



**Macedon  
Ranges**  
Shire Council

# **ATTACHMENTS**

**Planning Delegated Committee  
Meeting  
Under Separate Cover**

**Wednesday 7 December 2022**

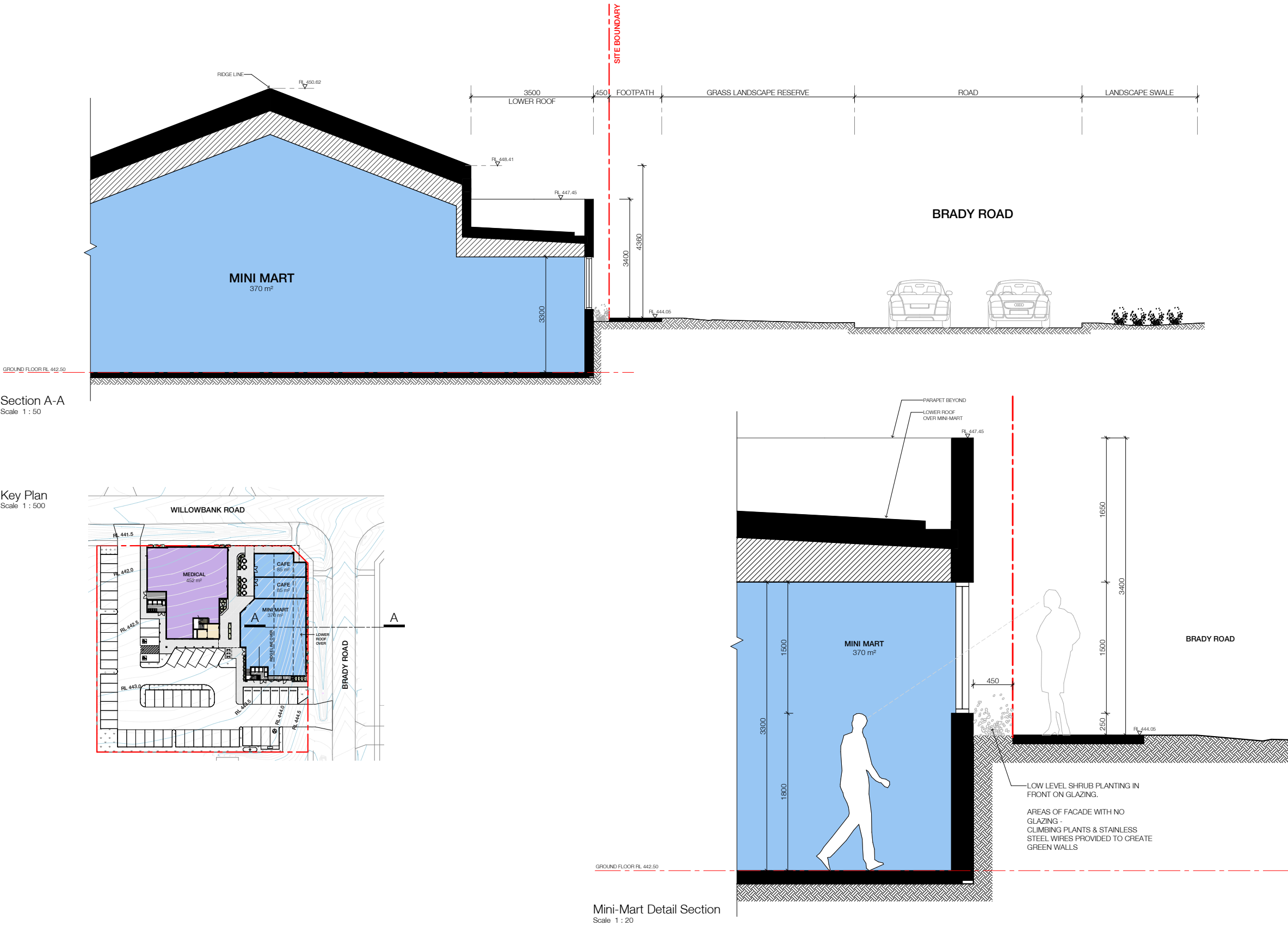




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WILLOWBANK ROAD ACTIVITY CENTRE  
210037 | 101-105 WILLOWBANK ROAD, GISBORNE VIC

TOWN PLANNING APPLICATION

REV a | 10 JUNE 2022





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**ClarkeHopkinsClarke** acknowledges the Wurundjeri Woi Wurrung and the Boon Wurrung peoples of the Eastern Kulin Nation and the Gadigal people of the Eora Nation as the Traditional Custodians of the land we work on.

**ClarkeHopkinsClarke also acknowledges the Traditional Custodians of Country throughout Australia where our projects are situated.**

We pay our respects to Aboriginal and Torres Strait Islander cultures and to Elders past, present and emerging. We recognise their custodianship over deep time and their continuing connection to lands, waters and communities.

*Drawn by Foster Type and based on the AIATSIS map of Indigenous Australia, ©AIATSIS 1996.*  
For more information about using this map please visit [aiatsis.gov.au](http://aiatsis.gov.au)





# 01

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## CONTEXT ANALYSIS

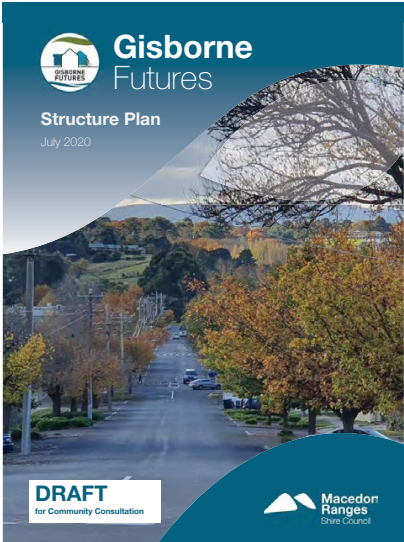




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101 - 105 WILLOWBANK ROAD, GISBORNE  
210037

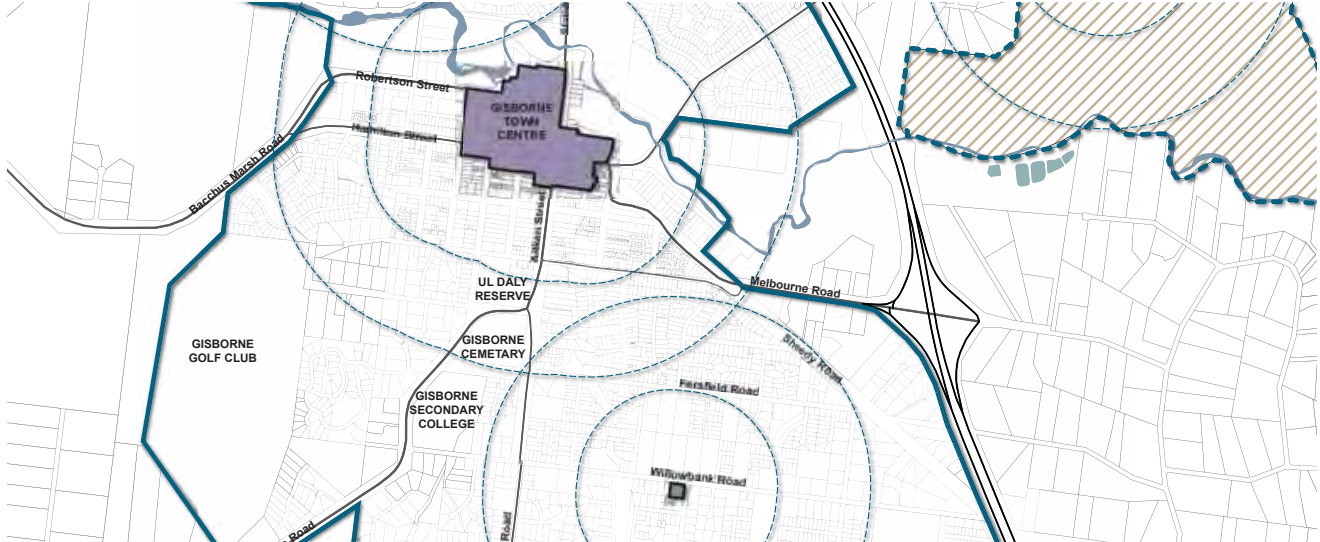




## Structure Plan

### Gisborne Futures

- Draft Structure Plan, July 2020
- The Gisborne Structure Plan sets out the long-term strategic vision and action plan for the whole town including New Gisborne.
- Key principles of the plan include Housing, Heritage & Culture, Activity Centre Landscape & Environment, Economic Development, Transport and Community.



## Activity Centre

### Gisborne Futures

- Within the Structure Plan, the site is identified as a future Neighbourhood Activity Centre (NAC), and will be re-zoned to Commercial 1 Zone.
- The objective of the NAC is identified to:  
*“Provide vibrant and attractive places for people to obtain a range of services (community and commercial) and experiences appropriate to the level of centres with the main town centre being the “heart” of the town”*

## Design & Development Overlay

### DD0

- Within the Structure Plan, it is identified that a Design & Development overlay will be prepared for the site, to ensure any developments deliver the objectives of a NAC

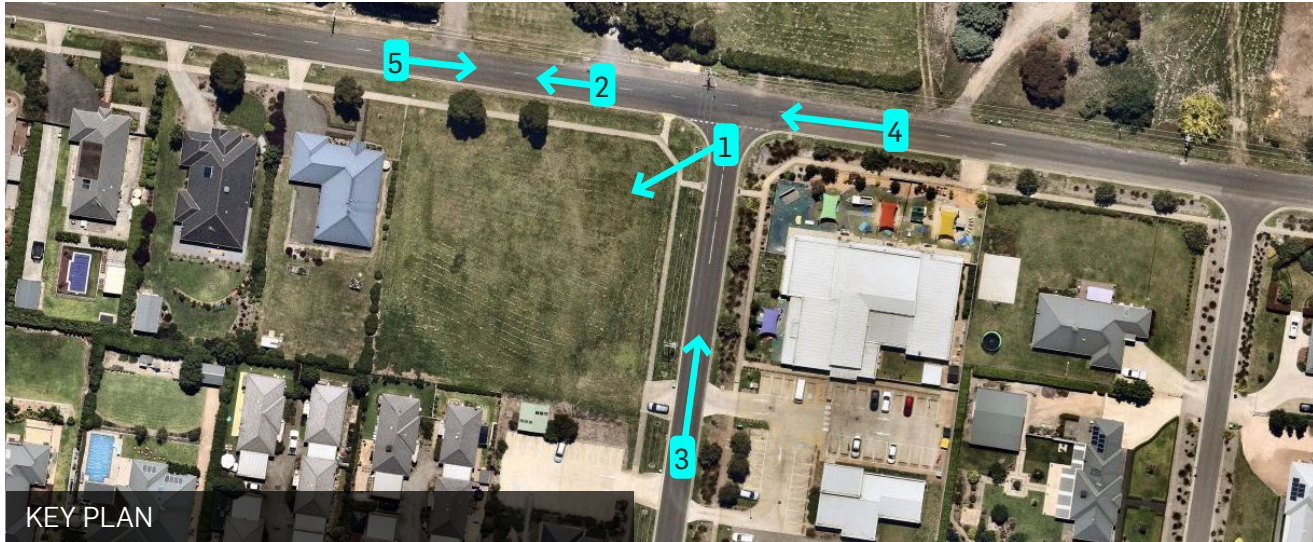
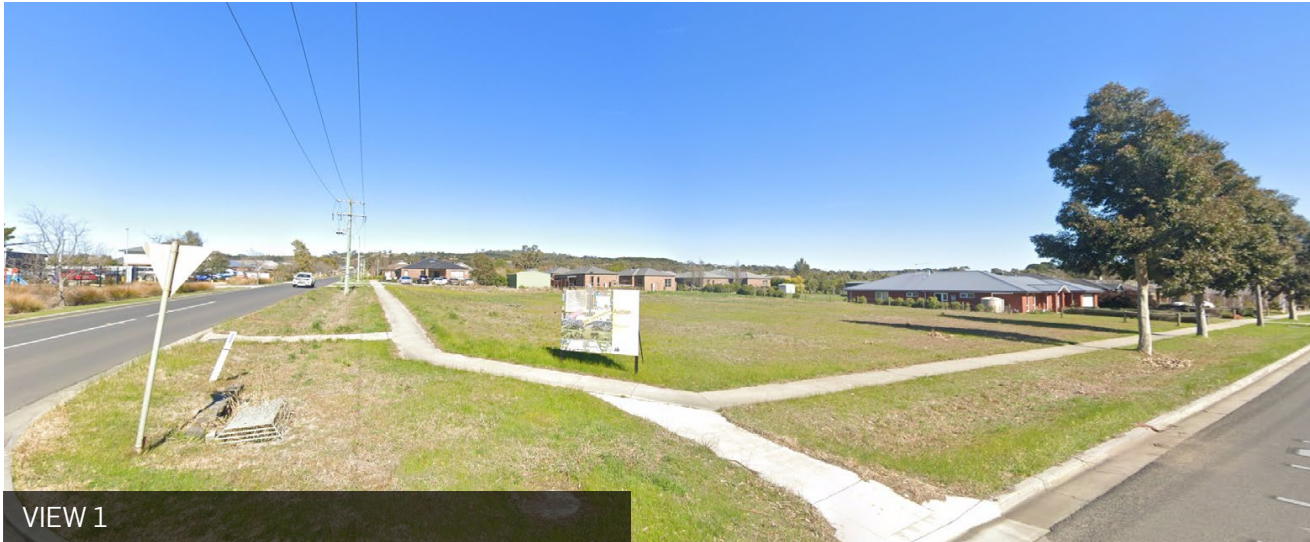


## Development Contributions Overlay

### DCPO2

- All land in Gisborne and New Gisborne in the DCP02 Area.
- To identify areas which require the preparation of a development contributions plan for the purpose of levying contributions for the provision of works, services and facilities before development can commence.









# 02

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DESIGN RESPONSE





PROJECT VISION

**Willowbank Rd Activity Centre will provide local convenience through a range of community, commercial and retail uses.**

**Capitalising on frontages to both Willowbank Rd and Brady Rd, a mix of uses will form a corner landmark that will integrate seamlessly with the adjoining residential areas.**









# 03

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## DRAWINGS





| Site & Neighbourhood Conte |   |
|----------------------------|---|
| 1                          | SUBJECT SITE: 101 - 105 WILLOWBANK RD, GISBORNE VACANT LAND WITH 3.4m² FALL ACROSS THE SITE FROM SOUTH-EAST CORNER TO NORTH-WEST CORNER |
| 2                          | EXISTING DRIVEWAY   |
| 3                          | EXISTING STREET TREES   |
| 4                          | BRADY RD WILLOWBANK RD BUS STOP BUS 473   |
| 5                          | EXISTING SINGLE STOREY CHILDCARE CENTRE   |
| 6                          | EXISTING SINGLE STOREY OSTEOPTH FACILITY  |
| 7                          | EXISTING SINGLE STOREY PHYSIOTHERAPY & REHAB FACILIT  |
| 8                          | EXISTING SINGLE STOREY RESIDENTIAL PROPERTIES   |
| 9                          | FUTURE RESIDENTIAL AGED CARE FACILITY   |

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Willowbank Road Mixed-Use

101-105 Willowbank Road Gisborne VIC

Existing Conditions Plan

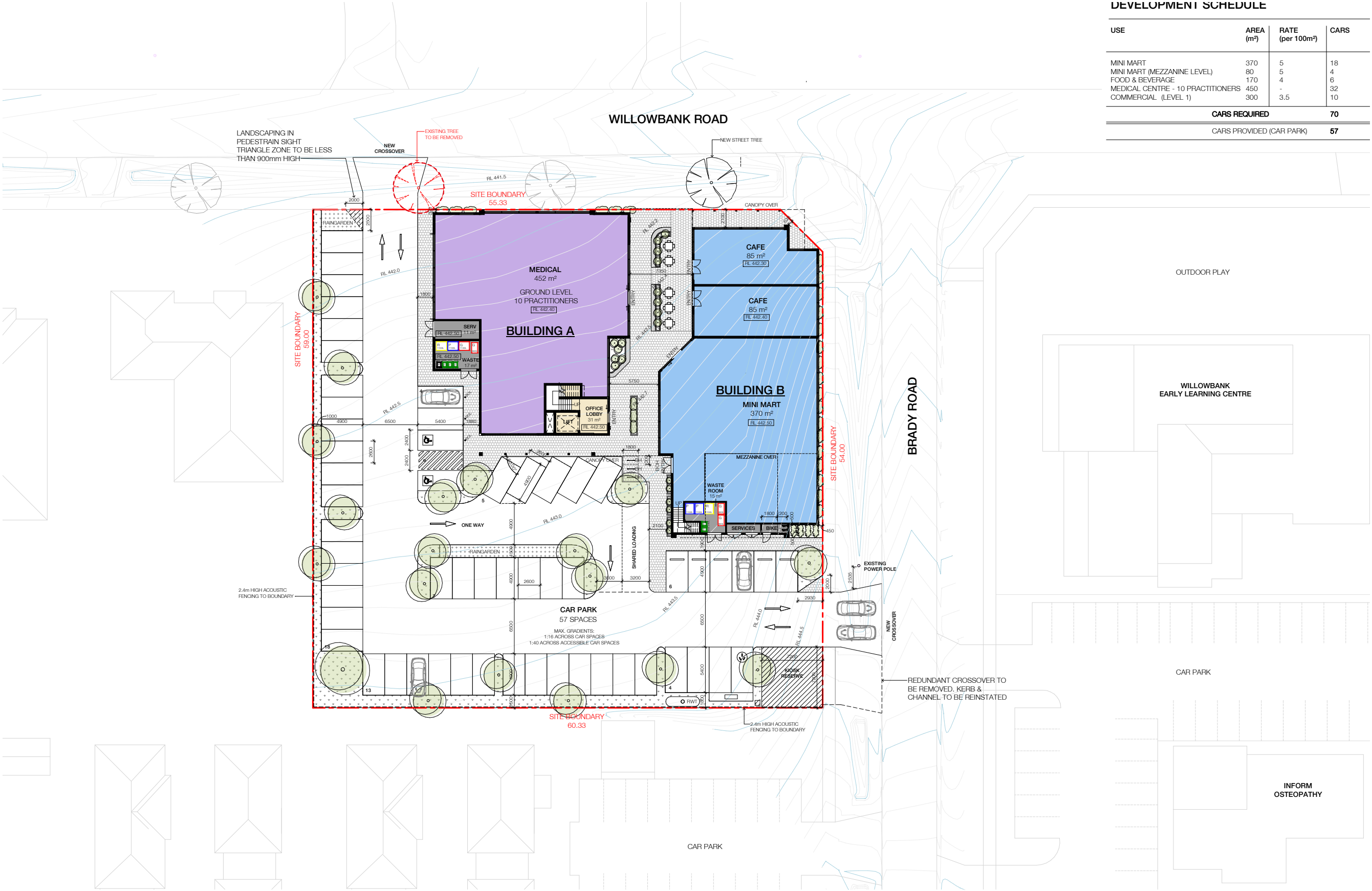
1:500 @ A1

TOWN PLANNING

210037/TD01

10.06.20





| DEVELOPMENT SCHEDULE              |           |                  |      |
|-----------------------------------|-----------|------------------|------|
| USE                               | AREA (m²) | RATE (per 100m²) | CARS |
| MINI MART                         | 370       | 5                | 18   |
| MINI MART (MEZZANINE LEVEL)       | 80        | 5                | 4    |
| FOOD & BEVERAGE                   | 170       | 4                | 6    |
| MEDICAL CENTRE - 10 PRACTITIONERS | 450       | -                | 32   |
| COMMERCIAL (LEVEL 1)              | 300       | 3.5              | 10   |
| CARS REQUIRED                     |           |                  | 70   |
| CARS PROVIDED (CAR PARK)          |           |                  | 57   |

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**Willowbank Road Mixed-Use**  
101-105 Willowbank Road Gisborne VIC

Ground Floor Site Plan

1:200 @ A1

**TOWN PLANNING**  
**210037/TD02**

10.06.20

| DEVELOPMENT SCHEDULE              |           |                  |      |
|-----------------------------------|-----------|------------------|------|
| USE                               | AREA (m²) | RATE (per 100m²) | CARS |
| MINI MART                         | 370       | 5                | 18   |
| MINI MART (MEZZANINE LEVEL)       | 80        | 5                | 4    |
| FOOD & BEVERAGE                   | 170       | 4                | 6    |
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Willowbank Road Mixed-Use  
101-105 Willowbank Road Gisborne VIC

First Floor Site Plan

1:200 @ A1

TOWN PLANNING

210037/TD03

10.06.20





| DEVELOPMENT SCHEDULE              |           |                  |      |
|-----------------------------------|-----------|------------------|------|
| USE                               | AREA (m²) | RATE (per 100m²) | CARS |
| MINI MART                         | 370       | 5                | 18   |
| MINI MART (MEZZANINE LEVEL)       | 80        | 5                | 4    |
| FOOD & BEVERAGE                   | 170       | 4                | 6    |
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Willowbank Road Mixed-Use

