

**DRAFT**

**Bushfire Risk Assessment**  
**59 Dukes Lane, Strathfieldsaye**



**July 2025**

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Report by Julian Drummond

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## 1. INTRODUCTION

Practical Ecology has been commissioned by *Villawood Properties Pty Ltd* on behalf of *Emu Creek Holdings Pty Ltd.* to assess the bushfire risk to their proposed subdivision at 59 Dukes Lane, Strathfieldsaye. The owners are proposing to subdivide the property into 66 residential lots with an internal road reserve. While the site is not covered by the *Clause 44.05 Bushfire Management Overlay* (BMO), the requirements of the BMO are being applied in response to *Clause 13.02-1S Bushfire Planning* as this application is for a subdivision,

Under Clause 13.02-1S, bushfire risk must be considered as a part of the planning application for the following developments within these areas:

- 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.
- Any application for development that will result in people congregating in large numbers.

The application will therefore be assessed by this report which will consider the requirements of the BMO as recommendations and as a benchmark of bushfire safety to address the requirements of Clause 13.02 – 1S.

### 1.1 Subject site

Map 1 provides an overview of the site.

The site consists of 59 Dukes Lane at the southern end and an additional parcel to the north along Duke Lane. There is a single dwelling in the south-east corner along with sheds and associated infrastructure; the remainder of the site is pasture. The site is approximately 7.5 ha in size and is zoned General Residential Zone (GRZ). It is subject to the following overlays:

- Development Plan Overlay – Schedule 26 (DPO26)
- Environmental Significance Overlay – Schedule 1 (ESO1)
- Land Subject to Inundation Overlay – Schedule 1 (LSIO1) & Schedule 2 (LSIO2)

## 1.2 Application requirements

Clause 44.06 details the application requirements to address the BMO:

Unless a schedule to *Clause 44.06 – Bushfire Management Overlay* specifies a different requirement, an application under the BMO must be accompanied by:

- A **bushfire hazard site assessment** including a plan that describes the bushfire hazard within 150 metres of the proposed development. The description of the hazard must be prepared in accordance with Sections 2.2.3 to 2.2.5 of *AS3959–2018 Construction of buildings in bushfire prone areas* (Standards Australia) (AS3959–2018) excluding paragraph (a) of section 2.2.3.2. Photographs or other techniques may be used to assist in describing the bushfire hazard.
- A **bushfire hazard landscape assessment** including a plan that describes the bushfire hazard of the general locality more than 150 metres from the site. Photographs or other techniques may be used to assist in describing the bushfire hazard. This requirement does not apply to a dwelling that includes all of the approved measures specified in Clause 53.02–3.
- A **bushfire management statement** describing how the proposed development responds to the requirements in this clause and Clause 44.06. If the application proposes an alternative measure, the bushfire management statement must explain how the alternative measure meets the relevant objective.

If in the opinion of the responsible authority any part of these requirements is not relevant to the assessment of an application, the responsible authority may waive, vary or reduce the requirement.

Clause 53.02 details the objectives, approved measures, alternative measures and decision guidelines to be met under the BMO and is divided into three sections (Clause 53.02–3, 4 and 5). Clause 53.02–3 applies to an application to construct a single dwelling or construct or carry out works associated with a single dwelling if all of the following requirements are met:

- The land is zoned Neighbourhood Residential Zone, General Residential Zone, Residential Growth Zone, Urban Growth Zone, Low Density Residential Zone, Township Zone or Rural Living Zone.
- There is only one dwelling on the lot.
- The application meets all of the approved measures contained in Clause 53.02–3.

Clause 53.02–4 applies to all other applications and Clause 53.02–5 contains the tables with site specific requirements (to be determined through site assessment and evaluation of Clause 53.02–3 or 4).

### Relevance to proposal

As stated previously, the requirements of the BMO stipulated above do not apply to this stage of the development but bushfire risk must be assessed at the planning level under Clause 13.02–1S as this application is for a development greater than 10 lots within a Bushfire Prone Area.

The bushfire risk for this area will therefore be assessed using the requirements above from the BMO as a benchmark for bushfire safety, and recommendations will be made as a result. A Bushfire Management Plan is therefore not required for this assessment.

### 1.3 Executive summary

A summary of the Approved and Alternative Measures of Clause 53.02, including those which apply to the site and those which are met by this proposal, is presented in Table 1.

The site is an open paddock containing pasture (Grassland) and an existing dwelling in the south-east corner. Dukes Lane runs along the eastern boundary and has Forest within the road reserve. Adjacent properties to the east and south contain Woodland/Grassland around low-density residential development, and managed partially constructed residential areas respectively. The northern and western boundaries contain Woodland vegetation along Emu Creek. The entire site is on level terrain.

The immediate surrounding landscape consists of agricultural land, residential areas within the Township of Strathfieldsaye to the south-west and north-west of the site, and scattered patches of native vegetation. To the south of the site, Strathfieldsaye Road leads into Bendigo to the west through heavily vegetated areas within State and National Parks. The wider landscape consists of fragmented bushland, low-density residential development, and vast areas of farmland.

The site and the adjacent landscape have no record of bushfire, but the Greater Bendigo National Park and other surrounding bushland have long histories of bushfires along with extensive planned burns. Under prevailing conditions, a bushfire can potentially approach from the north-west through the bushland, but would be separated from the site by various low-density developments and part of the Township of Strathfieldsaye.

The owners are proposing to subdivide the property into 66 residential lots with a proposed internal road network accessing Dukes Lane to the east, along with proposed internal roads that will link to residential development to the south. Dukes Lane along with this internal road will connect to Strathfieldsaye Road to the south. While the BMO does not apply to the site, its requirements will be used as a benchmark for bushfire safety to meet the requirements of Clause 13.02-1S. Approved Measure 5.2 includes the incorporation of Approved Measures 2.1, 2.2 and 4.1 along with unique requirements from it and 5.3 and 5.4.

While the site is surrounded by vegetation, only the vegetation to the north and west is an issue. The Forest that is currently present along Dukes Lane and the majority of the vegetation within adjacent properties to the east and south will be controlled as a part of future development. This, combined with the immediate access to Strathfieldsaye allows the proposal to meet Approved Measure 2.1.

The proposed development also incorporates a perimeter road and managed open space between residential lots and the bushfire hazard which allows it to meet the separation requirements of Approved Measure 2.2, the perimeter road requirements of Approved Measure 5.3, and the management requirements of Approved Measure 5.4.



This proposed separation allows each lot to have BAL-12.5 as a minimum with only a few very minor setbacks required to accommodate this on some lots as per Approved Measure 5.2 and the settlement requirements of Clause 13.02-1S. Finally, Approved Measure 4.1 is met through the proposed access and layout guaranteeing driveways less than 30m. **A 5,000L static water supply is recommended for each lot and no CFA access or fittings are required.**

**Table 1. Summary of Approved/Alternative Measures to Clause 53.02**

Approved/Alternative Measure	Relevant to proposal?	Met by proposal?	Further comments
AM 1.1	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A	Requirements of Clause 52.03-4 to be met
AM 1.2	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
AM 1.3	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
AM 2.1	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Applied under AM 5.2
AM 2.2	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Applied under AM 5.2
AM 2.3	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A	Not required for a subdivision application
AM 3.1	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
AM 3.2	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
AltM 3.3	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
AltM 3.4	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
AltM 3.5	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
AltM 3.6	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
AM 4.1	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Applied under AM 5.2
AM 4.2	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A	AM 4.1 applies
AM 5.1	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A	AM 5.2 applies
AM 5.2	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
AM 5.3	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Not considered necessary as the site is not within the BMO and the requirement is partially met through the presence of existing roads and an adjacent paddock which can provide vehicles access.
AM 5.4	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Met through proposed management of reserves and open space.
AltM 5.5	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A	Not required



## 2. BUSHFIRE HAZARD SITE ASSESSMENT

The bushfire hazard site assessment documents the bushfire hazard on and near the site. Map 1 provides an overview of the subject site, including the land within 150 metres of site.

### 2.1 Site shape, dimensions and size

The shape of the site is:	Irregular
The dimensions of the site are:	Approximately 395 m x 266 m
The site has a total area of:	Approximately 7.4 ha

### 2.2 Planning controls

The zoning of the site is:	General Residential Zone
The planning scheme overlays that apply to the site are:	<ul style="list-style-type: none"> <li>• Development Plan Overlay – Schedule 26</li> <li>• Environmental Significance Overlay – Schedule 1</li> <li>• Land Subject to Inundation Overlay – Schedule 1 &amp; Schedule 2</li> </ul>

### 2.3 Existing use and development on the site

The current use of the site	Residential and agricultural
The buildings or works located on the site are:	There is an existing dwelling, shed and associated infrastructure in the south-east corner of the site along with a farm dam and boundary and internal fencing (see Figure 2). The remaining areas onsite are covered in pasture.

### 2.4 Existing access and utilities

Roads and access	There is currently driveway access onto the existing dwelling from Dukes Lane in the south-east corner of the site and access is proposed at multiple points along the eastern boundary onto Dukes Lane.
Power	The site is connected to mains power
Water	The site is connected to mains water
Nearest fire hydrant	There are no fire hydrants available to the site

## 2.5 Adjacent land

See Map 2 and Figure 1 for an overview of the adjacent landscape.

The centre of Strathfieldsaye is to the south-west of the site while the adjacent landscape to the north-west is low density residential. Farmland is located to the east and south. Further from the site, there are large areas of bushland to the north and west. Emu Creek runs east to south-west to the north of the site and has vegetation along both banks (this creek is also covered by the Environmental Significance Overlay (ESO)).

