations Centre, where he performed the dual roles of Municipal Emergency Response Coordinator and police Forward Commander. Police liaison officers at the ICC kept the MERC informed of the Municipal Emergency Resource Officer's requests.⁶³

Considerable difficulties were also experienced in radio communication between the Horsham ICC and some personnel at the fire ground. Mr McGennisken gave evidence that he was unable to raise the Horsham ICC, not just on his radio but also using multiple radios from other CFA vehicles.⁶⁴ Communications are discussed in Chapter 3 of Volume II.

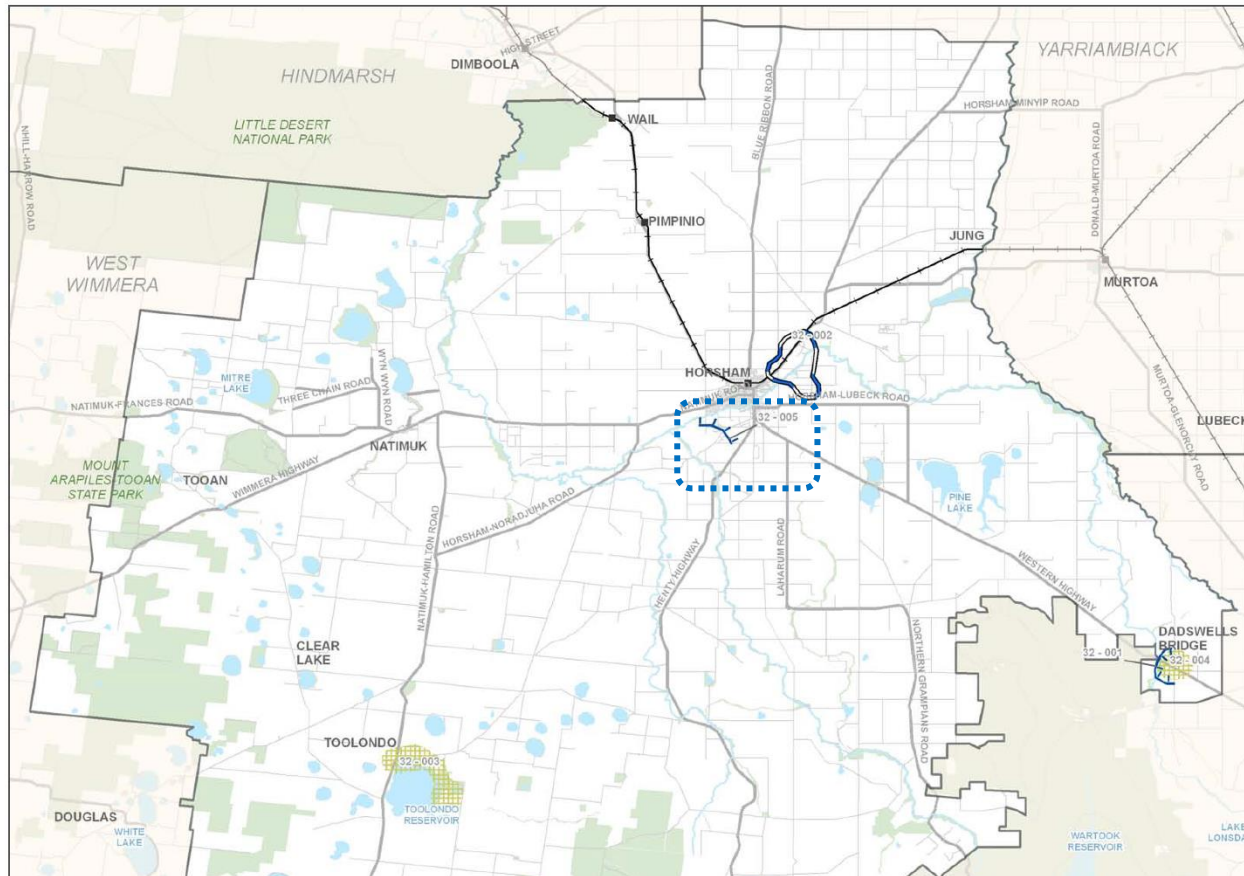
The use of roadblocks at the time of the Horsham fire caused community concern. It appears the roadblocks were operated in accordance with the agreed CFA, DSE and Victoria Police guidelines as at 7 February. Strict enforcement of the guidelines was, however, a source of frustration and conflict between police and firefighters for several reasons:

- People who came to help their neighbours fight fires and individuals trying to return to their families were prevented from doing so.
- Private firefighting units and tankers were prevented from entering the fire ground.
- A maintenance crew responsible for the restoration of circuit breakers at the pumping station for the Horsham water supply was held up, delaying resumption of provision of Horsham's water and the refilling of CFA tankers.
- Some firefighters trying to return home at the end of their duty were denied access to their homes.⁶⁵









Chapter 2 in Volume II discusses the question of roadblocks.

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HORSHAM MUNICIPAL MAP



Identified Areas

-  Small lots in or close to hazard (0 - 0.4 hectares)
-  Medium lots in or close to hazard (0.4 - 4 hectares)
-  Specific local knowledge
-  Other information of interest to planning
-  Multiple matters
-  Limited access and egress
-  Urban/bushfire hazard interface
-  Future strategic directions and bushfire hazard conflict

Features

-  Major road
-  Road
-  Railway
-  Railway station
-  Watercourse
-  Waterbody
-  Public land

32-005 Horsham

South-western extent of the urban settlement of Horsham in proximity to Horsham Golf Club. Area includes small lots that surround the golf course and interface with bushfire hazard including grassland environments. This area was affected by the 2009 bushfires.



Source: DPCD 2012

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