101-105 Willowbank Road Gisborne VIC

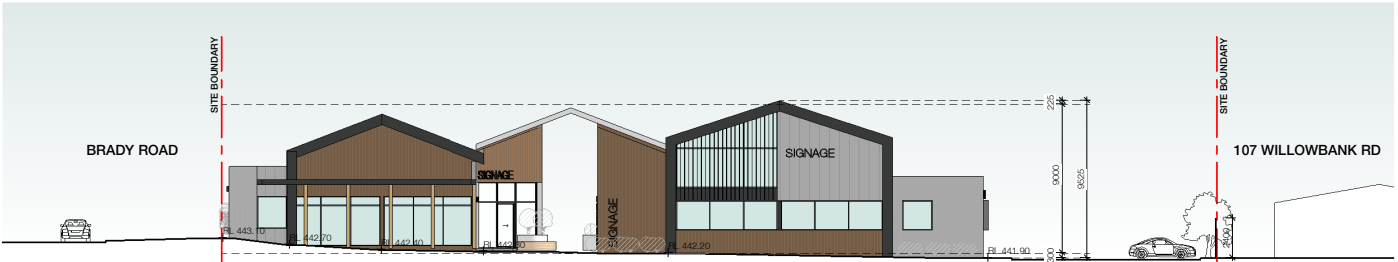
Roof Site Plan

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TOWN PLANNING

210037/TD04

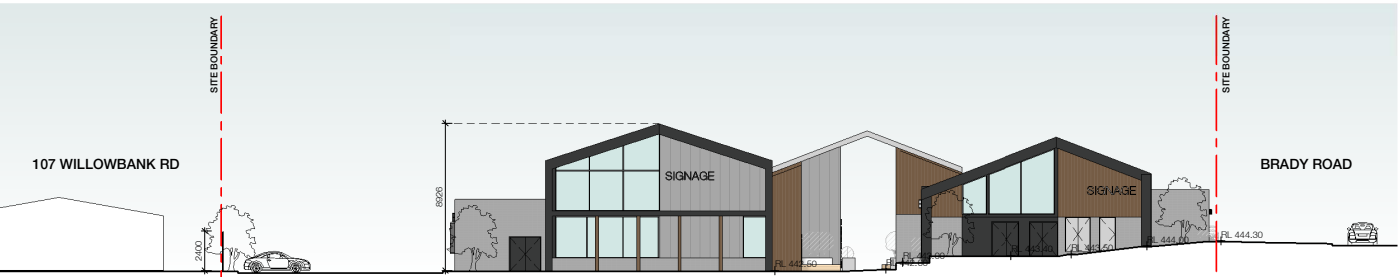
10.06.20



1 North Elevation - Willowbank Road  
Scale 1 : 200



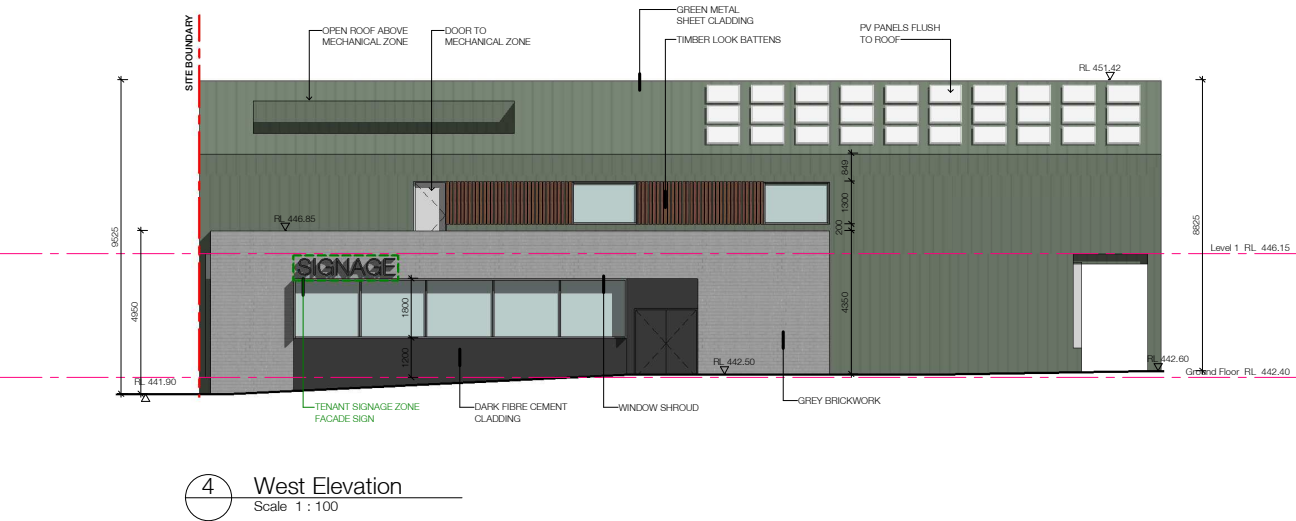
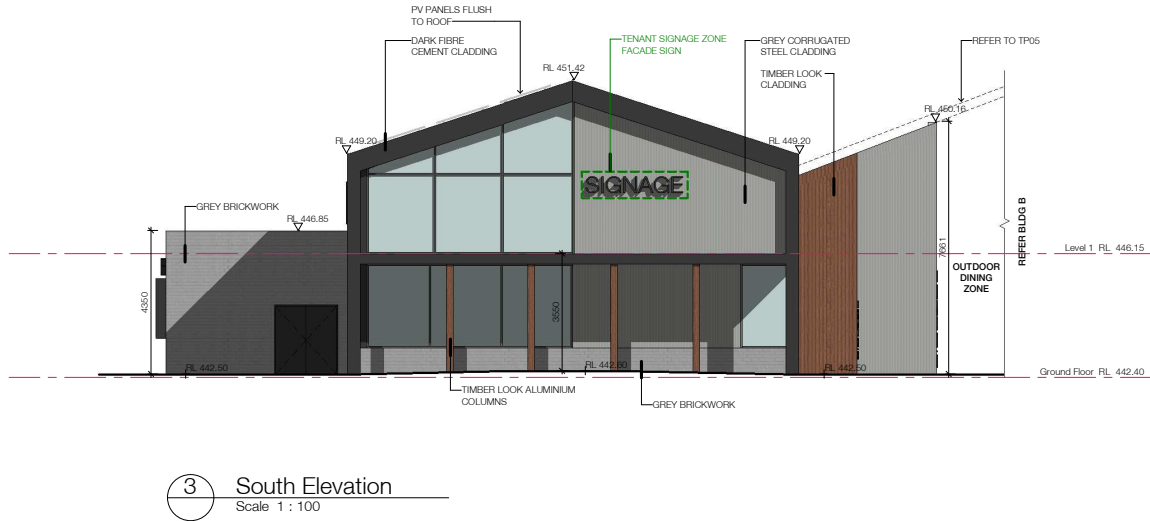
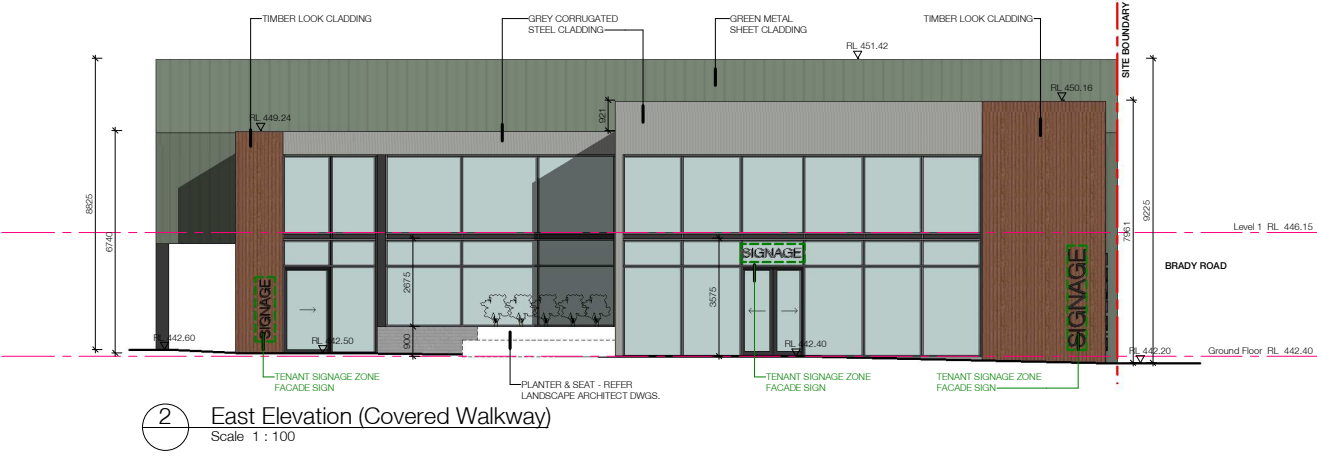
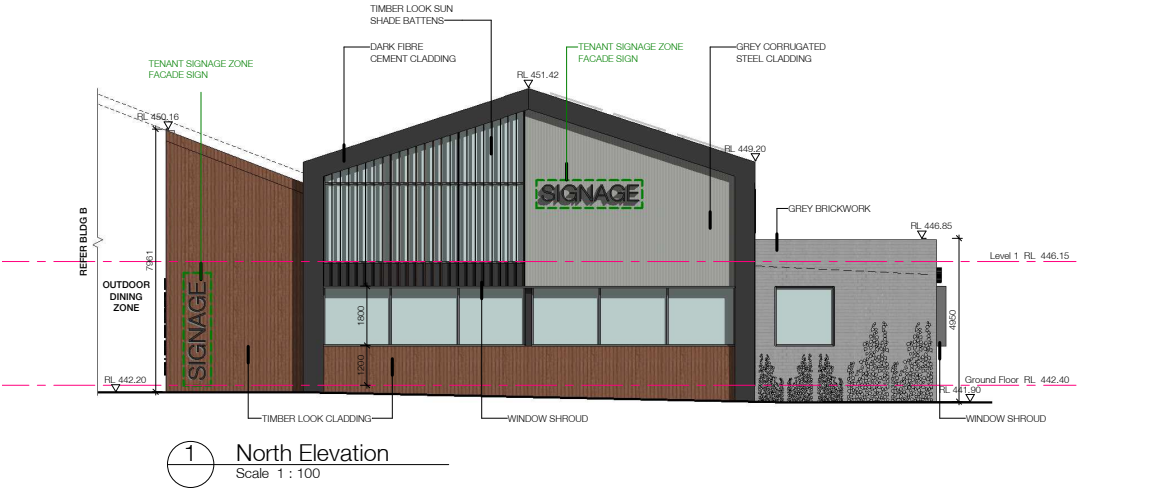
2 East Elevation - Brady Road  
Scale 1 : 200

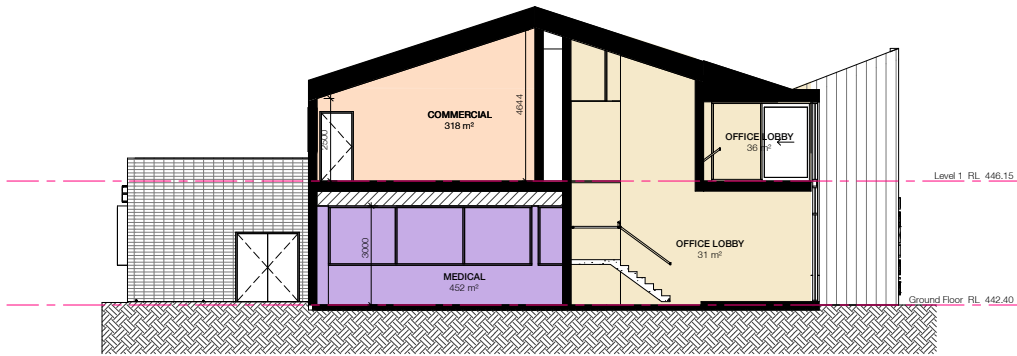


3 South Elevation  
Scale 1 : 200



4 West Elevation  
Scale 1 : 200

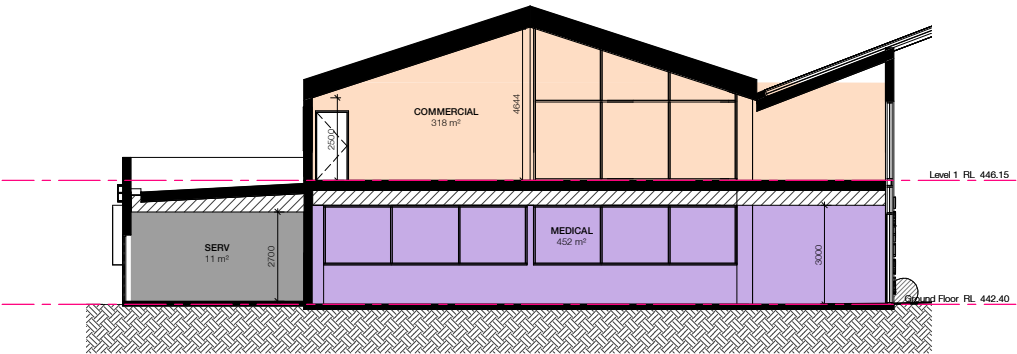




1 Building A - Section A  
Scale 1 : 100



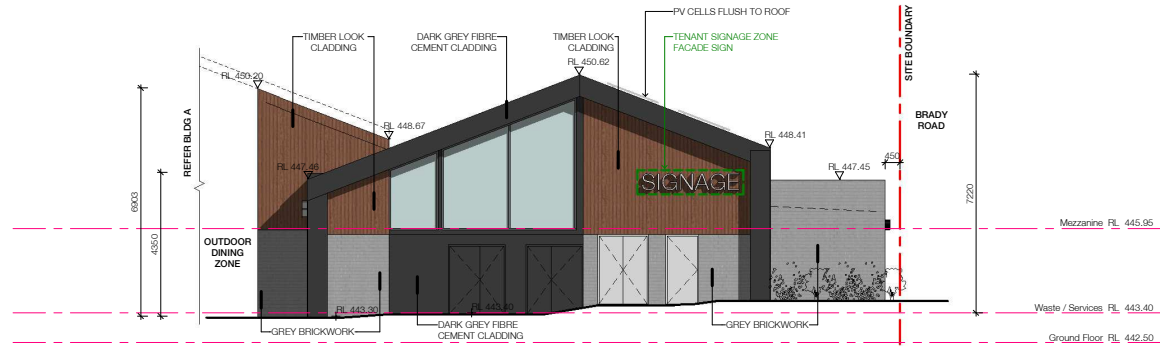
2 Building A - Section B  
Scale 1 : 100



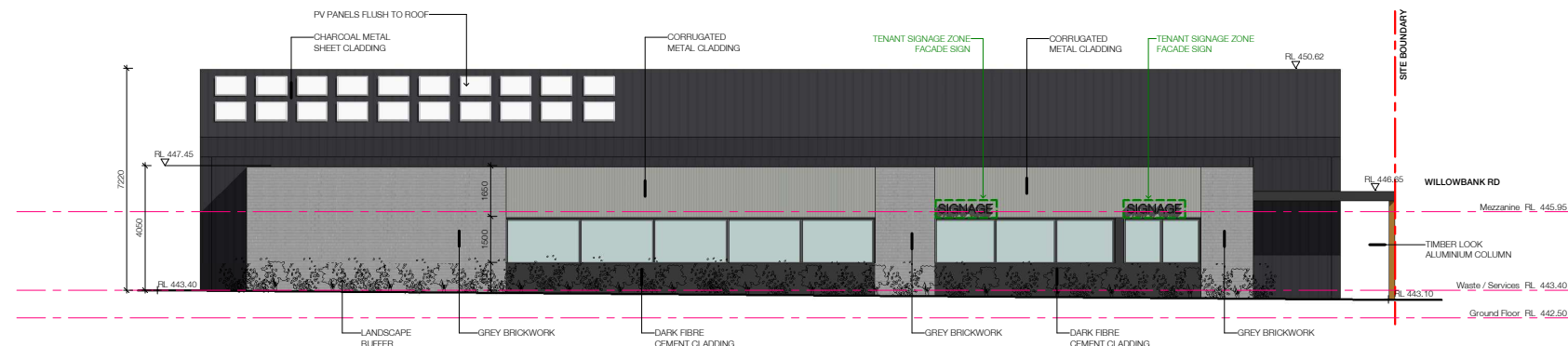
3 Building A - Section C  
Scale 1 : 100



1 North Elevation  
Scale 1 : 100



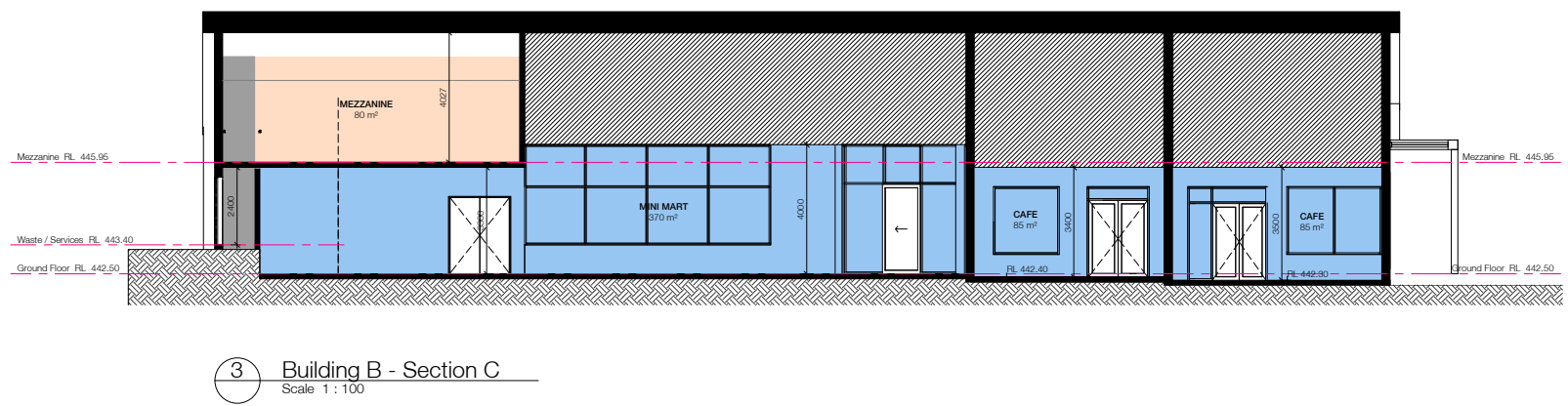
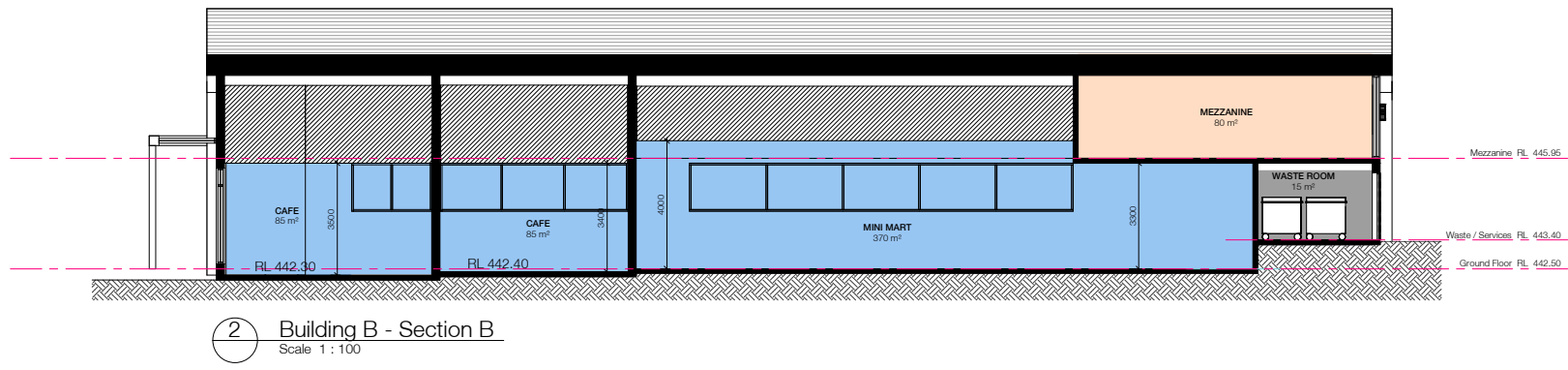
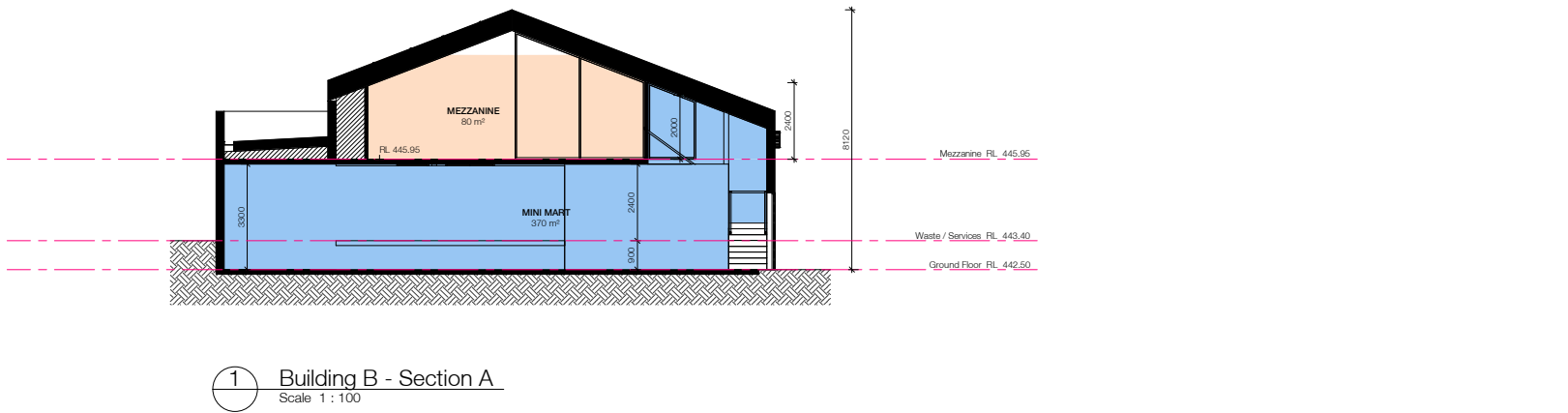
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Scale 1 : 100



3 East Elevation  
Scale 1 : 100



4 West Elevation  
Scale 1 : 100







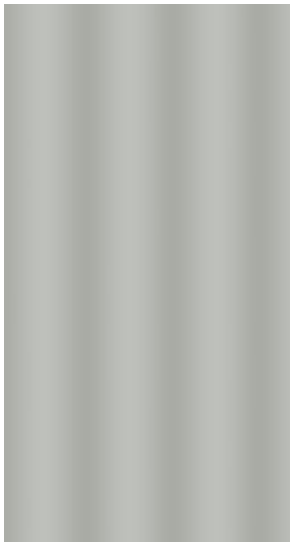
# 04

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## ARTIST IMPRESSIONS & MATERIALS



01



02



03



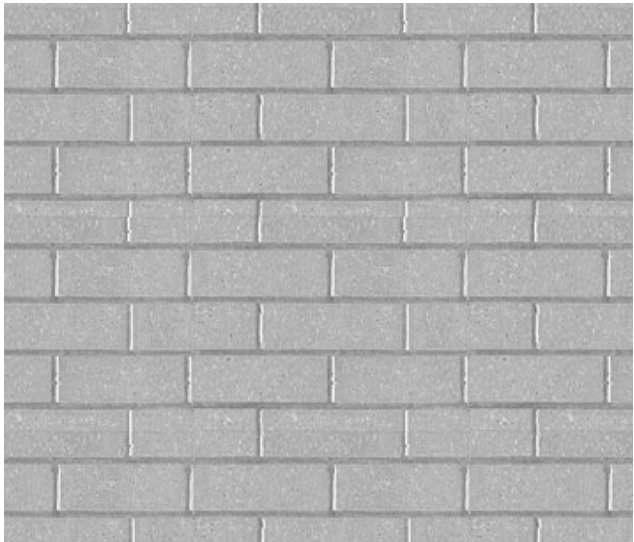
04

MATERIALS

- 01. PROFILED METAL CLADDING - GREEN
- 02. PROFILED METAL CLADDING - LIGHT GREY
- 03. TIMBER LOOK CLADDING
- 04. TIMBER LOOK BATTENS
- 05. PROFILED METAL CLADDING - DARK GREY
- 06. BRICKWORK - LIGHT GREY
- 07. FEATURE TENANCY SIGNAGE
- 08. MODULAR ACOUSTIC PANEL FENCE - LIGHT GREY PAINT FINISH