The site, along with the majority of the zoning to the west and south within Strathfieldsaye is General Residential Zone, while to the east is Rural Living Zone (RLZ). The landscape north of Strathfieldsaye is Rural Conservation Zone (RCZ). The Bushfire Management Overlay (BMO) covers the majority of the landscape to the north; extending from reserves and national parks further north, and also covers a large area in the south-east of Strathfieldsaye.

The layout of the surrounding area, and the zoning/overlays present, indicate that the bushfire risk will be reduced in future. Despite the number of adjacent properties currently containing farmland, the GRZ present indicates that they will be developed into residential estates in the future, similar to that proposed for the site, and those observed to the south. The ESO around Emu Creek indicates that this vegetation will be retained in perpetuity but is only considered to be a minor hazard.



Figure 1. Surrounding land zoning

## 2.6 Vegetation and topography

Refer to Map 3 and Table 2 for the results of the vegetation and slope assessment as per *Australian Standards 3959-2018: Building in Bushfire Prone Areas* (AS3959-2018).

The assessment area is on relatively level terrain with some minor slopes to the north and the west towards Emu Creek but none that would significantly impact bushfire behaviour. Some of the creek banks have erosion present which results in steep slopes but these only extend a few metres and are highly unlikely to impact bushfire behaviour significantly. Vegetation as per AS3959–2018 within the assessment area included Forest, Grassland, and Woodland along with some Low Threat areas and areas considered Modified Vegetation under Clause 53.02.

**Table 2. Bushfire hazard site assessment**

Patch ID	1	2	3	4	5
Patch placement	East	North, East & West	Grassland	East & West	North–West
Vegetation type	Forest	Woodland	North, East, South–West & West	Low Threat	Modified vegetation
Effective slope (up/down)	Level	Level	Level	Level	Level
Effective slope (degrees)	0–2°	0–2°	0–2°	0–2°	0–2°

### 2.6.1 Forest

Forest vegetation as per AS3959–2018 consists of a canopy layer between 10–30m high (can be taller) with foliage cover of between 30–70%. There is also an elevated fuel layer of shrubs along with groundstorey fuels (grasses and herbs). This vegetation is typically dominated by Eucalypts but also includes Pine plantations and denser covering of exotic trees.

This vegetation is present within the roadside reserve along Dukes Lane where there is a higher percentage of understory vegetation which increases the overall foliage cover to greater than 30% (see Figure 3). This vegetation will be managed as part of proposed upgrades along Dukes Lane so it should not be considered a threat to the proposed subdivision.

### 2.6.2 Woodland

Woodland vegetation as per AS3959–2018 also consists of a canopy layer of between 10–30m tall (can be less than 10m) with foliage cover of between 10–30%. Elevated fuel layers are often also present but at significantly lower density than observed in Forest vegetation. The key difference between Forest and Woodland vegetation is Forest support fires in the canopy.

This requires a dense canopy layer and elevated fuel layer so vegetation can be considered Woodland if the canopy density is greater than 30% but there is very little to no elevated fuels. Woodland is present within properties to the east opposite Dukes Lane (see Figure 4), and along Emu Creek to the north and the west of the site (see Figure 5 and Figure 6).

### 2.6.3 Grassland

Grassland vegetation as per AS3959–2018 is dominated by grass and herb species and can contain canopy and elevated fuel layers of varying heights as long as the foliage cover is less than 10%. This vegetation covers the entire site as pasture (see Figure 7) and is also present within paddocks to the east (see Figure 8) and to the west of the site (see Figure 9).

The vegetation within the properties to the west will eventually be managed as part of proposed residential subdivisions similar to those proposed for this site and should therefore not pose a threat but the vegetation along Emu Creek will be retained in perpetuity and will need to be responded to accordingly.

### 2.6.4 Low Threat and Modified Vegetation

Low Threat vegetation as per AS3959–2018 consists of vegetation managed to minimal fuel conditions including maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and wind breaks. Areas considered to be Low Threat are present along Dukes Lane (see Figure 10), within residential development to the south (see Figure 11), and along paths and within the Sullivans Road reserve to the west (see Figure 12).

The management observed in some areas can also be considered insufficient to consider the vegetation Low Threat but enough to rule out other classified vegetation. Clause 53.02 considers this vegetation Modified as it:

- has been modified, altered or is managed due to urban development or gardening,
- has different fuel loads from those assumed in the standard,
- has limited or no understorey vegetation, or
- is not low-threat or low-risk vegetation as defined in the standard

Residential properties to the north-west contain denser garden vegetation and cannot be considered Low Threat as per AS3959–2018 so the Modified vegetation classification is the most appropriate (see Figure 13). This classification only applies within the BMO however so this patch of vegetation is not expected to impact this assessment.



## 2.7 Photographs of the site and assessment area



Figure 2. Existing developments onsite



Figure 3. Forest vegetation along Dukes Lane



Figure 4. Woodland vegetation east of the site



Figure 5. Woodland vegetation along Emu Creek to the north of the site



Figure 6. Woodland vegetation along Emu Creek to the west of the site



Figure 7. Grassland within the site





Figure 8. Grassland to the east of the site



Figure 9. Grassland to the west of the site



Figure 10. Low Threat areas along Dukes Lane



Figure 11. Low Threat areas south of the site



Figure 12. Low Threat areas west of the site



Figure 13. Modified vegetation north-west of the site



### 3. BUSHFIRE HAZARD LANDSCAPE ASSESSMENT

The bushfire hazard landscape assessment provides information on the bushfire hazard more than 150 m away. This information is presented in Map 4 and discussed further below.

#### 3.1 Landscape

See Map 4 and Figure 14 for an overview of the wider landscape.

Strathfieldsaye extends directly south-west of the site and consists of dense residential and urban development, with further development planned going into the future. Directly to the north-west, there is low-density residential development interspaced with dense vegetation. The site is directly bordered to the south, east, and north-east by farmland.

Further from the site, there is a band of expansive vegetation stretching from Mount Sugarloaf Nature Conservation Reserve approximately 10km north-east of the site. This continues to State Forest approximately 5km north of the site, and to Greater Bendigo National Park approximately 5km to the west and south-west. Further to the south and east of the site, the landscape is covered with a patchwork of farmland and reserves.



Figure 14. Landscape



## 3.2 Bushfire history

Strathfieldsaye has not been burnt in bushfires according to recent records but the Greater Bendigo National Park experienced bushfires in 1961. Large areas of the national park and other vegetated areas have been subject to controlled burns from the 1980s onward and some scattered planned burns prior to this.

## 3.3 Bushfire scenarios

During bushfire season, bushfires are propelled by powerful north-westerly winds before a south-westerly change occurs. This south-westerly change brings cooler, humid winds from the Southern Ocean which can reduce bushfire intensity or result in less intense bushfires approaching from the south-west. Under severe conditions, the south-westerly change can reignite the terrain behind an existing front and turn it which results in a much more intense bushfire approaching from the south-west.

Prevailing conditions favour a bushfire approaching from the north-west. The landscape directly to the north is predominately farmland, and although the site is separated from the north-western forested landscape by low-density housing, there is still a risk of fire directly threatening the site due to the amount of vegetation present.

A bushfire approaching from the south-west (either directly or as part of a turned front) is less likely due to the cooler south-westerly winds propelling them. While there is a large patch of forest to the south-west, it is separated from the site by a large area of grassland/pasture, and is therefore only likely to affect the site via embers.

It can therefore be concluded that a bushfire from the north-west poses the greatest threat to the site via ember attack and potential direct flame contact. A bushfire approaching from the south-west is possible but is separated from the site by grassland and is not considered a threat to the proposed development.

## 3.4 Shelter and refuge options

Considering the risk of a bushfire approaching from the north-west; evacuation is recommended during a bushfire emergency. Strathfieldsaye Primary School playing fields are the closest Neighbourhood Safer Place and these are the recommended refuge during a bushfire emergency. They can be reached by proceeding south and turning right onto Strathfieldsaye Rd, and turning right onto Uxbridge St before reaching the school (approximately 3km, 5–10 minutes travel by car). The CFA should be consulted prior to any evacuation attempt and a personal bushfire plan for each dwelling is highly recommended.

### 3.5 Landscape typology

*Planning Permit Applications – Bushfire Management Overlay – Technical Guide* (DELWP 2017) (herein referred to as ‘the Technical Guide’) provides a typology of bushfire landscapes based on the conditions present (see Table 3).

Despite the potential threat of a bushfire approaching from the north-west and the potential for multiple scenarios; this can be considered a Type 2 Landscape due to a bushfire from the north-west being the only one which poses a credible threat. In addition, the sites proximity to Strathfieldsaye guarantees readily available access to a place which provides bushfire shelter.

**Table 3. Landscape typology as presented in Planning Permit Applications – Bushfire Management Overlay – Technical Guide (DELWP 2017)**

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

## 4. BUSHFIRE RISK ASSESSMENT

This report will address the proposed subdivision and will include a full response to Clause 44.06 and Clause 53.02 as a benchmark of bushfire safety as this area of the site is outside of the BMO but within a Bushfire Prone Area and must therefore be assessed at the planning level as per the requirements of Clause 13.02. This section describes how the proposed development responds to the requirements in Clause 53.02–4 and Clause 44.06.