05



06



08



07





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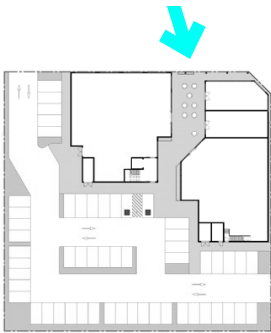
WILLOWBANK ROAD ACTIVITY CENTRE  
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PERSEPCTIVE VIEWS - AERIAL  
10 JUNE 2022

04.02

a





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WILLOWBANK ROAD ACTIVITY CENTRE  
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PERSPECTIVE VIEWS - WILLOWBANK ROAD

10 JUNE 2022

04.03

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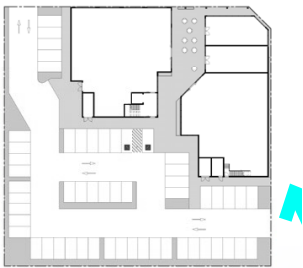
PERSPECTIVE VIEWS - WILLOWBANK ROAD

10 JUNE 2022

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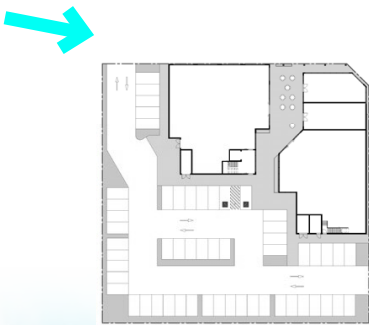




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PERSPECTIVE VIEWS - BRADY ROAD | 10 JUNE 2022 | **04.05** a



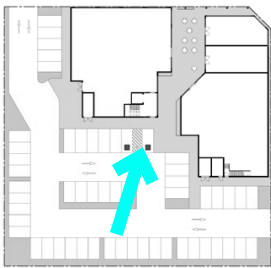


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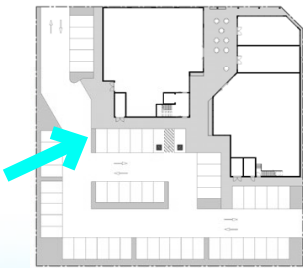
WILLOWBANK ROAD ACTIVITY CENTRE  
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PERSPECTIVE VIEWS - WILLOWBANK ROAD10 JUNE 202204.06a









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PERSPECTIVE VIEWS - CAR PARK

10 JUNE 2022

04.08

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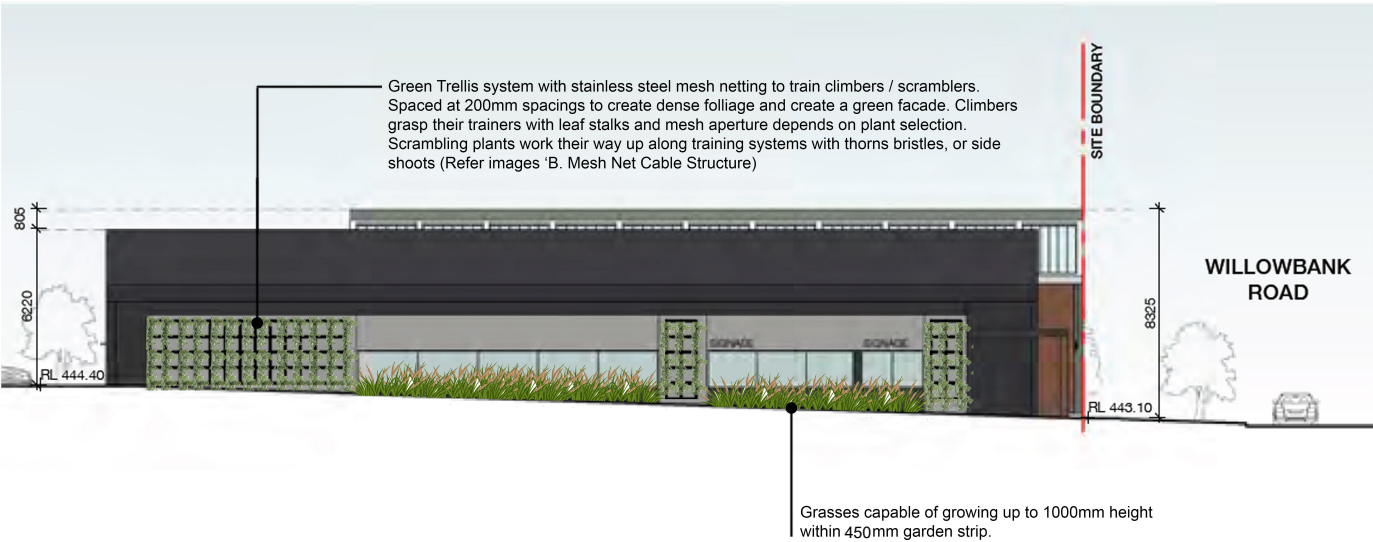


# WILLOWBANK ROAD, GISBORNE

Vertical Landscaping Concepts to Northern + Eastern Facades



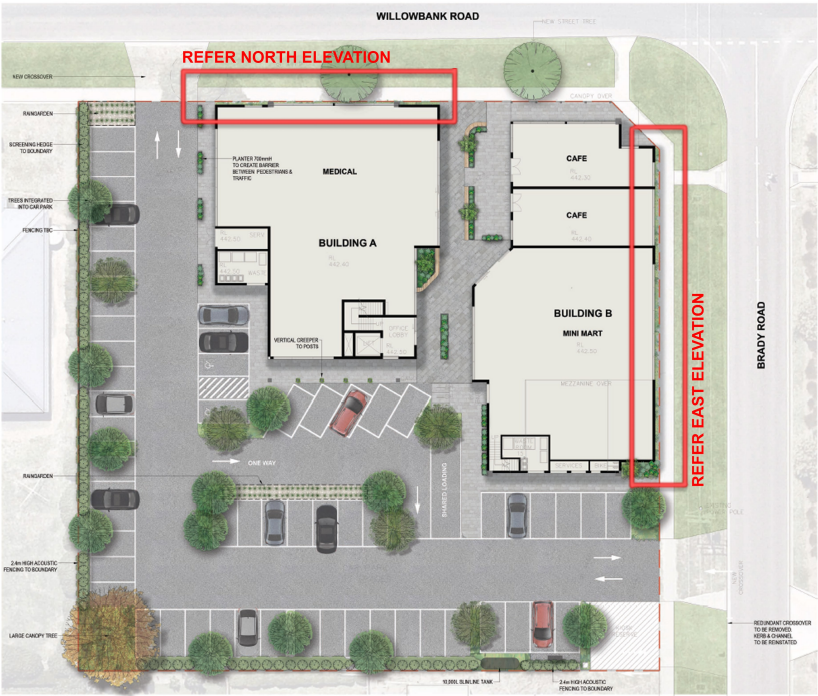
NORTHERN ELEVATION: Willowbank Road



EASTERN ELEVATION: Brady Street

## INDICATIVE PLANT SPECIES

- Wisteria (Water Wisteria)
- Fallopia (Knotweed)
- Celastrus (Staff Vine)
- Ampelopsis (Peppervine)
- Clematis (Travelers' Joy)
- Vitis (Grape Vine)
- Rosa (Shrub Rose)
- Jasminum (Jasmine)
- Kennedia (Coral Pea)

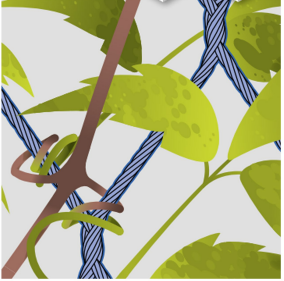


LANDSCAPE PLAN / LOCATOR MAP

## A. Vertical & Mesh Tensile Cable Structure



## B. Mesh Tensile Cable Structure





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Email: [mrsc@mrsc.vic.gov.au](mailto:mrsc@mrsc.vic.gov.au)

# DRAFT PLANNING PERMIT

|                               |  |
|-------------------------------|--|
| <b>PERMIT NUMBER:</b>         | PLN/2022/359   |
| <b>PLANNING SCHEME:</b>       | Macedon Ranges Planning Scheme   |
| <b>RESPONSIBLE AUTHORITY:</b> | Macedon Ranges Shire Council   |
| <b>ADDRESS OF THE LAND:</b>   | LOT 43 PS 549356W P/Gisborne, 101-105 Willowbank Road<br>GISBORNE  |
| <b>THE PERMIT ALLOWS:</b>     | Development of a Commercial Centre including a Supermarket, Medical Centre, Commercial space and Food and Drink Premises (Cafe), Reduction in parking spaces (4 spaces) and Variation of Covenant PS549356W. |

## THE FOLLOWING CONDITIONS APPLY TO THIS PERMIT:

1. Prior to the commencement of works, an electronic copy of amended plans must be submitted to and approved by the Responsible Authority. When approved, the plans will be endorsed and will then form part of this permit. The plans must be generally in accordance with the plans prepared by Clarke Hopkins Clarke Ref No 210037 dated 10.06.2022 but modified to show:
  - a) The changes as required under Engineering condition 13.
  - b) Removal of the canopy at the north-east corner of the building that extends over the pedestrian footpath unless otherwise agreed in writing by the Responsible Authority.
2. The development as shown on the endorsed plans must not be altered unless with the prior written consent of the Responsible Authority.
3. Before the development commences, three copies of a landscape plan to the satisfaction of the Responsible Authority must be submitted to and approved by the Responsible Authority. When approved, the plan will be endorsed and will then form part of this permit. The landscaping plan must be generally in accordance with the development plans submitted and must show:
  - a) A survey of all existing vegetation and natural features;
  - b) The area or areas set aside for landscaping;
  - c) A schedule of all proposed trees, shrubs/small trees and ground cover.
  - d) The location of each species to be planted and the location of all areas to be covered by grass, lawn or other surface material;
  - e) Paving, retaining walls, fence design details and other landscape works including areas of cut and fill;
  - f) Appropriate irrigation systems;
  - g) Landscaping to the eastern façade of the supermarket and northern façade of the medical centre in the form of groundcovers and vertical landscape climbers to create a 'greenwall' along any blank façade.

Page 1 of 6

**Date Issued:** \_\_\_\_\_ **Signature of the Responsible Authority:** \_\_\_\_\_



**DRAFT PLANNING PERMIT****PLN/2022/359 CONDITIONS CONTINUED:**

- h) The removal of the two existing street trees in the Willowbank road nature strip to allow for the construction of a new crossover and to reduce any future building façade/tree conflicts. Removal is to be in accordance with Councils Tree Management Policy 2022, at 8.8 Removal for Infrastructure Development and carried out by Council approved Arborists only. This is to be organised along with the application for an Asset Protection Permit for Entering a Building Site as per condition 16 of the Planning Permit.
- i) New street trees to both nature strips adjacent to the new development.
- j) Street tree species selection is to be of a small to medium size at maturity to ensure no future conflicts with the building and facade, and to the approval of the Responsible Authority
- k) Trees are to be spaced at a minimum of every 10 metres and in locations in accordance with Councils Tree Management Policy, and Plan, 2022.
- l) A Plant Schedule for proposed tree species showing minimum supply size of 45L/1.6mH
- m) The following notations:
- *Tree planting is to occur between April & September to maximise establishment and survival.*
  - *Tree locations shown on this plan are a guide only and may require adjustment to coordinate with final service locations, Powercor requirements, and 'as constructed' infrastructure.*
  - *Street tree locations are to be set-out and approved on site by the Council Landscape Officer prior to installation*
  - *It is the responsibility of the contractor to confirm the location of all underground services prior to commencement of any excavation.*
4. Landscaping shown on the endorsed landscape plans must be completed prior to the occupation of the approved development (unless otherwise approved in writing by the Responsible Authority) and must be maintained to the satisfaction of the Responsible Authority for a period of two (2) years from the practical completion of the landscaping. During this period, any dead, diseased or damaged plants or landscaped areas are to be repaired or replaced during the period of maintenance and must not be deferred until the completion of the maintenance period.
5. A maximum of seven (7) medical practitioners may operate from the site at any given time unless with the further written consent of the Responsible Authority.
6. The development hereby permitted must be managed so that the amenity of the area is not detrimentally affected, through the:
- a) Transport of materials, good or commodities to or from the land;
  - b) Appearance of any building, works or materials;
  - c) Emissions of noise, artificial light, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil;
  - d) Presence of vermin.
7. Noise levels emanating from the premises must not exceed those required to be met under State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1, to the satisfaction of the Responsible Authority.
8. All external lighting must be designed, baffled and located so as to prevent adverse effect on adjoining land, to the satisfaction of the Responsible Authority.

---

Page 2 of 6

Date Issued:

Signature of the Responsible Authority: \_\_\_\_\_

**DRAFT PLANNING PERMIT**

PLN/2022/359 CONDITIONS CONTINUED:

9. All exterior plant equipment located on the roof of the development must be installed in a manner to be visually obscured from nearby roads and surrounding properties, to the satisfaction of the Responsible Authority.
10. The plan of variation of restriction must not be altered or modified (whether or not in order to comply with any Statute, Statutory Rule Local Law or By-Law or for any other reason) without the prior written consent of the Responsible Authority.
11. Restrictive Covenant PS 549356W registered on the Certificate of Title Volume 10978 Folio 113 is to be varied on the Plan of Subdivision PS 549356W for Lot 43 only as follows:
  - a) Vary clause 5 of the covenant to read "Erect any fencing other than post and wire fencing, excluding Lot 43."
  - b) Vary clause 7 of the covenant to read "Construct a building with a building height greater than 9 metres or more than two storeys, excluding Lot 43."
12. Application must be made to the Register of Titles to register the varied restriction on the title, at no cost to Council.

**MRSC Engineering & Projects Conditions**

13. Prior to the commencement of works, an electronic copy of amended plans must be submitted to and approved by the Responsible Authority. When approved, the plans will be endorsed and will then form part of this permit. The plans must be generally in accordance with the plans prepared by Clarke Hopkins Clarke Ref No 210037 dated 10.06.2022 but modified to show:
  - a) Driveway separation island with maximum 70-degree angle to Brady Road with Splay outside.
  - b) "No right turn sign" is required to be installed along Brady Street.
  - c) Rainwater tank with a minimum capacity of 10 000 litres to capture stormwater from the rooftop of the building for harvesting and re-use unless agreed otherwise by the responsible authority.
  - d) Pedestrian crossing line marking on Brady Road and mandatory approval from DOT for the line marking.
  - e) A stormwater detention system demonstrating 10-year ARI post-development flow restricted to the predevelopment stage.
  - f) Agreements from Council Governance Team for approval of encroachment of building to the council land.
14. Prior to the occupation of the development, a potable water supply (rainwater tank) with a storage capacity of at least 10,000 litres must be provided to the development for use to the satisfaction of the Responsible Authority or unless agreed otherwise by the responsible authority.
15. Prior to the commencement of works, an "Asset Protection Permit" must be obtained from Council for any of the following circumstances:
  - a) Entering a building site by means of a motor vehicle having a gross weight exceeding two tonnes.
  - b) Occupying a road for works.
  - c) Connecting any Council land to a stormwater drain.
  - d) Opening, altering or repairing a Council road.

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Date Issued:

Signature of the Responsible Authority: \_\_\_\_\_

**DRAFT PLANNING PERMIT**

PLN/2022/359 CONDITIONS CONTINUED:

- e) Opening, altering or repairing a Council drain.
  - f) Accessing a building site from a point other than a crossover.
  - g) Construct/repair/widen/remove any crossover
16. No polluted and/or sediment-laden run-off is to be discharged directly or indirectly into drains or watercourses. Soil erosion control measures must be employed throughout the works to the satisfaction of the Responsible Authority.
17. Prior to works commencing, engineering plans detailing the stormwater drainage are to be submitted for Macedon Ranges Shire Council approval and plan and supervision fees paid. The development is to be provided with a drainage system to a design approved by the Responsible Authority and such that
- a) The development as a whole is provided with a legal point of discharge approved by the Responsible Authority and any other statutory authority from which approval must be received for the discharge of drainage.
  - b) Stormwater runoff from all buildings, tanks and paved areas must be drained to a legal point of discharge.
  - c) All drainage courses or outfall drainage lines required to the legal point of discharge and which pass through lands other than those within the boundaries must be constructed at no cost to the Responsible Authority.
  - d) All drainage courses located within must be contained within expressed drainage easements.
  - e) The flow paths of a 1 in 10 year ARI storm need to be determined such that no private property is inundated.
  - f) The drainage system must have provision for runoff from the upstream catchments and include any downstream works necessary to manage flows from the development.
  - g) Objectives of the Urban Stormwater – Best Practice Environmental Management Guidelines (Victorian Stormwater Committee, 1999) are satisfied.
  - h) A gross pollutant trap to be incorporated into the drainage system.
18. The development is to be constructed in accordance with Macedon Ranges Shire Council's Policy Engineering Requirements for Infrastructure Construction (June 2010).
19. Before the development commences, a Construction Management Plan must be submitted to and approved by the Responsible Authority. The management plan must show:
- a) Measures to control erosion and sediment and sediment-laden water runoff including the design details of structures;
  - b) Dust control;
  - c) Where any construction wastes, equipment, machinery, and/or earth is to be stored/stockpiled during construction;
  - d) Where access to the site for construction vehicle traffic will occur;
  - e) The location of any temporary buildings or yards.
- Development works on the land must be undertaken in accordance with the endorsed Construction Management Plan to the satisfaction of the Responsible Authority.

Date Issued:

Signature of the Responsible Authority: \_\_\_\_\_



**DRAFT PLANNING PERMIT**

PLN/2022/359 CONDITIONS CONTINUED:

20. Before the occupation of the development, the area(s) set aside for the parking of vehicles and access lanes as shown on the endorsed plans must be to the satisfaction of the Responsible Authority as follows:
- a) Constructed;
  - b) Properly formed to such levels that they can be used in accordance with the plans;
  - c) Surfaced with an all-weather sealcoat or treated to the satisfaction of the Responsible Authority to prevent dust and gravel from being emitted from the site;
  - d) Drained and maintained;
  - e) Line marked to indicate each car space and all access lanes;
  - f) Clearly marked to show the direction of traffic along access lanes and driveways;
  - g) Car spaces, access lanes and driveways must be kept available for these purposes at all times, to the satisfaction of the Responsible Authority.
21. Prior to the occupation of the development, two new crossovers within Willowbank Road and Brady road must be constructed to a sealed surface and the driveway separation island is required to be built to the satisfaction of the Responsible Authority.
22. Prior to the occupation of the development, the driveway to the development must be constructed to meet the following requirements to the satisfaction of the Responsible Authority:
- a) The driveway, including any waterway crossing, must be constructed to a standard so that it is accessible in all weather conditions and capable of accommodating a vehicle of 15 tonnes for the trafficable road width.
  - b) The driveway must have a minimum trafficable width of 3.5m, be clear of encroachments 4 metres vertically and have no obstructions within 0.5m on either side of the formed width of the driveway.
  - c) The average grade must be no more than 1 in 7 with a maximum of no more than 1 in 5 for no more than 50 metres.
  - d) Dips must have no more than a 1 in 8 entry and exit angle.
23. Before the occupation of the development hereby permitted, an environmental management plan shall be submitted to and approved by the Responsible Authority. The plan must detail how issues such as erosion prevention, temporary drainage, dust generation, and sediment control will be managed, on-site, during the operation of the use permitted. Details of a contact person/site manager must also be provided so that this person can be easily contacted should any issues arise.

**Expiry of Permit – Development of Land**

24. This permit will expire if one of the following circumstances applies:
- a) The development is not commenced within two years of the date of this permit.
  - b) The development is not completed within four years of the date of this permit.
  - c) The permit will expire if the restriction is not varied and registered with the Land Title Office within two (2) years of the date of this permit.

The Responsible Authority may extend the periods referred to if a request is made in writing before the permit expires, or within six months afterwards.

Date Issued:

Signature of the Responsible Authority: \_\_\_\_\_



## DRAFT PLANNING PERMIT

PLN/2022/359 CONDITIONS CONTINUED:

### Permit Notes:

- Future owners of the land must be made aware of the existence of this permit.
- Siting will need to be assessed in relation to any Building Permit application, which may require alterations to the building design and/or an application for report and consent for dispensations in siting provisions under the Building Regulations. Any changes to the building design form approved on the planning Permit will require an amendment to the Planning Permit.
- The buildings and works hereby permitted shall accord with the requirements of any relevant Building Act, Building Regulations, Building Code of Australia and any other relevant Acts, Regulations & Codes.

DRAFT

Page 6 of 6

Date Issued:

Signature of the Responsible Authority: \_\_\_\_\_





# LAND MANAGEMENT PLAN

**Lot and Plan Number:** Lot 1 TP 334568R

**Address:** 641 Burke and Wills Track, Benloch

**Local Government (Council):** Macedon Ranges

**Vic Roads:** 60 D5



LOT 1 TP 334568R

**15<sup>th</sup> of August 2022**

Gavin Beever,  
Director  
Cumbre Consultants P/L  
[cumbre.com.au](http://cumbre.com.au)

*Lot 1 TP 334568R Burke and Wills Track Land Management Plan*

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## INTRODUCTION

This Land Management Plan has been requested to address the requirements of the Macedon Ranges Shire Council in respect to a Planning Permit application to develop a dwelling at Lot 1 TP 334568R Burke and Wills Track.

The property is approximately ~6.6ha. It is vegetated with mainly introduced species, see Figure 1. It has some overstory species present and only a small number of native grasses and is ~95% cleared. Historically it has been used for grazing. It currently has low strategic biodiversity in relation to native vegetation.

The aim of the property owners is to avoid the need for native vegetation removal, improve the biodiversity of the property and address weed and pest problems as part of this proposed development.

There is some overstory native vegetation along the Westcott Lane and Burke and Wills Track Road reserves that will benefit due to this proposal as the planned weed control and planting with indigenous species will improve biodiversity and provide a wildlife corridor adjacent to reach road reserve.

The environmental management practices and actions outlined in this plan will demonstrate how a gain in native vegetation, strategic biodiversity value and a contribution to objectives of the Resource Conservation Zone will occur.

This Land Management Plan includes:

A site plan showing:

- a) Satellite image map
- b) Proposed buildings and outbuildings
- c) Effluent field location
- d) Driveway location
- e) Crossover location
- f) Defendable space
- g) All proposed outbuildings
- h) All paddocks with all internal fencing
- i) Dam storage or capacity
- j) Areas set aside for regeneration/revegetation
- k) Water supply for domestic purposes and firefighting.
- l) Clearly zoned areas - domestic, conservation and agriculture zones.

Weed Management strategies that include the following:

- a) A site plan that shows weeds that are present on site
- b) A weed list including species listed by common names and scientific names
- c) Method/s of control for each species
- d) Timing of control
- e) Frequency of control
- f) Monitoring
- g) Any current weed control



*Lot 1 TP 334568R Burke and Wills Track Land Management Plan*

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Pest animal control and treatment measures particularly for foxes and rabbits which include:

- a) Evidence found on site of pest animals such as burrow/dens, scats, diggings, etc.
- b) Approaches to integrated pest animal management,
- c) Monitoring techniques
- d) Timing of treatment/control
- e) Treatment options

A revegetation plan including:

- a) Inclusion of planting indigenous trees within grazing areas to increase canopy cover, habitat and shade for grazing animals.
- b) Inclusion of planting indigenous plants to expand and enhance remnant conservation areas
- c) A site plan showing where all revegetation will be located.
- d) Local indigenous plants with a selection of trees, shrubs and understory as per the EVC of the property
- e) A species list including scientific and common names, including total number of plants
- f) Ongoing weed management and replacement of dead/dying plants, including plant guards'
- g) replacement.

A "Table of Actions" for a 10-year period and a perpetual table of actions relating to land management activities.

#### **Retention of Logs & Woody Debris**

Logs and woody debris will be retained, and left in conservation areas, as much as feasible. This will provide valuable habitat for native fauna species. Decomposing logs, woody debris and organic litter will also provide nutrients back into the soil and help stabilise soils.

#### **Animal Friendly Fencing**

If grazing animals are introduced on the property, Wildlife Friendly Fencing is to be erected around remnant vegetation so grazing animals do not enter and graze in the remnant vegetation. Wildlife Friendly Fencing is recommended for fencing around remnant vegetation, with the following requirements:

- a) A fence that allows animals to pass underneath, leave a minimum of 40cm between the ground and the bottom wire
- b) Choose a plain high-tensile fencing wire. If this is tensioned correctly, this fencing material can contain most stock.
- c) If barbed wire has to be used, avoid placing the wire on the top two or three strands of the fence or on the bottom wire. This will reduce the risks but not eliminate them.
- d) Keep the fence low with a maximum height of 1.2m. This will allow larger animals such as Kangaroos to easily pass over the top.
- e) Consider retrofitting your existing fence with reflective materials such as CDS and aluminium plant tags. Alternatively add a white wire to the top. Place these items on the top wire to make it easier for wildlife to see.
- f) Retrofitting existing fencing with wildlife gates. Locate gates and openings where wildlife regularly pass through.





Lot 1 TP 334568R Burke and Wills Track Land Management Plan

### Land Management Plan Reporting Template

This Land Management Plan includes a reporting template (see Appendix 3) for the landowners to complete and submit to Council on an annual basis for approximately a five-year period. This includes the following information:

- Management action/s
- Timing of action
- Who has undertaken the action
- Progress at end of financial year
- Council authorisation
- Compliance checklist
- Comments / notes

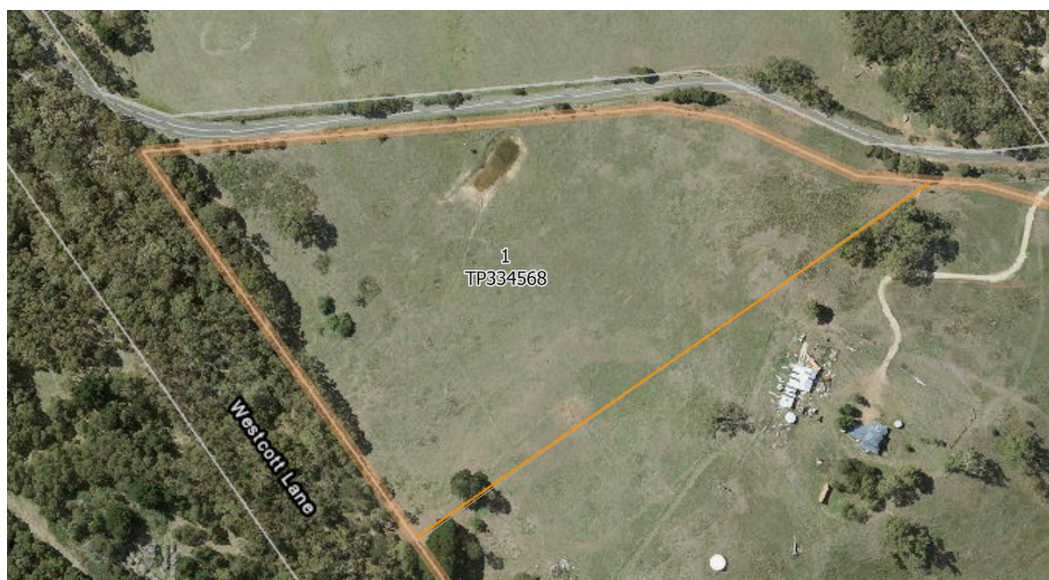


Figure 1 – Aerial view of the property

### SITE HISTORY

Pastoral development of the Lancefield and Benloch district started in 1837 with the arrival of squatters and the development of pastoral runs.

The Burke and Wills expedition passed through the area in August 1860.

The area became a key region for producing produce (meat, vegetables and wool), that was used to provision the mining districts.

The area has a strong indigenous association, with evidence to suggest that Aboriginal people have lived in the area for at least 26,000 years. The region is home to sites of national significance and local indigenous communities that are still active today.

One of those being the Mount William axe quarry, which is ~9km east southeast of the property. Known as Wil-im-ee Moor-ring, meaning "axe place" in the Woiwurrung language, the greenstone quarry was an important source of raw material for the manufacture of greenstone ground-edge axes, which were traded over a wide area of south-east Australia.



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It is documented that around 1500 years ago the traditional owners of Mt William, the Wurundjeri, actively quarried greenstone to make the hatchet heads for their own use and to trade. This continued up until the 1800s when it ceased due to European settlement.

The district is now known for a range of agricultural enterprises and since the 1970s development of the Tullamarine freeway, it has been part of the commuter belt for Melbourne.

The district is now known for a range of agricultural enterprises and since the 1970s development of the Tullamarine freeway, it has been part of the commuter belt for Melbourne.

The land to the west is native vegetation that is contiguous with the Cobaw State Forest.

It was originally a pastoral and timber harvesting district and now there are a range of agricultural enterprises and rural living properties as well as the State Forest and Reserves.

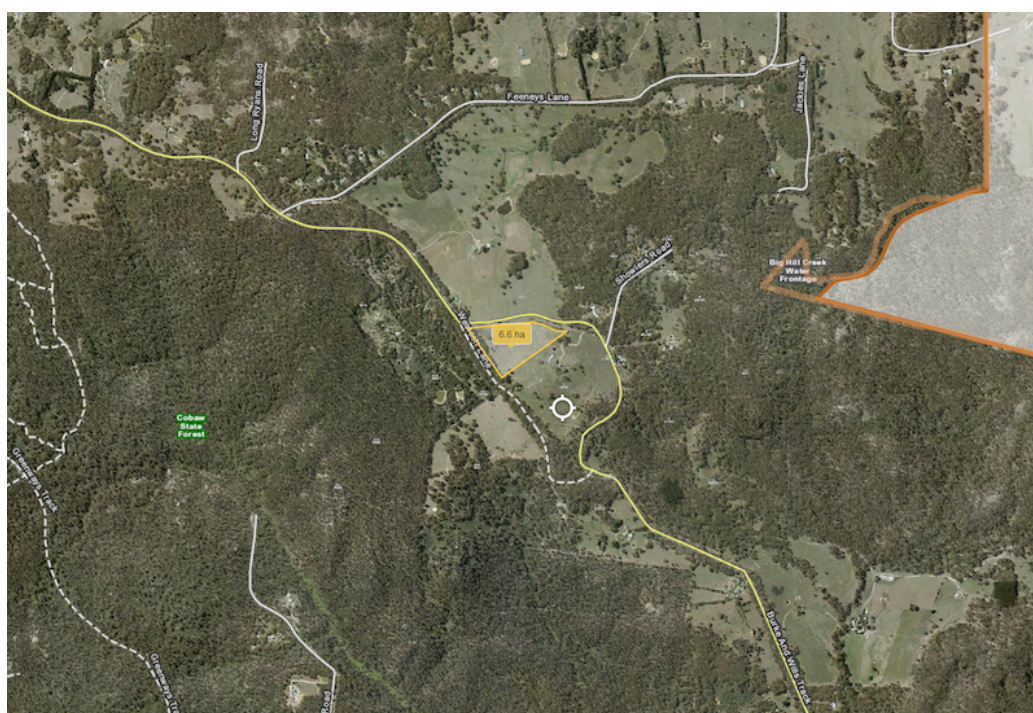


Figure 2 – Neighbourhood character

## PROPERTY ZONING AND OVERLAYS

The property has the following Zoning and Overlays, see Figures 3 to 6.

The property is in the Rural Conservation Zone (RCZ1) whose Conservation Values are:

- To ensure that the existing forest mosaic is protected and that any development does not compromise native vegetation, but provides for its enhancement.
- To ensure that land use within water supply catchments, most particularly proclaimed catchments, will not compromise water quality.
- To protect the unique flora, fauna and landscapes that are fundamental to the character and biodiversity of the area from inappropriate land use and development.
- To protect the conservation and landscape values of adjoining public land.



Lot 1 TP 334568R Burke and Wills Track Land Management Plan

- To ensure that the character and landscape values of the area are protected.
- To achieve sustainable agricultural practice.

There is an Environmental Significance Overlay (ESO5) whose state of Environmental Significance is: "Regional water catchments are located throughout the Shire. The protection of catchments from inappropriate development and the protection of water quality is paramount to the health of the surrounding environment, habitat, vegetation and all urban and rural communities."

There is an Significant Landscape Overlay (SLO1), whose statement of nature and key elements of landscape is: "The Macedon Ranges form a significant natural landmark feature of Victoria. They provide for recreation, tourism, forestry, and water catchments. They also contain a large collection of gardens which represents an important cultural asset at a national level and must be protected. The ranges also represent a prime conservation and recreational tourism resource for the Melbourne region. The key elements of these landscape features are Mount Macedon, the Cobaw Range, Mount Bullengarook and Hanging Rock. The Cobaw Range is a low mountain range with exposed granite boulder outcrops and some steep slopes covered by forest, some of which has been harvested. The forest character is of trunk forms and high enclosing canopies. The outcrop is an important forested backdrop to local rural areas."

There is an Vegetation Protection Overlay (VPO9) whose statement of nature and significance of vegetation to be protected is: "Council's vision for the areas around Woodend, Macedon and the Cobaw Ranges is protecting and enhancing the existing forest mosaic. This native vegetation is considered valuable for its environmental role, including its contribution to biodiversity, and for the part it plays in the character and amenity of the Shire."

[RURAL CONSERVATION ZONE \(RCZ\)](#)

[RURAL CONSERVATION ZONE - SCHEDULE 1 \(RCZ1\)](#)

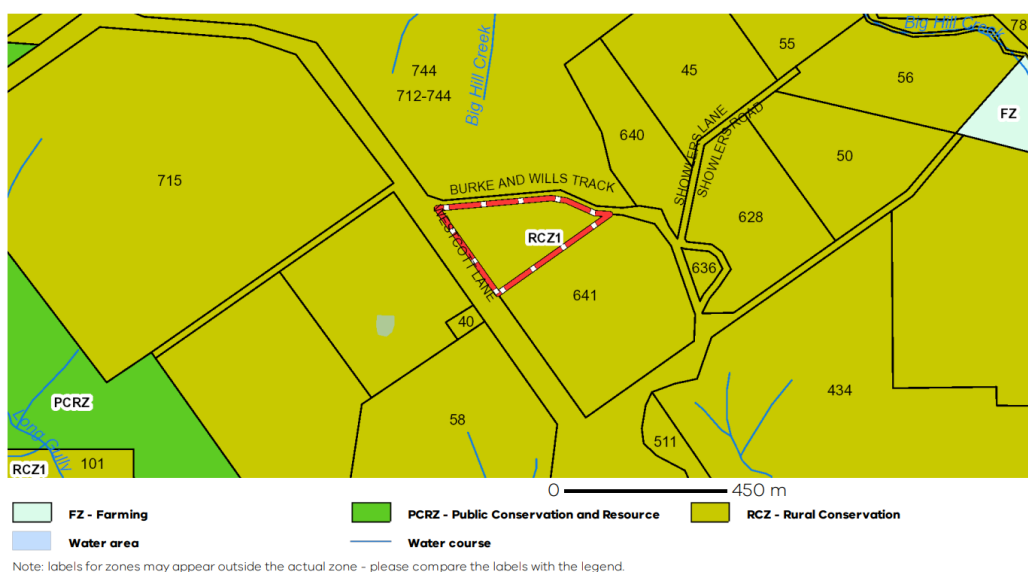


Figure 3 - Zoning

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ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO)

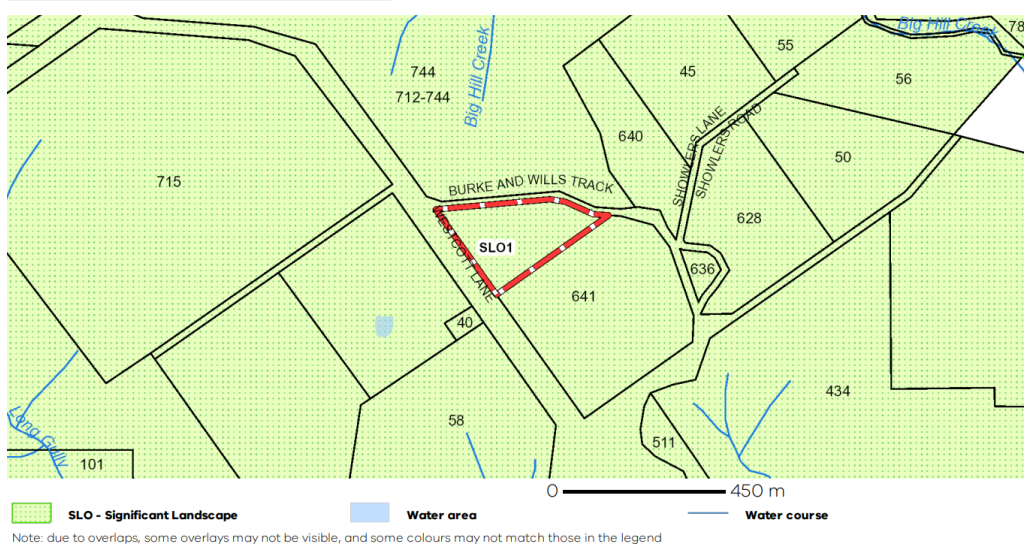
ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 5 (ES05)



**Figure 4 – Environmental Significance Overlay**

SIGNIFICANT LANDSCAPE OVERLAY (SLO)

SIGNIFICANT LANDSCAPE OVERLAY - SCHEDULE 1 (SLO1)



**Figure 5 – Significant Landscape Overlay**



Lot 1 TP 334568R Burke and Wills Track Land Management Plan

VEGETATION PROTECTION OVERLAY (VPO)

VEGETATION PROTECTION OVERLAY - SCHEDULE 9 (VPO9)

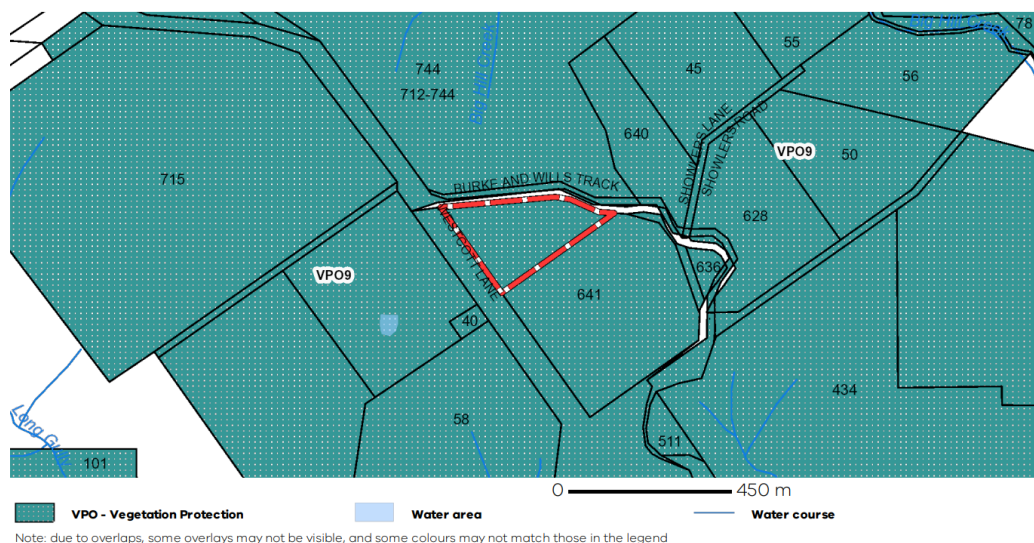


Figure 6 – Vegetation Protection Overlay

## PROPERTY CHARACTERISTICS

### PRE-EUROPEAN VEGETATION

The site is within the Central Victorian Uplands Bioregion and is mapped as ecological vegetation class (EVC) of 23 Herb-rich Foothill Forest. See Figure 3 and Appendix 1. Bioregions are a landscape-scale approach to classifying the environment using a range of attributes such as climate, geomorphology, geology, soils and vegetation. There are 28 bioregions identified within Victoria.

Ecological Vegetation Classes (EVC) are the standard unit for classifying vegetation types in Victoria. EVCs are described through a combination of floristics, lifeforms and ecological characteristics, and through an inferred fidelity to particular environmental attributes. Each EVC includes a collection of floristic communities (i.e. lower level in the classification) that occur across a biogeographic range, and although differing in species, have similar habitat and ecological processes operating.

The Ecological Vegetation Class benchmarks give an appreciation of what the vegetation was like pre-European settlement.

For this site mapped as EVC 23 the vegetation is likely to have been: *“Occurs on relatively fertile, moderately well-drained soils on an extremely wide range of geological types and in areas of moderate to high rainfall. Occupies easterly and southerly aspects mainly on lower slopes and in gullies. A medium to tall open forest or woodland to 25m tall with a small tree layer over a sparse to dense shrub layer. A high cover and diversity of herbs and grasses in the ground layer characterise this EVC.”*



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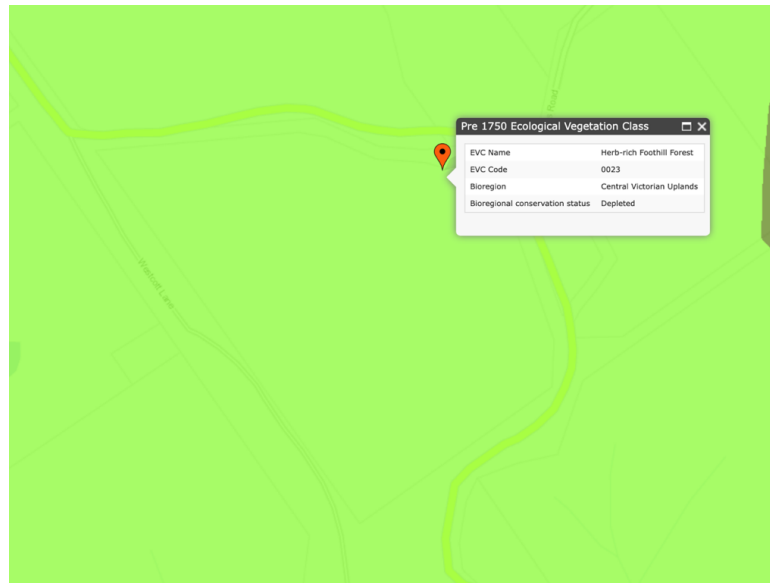


Figure 7 – Ecological vegetation class

#### TOPOGRAPHY

The property is the northwest slope of a hill at 650m sloping to 630m, see Figure 4.

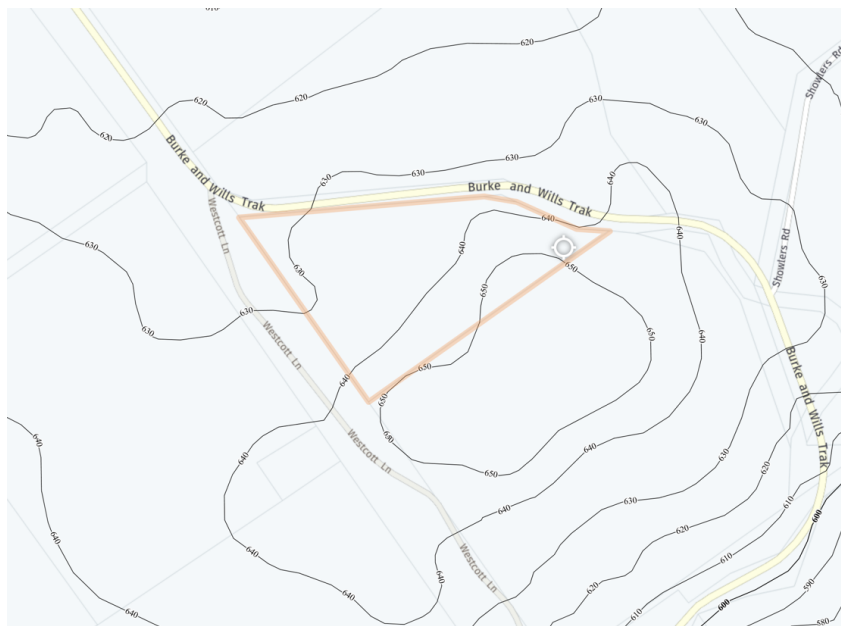


Figure 8 – Contour map





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*Figure 9 – Property overview, the property is 95% cleared of native vegetation*

#### GEOLOGY AND SOILS

The geology and soils also confirm the likely native species that occur on a site. The geology is mapped as Palaeozoic, Devonian, Pyalong Granite, see Figure 6.



*Figure 10 – Geology Map (Location is shown with the white “X”), Source Victorian Government Geology Maps*

In the Study of Land in the Catchments to the North of Melbourne completed in 1981 by the former Soil Conservation Authority. It falls into the Cobaw Land System.