### 4.1 Definition of objectives and measures

To fulfil the purpose, and allow application of Clause 53.02 of the Planning Scheme, objectives, measures to address the objectives, and decision guidelines are detailed within the Clause. These are defined below:

- **Objectives.** An objective describes the outcome that must be achieved in a completed development.
- **Approved measures (AM).** An approved measure meets the objective.
- **Alternate measures (AltM).** An alternative measure may be considered where the responsible authority is satisfied that the objective can be met. The responsible authority may consider other unspecified alternative measures.
- **Decision guidelines.** The decision guidelines set out the matters that the responsible authority must consider before deciding on an application, including whether any proposed alternative measure is appropriate.

A schedule to Clause 44.06 may specify substitute approved measures, additional alternative measures and additional or substitute decision guidelines.

A substitute approved measure specified in a schedule to Clause 44.06 substitutes the applicable approved measure contained in this clause.

### 4.2 Development proposal

As stated previously; the owners are proposing to subdivide the properties into 66 residential lots with a proposed internal road accessing Dukes Lane at multiple points to the east, and managed reserves along the north–western boundary along Sheepwash Creek.

Refer to Appendix 4 for the proposed development plans.

## 4.3 Relevant Objectives and Approved Measures

Clause 53.02–4.4 provides the objectives and approved measures for Subdivisions. They are detailed in the table below.

**Table 4. Approved measures to meet Clause 53.02–4.4 subdivision objectives**

Clause 53.02–4.4 Subdivision objectives		
<p>To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.</p> <p>To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.</p>		
Measure	Requirement	Applicable
<b>AM5.1</b>	<p>An application to subdivide land, other than where AM 5.2 applies, demonstrates that each proposed lot is capable of meeting:</p> <ul style="list-style-type: none"> <li>The defensible space in accordance with Table 2 Columns A, B or C and Table 6 Clause 53.02–5.</li> <li>The approved measures in Clause 53.02–4.1 and Clause 53.02–4.3.</li> </ul>	No – 5.2 applies
<b>AM5.2</b>	<p>An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:</p> <ul style="list-style-type: none"> <li>Each lot satisfies the approved measure in <b>AM 2.1</b>.</li> <li>A building envelope for a single dwelling on each lot that complies with <b>AM 2.2</b> and provides defensible space in accordance with: <ul style="list-style-type: none"> <li>Columns A or B of Table 2 to Clause 53.02–3 for a subdivision that creates 10 or more lots; or</li> <li>Columns A, B or C of Table 2 to Clause 53.02–3 for a subdivision that creates less than 10 lots.</li> </ul> </li> </ul> <p>The bushfire attack level that corresponds to the defensible space provided in accordance with Table 2 to Clause 53.02–3 must be noted on the building envelope</p> <ul style="list-style-type: none"> <li>Defensible space wholly contained within the boundaries of the proposed subdivision.</li> <li>Defensible Space may be shared between lots within the subdivision. Defensible space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defensible space.</li> <li>Vegetation management requirements in accordance with Table 6 to implement and maintain the defensible space required under this approved measure.</li> <li>Water supply and access that complies with AM 4.1</li> </ul>	Yes – requires consideration
<b>AM 5.3</b>	An application to subdivide land to create 10 or more lots provides a perimeter road adjoining the hazardous vegetation to support fire fighting.	Yes – requires consideration
<b>AM 5.4</b>	A subdivision manages the bushfire risk to future development from existing or proposed landscaping, public open space and communal areas.	Yes – requires consideration

AM 5.2 includes the application of AM 2.1 and 2.1. These are presented in Table 5 below.

**Table 5. Clause 53.02–4.1 Landscape siting and design objectives and approved measures**

Clause 53.02–4.1 Landscape siting and design objectives	
Development is appropriate having regard to the nature of the bushfire risk arising from the surrounding landscape.	
Development is sited to minimise the risk from bushfire.	
Development is sited to provide safe access for vehicles, including emergency vehicles.	
Building design minimises vulnerability to bushfire attack.	
Measure	Requirement
AM2.1	The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level.
AM2.2	A building is sited to ensure the site best achieves the following: <ul style="list-style-type: none"> <li>• The maximum separation distance between the building and the bushfire hazard.</li> <li>• The building is in close proximity to a public road.</li> <li>• Access can be provided to the building for emergency service vehicles.</li> </ul>

## 4.4 Landscape risk objectives

Clause 53.02–4.4 Subdivision objectives
To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.
To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.
AM 5.2
An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows: <ul style="list-style-type: none"> <li>• Each lot satisfies the approved measure in AM 2.1.</li> <li>• A building envelope for a single dwelling on each lot that complies with AM 2.2 and provides defensible space in accordance with:               <ul style="list-style-type: none"> <li>– Columns A or B of Table 2 to Clause 53.02–5 for a subdivision that creates 10 or more lots; or</li> <li>– Columns A, B or C of Table 2 to Clause 53.02–5 for a subdivision that creates less than 10 lots.</li> </ul>               The bushfire attack level that corresponds to the defensible space provided in accordance with Table 2 to Clause 53.02–5 must be noted on the building envelope             </li> <li>• Defensible space wholly contained within the boundaries of the proposed subdivision.</li> <li>• Defensible Space may be shared between lots within the subdivision. Defensible space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defensible space.</li> <li>• Vegetation management requirements in accordance with Table 6 to implement and maintain the defensible space required under this approved measure.</li> <li>• Water supply and access that complies with AM 4.1</li> </ul>

**AM 2.1**

The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level.

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The site is considered to be within a Type 2 Landscape as per the Technical Guide. The primary reason for this is that the site is directly adjacent to Strathfieldsaye and the landscape to the north-west is predominantly farmland and low-density residential housing. While it is possible for a fire to approach from the north-west, it will most likely be contained and pose minimal risk by the time it reaches the development. Additionally, the area has been managed with a high frequency and area of planned burns in the recent years.

A fire from the south-west poses a lower risk to the site, as it is likely to only be a grassfire. Such a fire will be largely buffered by Strathfieldsaye where the fire is likely to be contained well before it reaches the development. Additionally, moving into the future, much of the surrounding landscape will be developed into high-density housing, which will further mitigate the risk of a fire directly impacting the site. The bushfire risk within the landscape to the north-west is somewhat high but this site is separated from such a threat enough to consider a lower landscape type and therefore be compliant with AM 2.1.

## 4.5 Subdivision design

**Clause 53.02–4.4 Subdivision objectives**

To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.

To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.

---

**AM 5.2**

An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:

- Each lot satisfies the approved measure in AM 2.1.
- **A building envelope for a single dwelling on each lot that complies with AM 2.2** and provides defensible space in accordance with:
  - Columns A or B of Table 2 to Clause 53.02–5 for a subdivision that creates 10 or more lots; or
  - Columns A, B or C of Table 2 to Clause 53.02–5 for a subdivision that creates less than 10 lots.

The bushfire attack level that corresponds to the defensible space provided in accordance with Table 2 to Clause 53.02–5 must be noted on the building envelope

- Defensible space wholly contained within the boundaries of the proposed subdivision.
  - Defensible Space may be shared between lots within the subdivision. Defensible space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defensible space.
  - Vegetation management requirements in accordance with Table 6 to implement and maintain the defensible space required under this approved measure.
  - Water supply and access that complies with AM 4.1
-

#### AM 2.2

A building is sited to ensure the site best achieves the following:

- The maximum separation distance between the building and the bushfire hazard.
- The building is in close proximity to a public road.
- Access can be provided to the building for emergency service vehicles

This development is being provided with an internal road network which will provide direct egress for residents and emergency services onto Dukes Lane to the east which connects to Strathfieldsaye Road to the south. The proposed internal road which will run along the western side of the subdivision will also connect south to Strathfieldsaye Road via adjacent residential estates current being developed. The proposed lots cover the majority of the site, which is flanked by road reserve and/or farmland in the process of being developed into residential areas (either within the building or planning approval stages) to the east and south and vegetation surrounding Emu Creek to the north and west.

The vegetation surrounding Emu Creek is protected and has been considered as a hazard as part of this assessment as it will be retained. The development has already included a 30m setback from this vegetation in addition to other setbacks and a road reserve between Emu Creek areas and the residential lots. This mean the dwellings will be as far as possible from this hazard and can be provide the required access as per AM 2.2

#### AM 5.3

An application to subdivide land to create 10 or more lots provides a perimeter road adjoining the hazardous vegetation to support fire fighting.

This measure has been met by the current design with Dukes Lane along the eastern boundary and a proposed road reserve encircling the lots on the northern and western sides adjacent to protected vegetation around Emu Creek. No perimeter road is provided along the lots on the southern boundary but the proposed roads of a subdivision within the adjacent property to the south connect to these roads and allow this proposal to meet this requirement.



## 4.6 Defendable space and construction

### Clause 53.02–4.4 Subdivision objectives

To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.

To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.