The soils developed are mainly gravelly gradational soils, varying in colour from brownish-yellow to red.

It has rolling hills on the Devonian granodiorite trending north-south and leading down from the Cobaw land system they are characterised by the exposure of large boulders on the upper slopes and crests. The course sandy topsoils are prone to sheet, rill and gully erosion when exposed and low-lying areas are prone to periodic waterlogging, see Figure 12.





Lot 1 TP 334568R Burke and Wills Track Land Management Plan

| COMPONENT                           | 1   | 2  | 3  |
|-------------------------------------|---|--|--|
| Proportion %                        | 15  | 80   | 5  |
| <b>CLIMATE</b>                      |   |  |  |
| Rainfall (ay.)                      | Annual: 750-1000 mm (monthly range: June 85 mm - January 40 mm)   |  |  |
| Temperature (ay.)                   | Annual: 10°C (monthly range: January 17°C - July 6°C)   |  |  |
| Seasonal growth limitations         | Temperature: less than 10°C May - September<br>Precipitation: less than potential evapotranspiration November - March |  |  |
| <b>GEOLOGY</b>                      |   |  |  |
| Age, rock                           | Devonian granite, granodiorite  |  |  |
| <b>TOPOGRAPHY</b>                   |   |  |  |
| Landscape                           | High Hills  |  |  |
| Elevation (range) m                 | 460 - 760   |  |  |
| Local relief (ay.) m                | 40  |  |  |
| Drainage pattern                    | Dendritic   |  |  |
| Drainage density km/km <sup>2</sup> | 3.2   |  |  |
| Land form                           | Crest   | Slope  | Drainage line  |
| Slope (ay.) %, elope shape          | 5; convex   | 18; straight   | 3; concave   |
| <b>NATIVE VEGETATION</b>            |   |  |  |
| Structure                           | Open forest   |  |  |
| Dominant species                    | <i>E. obliqua</i> , <i>R. radiata</i> <i>E. ovata</i> , <i>E. viminalis</i> , <i>E. leucoxylo</i> <i>E. viminalis</i> |  |  |
| <b>SOIL</b>                         |   |  |  |
| Parent material                     | In situ weathered rock  |  |  |
| Description                         | Shallow stony brown gradational soils   | Red gradational soils, fine structure                    | Alluvium   |
| Factual key                         | Gn 2.51   | Gn 1.24  | Gn 1   |
| Surface texture                     | Loamy sands   |  |  |
| Permeability                        | High  | High   | Moderate   |
| Depth (av.) m                       | 0.4   | 1.0  | 1.5  |
| <b>LAND USE</b>                     | Forestry, recreation, nature conservation   |  |  |
| <b>SOIL DETERIORATION HAZARD</b>    |   |  |  |
| Processes                           | Slope gradient  | Slope gradient   | Moderate permeability, seasonal high water-table, dispersibility |
| Forms                               | Overland flow, leaching   | Overland flow, leaching                                  | Periodic waterlogging, overland flow                             |
|                                     | Sheet and rill erosion (where cleared), nutrient decline  | Sheet and rill erosion (where cleared), nutrient decline | Surface compaction, gully erosion                                |

Figure 11 – Cobaw Land System Described



Figure 12 – Soil on the property



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## WEEDS

There were a number of weeds observed on the property, see Table 1. Blackberry is at <1% of the property and there are sporadic, scattered Scotch Thistle, also at less than 1%, see Figure 19.

**Table 1 – Weeds Observed**

| Common Name         | Scientific Name            |
|---------------------|----------------------------|
| Couch grass         | <i>Cynodon spp</i>         |
| Scotch thistle      | <i>Onopordum acanthium</i> |
| Barley grass        | <i>Hordeum spp</i>         |
| Rye grass           | <i>Lolium spp</i>          |
| Onion grass         | <i>Romulea rosea</i>       |
| Blackberry          | <i>Rubus fruticosus</i>    |
| Gorse               | <i>Ulex europaeus</i>      |
| Clover              | <i>Trifolium spp</i>       |
| Yorkshire fog grass | <i>Holcus annuus</i>       |

## WEED MANAGEMENT PLAN

- 1 Remove any isolated noxious weeds that may appear on the property.
- 2 Maintain a 25m weed free buffer zone around the property boundary to prevent any weed incursions.
- 3 Monitor and remove seedlings from any controlled areas.
- 4 Weeds to be monitored and controlled on an ongoing basis with spot spraying, mechanical removal and slashing occurring, if new weeds are detected.

**Table 2. Pasture/Weed Species Observed on the Property**

| Species                     | Common Name          |
|-----------------------------|----------------------|
| <i>Rubus fruticosus</i>     | Blackberry           |
| <i>Onopordum acanthium</i>  | Scotch Thistle       |
| <i>Hypochoeris radicata</i> | Cat's Ear            |
| <i>Oxalis pes-caprae</i>    | Sour Sob             |
| <i>Trifolium spp.</i>       | Clover               |
| <i>Lolium spp.</i>          | Ryegrass             |
| <i>Sonchus oleraceus</i>    | Common sow thistle   |
| <i>Bromus spp</i>           | Brome grass          |
| <i>Cynodon dactylon</i>     | Couch grass          |
| <i>Holcus lanatus</i>       | Yorkshire fog grass  |
| <i>Plantago coronopus</i>   | Buck's-horn plantain |
| <i>Hypericum perforatum</i> | St Johns Wort        |



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|                              |              |
|------------------------------|--------------|
| <i>Rumex spp</i>             | Dock         |
| <i>Anthoxanthum odoratum</i> | Sweet vernal |
| <i>Rumex acetosella</i>      | Sheep sorrel |
| <i>Cyperus rotundus</i>      | Nut grass    |

### PROBLEM WEEDS

Table 4 shows the problem weeds on the property and their Category. Their proposed timing of control is described in the action plan. Thistles will also be monitored for and controlled if they appear.

**Table 3. Problem Weeds**

| Common Name    | Scientific Name            | Category                  | Infestation level        |
|----------------|----------------------------|---------------------------|--------------------------|
| Blackberry     | <i>Rubus fruticosus</i>    | C. Regionally Controlled* | One small clump          |
| Scotch Thistle | <i>Onopordum acanthium</i> | P. Regionally Prohibited* | Scattered, single plants |

*\*Regionally Controlled: These invasive plants are usually widespread in a region. To prevent their spread, ongoing control measures are required. Landowners have the responsibility to take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land.*

*\*Regionally Prohibited: Regionally prohibited weeds are not widely distributed in a region but are capable of spreading further. It is reasonable to expect that they can be eradicated from a region and they must be managed with that goal. Landowners, including public authorities responsible for crown land management, must take all reasonable steps to eradicate regionally prohibited weeds on their land.*

### BLACKBERRY

Blackberry is present as a small clump, see Figure 19. Table 4 gives the control options. Blackberry can also be controlled by mulching and when they are small plants, by chipping and pulling.

Blackberry control is best while the plants are actively growing, spring to autumn. If using chemical control, always follow the instructions on the label, see Table 5 for example herbicide options.

**Table 4. Herbicides for Blackberry Control**

| Permitted Herbicide (active ingredient) | Example of commercial product | Recommended Herbicide Control Technique  |
|---|-------------------------------|--|
| Metsulfuronmethyl                       | eg Associate or Brush-Off®    | Spot spray, 10g/100L. Apply when bushes are actively growing. Avoid spraying when bushes are stressed. Spray to thoroughly wet all foliage and canes, but not to cause run-off. Ensure peripheral runners are sprayed. |
| Triclopyr herbicide.                    | eg Garlon 600®                | Foliar spray, 170mL/100L, spray to thoroughly wet the foliage.   |

**Table 5. Blackberry control options**

| Control Method   | Density |          |
|------------------|---------|----------|
| Density          | Low     | Med-High |
| Physical Removal |         |          |





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|                             |                |   |
|-----------------------------|----------------|---|
| Chipping/pulling            | X <sup>1</sup> |   |
| Cultivation                 |                |   |
| Mulching                    | X              | X |
| Fire                        | X              | X |
| <b>Chemical Control</b>     |                |   |
| Spot spray                  | X <sup>2</sup> | X |
| Boom spray                  |                |   |
| Spray top                   |                |   |
| Wick wipe                   |                |   |
| <b>Competition</b>          |                |   |
| Cropping (Crop rotation)    |                |   |
| Green manure phase          |                |   |
| <b>Incursion prevention</b> |                |   |
| Boundary zone control       | X              |   |
| Slashing                    | X <sup>3</sup> |   |
| Vehicle/machinery hygiene   |                |   |

**SCOTCH THISTLE**

There are scattered plants on the property, <1% of the property. They are at low numbers and are best controlled by hand chipping them out.

**NATIVE VEGETATION**

The following species of native vegetation were observed on the property. There is one large old tree (see Figure 9), one immature eucalypt (see Figure 10) and one small clump of Blackwood (see Figure 11).

**Table 6 – Native Vegetation Observed**

<sup>1</sup> When emerging in crops or pastures.

<sup>2</sup> 600g/l triclopyr such as Garlon 600 is used, following the label directions. It is a foliar spray that is an option for hard to kill woody weeds and noxious herbaceous plants. It is used when the plants are actively growing (not stressed) and not when there is a risk of rain, in the late spring and summer months is optimal. The rate used depends upon the age of the cane, the density of the patch and the absorption area available. The plant is then left for 6 months to ensure a complete kill down to the roots. Dead canes are then removed by burning or slashing. Follow up control of any seedlings is carried out in the following summer.

<sup>3</sup> Slashing, mulching and fire is used with dead canes.



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| Common Name             | Scientific Name            |
|-------------------------|----------------------------|
| Broad-leafed Peppermint | <i>Eucalyptus Dives</i>    |
| Blackwood               | <i>Acacia melanoxylong</i> |
| Barley grass            | <i>Hordeum spp</i>         |

## PEST ANIMALS

Rabbits are present but are at low levels; the aim of the owner is to control rabbits and maintain the property as near as possible to rabbit free. There are two small warrens that will be eradicated.

### Rabbit Management

1. Nighttime spotlight counts will be conducted, focusing on likely rabbit harbour along the creek, around wood heaps, sheds, thickets and buildings.
2. Rabbit control will be focused on the most cost-effective period of late summer and early autumn, when breeding has generally ceased in the rabbit population.
3. Biological control and natural mortality will be allowed to continue.
4. Any rabbit harbour will be removed and warrens destroyed (i.e. ripped).
5. Fumigation and further warren destruction will be carried out.
6. Where wombats may be present, care needs to be taken with fumigation. Smoke should be used to identify which are wombat holes and which are rabbit holes.

Foxes (*Vulpes vulpes*) are opportunistic predators and scavengers and have few natural predators in Australia. Red foxes pose a threat to livestock, as they prey on poultry and lambs. They can also transmit distemper, parvo virus and mange to domestic dogs. Evidence suggests red foxes are a primary cause in the decline and extinction of many small and medium-sized rodent and marsupial species in Australia. They also prey on many bird species.

### Fox Management

- Foxes will be managed by monitoring for scats and by nighttime spotlight counts (as for the rabbits). Control will be by shooting.





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*Figure 13 – Large old eucalypt (Peppermint Gum) in the northwest corner of the property (also see Figure 1)*



*Figure 14 – Immature eucalypt (Manna gum) in the southwest corner of the property*





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Figure 15 – Small clump of Blackwoods on the northern boundary

## CLIMATE

This property is located on the northern slopes of the Great Dividing Range. The range has a great influence on rainfall pattern for this property. This property is located in the Goulburn River Catchment. The average rainfall for the district is 704mm, see Figure 16 and Table 3.

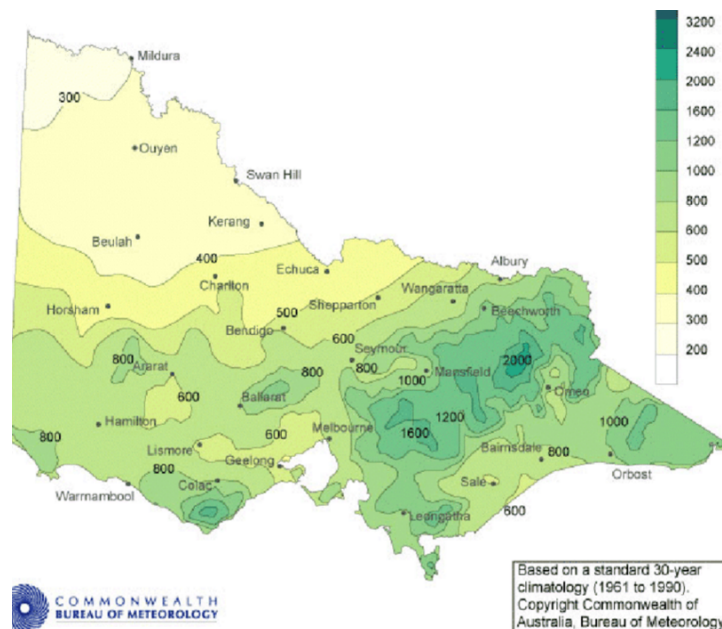


Figure 16 – Victorian rainfall averages



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The growing season is on average from April to October (9 months). These are the months when rainfall reliably exceeds the rate of evapotranspiration (>50% of the time), this is also referred to as months of effective rainfall.

Effective rainfall is when there is enough to enable plant germination and to sustain plant growth. Evapotranspiration is an estimate of moisture lost from a fully vegetated area, where soil moisture is not limiting, (Source VRO Agriculture Victoria).

Victoria is divided up into eight climatic zones: Climate zone 1 - High humidity summer, warm winter. Climate zone 2 - Warm humid summer, mild winter. Climate zone 3 - Hot dry summer, warm winter. Climate zone 4 - Hot dry summer, cool winter. Climate zone 5 - Warm temperate. Climate zone 6 - Mild temperate. Climate zone 7 - Cool temperate. Climate zone 8 - Alpine. This property is in climatic zone 7 - Cool temperate, see Figure 17.

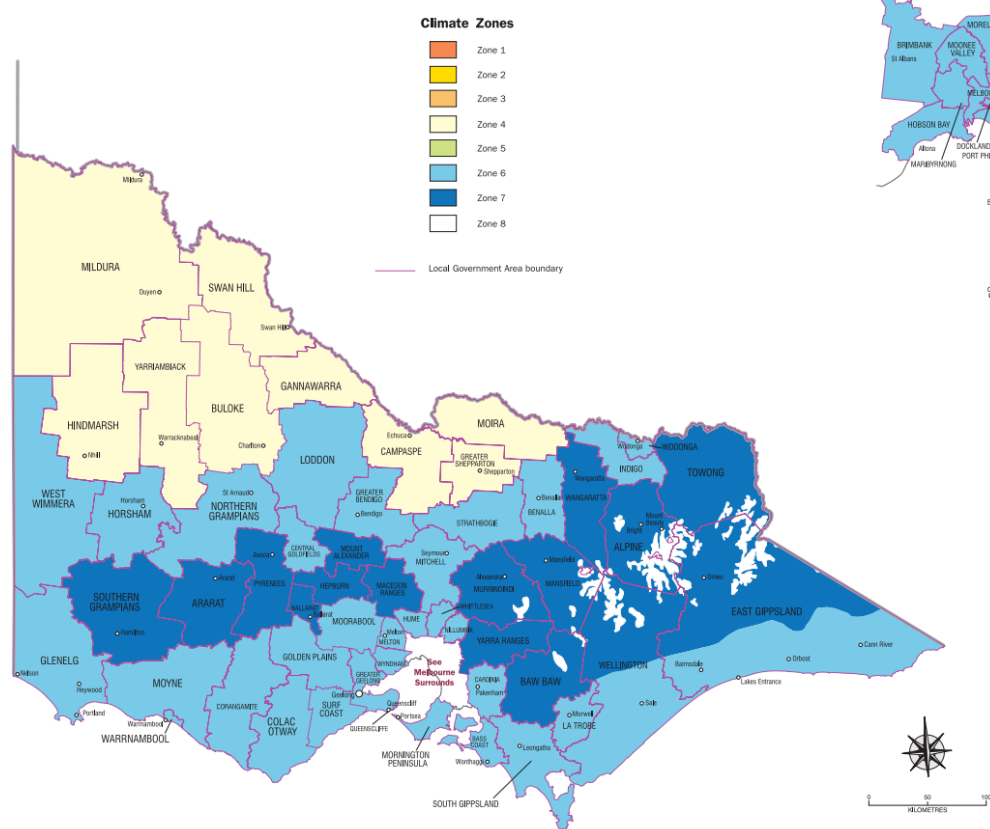


Figure 17 - Victorian Climatic Zones (Source Australian Bureau of Meteorology)

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**Table 7. Rainfall Data for Baynton (Records kept since 1953) – 13km north of the property**

| Statistic | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov   | Dec   | Annual |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Mean      | 44.3  | 35.9  | 35.7  | 48.3  | 69.9  | 71.7  | 79.0  | 79.3  | 68.7  | 63.5  | 52.1  | 44.5  | 705.4  |
| Lowest    | 0.0   | 0.0   | 0.0   | 3.6   | 5.4   | 7.0   | 12.0  | 12.0  | 13.0  | 1.8   | 5.4   | 0.0   | 323.3  |
| 5th %ile  | 1.3   | 0.0   | 1.4   | 6.9   | 19.2  | 22.0  | 24.8  | 25.6  | 23.1  | 8.1   | 14.3  | 4.9   | 439.2  |
| 10th %ile | 6.6   | 0.5   | 5.5   | 8.1   | 22.8  | 25.3  | 32.2  | 32.8  | 30.1  | 11.4  | 17.7  | 7.5   | 501.0  |
| Median    | 35.2  | 23.3  | 27.7  | 36.9  | 63.5  | 61.0  | 79.7  | 81.0  | 60.8  | 53.2  | 45.0  | 31.8  | 704.3  |
| 90th %ile | 86.4  | 86.6  | 79.3  | 103.9 | 130.1 | 131.2 | 118.3 | 114.9 | 117.4 | 117.3 | 97.6  | 88.4  | 905.7  |
| 95th %ile | 112.5 | 95.2  | 90.6  | 121.3 | 146.0 | 150.7 | 139.7 | 140.3 | 139.4 | 137.5 | 107.6 | 125.7 | 977.5  |
| Highest   | 205.4 | 180.0 | 119.8 | 190.6 | 181.6 | 180.8 | 168.7 | 216.9 | 186.2 | 229.4 | 155.6 | 149.5 | 1064.7 |

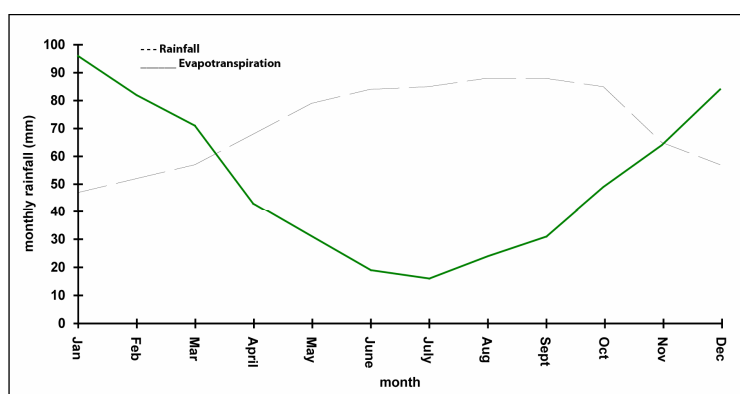
The area is prone to frosts, with January and February being the only months that are reliably frost free. Frost is very prevalent in June and particularly July. Black ice can occur, usually above 500m.

Frost causes the plant's cells to shrink, forcing water into spaces between the cells, where it can freeze and form ice crystals. As temperatures rise and thawing begins, the water is absorbed back into the cells by osmosis. If this occurs quickly there is no damage to the tissue, but if thawing is slow, the cells are deprived of water and become dehydrated resulting in 'frost burn' and even plant death. Frost tolerant plants are those that can survive temperatures down to -5C and several frosts in a row.

The length of growing season is determined by combining temperature, rainfall and evapotranspiration information. As temperature drops below 10 C plant growth is restricted (Trumble 1939) and ceases when below 6 C (Martin and Leonard, 1967).

Potential evapotranspiration is an estimate of the amount of moisture that a fully vegetated area can lose by evaporation and transpiration, when soil moisture is not limited. There is no evapotranspiration data for the Shire, so an approximation has been calculated using Leeper's modification to Thornwaite's formula (Leeper 1950).

During summer months from November to March evapotranspiration exceeds rainfall while in winter months from April to October rainfall exceeds evapotranspiration and is considered as the typical growing season for this district, (Source Agriculture Victoria), see Figure 18.

**Figure 18 – Average monthly rainfall and evapotranspiration for Macedon Ranges (Source VRO Agriculture Victoria)**



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## AGRICULTURAL POTENTIAL

Most of the property has been cleared historically and is still 95% cleared.

Table 8 shows the land capability classes for the property, with the property being rated as land capability class 4 poor, the major limitations being slope, rock and soil types that are prone to erosion if left bare.

**Table 8 - Land Capability Classes Explained**

| CLASS   | CAPABILITY | DEGREE OF LIMITATION   |
|---------|------------|--|
| Class 1 | Very good  | Can sustain a wide range of uses including an intensive cropping regime. Very high levels of production possible with standard management levels.  |
| Class 2 | Good       | Moderate limitations to agricultural productivity, overcome by readily available management practices.   |
| Class 3 | Fair       | Can sustain agricultural uses with low to moderate levels of land disturbance such as broad acre cultivation in rotation with improved pastures. Moderate to high levels of production possible with specialist management practices such as minimum tillage.                              |
| Class 4 | Poor       | Low capacity to resist land disturbance such as cultivation. Moderate production levels possible with specialist management such as improved pasture establishment with minimum tillage techniques. Recommended for low disturbance agriculture such as grazing or perennial horticulture. |
| Class 5 | Very poor  | Very low capability to resist disturbance. Areas of low productive capacity. Minimal grazing levels or non-agricultural uses recommended.  |

**Note:** Land is assessed for agricultural production on the basis of climate, topography, and the inherent characteristics of the soil. Climate differs from topography and soil features in that it is a regional parameter rather than site specific. The capability table identifies the versatility and potential productivity of an area for a range of agricultural uses, and highlights the necessary level of management required to sustain the land use. E. Jones, G. Boyle, N. Baxter and M. Bluml (1996) 'A Land Capability Study of the Shire of Mitchell'

Table 9 shows a calculation of the carrying capacity for the property. The effective grazing area for this property is ~3.5 ha. Animal and plant growth needs change throughout the year and season to season, grazing management is the key to livestock production and effective land protection under such conditions. As a guide, in an average rainfall season this property is capable of supporting 49 DSE or 4 cows. So is hobby scale from a broadacre grazing perspective.



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**Table 9 - Potential water limited yield of annual pasture dry matter production**

| Rainfall Decile                               | Growing Season Rainfall mm | Less 30mm for evaporation | Potential Kg dry matter/ha | Pasture Utilisation 35% | Potential DSE/ha |
|---|----------------------------|---------------------------|----------------------------|-------------------------|------------------|
| Decile 9 – Above Average (Best 10% of years)  | 938mm                      | 837mm                     | 27,240kg                   | 9,534kg                 | 27               |
| Decile 5 – Average Season                     | 491mm                      | 461mm                     | 13,830kg                   | 4,841kg                 | 14               |
| Decile 1 – Below Average (Worst 10% of years) | 190mm                      | 160mm                     | 4,800kg                    | 1,680kg                 | 5                |

*Bolger TP, Turner NC (1999) 'Water use efficiency and water use of Mediterranean annual pastures in southern Australia'. Rainfall data calculated from the Bureau of Meteorology Data for Baynton (3km north of the site)*

## GRAZING PLAN

Flexibility is a must, requiring a constant balancing act between meeting your stock's nutritional need and maintaining a healthy pasture and preventing land degradation.

Paddock sizes have been set to best balance and meet such requirements. The paddock layout and size has been set to allow for rotational and even grazing, the major cause of pasture deterioration is overgrazing, a three paddock rotation will work very well for four head to prevent that see Figure 19.

The proposed paddock locations will allow for drainage, even grazing and easy access. The layout can enable all weather grazing, it can handle stock in wet and dry conditions. The upper slope paddocks follow the contour, that is their longest side follows along the contour and will cater for any fence walking. Fence walking can create troughs that carry water and increases erosion risk.

On flat ground and low slopes, the squarer the paddock, the less fencing material is required.

The proposed management sets the property up for a consistent grazing and maintenance schedule.

The aim is to have 100% ground cover and pasture height maintained between a three-paddock rotation, 12.5cm or greater and stock removed/rotated at 4cm. In drought conditions, grazing is to be maintained so that paddocks are not grubbed out. Once paddocks are at risk of being grazed below 4cm, holding (sacrifice) paddocks/yards are to be used and the stock hand feed, so that pastures are preserved, and the land protected. Or stock will be removed from the property and sold or shifted to alternative grazing areas that have more feed.

See Table 7 for the calculations on stocking potential under different rainfall regimes. By taking stock out at 4cm in pasture height or greater, it means that stock management will ensure groundcover should the season tighten or vary.

In the fire danger period, grass cover is to be kept between 4cm and less than 10cm.





## DEVELOPMENT PLAN

The owners will focus on getting weeds under control, fencing to protect native vegetation, grazing and developing a house.



Figure 19 – Development plan layout with property management zones

The property is planned to be divided up into three zones, see Figure 30. A domestic zone, an agricultural zone and a conservation zone.

Nature conservation is a key objective. The property owners are establishing a Conservation Zone where weeds will be controlled, planting carried out and natural regeneration encouraged. This will enhance the native vegetation and significantly improve the biodiversity for the EVC that is listed as depleted. It will also improve the character and landscape value of the property. Onsite management will make weed control timelier and more effective.

The domestic zone will be used for rural living purposes.

The grazing zone will be used for grazing cattle at a hobby scale in a grazing management system.

### Conservation Zone

This property like most other properties in the district, has had a history of disturbance with European settlement and has been cleared in the past. It is in the Central Victorian Uplands Bioregion and the property is mapped as having (EVC) 23 Herb-rich Foothill Forest, with a bioregional conservation status of depleted, see Figure 20.

Figure 20 gives a result that shows that the property is very modified, with moderate Strategic Biodiversity Scores of 0% to 60% of the benchmark. A property inspection has shown that remnant overstory is limited and indigenous understorey species and mid strata species are very poorly represented. The owners wish to manage the native vegetation and improve its health and biodiversity.

A primary objective of the owners is to retain and continue to improve the native vegetation on the property, with particular emphasis on the Conservation Zone.

The objective of the owners as documented in this plan, is to also maintain soil stability, to continue to maintain and improve biodiversity, provide fauna habitat and wildlife corridors, ensure continuity of native

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vegetation over time, provide visual amenity, maintain surface water quality and keep surface flow rates at acceptable levels and have rural living/recreation and grazing areas that are stable from a land degradation perspective.

The proposed vegetation works and protection provided by onsite management, will also ensure an important link between the Cobaw State Forest and the native vegetation along Burke and Wills Track and neighbouring properties, thus it provides wildlife habitat and a corridor that links with other native vegetation in the area, see Figure 19.

Part of the proposal is to continue to encourage natural regeneration within the Conservation Zones and plant indigenous vegetation in the zones. There will also be ongoing removal of weeds and prevention of stock grazing. The owners plan to plant in the conservation zone species from the EVC so that it is restored to the densities outlined for the EVC, see Appendix One.

Ongoing protection and enhancement (through weed control) is the key management required to ensure the establishment of the vegetation and trees reaching the large tree category.

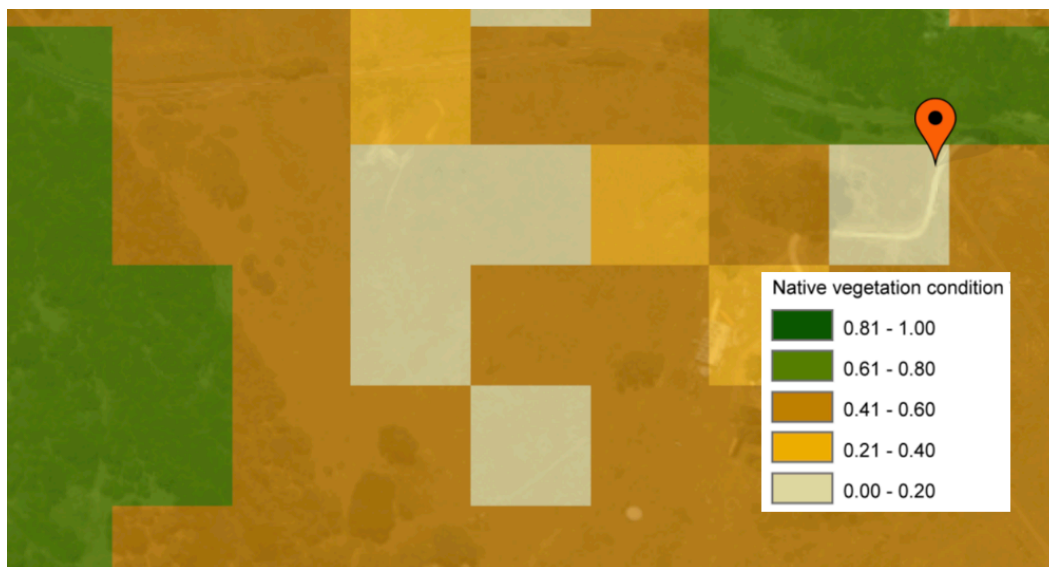


Figure 20 – Native Vegetation Condition





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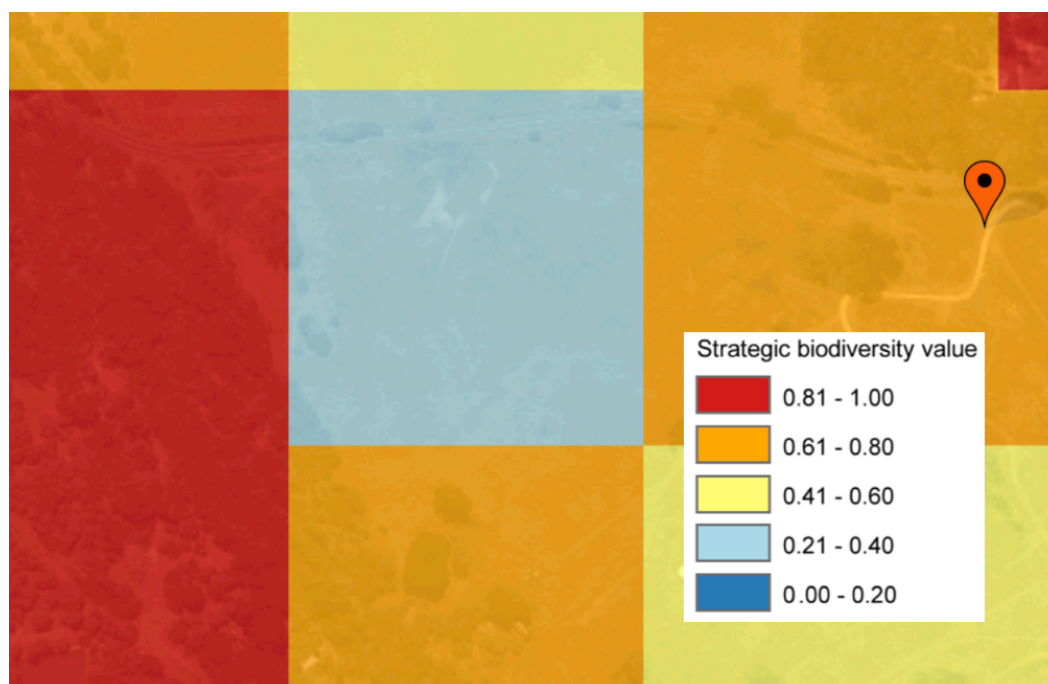


Figure 21 – Native Vegetation Condition

## REVEGETATION PLAN

Natural regeneration will be supplemented with indigenous plantings. This schedule of activities will ensure the optimal survival of a native species infill plantings to be established within the Conservation Zone, see Figure 19. Under this proposal it will be revegetated so that native vegetation cover will be indicative of the EVC, see Appendix 1. It will also provide a wildlife corridor alongside and to Burke and Wills Track and Westcott Lane.

The mixed species planting will be established with tall and medium trees to be planted 6m apart and shrubs 2m to 3m apart. The trees and shrubs are to be staggered, so no gaps are created and there is a genuine mixed planting. The tree area will be fenced with animal friendly fencing to protect the trees from grazing. Individual eucalypts are to be planted in the grazing area to provide protection for stock, these are to be guarded by mesh to prevent grazing from stock.

### ESTABLISHMENT

Weeds must be controlled well beforehand, and the rows deep ripped in February to shatter the soil and allow for good root penetration of tube stock, no ripping is to occur within the tree protection zones of existing vegetation (12 x the diameter of the tree at 1.3m from the ground). All trees are to be protected with tree guards to prevent rabbits and hares nipping them off.

One-metre diameter circles are to be cleared of grasses and weeds, away from the canopy of existing trees or spray one metre lines. These are to be placed in areas free of native grasses. Weed control is the most important factor in successful tree establishment from tube stock planting. It is also important to get them planted in the right soil conditions and then guarded so that they are not eaten.



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**What to plant:**

| <b>Canopy Tree</b>  | <b>#Spp</b>   | <b>%Cover</b> | <b>Number to Plant</b> |
|---|---|---------------|------------------------|
| <i>Eucalyptus globulus</i><br><i>Eucalyptus obliqua</i><br><i>Eucalyptus dives</i>                      | Eurabbie<br>Messmate Stringybark<br>Broad-leaved Peppermint | 40%           | 210 (70 each)          |
| <b>Medium Tree/Shrub</b>  |   | 15%           | 200 (50 each)          |
| <i>Acacia dealbata</i><br><i>Bursaria spinosa</i><br><i>Acacia melanoxylon</i><br><i>Acacia stricta</i> | Silver Wattle<br>Sweet Bursaria<br>Blackwood<br>Hop Wattle  |               |                        |

**Weather conditions and when to plant:** Planting in this location, is best in mid-July, so that the plants are ready to benefit from good growing conditions in the spring. Autumn and early winter is also ok, but can result in them just sitting in cold and wet conditions and getting waterlogged in a wet season.

**Deep ripping:** Ripping is very important to assist root development for the trees and shrubs, by re-aerating clay soils, hardpans or compacted soils. It will shatter dry subsoils, allowing easy and rapid root growth laterally and to depth and improves water infiltration. Doing so, will increase plant survival, good anchoring, vigour and stability. In order to optimise the shattering effect, ripping should be undertaken when the soil is relatively dry (Summer - February).

Deep rip to at least 30 cm across the chosen site with a winged single tyne ripper. Run over the rip lines with the tractor tyre straight after ripping, to flatten out raised clods. Do not deep rip within any Tree Protection Zone of existing native vegetation (12 x the diameter at 1.3m height of the tree).

**Planting:** Ensure the 1m area from tree centre is weed free at planting time, plant the trees outside the canopy area (drip line) of existing overstorey native vegetation and not where there is native grasses. Ensure you plant when the soils are moist.

Dig a hole 2 – 3 times the size of the root ball of the tree to be planted. Don't pull the tree from the tube, but rather squeeze the tube, tap the bottom and slide it out. Place the tree in the hole and fill with friable soil. Press in firmly and ensure the tree is standing straight. Water deeply to ensure roots go deep rather than just become surface roots, if the soil profile is not wet.

**Protection:** Place tree guards around each tree. Keep 1m circles weed free for at least the first 6 months and ideally for the first 18 months. Mulching and laying of weed mat is beneficial and altogether, this should result in a 90% plus survival rate. If your trees are showing the results of lack of water (stress, drooping leaves) in the first few weeks after planting. Water them deeply, so the subsoil wets up, this can be helped by placing some pipe or plastic bottles into the ground and filling those. Insect damage on young trees can sometimes be extensive, especially during late summer when the trees might suffer moisture stress or insect populations are high. If trees are repeatedly attacked or losing many leaves, treatment may be warranted.

Manage weeds in the buffer zones on an ongoing basis with spot spraying, mechanical removal and slashing.

**PLANTING MANAGEMENT**

Newly established tree plantations have four key factors that they are most susceptible in terms of successful establishment:

1. Competition from weeds
2. Grazing by animals
3. Dry conditions (moisture stress)
4. Replacement trees





### WEED MANAGEMENT

Effective weed control is especially important during the first 5 years and in particular the first 12 months and then two years. Outside of grazing pressure, it is the greatest factor in tree survival and establishment. Weeds can outcompete developing trees for moisture and nutrients.

A tree plantation that has effective weed control from establishment on, will become effective earlier and last longer.

Weed control should be undertaken within and between the rows to give trees the opportunity to fully establish.

An area of 75cm in diameter around each tree should be maintained as weed free in the first two years.

Mulch or weed mat can assist.

Weed control between the rows is as important as within the row. Weeds growing between rows can have a significant negative effect on tree growth.

If weeds get away in the first two years after planting, residual chemicals (e.g. simazine or oxyflourfen) can be applied as an overspray or as a directed on the labels or as a shielded spray in the autumn, before much weed germination occurs. Grasses can be controlled by over-spraying the trees with fluzifop-p (4 L/ha), or by using a shielded or directed spray of glyphosate (2 L/ha), very carefully, as contact with the leaves of the trees will burn or kill them.

### PROTECTION FROM GRAZING BY ANIMALS

Rabbits, hares and other grazing animals can enter a plantation and cause significant damage to trees. This site should be well protected by fencing and tree guards.

Tree guards should be removed once the tree is 10cm to 20cm above the guard, or when growth is being restricted. This is typically within 12 months of establishment, see Figures 33 and 34.



*Figure 22 – An example of too long in the tree guards and the guards need to come off*

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Figure 23 – Example of a tree ready for tree guard removal

#### DRY CONDITIONS (MOISTURE STRESS)

Local native plants are well adapted to site conditions and a good weed control program, before and after planting, will ensure enough soil moisture is retained for trees to thrive.

Moisture stressed plants will start wilting at their tips. Each year will be different. If a heat wave is coming make sure to water before the hot weather hits. Watering when plants are already struggling can be ineffective.

For long term survival it is very important that tree roots go deep into the soil profile. Do not water just because the weather has been dry, as this just encourages surface roots.

That is, too frequent or unnecessary watering, will concentrate too many roots near the surface at the expense of deeper penetrating roots. Once summer hits, these plants will likely die (unless they have very frequent watering) because their shallow roots dry out and they have insufficient deep roots. Longer term these trees are susceptible to blowing over, as they do not have enough deep roots to anchor them and also, they can become dependent upon watering, if they are watered frequently.

Trees should be watered only when they are moisture stressed, or for the first two summers, when a heat wave is coming. Water deeply, each plant should receive 10 – 20L per watering. Check for weed germination after watering, particularly inside the tree guards.

#### REPLACEMENT TREES

As long as there is a eucalypt every 6m from an adjoining tree and a shrub at 2-4m spacings from an adjoining tree, the plantation will be at an expected density. Where trees die in a patch and these densities are not maintained, plant replacement trees in July. Control weeds at a 1m diameter with a mixture of glyphosate and simazine at recommended rates, following the directions on the labels.

The plantation will thin overtime and as the trees mature, a large tree at 8-10m spacings from an adjoining tree and shrubs at 5m from an adjoining tree, is an expected target density for a successful plantation (10 years plus).



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slashing.

## ACTION PLAN

### JANUARY/FEBRUARY

1. Check for summer weeds and hand chip them from within and between the rows.
2. Remove any tree guards where the plants are 15cm or more in height above the tree guard.
3. Monitor for heat waves in the first two summers and water before the temperature rises, 10L to 20L per tree. Otherwise, do not water unless the trees are at wilting point.
4. Check for any caterpillar or insect attack and treat as required.

### MARCH/APRIL

5. Remove any tree guards where the plants are 15cm or more in height above the tree guard.

### MAY/JUNE

6. Remove any tree guards where the plants are 15cm or more in height above the tree guard.
7. Mow between rows to keep grass down after the autumn break.
8. Grasses can be controlled by over-spraying the trees with fluazifop-p (4 L/ha).
9. If weeds are an issue in the first two years, residual chemicals (e.g. simazine or oxyflourfen) can be applied as an overspray or as a directed, or shielded spray in the autumn, before much weed germination occurs.
10. Plant any replacement trees in 1m diameter weed free circles and tree guard them. If there are no overstory trees within 5m and no shrubs within 4m.

### JULY/AUGUST

11. Remove any tree guards where the plants are 15cm or more in height above the tree guard.
12. Mow between rows as required.

### SEPTEMBER/OCTOBER

13. Mow between rows and keep spring grasses and weeds down using herbicide at recommended rates (as already provided).
14. If weeds get away in the first two years after planting, grasses can be controlled by over-spraying the trees with fluazifop-p (4 L/ha).

### SEPTEMBER/OCTOBER

15. Check for summer weeds and hand chip them from within and between the rows.
16. Remove any tree guards where the plants are 15cm or more in height above the tree guard.
17. Monitor for heat waves in the first two summers and water before the temperature rises, 10L to 20L per tree. Otherwise, do not water unless the trees are at wilting point (the tips of their leaves are starting to wilt).
18. Check for any caterpillar or insect attack and treat as required.



*Lot 1 TP 334568R Burke and Wills Track Land Management Plan*

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#### NOVEMBER/DECEMBER

19. Check for summer weeds and hand chip them from within and between the rows.
20. Remove any tree guards where the plants are 15cm or more in height above the tree guard.
21. Monitor for heat waves in the first two summers and water before the temperature rises, 10L to 20L per tree. Otherwise, do not water unless the trees are at wilting point (the tips of their leaves are starting to wilt).
22. Check for any caterpillar or insect attack and treat as required.

#### CONCLUSION

The planning proposal and Land Management Plan is well considered. The implementation of the plan should ensure a sustainable future for the property, with weeds eradicated, pest animals controlled, groundcover maintained and a net gain in native vegetation and biodiversity achieved.

The proposed scale will be in keeping with the district character and a key advantage of the proposal are the conservation zones that will provide a wildlife corridor and greatly enhance the roadside vegetation of Westcott Lane and Burke and Wills Track.

Your sincerely,



**Director Cumbre Consultants**





Lot 1 TP 334568R Burke and Wills Track Land Management Plan

## APPENDIX 1 – ECOLOGICAL VEGETATION CLASS

## EVC/Bioregion Benchmark for Vegetation Quality Assessment

### Central Victorian Uplands bioregion

#### EVC 23: Herb-rich Foothill Forest

**Description:**

Occurs on relatively fertile, moderately well-drained soils on an extremely wide range of geological types and in areas of moderate to high rainfall. Occupies easterly and southerly aspects mainly on lower slopes and in gullies. A medium to tall open forest or woodland to 25m tall with a small tree layer over a sparse to dense shrub layer. A high cover and diversity of herbs and grasses in the ground layer characterise this EVC.