### AM 5.2

An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:

- Each lot satisfies the approved measure in AM 2.1.
  - A building envelope for a single dwelling on each lot that complies with AM 2.2 **and provides defendable space in accordance with:**
    - Columns A or B of Table 2 to Clause 53.02–5 for a subdivision that creates 10 or more lots; or
    - Columns A, B or C of Table 2 to Clause 53.02–5 for a subdivision that creates less than 10 lots.
- The bushfire attack level that corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02–5 must be noted on the building envelope**
- Defendable space wholly contained within the boundaries of the proposed subdivision.
  - Defendable Space may be shared between lots within the subdivision. Defendable space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defendable space.
  - Vegetation management requirements in accordance with Table 6 to implement and maintain the defendable space required under this approved measure.
  - Water supply and access that complies with AM 4.1

### 4.6.1 BAL Assessment

Document date & version	09/09/2020 – Version 0.1
Assessor	Julian Drummond
Accreditation	BPAD Level 2 (Vic) – Accreditation No. BPAD44709
Assessors Contact	Email: <a href="mailto:juliand@practicalecology.com.au">juliand@practicalecology.com.au</a> Phone: (03) 9484 1555

### Site Details

Municipality	Greater Bendigo
Address	59 Dukes Lane, Strathfieldsaye
Applicant/Owner	Emu Creek Holdings Pty Ltd
Zoning	General Residential Zone (GRZ)

<b>Overlays</b>	<ul style="list-style-type: none"> <li>• Development Plan Overlay – Schedule 26 (DPO26)</li> <li>• Environmental Significance Overlay – Schedule 1 (ESO1)</li> <li>• Land Subject to Inundation Overlay – Schedule 1 (LSIO1) &amp; Schedule 2 (LSIO2)</li> </ul>
<b>Bushfire Prone Area</b>	Yes
<b>Proposed works</b>	Residential subdivision

### AS3959–2018 Method 1

An overview of the setbacks required from classified vegetation is presented on Map 5.

While there are classified vegetation patches within the site and surrounding it within the assessment area, the majority of these patches can be considered exempt due to proposed or current works occurring within adjacent areas. These areas are presented on Map 5 and detailed below:

- Patch 1 along Dukes Lane is to be managed as part of proposed upgrades along this road to service the adjacent residential areas. While some vegetation will be retained, the remaining patches will be less than 20m wide and more than 20m from each other and adjacent vegetation so they can be considered exempted as per Section 2.2.3.2.d of AS3959–2018.
- Grassland and Woodland within properties to the east of Dukes Lane and Grassland west of the site opposite Emu Creek are currently being approved for residential subdivisions similar to those proposed within this site and will subsequently be cleared and managed as Low Threat vegetation
- Modified vegetation to the north-west normally requires a BAL-29 rating and 50m of defendable space (or to the property boundary, whichever is lesser). This is only required within the BMO however so it will not be necessary for this site.

Based on this and the vegetation still present, setbacks required from this remaining classified vegetation are summarise below.

Patch ID	1	2	3	4	5
<b>Patch placement</b>	East	North & West	West	East & West	North-West
<b>Fire Danger Index</b>	100	100	100	100	100
<b>Vegetation type</b>	Forest	Woodland	Grassland	Low Threat	Modified vegetation
<b>Exclusions (from section 2.2.3.2 b, c, d, e or f)</b>	d	N/A	N/A	e & f	e & f
<b>Effective slope (up/down)</b>	Level	Level	Level	Level	Level
<b>Effective slope (degrees)</b>	0–2°	0–2°	0–2°	0–2°	0–2°
<b>Defendable space required for BAL-12.5 (m)</b>	N/A	33	19	N/A	N/A*

Patch ID	1	2	3	4	5
Defendable space required for BAL-19 (m)	N/A	24	13	N/A	N/A*
Defendable space required for BAL-29 (m)	N/A	16	9	N/A	N/A*
Defendable space required for BAL-40 (m)	N/A	12	6	N/A	N/A*

\*: For modified vegetation as per Table 1 to Clause 53.02-3; defendable space is to be provided for a distance of 50 metres, or the property boundary, whichever is the lesser, for buildings constructed to all bushfire attack levels. The minimum construction standard is BAL 29. It should be noted that this classification only exists under the BMO and is not a part of AS3959-2018 (Section 2.2.3.2e and f apply to this vegetation).

### Prescribed BAL rating for each lot

Under Clause 13.02-1S Bushfire Planning, lots within new residential subdivisions need to prove that BAL-12.5 can be attained for each approved lot (see Figure 15 below for a summary of the BAL ratings). This is primarily achieved within this site through the design of the subdivision but also through setbacks on lots adjacent to the retained vegetation around Emu Creek.

The areas within the property between Emu Creek and the proposed lots will need to be managed as Low Threat to allow for this. This applies to areas that are current maintained as pasture and will form part of the Emu Creek frontage that will abut the proposed internal road running along the west side of the development. Further detail is provided below.

Details for each lot along with the prescribed minimum BAL are provided in Appendix 1.

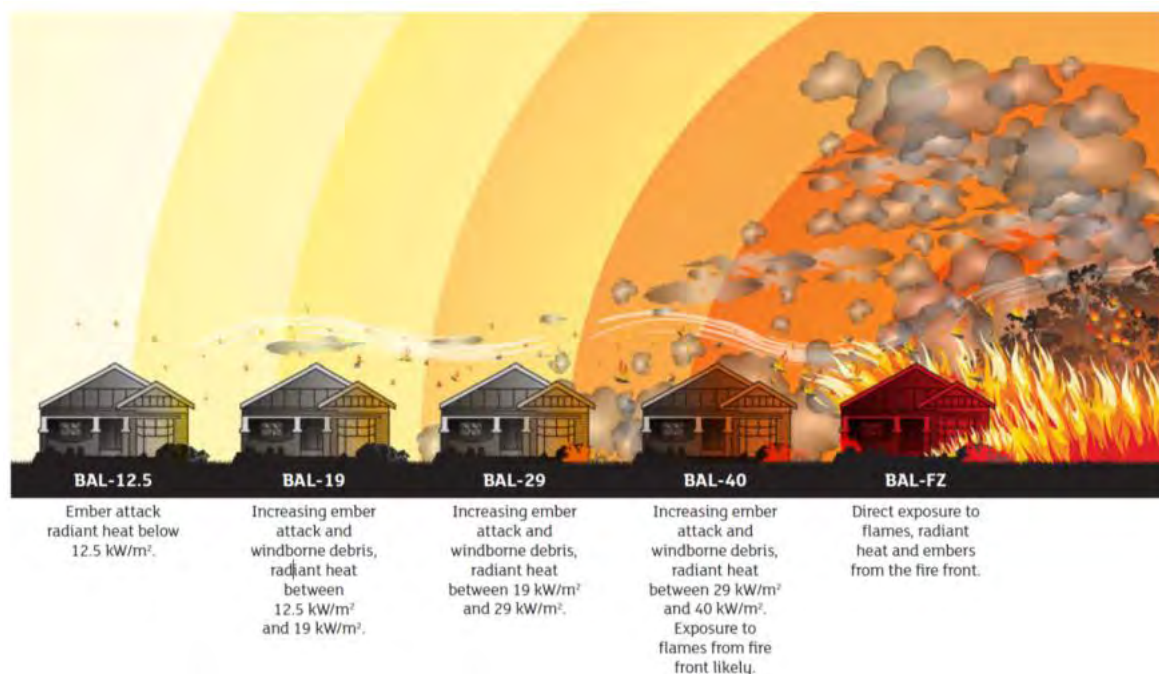


Figure 15. BAL levels (CFA 2012)

## 4.6.2 Landscaping

### AM 5.4

A subdivision manages the bushfire risk to future development from existing or proposed landscaping, public open space and communal areas

The proposed road reserves and managed areas onsite separating the residential development from Emu Creek are the only public spaces within the property. In order to provide the required setback from residential lots and allow for BAL-12.5, these must be managed and any new landscaping within them must be done in accordance with the defendable space management standards of Clause 53.02.

Table 6 to Clause 53.02–5 requires that defendable space is provided and is managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m 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.

These can potentially be adjusted (with CFA approval) to suit landscaping requirements and are not required within residential lots (although it is recommended that some of the requirements such as overhanging trees be recommended to residents). Assurance that public spaces will be managed to minimal fuel levels will however be sufficient for this property to meet the requirements of AM 5.4.

## 4.7 Water supply and access

### Clause 53.02–4.4 Subdivision objectives

To provide lots that are capable of being developed in accordance with the objectives of Clause 53.02.

To specify at the subdivision stage bushfire protection measures to develop a lot with a single dwelling on land zoned for residential or rural residential purposes.

Measure	Requirement
<b>AM5.2</b>	<p>An application to subdivide land zoned for residential or rural residential purposes must be accompanied by a plan that shows:</p> <ul style="list-style-type: none"> <li>Each lot satisfies the approved measure in <b>AM 2.1</b>.</li> <li>A building envelope for a single dwelling on each lot that complies with <b>AM 2.2</b> and provides defensible space in accordance with: <ul style="list-style-type: none"> <li>Columns A or B of Table 2 to Clause 53.02–5 for a subdivision that creates 10 or more lots; or</li> <li>Columns A, B or C of Table 2 to Clause 53.02–5 for a subdivision that creates less than 10 lots.</li> </ul> </li> </ul> <p>The bushfire attack level that corresponds to the defensible space provided in accordance with Table 2 to Clause 53.02–5 must be noted on the building envelope</p> <ul style="list-style-type: none"> <li>Defensible space wholly contained within the boundaries of the proposed subdivision.</li> <li>Defensible Space may be shared between lots within the subdivision. Defensible space for a lot may utilize communal areas, such as roads, where that land can meet the requirements for defensible space.</li> <li>Vegetation management requirements in accordance with Table 6 to implement and maintain the defensible space required under this approved measure.</li> <li><b>Water supply and access that complies with AM 4.1</b></li> </ul>

**AM 4.1**

A building used for a dwelling (including an extension or alteration to a dwelling), a dependant person's unit, industry, office or retail premises is **recommended (though not required)** to be provided with:

- A static water supply for firefighting and property protection purposes specified in Table 4 to Clause 53.02–5.
- Vehicle access that is designed and constructed as specified in Table 5 to Clause 53.02–5.