**Large trees:**

| Species                | DBH(cm) | #/ha    |
|------------------------|---------|---------|
| <i>Eucalyptus</i> spp. | 70 cm   | 20 / ha |

**Tree Canopy Cover:**

| %cover | Character Species                                | Common Name             |
|--------|--|-------------------------|
| 40%    | <i>Eucalyptus globulus</i> ssp. <i>bicostata</i> | Eurabbie                |
|        | <i>Eucalyptus obliqua</i>                        | Messmate Stringybark    |
|        | <i>Eucalyptus dives</i>                          | Broad-leaved Peppermint |

**Understorey:**

| Life form                           | #Spp | %Cover | LF code |
|-------------------------------------|------|--------|---------|
| Immature Canopy Tree                |      | 5%     | IT      |
| Understorey Tree or Large Shrub     | 2    | 10%    | T       |
| Medium Shrub                        | 3    | 5%     | MS      |
| Small Shrub                         | 2    | 1%     | SS      |
| Prostrate Shrub                     | 1    | 1%     | PS      |
| Large Herb                          | 4    | 5%     | LH      |
| Medium Herb                         | 11   | 25%    | MH      |
| Small or Prostrate Herb             | 3    | 5%     | SH      |
| Large Tufted Graminoid              | 2    | 5%     | LTG     |
| Large Non-tufted Graminoid          | 1    | 5%     | LNG     |
| Medium to Small Tufted Graminoid    | 6    | 20%    | MTG     |
| Medium to Tiny Non-tufted Graminoid | 2    | 5%     | MNG     |
| Ground Fern                         | 2    | 10%    | GF      |
| Scrambler or Climber                | 3    | 5%     | SC      |
| Bryophytes/Lichens                  | na   | 20%    | BL      |



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**EVC 23: Herb-rich Foothill Forest – Central Victorian Uplands bioregion**

| LF Code | Species typical of at least part of EVC range | Common Name           |
|---------|---|-----------------------|
| T       | <i>Acacia dealbata</i>                        | Silver Wattle         |
| SS      | <i>Hovea heterophylla</i>                     | Common Hovea          |
| PS      | <i>Acrotriche prostrata</i>                   | Trailing Ground-berry |
| LH      | <i>Wahlenbergia stricta</i>                   | Tall Bluebell         |
| LH      | <i>Senecio tenuiflorus</i>                    | Slender Fireweed      |
| LH      | <i>Senecio minimus</i>                        | Shrubby Fireweed      |
| LH      | <i>Senecio quadridentatus</i>                 | Cotton Fireweed       |
| MH      | <i>Stellaria pungens</i>                      | Prickly Starwort      |
| MH      | <i>Viola hederacea sensu Willis (1972)</i>    | Ivy-leaf Violet       |
| MH      | <i>Acaena novae-zelandiae</i>                 | Bidgee-widgee         |
| SH      | <i>Dichondra repens</i>                       | Kidney-weed           |
| SH      | <i>Hydrocotyle laxiflora</i>                  | Stinking Pennywort    |
| LTG     | <i>Lomandra longifolia ssp. longifolia</i>    | Spiny-headed Mat-rush |
| MTG     | <i>Lomandra filiformis ssp. coriacea</i>      | Wattle Mat-rush       |
| MTG     | <i>Luzula meridionalis var. flaccida</i>      | Common Woodrush       |
| MTG     | <i>Austrodanthonia pilosa</i>                 | Velvet Wallaby-grass  |
| MTG     | <i>Poa ensiformis</i>                         | Sword Tussock-grass   |
| MNG     | <i>Microlaena stipoides var. stipoides</i>    | Weeping Grass         |
| MNG     | <i>Poa tenera</i>                             | Slender Tussock-grass |
| MNG     | <i>Echinopogon ovatus</i>                     | Common Hedgehog-grass |
| GF      | <i>Pteridium esculentum</i>                   | Austral Bracken       |
| GF      | <i>Asplenium flabellifolium</i>               | Necklace Fern         |
| SC      | <i>Clematis aristata</i>                      | Mountain Clematis     |
| SC      | <i>Glycine clandestina</i>                    | Twining Glycine       |
| SC      | <i>Billardiera scandens var. scandens</i>     | Common Apple-berry    |
| SC      | <i>Hardenbergia violacea</i>                  | Purple Coral-pea      |

**Recruitment:**

Continuous

**Organic Litter:**

40 % cover

**Logs:**

20 m/0.1 ha.

**Weediness:**

| LF Code | Typical Weed Species        | Common Name     | Invasive | Impact |
|---------|-----------------------------|-----------------|----------|--------|
| MH      | <i>Hypochoeris radicata</i> | Cat's Ear       | high     | low    |
| MH      | <i>Centaurium erythraea</i> | Common Centaury | high     | low    |
| LNG     | <i>Holcus lanatus</i>       | Yorkshire Fog   | high     | high   |





Lot 1 TP 334568R Burke and Wills Track Land Management Plan

## APPENDIX 2 – BIOGRAPHY OF THE AUTHOR



### **GAVIN BEEVER**

*Consultant/Director – Cumbre Consulting*

**Gavin has extensive experience in Land Use Planning, Rural Land Management, Farming, Animal Husbandry, Strategic Planning, Business Planning, Group Facilitation, Adult Education and Horse Management.**

He has 31 years' experience in Land and Business Management. During that period, he has consulted and provided technical advice on a broad range of land and business management issues to hundreds of individual property owners, consultants, cooperatives, companies, corporations and government departments, both locally and nationally. Initially as a Departmental Advisory Officer (1989 to 1997) and then as a Private Consultant (1997- ). For 10 years, he was Vice Chairman of the 1,000-member farmer Coop CEPA, which is the largest independent supplier of stockfeed in Victoria.

He has extensive practical experience in farming and land management. With his wife, he has developed and run a 25,000DSE sheep and cattle family farming business. He has established and continues to manage Cumbre Stud, a Horse Breeding and Training Stud on their family farm in Central Victoria.

He has been a caretaker of farms in New South Wales (Cropping and Livestock) and leased other farms in Victoria.

For five years, he was a referral officer for State Planning Schemes for what is now the Department of Sustainability and Environment in Victoria.

He has also prepared Farm, Environmental and Land Management Plans for Planning Permit Applications in the State of Victoria for 22 years. He has been called as an expert witness at VCAT for matters relating to environmental, farm and land management issues.

He has presented at numerous local, state, national and international conferences.

He has developed and delivered numerous workshops for land and business managers and owners.

### **FIELDS OF COMPETENCE**

*Land Capability Assessment*

*Land Management Planning*

*Strategic Planning*

*Business Planning*

*Animal Husbandry*

*Pasture and Crop (Broad acre) establishment and management*

*Native Vegetation establishment and management*

*Pest Plan and Animal Control*

*Soil Conservation*

*Soil Salinity*



*Lot 1 TP 334568R Burke and Wills Track Land Management Plan*

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*Catchment and Waterway Management*

*Fire Protection*

*Wool Classing*

*Adult Learning and Workshop Development and Delivery*

*Benchmarking*

*Horse and working dog, training and management*

#### **PUBLICATIONS**

*Hill and Rising Country Management in the Avon-Richardson Catchment (1991)*

*Saline Agriculture Program, Wimmera Catchment Salinity Management Plan (1992)*

*The Wimmera River Catchment Salinity Plan – Tree Program (1992)*

*Saline Agriculture Program. Wimmera River Catchment Salinity Management Plan (1992)*

*Pasture Program for the Wimmera River Catchment Salinity Management Plan (1992)*

*Whole Farm Planning Workshop Series. Department of Natural Resources and Environment (1993)*

*Property Management Planning Workshop Series. Department of Primary Industries Queensland (1996)*

*Technical Coordinator and Editor. Meat and Livestock Australia. Business Skills and Best Practice Workshop Series. (1998-2002)*

*Business Health Indicators for Professional Farmers. FM500. (2004)*

#### **EDUCATION**

*BSc (Botany/Zoology) 1987*

*Grad Cert Appl Sc 1997*

*Diploma Racing 2006*

*Innoven – Effective Company Directors Graduate 2004*





*Lot 1 TP 334568R Burke and Wills Track Land Management Plan***APPENDIX 3 – LAND MANAGEMENT PLAN REPORTING TEMPLATE****FINANCIAL YEAR:**

| DATE   | ACTION | WHO | COUNCIL<br>CHECK | COMPLIANCE<br>CHECKLIST<br>NUMBER |
|--------|--------|-----|------------------|-----------------------------------|
|        |        |     |                  |                                   |
|        |        |     |                  |                                   |
|        |        |     |                  |                                   |
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|        |        |     |                  |                                   |
|        |        |     |                  |                                   |
|        |        |     |                  |                                   |
| NOTES: |        |     |                  |                                   |



*Lot 1 TP 334568R Burke and Wills Track Land Management Plan*

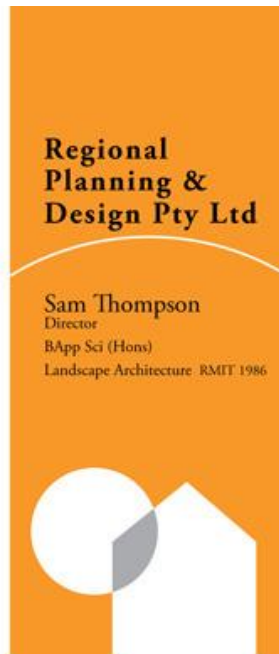
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### **\* COMPLIANCE CHECKLIST**

1. Tree planting completed
2. Tree guards installed
3. Tree guards maintained
4. Tree guards removed
5. Weed control
6. Rabbit and fox monitoring and control
7. Grasses/weeds controlled in revegetation areas
8. Replacement plants planted in revegetation areas to replace lost plants
9. Fencing maintained







# BUSHFIRE MANAGEMENT STATEMENT



**Prepared by Regional Planning &  
Design Pty Ltd**  
13 Bridport Street Daylesford 3460  
Phone 0447 073 107  
s.thompsondesign@bigpond.com

641 Burke & Wills Track Benloch  
Ref No.20.385

**Disclaimer**

This report has been made with careful consideration and with the best information available to Regional Planning and Design Pty Ltd at the time of writing. Before relying on information in this report, users should evaluate the accuracy, completeness and relevance of the information provided for their purposes. Regional Planning and Design Pty Ltd do not guarantee that it is without flaw or omission of any kind and therefore disclaim all liability for any error, loss or other consequence that may arise from you relying on any information in this report.

Requirements detailed in this document do not guarantee survival of the buildings or the occupants. The client is strongly encouraged to develop and practice a bushfire survival plan.

Information and assistance including a template for a Bushfire Survival Plan is provided as part of the 'Fire Ready Kit' available through the CFA website at <http://www.cfa.vic.gov.au> or through your local CFA Regional office.

**Version Control**

| Report Version | Description               | Date Completed | Issued to |
|----------------|---------------------------|----------------|-----------|
| A              | Draft issued to client    | 9/12/2020      | Client    |
| B              | Issued as a final version | 6/12/2021      | Client    |
|                |                           |                |           |
|                |                           |                |           |

## 1 SUMMARY

| Summary  |   |
|--|---|
| Date of site visit:  | 6 <sup>th</sup> October 2020  |
| Broad landscape setting type (Planning Permit Applications – Bushfire Management Overlay – Technical Guide, DELWP 2017). | 3   |
| Access requirements can be met   | 3.5m wide driveway with 4m vertical and 4.5m horizontal clearance with a passing bay and a turning area at the dwelling |
| Water Supply Requirements  | 10 000 litres in non combustible tank with CFA access and fittings  |
| Defendable Space requirements can be met   | BAL 12.5 on site  |
| Proposed BAL construction level  | BAL 12.5  |
| Is native vegetation removal required:   | No  |

## 2 INTRODUCTION

This Bushfire Management Statement (BMS) has been prepared to enable Stephen Hartwig to respond to the requirements of Clause 44.06 *Bushfire Management Overlay* (known from this point on as Clause 44.06), and associated Clause 53.02 *Bushfire Protection: Planning Requirements* (known from this point on as Clause 53.02) for the proposed dwelling at Lot 1 TP334568R Burke & Wills Track Benloch

Clause 53.02-4 applies to this application as the land is zoned Rural Conservation

The BMS is in two parts

Part 1 Site description , hazard assessment and locality description

Part 2 A Bushfire Management Statement describing how the proposed development responds to the requirements in Clause 53.02 and 44.06.

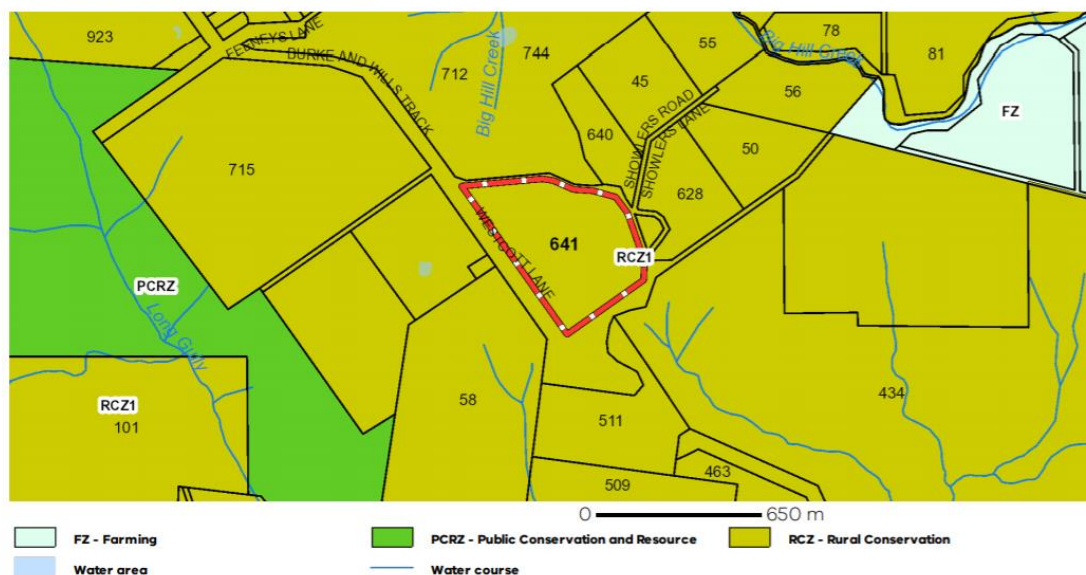
## 3 ZONING AND OVERLAYS

| Clause Number | Name                                   |
|---------------|--|
| 35.06         | Rural Conservation Zone                |
| 13.02-1       | Bushfire Planning                      |
| 44.06         | Bushfire Management Overlay            |
| 53.02         | Bushfire Planning                      |
| 42.01         | Environmental Significance Overlay (5) |
| 42.02         | Vegetation Protection Overlay (9)      |
| 42.03         | Significant Landscape Overlay (1)      |

### Planning Zones

[RURAL CONSERVATION ZONE \(RCZ\)](#)

[RURAL CONSERVATION ZONE - SCHEDULE 1\(RCZ1\)](#)



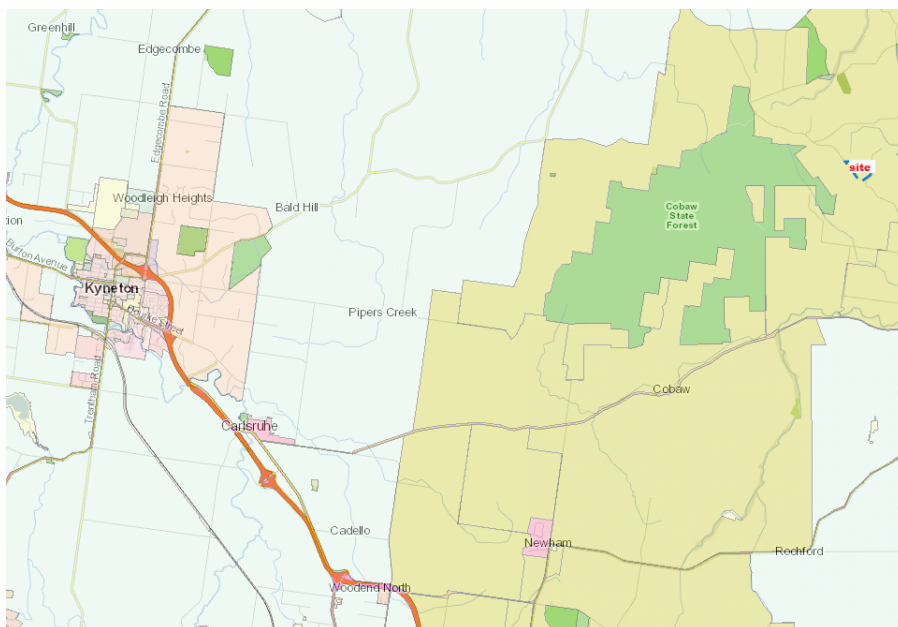
**FIGURE 1 ZONING**



#### 4 LOCATION

The site is located approximately 25 kilometres to the north east of Kyneton, some 100 kilometres to the north of Melbourne (See Figure 2)

There are substantial areas of forest, grassland and woodland to the north west and forest to the south west and east of the site which will be discussed further in Section 10 of this report



**FIGURE 2 LOCATION**

#### 5 SITE DESCRIPTION

| Site shape, dimensions, size, existing use and buildings and works |  |
|--|--|
| The shape of the site is:  | Irregular  |
| The site has a total area of:                                      | 63 ha  |
| The current use of the site is                                     | Grazing  |
| The buildings or works located on the site are:                    | Nil  |
| Site Topography  | The site is elevated on the south east boundary and land slopes generally to the south west and north at overall gradients of between 5 and 10 degrees |
| Site vegetation  | The site is mostly covered in grassland with forest on the south west boundary (photos 1 to 4)   |

## Site Photos



Photo 1 Looking north west from the proposed house site



Photo 2 Looking north from the proposed house site area



## Site Photos



Photo 3 Looking south east across grassland towards forest on the southern boundary of the site



Photo 4 Looking north west through forest on the southern boundary of the site



## 6 ACCESS

The access to the site is from Burke and Wills Track on the north west boundary (photo 7) which provides access to areas open grassland to the south east and north west. There is also frontage to Westcott Lane on the southern boundary (photo 8)

Access Photo



Photo 5 Looking south east along Burke and Wills Track to the east of site



Photo 6 Looking south east along Westcott Lane on the southern boundary

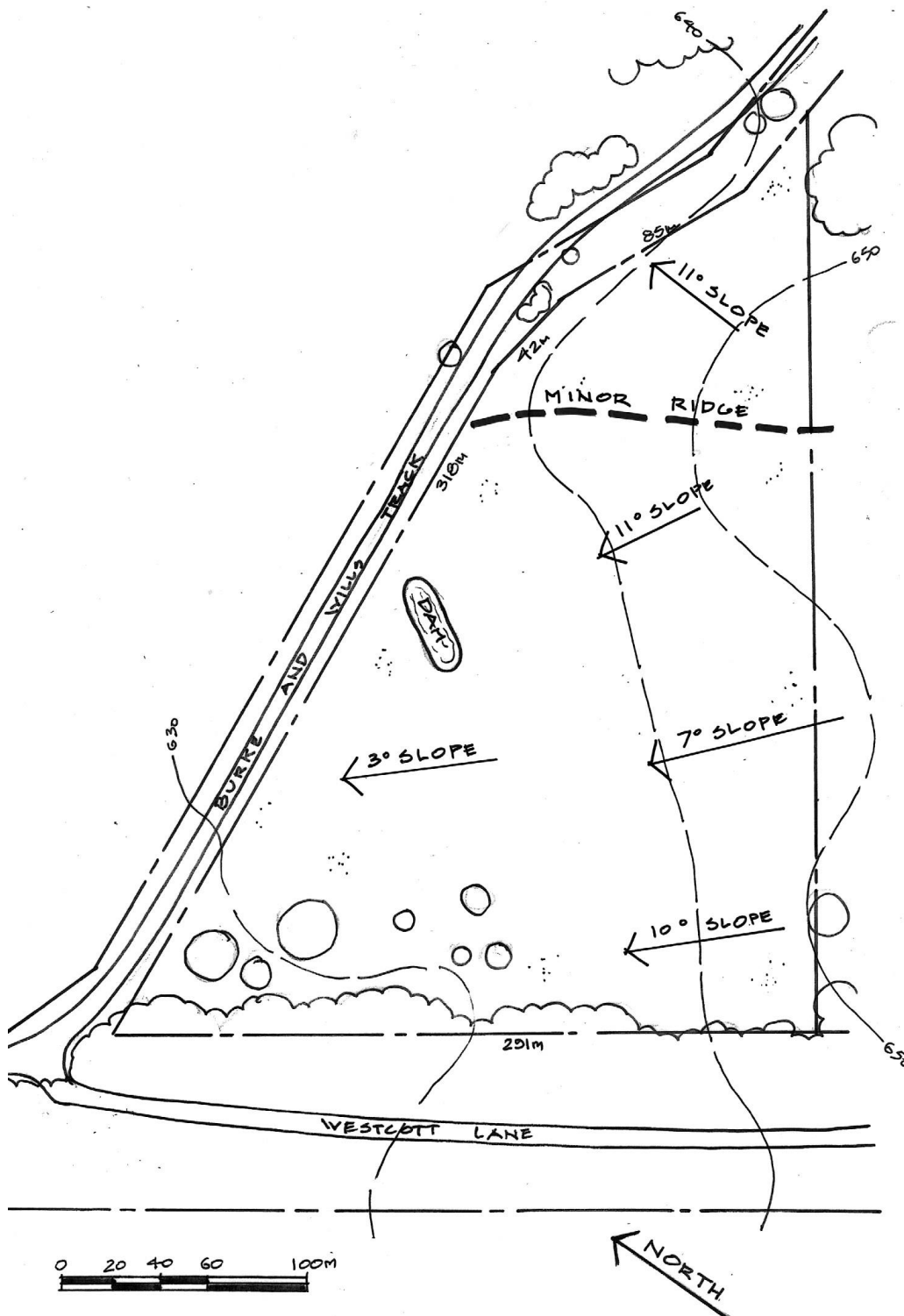


Figure 3 Existing Conditions Plan





**FIGURE 4 EXISTING CONDITIONS AIR PHOTO**



## 7 BUSHFIRE HAZARD SITE ASSESSMENT

As shown in Figure 5 and described in Appendix 1 there is mostly grassland with some woodland and forest within the 150 metre assessment area. To the east is a dwelling surrounded by modified vegetation and to the north east are dwellings in a forest setting (photos 7 and 8). There are extensive areas of forest to the south west (photos 4 and 10)

The stringy and ribbon bark trees in the forest are likely cause massive ember attack in a bushfire.



Figure 5 – 150m Assessment Area



## Surrounding Landscape Photos



Photo 7 Looking north to existing dwelling to the east of the site



Photo 8 Looking north north to a dwelling to the north east of the site beyond Burke and Wills Track.



## Surrounding Landscape Photos



Photo 9 Looking north east through forest to the north east of the site



Photo 10 Looking south west through forest beyond Westcott Lane to the south west



## 8 BUSHFIRE HAZARD LANDSCAPE ASSESSMENT

The surrounding landscape corresponds to Broader Landscape Type 3 as assessed in accordance with Planning Permit Applications – Bushfire Management Overlay – Technical Guide. The terrain is undulating and there are substantial areas of forest to the north west and south west of the site. On a broad landscape scale the site is most likely to come under threat from a fire from the north or north west or from the south west as on high fire danger days there are often strong northerly winds followed by a gusty south west change which can turn the east flank of a fire approaching from the north west into a long fire front.

Due to the bark hazard in surrounding forest the site is likely to receive a massive ember attack.

A spot fire could start to the east of the site and be drawn up hill into a main fire front approaching the site from the north west so it is also important to also establish and maintain defensible space in this direction.