The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for firefighting water supplies.

Additional information regarding water supply and access can be found in Appendix 2.

### 4.7.1 Water supply

The water requirements as per Table 4 to Clause 53.02–5 based on the size of the lots and the availability of fire hydrants are listed in Table 6 below.

**Table 6. Minimum static water supply requirements for buildings in BMO (Clause 53.02–5, table 4)**

Minimum static water supply for office, retail, dwellings and dependent person's units			
Lot sizes (m <sup>2</sup> )	Not available	Effective capacity (L)	Fire authority fittings and access required
Less than 500	N/A	2,500	No
500–1,000	Yes	5,000	No
500–1,000	No	10,000	Yes
1,001 and above	N/A	10,000	Yes

Note 1: A hydrant is available if it is located within 120 meters of the rear of the building

Note 2: Fittings must be in accordance with the published requirements of the relevant fire authority

Under Clause 53.02; a 10,000L static water supply would normally be required for each lot. As this site is not within the BMO however, whether or not these measures are implemented will be left to the future landowners. Emergency services using adjacent hydrants will decrease the water pressure so a guaranteed supply of at least 5,000L is recommended for dwellings within the proposed lots.

If chosen to be installed, these tanks must meet the following requirements:

- be stored in an above ground water tank constructed of concrete or metal.
- all fixed above-ground water pipes and fittings required for fire fighting purposes must be made of corrosive resistant metal
- Include a separate outlet for occupant use.

A 5,000L static supply will therefore be *recommended* (not required) for each lot, which do not require CFA access or fittings.

#### 4.7.2 Access

The access requirements as per Table 5 to Clause 53.02–5 are listed in Table 7 below.

Considering the layout of the proposed subdivision, an access way of less than 30m can be guaranteed and no additional access measures are required.

**Table 7. Access requirements for buildings in BMO (Clause 53.02–5, table 5)**

Applies		
<input checked="" type="checkbox"/>	Length of access is less than 30 metres	There are no design and construction requirements if fire authority access to the water supply is not required under AM4.1.
<input type="checkbox"/>	Length of access is less than 30 metres	Where fire authority access to the water supply is required under AM4.1 fire authority vehicles should be able to get within 4 metres of the water supply outlet.
<input type="checkbox"/>	Length of access is greater than 30 metres	<p>The following design and construction requirements apply:</p> <ul style="list-style-type: none"> <li>• All-weather construction.</li> <li>• A load limit of at least 15 tonnes.</li> <li>• Provide a minimum trafficable width of 3.5 metres.</li> <li>• Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically.</li> <li>• Curves must have a minimum inner radius of 10 metres.</li> <li>• The average grade must be no more than 1 in 7 (14.4%) (8.1°) with a maximum grade of no more than 1 in 5 (20%) (11.3°) for no more than 50 metres.</li> <li>• Dips must have no more than a 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle.</li> </ul>

Applies		
<input type="checkbox"/>	Length of access is greater than 100 metres	<p>A turning area for fire fighting vehicles must be provided close to the building by one of the following:</p> <ul style="list-style-type: none"> <li>• A turning circle with a minimum radius of eight metres.</li> <li>• A driveway encircling the dwelling.</li> <li>• The provision of other vehicle turning heads – such as a T or Y head – which meet the specification of Austroad Design for an 8.8 metre Service Vehicle.</li> </ul>
<input type="checkbox"/>	Length of access is greater than 200 metres	<p>Passing bays must be provided at least every 200 metres.</p> <ul style="list-style-type: none"> <li>• Passing bays must be a minimum of 20 metres long with a minimum trafficable width of six metres.</li> </ul>

## 4.8 Ongoing management and community awareness

Clause 44.06–3 of the BMO, includes the requirement that a permit for subdivision that creates a lot for a single dwelling on land zoned for residential or rural residential purposes must include a s173 agreement. This must detail the required bushfire protection measures to be ongoing and exempts the need for future assessment to undertake works, such as construct a dwelling, consistent with the specified measures. Additional supporting documentation should be provided to new residents to ensure that they understand the bushfire risk at the site and their obligations to manage it, including prescriptions and advice regarding the Landscape Design Guidelines.

Residents need to also be aware that the measures in this Bushfire Management Statement cannot guarantee safety during an extreme fire event; buildings are only designed to withstand fire up to a Fire Danger Index (FDI) of 100 (i.e. not designed for Code Red Fire Danger), and even below this threshold building survival cannot be guaranteed. Residents need to develop a Personal Bushfire Plan to clearly understand and plan for how they are going to act in response to a potential and actual fire event. Residents should refer to CFA's Fire Ready Kit (CFA 2011) to help plan for such events.

## 4.9 Interim management for staged development

As development will be staged there will need to be consideration of the management of areas of the site that will be developed after the initial stages. This will include the need to ensure an adequate road network is in place and that vegetation is managed appropriately so that adequate defensible space is provided throughout all stages of the development process.



## 5. REFERENCES

- CFA (2011) *Prepare. Act. Survive. Fire Ready Kit*. Country Fire Authority, Burwood East, Victoria.
- CFA (2012) *Planning for Bushfire Victoria – Guidelines for Meeting Victoria's Bushfire Planning Requirements*. Country Fire Authority.
- CFA (2014a) *Water Supply Requirements (Bushfire Management Overlay)*. Country Fire Authority, Victoria.
- CFA (2014b) *Access Requirements (Bushfire Management Overlay)*. Country Fire Authority, Victoria.
- DELWP (2017) *Planning Permit Applications – Bushfire Management Overlay – Technical Guide*. DELWP, Melbourne, Victoria.
- DTPLI (2014) *Practice Note 65: Preparing and Assessing a Planning Application under the Bushfire Provisions in Planning Schemes, July 2014*. Department of Transport, Planning and Local Infrastructure, Government of Victoria, Melbourne.

## Appendix 1. BAL rating requirements for each lot

Lot	BAL	Setback from boundary required	Shielding provision (section 3.5 to AS3959–2018)
1	BAL-12.5	Yes – western boundary	N/A
2	BAL-12.5	Yes – western boundary	N/A
3	BAL-12.5	Not required	N/A
4	BAL-12.5	Not required	N/A
5	BAL-12.5	Not required	N/A
6	BAL-12.5	Not required	N/A
7	BAL-12.5	Not required	N/A
8	BAL-12.5	Not required	N/A
9	BAL-12.5	Not required	N/A
10	BAL-12.5	Not required	N/A
11	BAL-12.5	Not required	N/A
12	BAL-12.5	Not required	N/A
13	BAL-12.5	Not required	N/A
14	BAL-12.5	Not required	N/A
15	BAL-12.5	Not required	N/A
16	BAL-12.5	Not required	N/A
17	BAL-12.5	Not required	N/A
18	BAL-12.5	Not required	N/A
19	BAL-12.5	Not required	N/A
20	BAL-12.5	Not required	N/A
21	BAL-12.5	Not required	N/A
22	BAL-12.5	Not required	N/A
23	BAL-12.5	Yes – western boundary	N/A
24	BAL-12.5	Yes – western boundary	N/A
25	BAL-12.5	Not required	N/A
26	BAL-12.5	Not required	N/A
27	BAL-12.5	Not required	N/A
28	BAL-12.5	Not required	N/A
29	BAL-12.5	Not required	N/A
30	BAL-12.5	Not required	N/A
31	BAL-12.5	Not required	N/A
32	BAL-12.5	Not required	N/A
33	BAL-12.5	Not required	N/A

Lot	BAL	Setback from boundary required	Shielding provision (section 3.5 to AS3959–2018)
34	BAL-12.5	Not required	N/A
35	BAL-12.5	Not required	N/A
36	BAL-12.5	Not required	N/A
37	BAL-12.5	Not required	N/A
38	BAL-12.5	Not required	N/A
39	BAL-12.5	Not required	N/A
40	BAL-12.5	Not required	N/A
41	BAL-12.5	Not required	N/A
42	BAL-12.5	Not required	N/A
43	BAL-12.5	Not required	N/A
44	BAL-12.5	Not required	N/A
45	BAL-12.5	Yes - western boundary	N/A
46	BAL-12.5	Yes - western boundary	N/A
47	BAL-12.5	Not required	N/A
48	BAL-12.5	Not required	N/A
49	BAL-12.5	Not required	N/A
50	BAL-12.5	Not required	N/A
51	BAL-12.5	Not required	N/A
52	BAL-12.5	Not required	N/A
53	BAL-12.5	Not required	N/A
54	BAL-12.5	Not required	N/A
55	BAL-12.5	Not required	N/A
56	BAL-12.5	Not required	N/A
57	BAL-12.5	Not required	N/A
58	BAL-12.5	Not required	N/A
59	BAL-12.5	Not required	N/A
60	BAL-12.5	Not required	N/A
61	BAL-12.5	Not required	N/A
62	BAL-12.5	Not required	N/A
63	BAL-12.5	Not required	N/A
64	BAL-12.5	Not required	N/A
65	BAL-12.5	Not required	N/A
66	BAL-12.5	Not required	N/A

## Appendix 2. Water supply and access guidance

### Water supply guidance

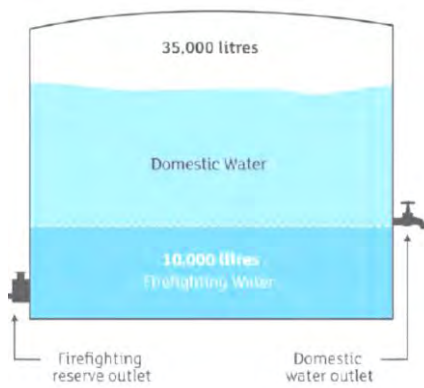


Figure 16. Firefighting water and domestic water can be in shared tank (DTPLI 2014)

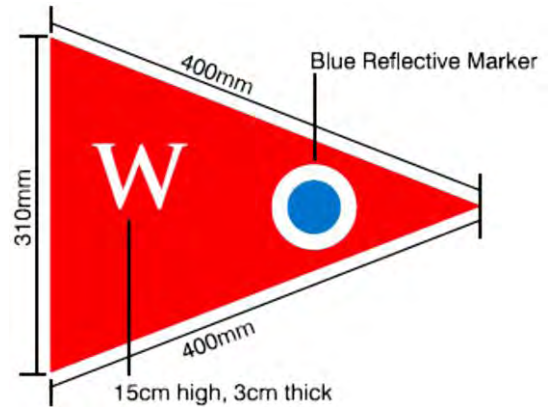


Figure 17. Water supply identification (CFA 2014a)

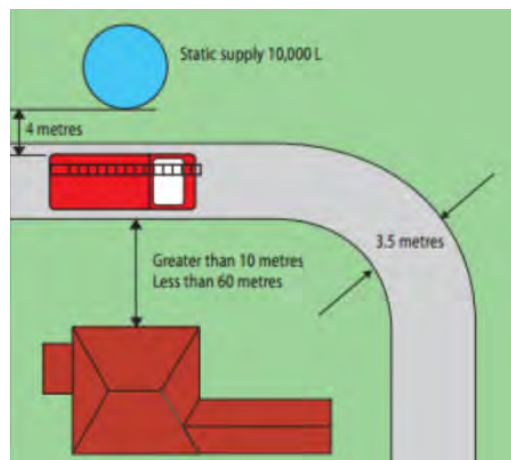


Figure 18. Water supply location (CFA 2014a)

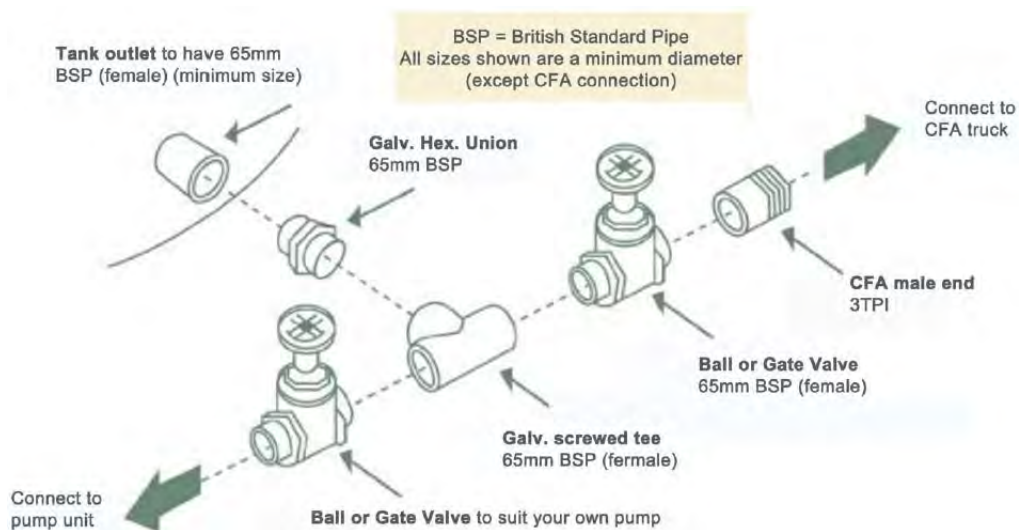
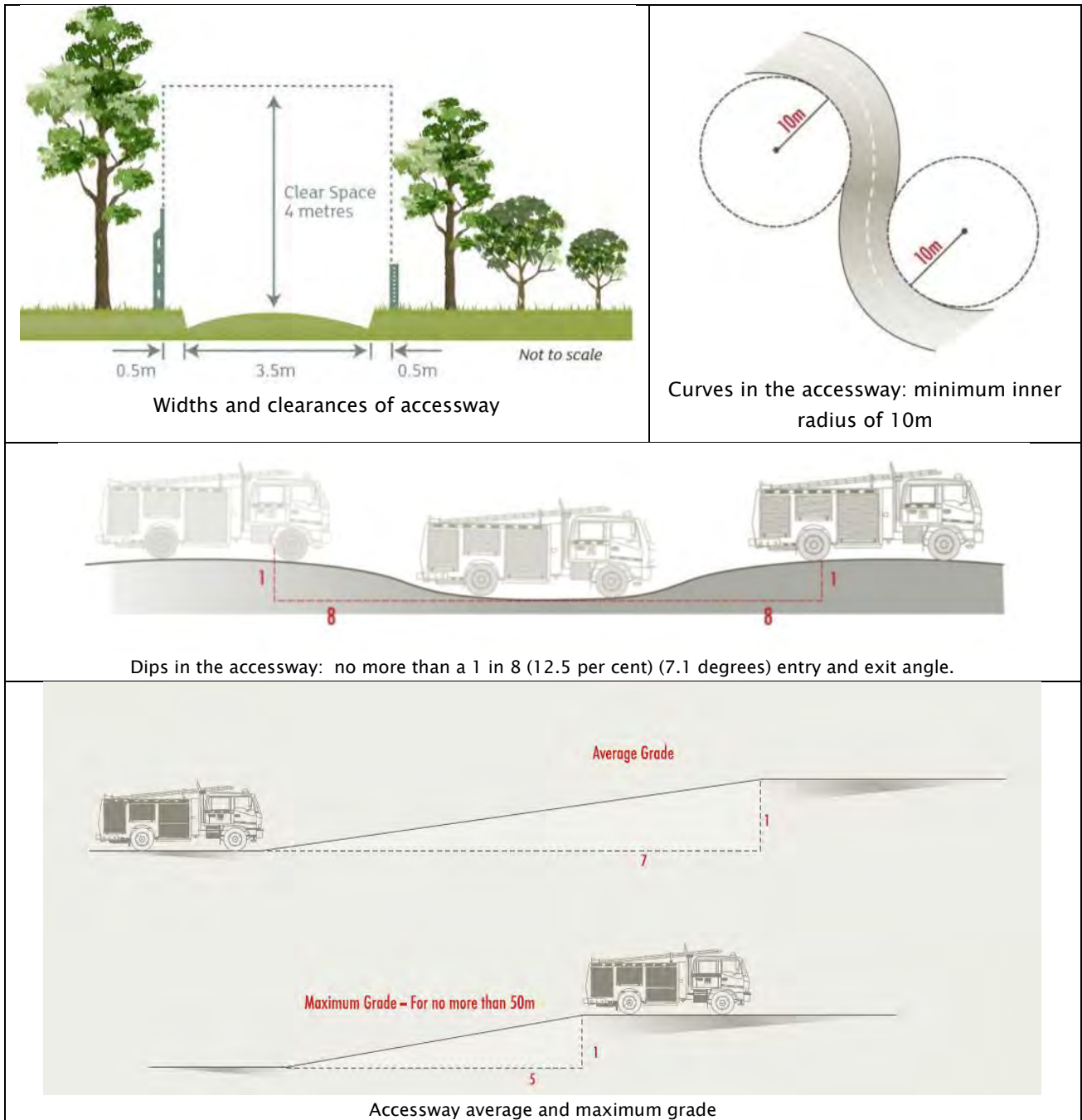
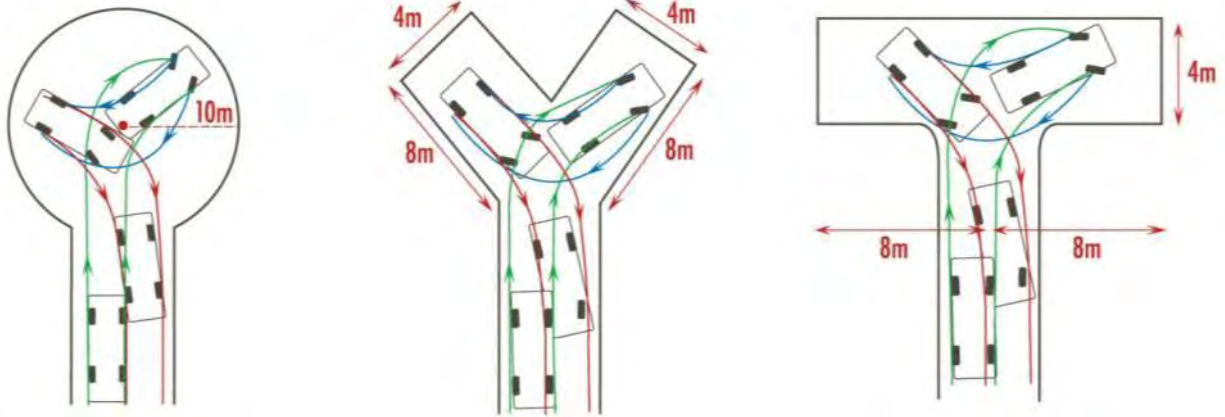


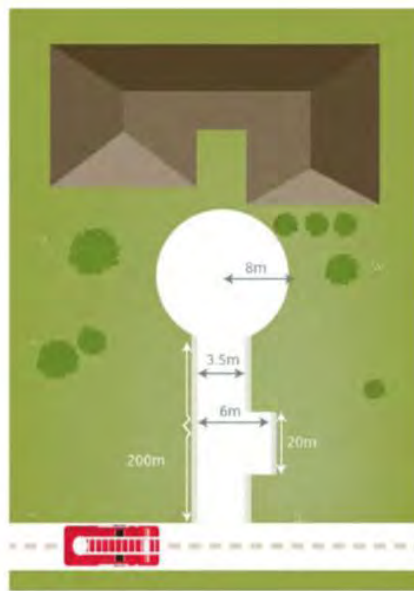
Figure 19. Requirements for water supply outlet, pipe work and valves (CFA 2014a)

## Access guidance





Turning circles– required where accessway is in excess of 100m



0.5m required to open firetruck door

Passing bays – required where an access way is in excess of 200m

Figure 20. Access guidance (CFA 2014b)

## Appendix 3. Maps


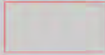
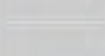

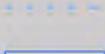
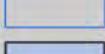
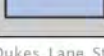




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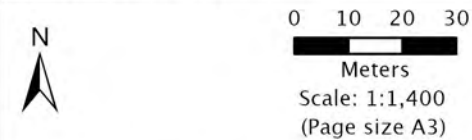
Disclaimer  
Practical Ecology bears no responsibility for the accuracy and completeness of this information and any decisions or actions taken on the basis of the map. While information appears accurate at publication, nature and circumstances are constantly changing.

#### Legend

-  Study area
-  Parcel boundary
-  Contour (10m interval)
-  Stream
-  Connector
-  Watercourse area (natural double sided stream)
-  Lake/dam

#### Map 1. Study Area 59 Dukes Lane, Strathfieldsaye

Details  
Project code: EMU 3081  
Mapping by: Julian Drummond  
Date: 28/07/2025  
Aerial imagery: Nearmap (05/05/2025)  
Basemap data: Vicmap Basemap © State Government of Victoria



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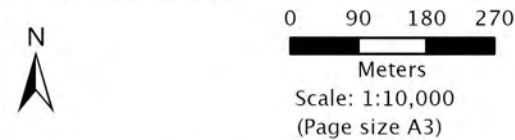
p: (03) 9484 1555 e: enquiries@practicalecology.com.au

Legend

- |  |                        |  |                                                |
|--|------------------------|--|------------------------------------------------|
|  | Study area             |  | Watercourse drain/channel                      |
|  | Parcel boundary        |  | Watercourse area (natural double sided stream) |
|  | Contour (10m interval) |  | Lake/dam                                       |
|  | Stream                 |  | Swamp                                          |
|  | Connector              |  |                                                |

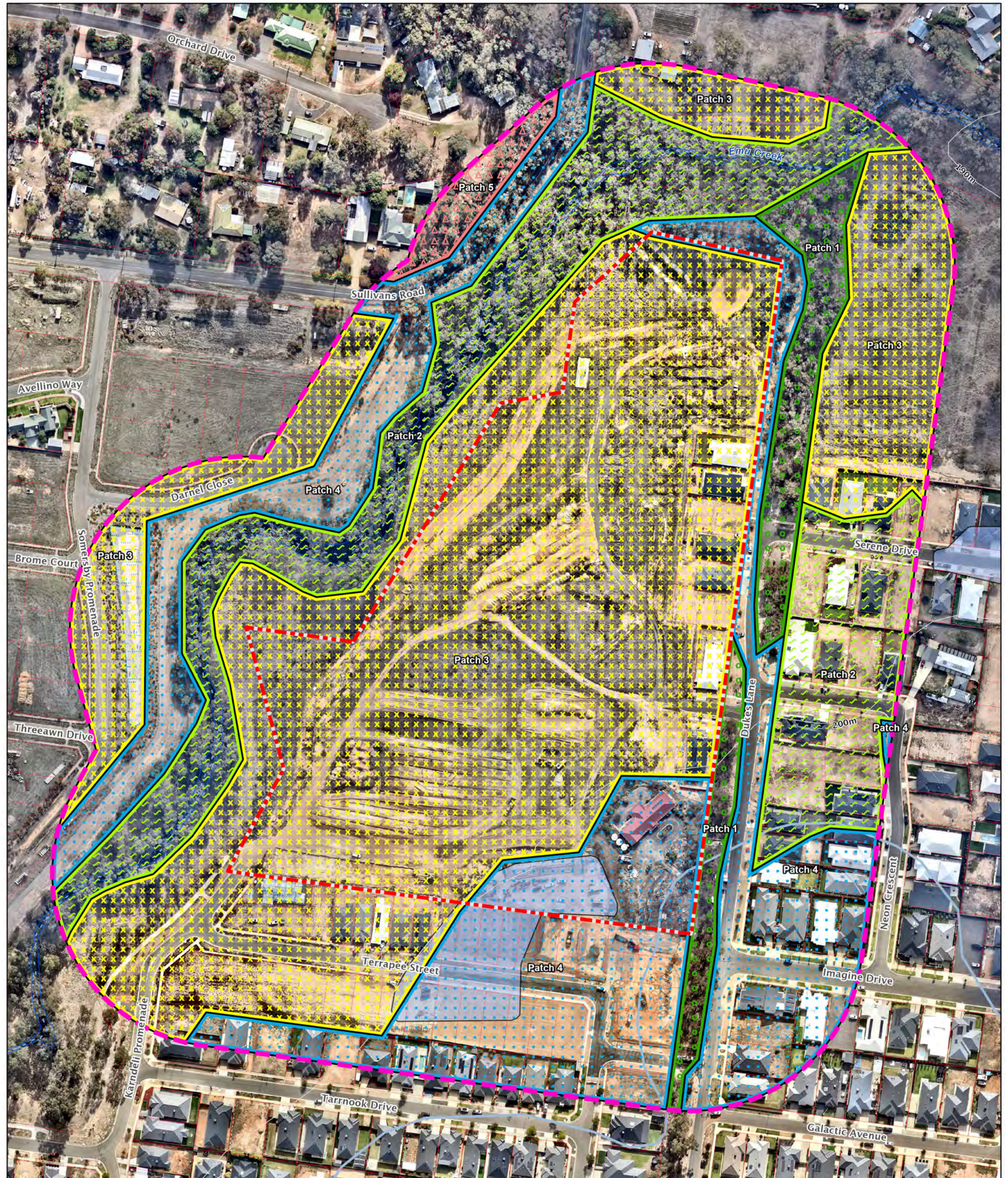
Map 2. Local Context  
59 Dukes Lane, Strathfieldsaye

Details  
Project code: EMU 3081  
Mapping by: Julian Drummond  
Date: 28/07/2025  
Aerial imagery: Vicmap Basemap (2020)  
Basemap data: Vicmap Basemap © State Government of Victoria



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### Legend

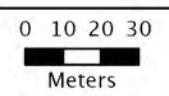
- |  |                                                |                              |                     |
|--|------------------------------------------------|------------------------------|---------------------|
|  | Study area                                     |                              | Lake/dam            |
|  | Assessment area (100m)                         |                              | Swamp               |
|  | Parcel boundary                                | <b>Classified vegetation</b> |                     |
|  | Contour (10m interval)                         |                              | Upslope Forest      |
|  | Stream                                         |                              | Upslope Woodland    |
|  | Connector                                      |                              | Upslope Grassland   |
|  | Watercourse area (natural double sided stream) |                              | Modified Vegetation |
|  |                                                |                              | Low Threat          |

### Map 3. Bushfire Hazard Site Assessment

59 Dukes Lane, Strathfieldsaye

#### Details

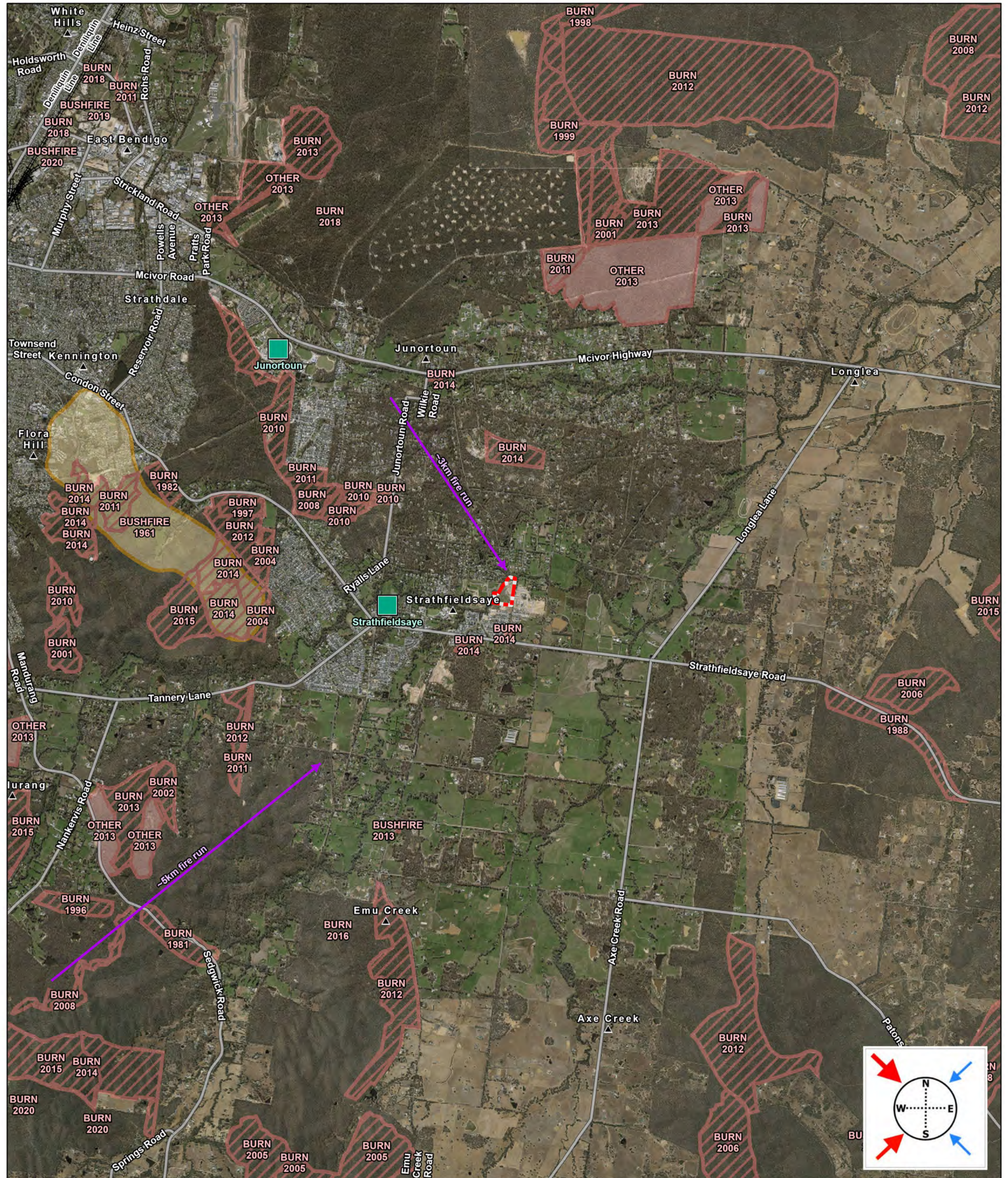
Project code: EMU 3081  
Mapping by: Julian Drummond  
Date: 28/07/2025  
Aerial imagery: Nearmap (05/05/2025)  
Basemap data: Vicmap Basemap © State Government of Victoria



Scale: 1:2,000  
(Page size A3)

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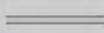
**Legend**



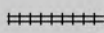
Study area



Town centre



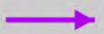
Major Roads



Railway line



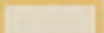
Neighbourhood Safer Place



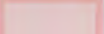
Potential fire runs

**Fire History**

**Bushfire**



Bushfire 1950-1979



Bushfire 1980 onwards

**Planned Burn**



Planned Burn 1980 onwards

**Map 4. Bushfire Hazard Landscape Assessment**  
59 Dukes Lane, Strathfieldsaye

**Details**

Project code: EMU 3081  
Mapping by: Julian Drummond  
Date: 28/07/2025  
Aerial imagery: Vicmap Basemap (2020)  
Basemap data: Vicmap Basemap © State Government of Victoria



0 650 1300  
Meters  
Scale: 1:50,000  
(Page size A3)

GDA2020 MGA Zone 55





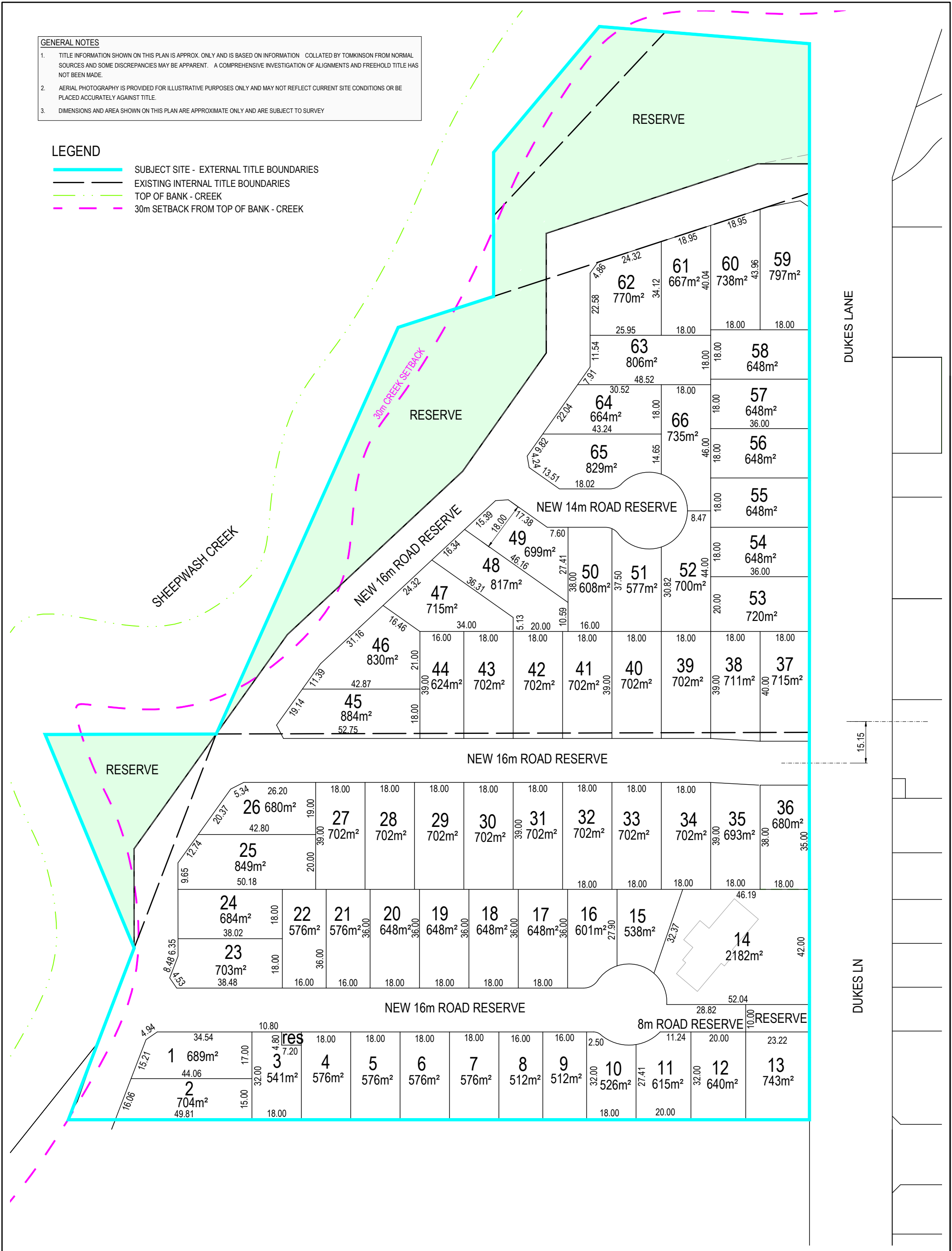


## Appendix 4. Detailed design plans

- GENERAL NOTES
- TITLE INFORMATION SHOWN ON THIS PLAN IS APPROX. ONLY AND IS BASED ON INFORMATION COLLATED BY TOMKINSON FROM NORMAL SOURCES AND SOME DISCREPANCIES MAY BE APPARENT. A COMPREHENSIVE INVESTIGATION OF ALIGNMENTS AND FREEHOLD TITLE HAS NOT BEEN MADE.
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LEGEND

- SUBJECT SITE - EXTERNAL TITLE BOUNDARIES  
EXISTING INTERNAL TITLE BOUNDARIES  
TOP OF BANK - CREEK  
30m SETBACK FROM TOP OF BANK - CREEK



G	CHANGES TO 3, 8-24 EXTRA 2 LOTS.	BB	NJB	07/07/25
F	ALTER SOUTHERN COURT BOWL & RELATED LOTS. CHANGE NTHN BDY OF LOT 13. ADD ROAD X-SECTIONS	PJL	NJB	20/05/21
E	CHANGES TO 8-10, 51-55, 33-34. EXTRA LOT.	LH	ME	26/08/20
D	CHANGES TO 32-34	LH	ME	25/08/20
C	MINOR AMENDMENTS TO LAYOUT	LH	ME	21/08/20
REV	REVISION	DES	DWG	CHK DATE



**Tomkinson**  
SURVEY > ENGINEERING > PLANNING > PROJECT MANAGEMENT

HEAD OFFICE: 57 MYERS STREET  
BENDIGO PH 03 5445 8700  
ABN 11 103 336 358  
WWW.TOMKINSON.COM

COMPASS ASSURANCE  
ISO 9001 QUALITY

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SCALE 1:1,250  
LENGTHS ARE IN METRES - PAPER SIZE A3

**PROPOSED SUBDIVISION**  
**59 DUKES LN, STRATHFIELDSAYE**  
**CONCEPT LOT LAYOUT**  
CITY OF GREATER BENDIGO  
EMU CREEK HOLDINGS PTY LTD

DWG STATUS: **PRELIMINARY**  
PROJECT & DWG No: 12633C01  
REV: G

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PLOT DATE: 07/07/2025 FILE: C:\12633\12633 - EMU CREEK HOLDINGS PTY LTD - STRATHFIELDSAYE 2002 ENG\000\CAD\CURRENT\12633 LAYOUT PLAN REV G.DWG