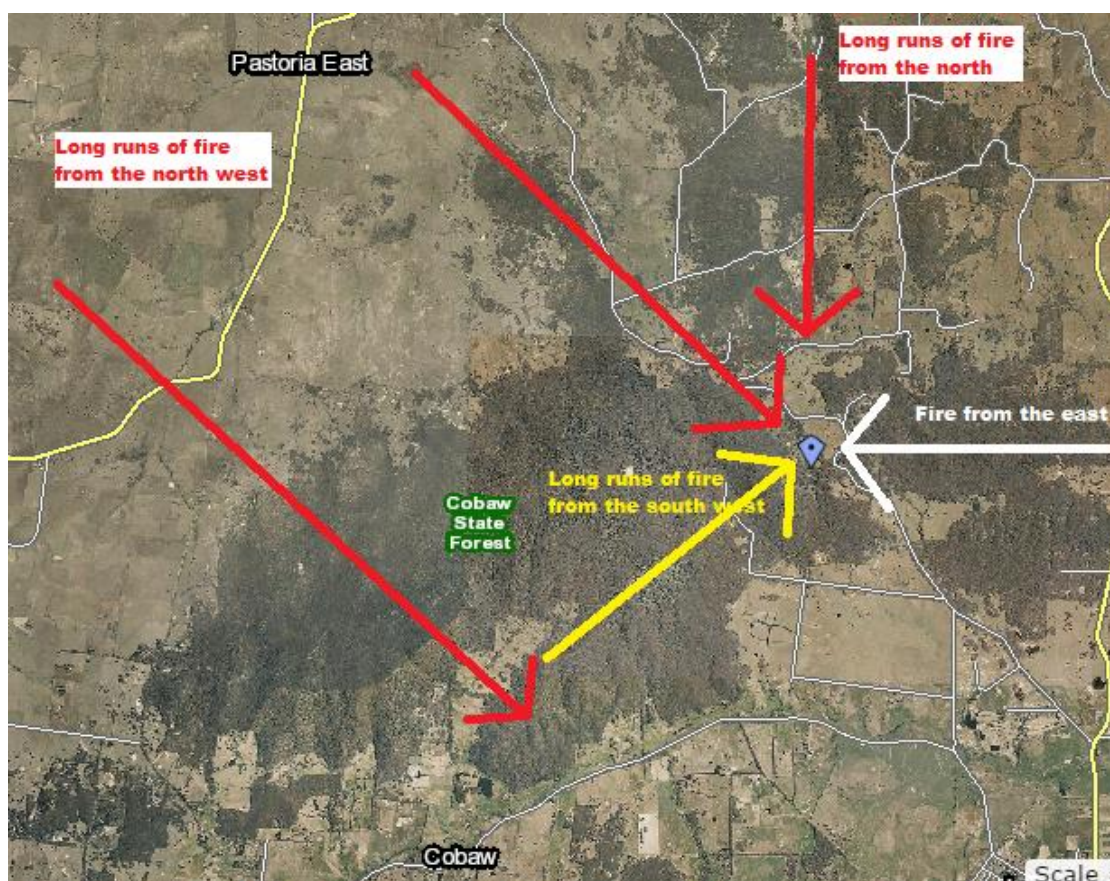


FIGURE 6 BUSHFIRE CONTEXT PLAN



As shown on Figures 7 and 8, within 1 kilometre of the site vegetation becomes fragmented, however the site is highly vulnerable to fire from the south west.

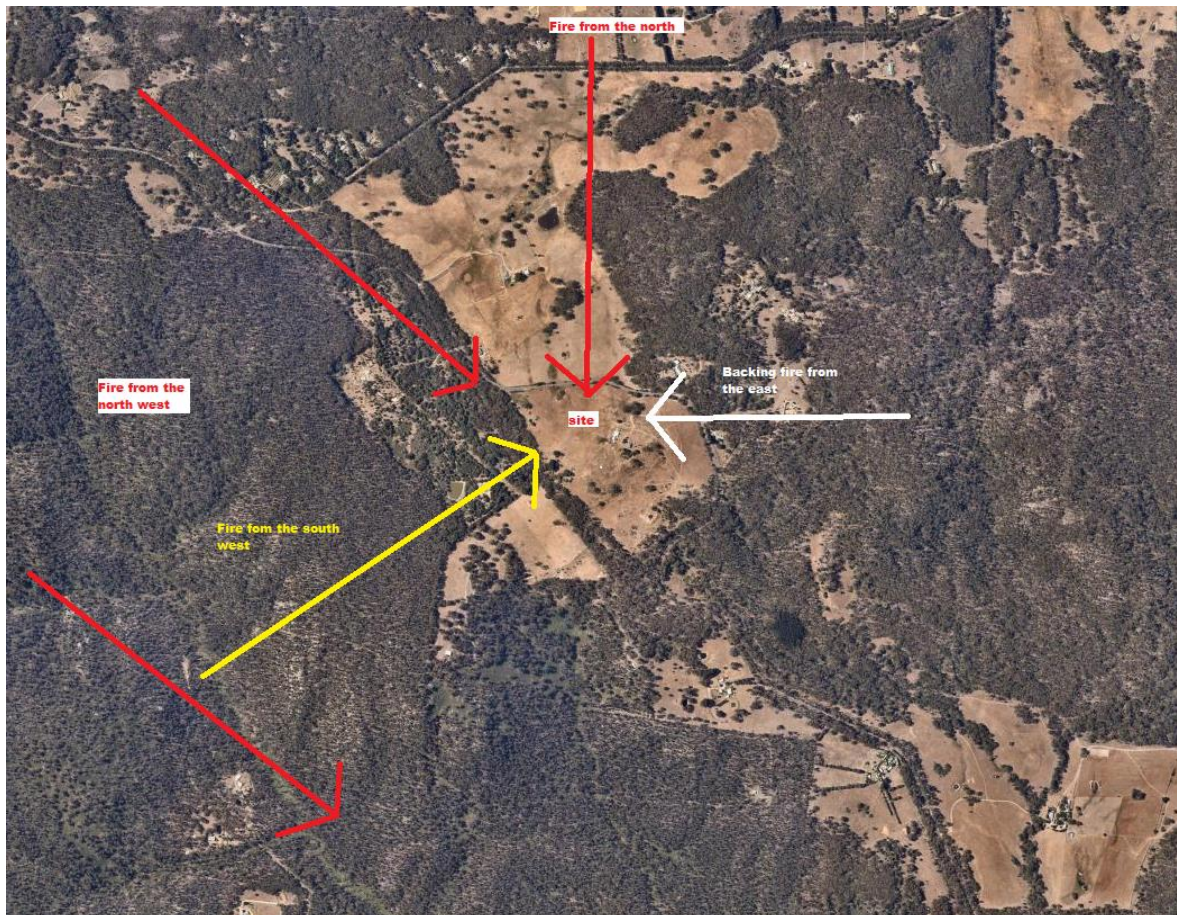
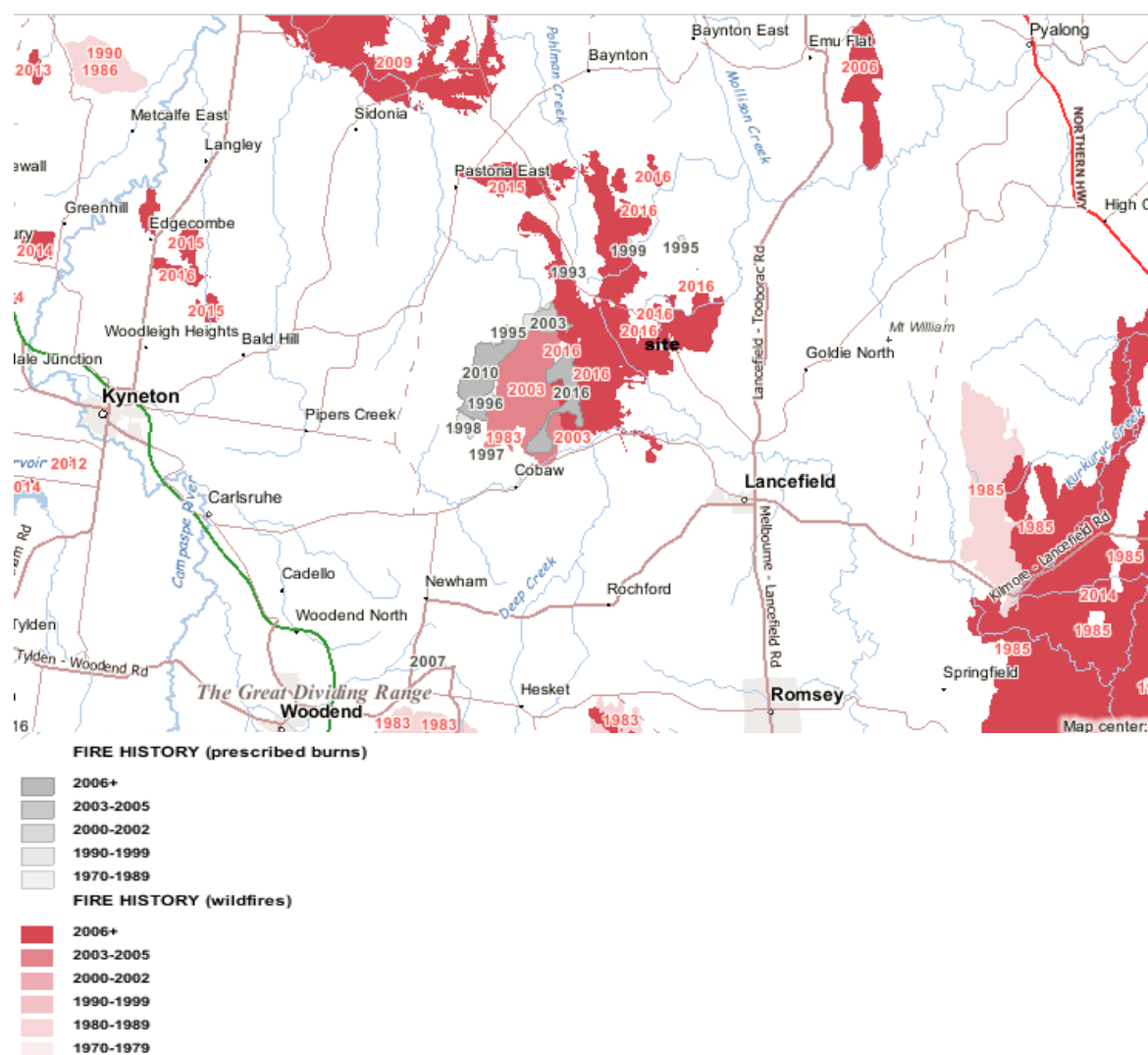


FIGURE 7 BUSHFIRE LOCAL CONTEXT PLAN





**FIGURE 8 BUSHFIRE NEIGHBOURHOOD CONTEXT PLAN**



**Figure 9 Bushfire History Map**

The Fire History Map above shows the site was affected by a bushfire that burnt 375 hectares in 2015. There have been fuel reduction burns to the south since 2003 which will help reduce the risk to the site. Public Land around the site is part of the Joint Fuel Management Plan which aims to reduce fuel loads and the fire risk (See Figure 10 on the following page)

In summary, the site is highly vulnerable to bushfire. This needs to be considered in siting the house, maximizing defensible space within property boundaries which will help reduce the fire risk.



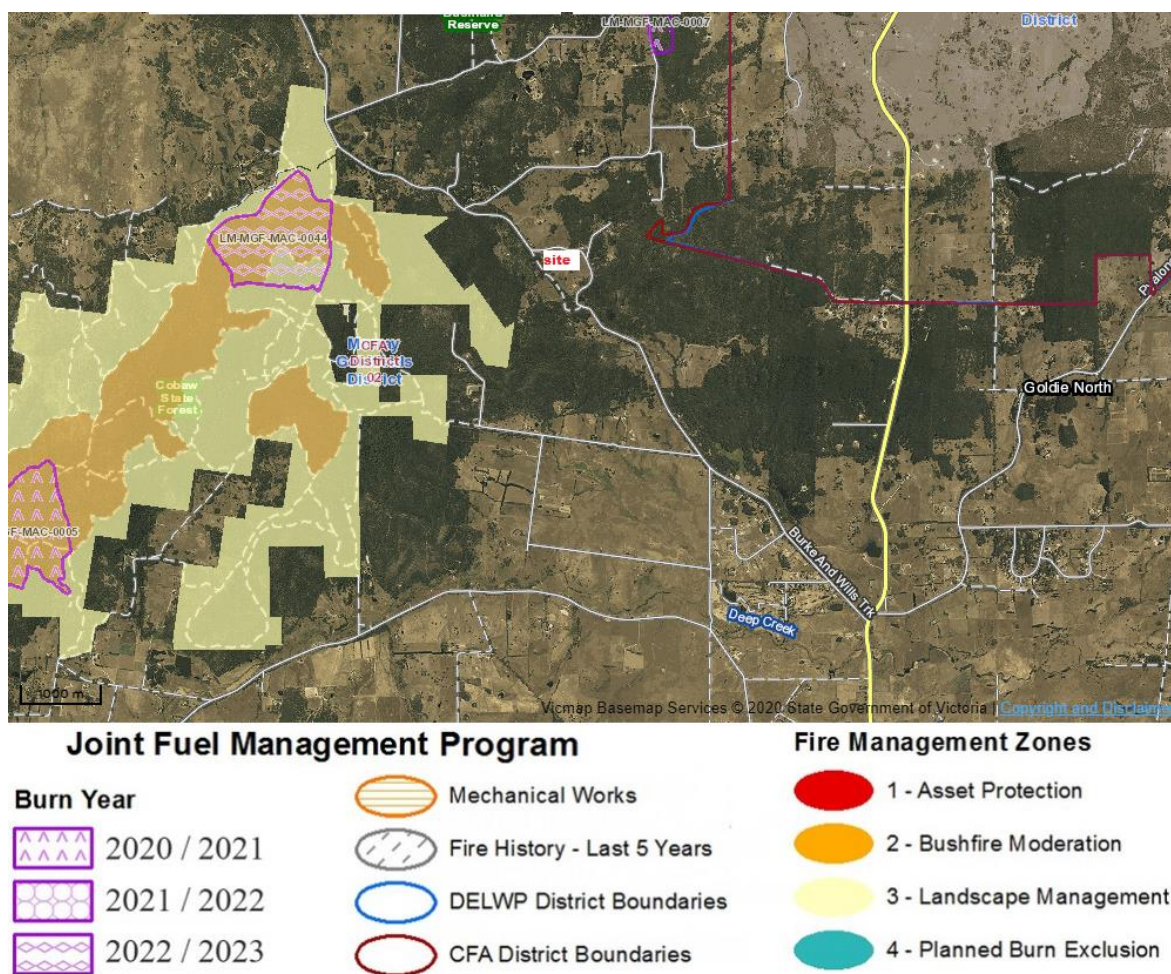


Figure 10 Planned Burns and Fire Management Areas

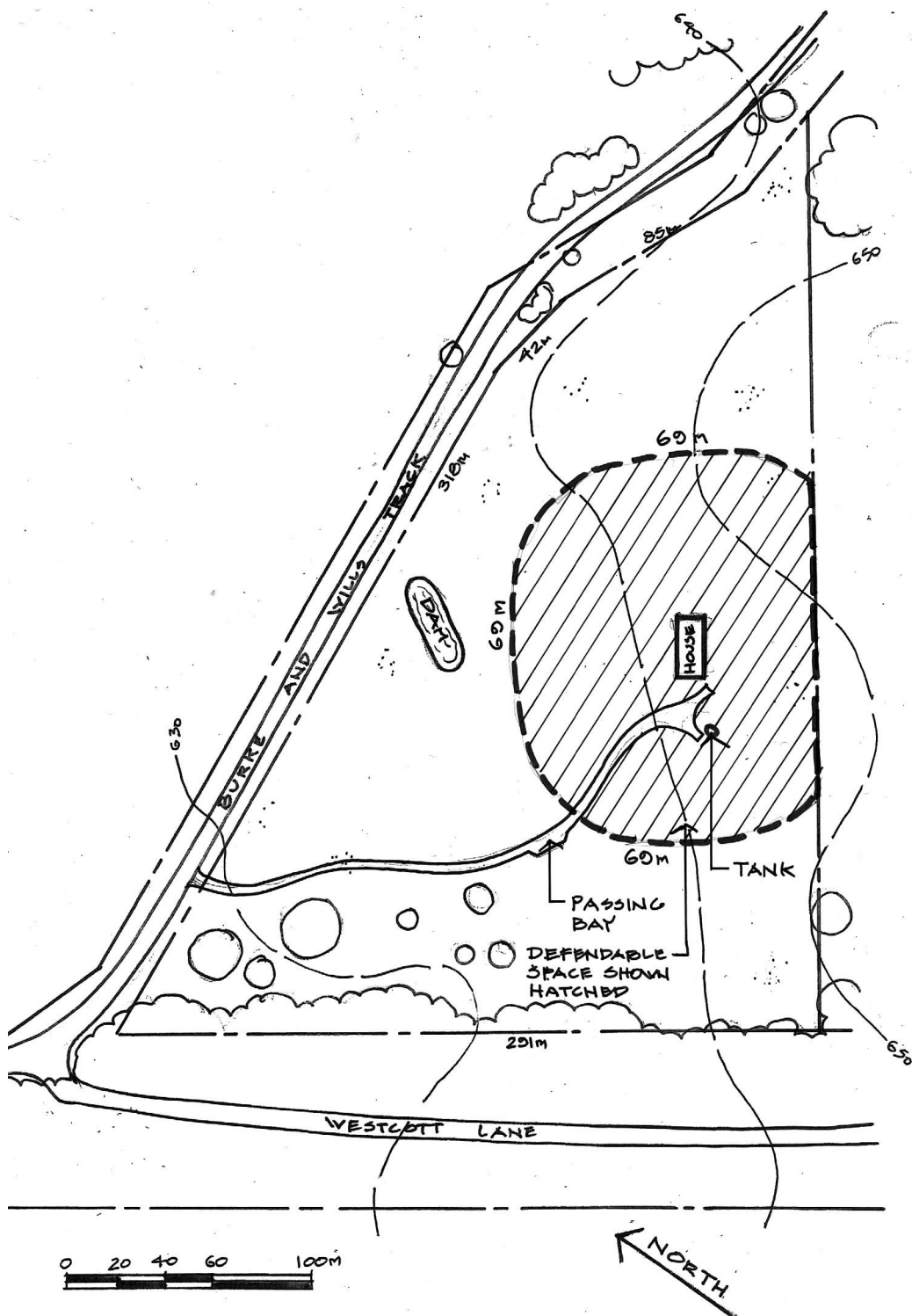


Figure 11 Defendable Space, Access and Water Supply



**SCHEDULE OF BUSHFIRE PROTECTION MEASURES****Defendable space**

The area of defendable space, shown hatched on Figure 11 on the previous page for a distance of 69 metres around the proposed building or to the property boundaries, is where vegetation (and other flammable materials) will be modified and 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 within 20 metres of the building.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

**Construction standards**

The building will be designed and constructed a minimum Bushfire Attack Level of (BAL) 12.5

**Water supply**

The tank shown on the plan will hold 10 000 litres of effective water supply for fire fighting purposes which meets the following requirements:

- Is 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.
- The water supply must also
- Incorporate a ball or gate valve (British Standard Pipe (BSP) 65mm) and coupling (64 mm CFA 3 thread per inch male fitting).
  - The outlet/s of the water tank must be within 4m of the access way and 60m of all parts of the dwelling and be unobstructed.
  - Be readily identifiable from the building or appropriate identification signage to the satisfaction of CFA must be provided.
  - Any pipework and fittings must be a minimum of 65 mm (excluding the CFA coupling).

**Access**

The driveway shown on the plan is will provide access for trucks for fire fighting purposes which meets the following requirements:

- Curves must have a minimum inner radius of 10m.
- The average grade must be no more than 1 in 7 (14.4 per cent) (8.1 degrees) with a maximum of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50m.
- Have a minimum trafficable width of 3.5m of all weather construction.
- Be clear of encroachments for at least 0.5m on each side and 4m above the access way.
- Dips must have no more than a 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle.

A turning area will be provided for fire fighting vehicles close to the building by one of the following:

- A turning circle with a minimum radius of eight metres.
- A driveway encircling the dwelling.
- 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- Be clear of encroachments for at least 0.5m on each side and 4m above the access way.

20 m long 6m wide passing bays will be provided at 200 m intervals

## 9 BUSHFIRE MANAGEMENT STATEMENT

Clause 53.02 contains a range of sub clauses with objectives, approved measures (AM), alternative measures (AltM) and decision guidelines. The table below details which clauses are relevant to this application. The following section demonstrates how the requirements have been met for the relevant standards. Relevant clauses and measures applicable to the proposed development.

| Clause   | Approved Measure | Achieved / Applicable | Justification   |
|--|------------------|-----------------------|---|
| Clause 53.02-3 – Dwellings in existing settlements – Bushfire protection objective | AM 1.1           | Not Applicable        | This site is zoned RCZ so not applicable.             |
|  | AM 1.2           | Not Applicable        |   |
|  | AM 1.3           | Not Applicable        |   |
| Clause 53.02-4.1 Landscape, siting and design objectives                           | AM 2.1           | Applicable            | This development addresses this clause.               |
|  | AM 2.2           | Applicable            |   |
|  | AM 2.3           | Applicable            |   |
| Clause 53.02-4.2 Defendable space and construction objectives                      | AM 3.1           | Applicable            | This development must address this clause.            |
|  | AM 3.2           | Not Applicable        | This proposal is for a single dwelling so N A         |
|  | AltM 3.3         | Not Applicable        | Defendable space contained within property boundaries |
|  | AltM 3.4         | Not Applicable        |   |
|  | AltM 3.5         | Not Applicable        |   |
|  | AltM 3.6         | Not Applicable        | This proposal is for a single dwelling                |
| Clause 53.02-4.3 Water supply and access objectives                                | AM 4.1           | Applicable            | This development addresses this clause.               |
|  | AM 4.2           | Not Applicable        | This proposal is for a single dwelling so N A         |
| Clause 53.02-4.4 Subdivision objectives  | AM 5.1           | Not Applicable        | This proposal is for a single dwelling so N A         |
|  | AM 5.2           | Not Applicable        |   |
|  | AM 5.3           | Not Applicable        |   |
|  | AM 5.4           | Not Applicable        |   |
|  | AM 5.5           | Not Applicable        |   |



### 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.

| Approved Measure | Requirement   |
|------------------|---|
| AM 2.1           | <p><b>The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level.</b></p> <p><b>Response:</b></p> <p>The site is located to the north and east of forest in the Cowbaw State Forest on the south west fringe of dwellings set in farmland to the north west of Lancefield. Forest on public land to the north, south and west of the site is part of the fire Operations Plan which helps reduce the broader landscape fire risk</p> <p>The proposed house site is able to meet the defendable space requirements for 12.5 as per the Method 1 assessment of AS 3959-2018 within the property boundaries .</p>   |
| AM 2.2           | <p><b>A building is sited to ensure the site best achieves the following:</b></p> <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> <p><b>Response:</b></p> <p>The house has been sited to achieve BAL 12.5 defendable space, setting the house within existing cleared grassland.</p> <p>The house is located 220 metres from a public road to utilize an existing cleared land and preserve on site vegetation</p> <p>Access requirements can be met. The proposed drive will provide truck access to the house site.</p> |
| AM 2.3           | <p><b>A building is designed to be responsive to the landscape risk and reduce the impact of bushfire on the building</b></p> <p><b>Response:</b></p> <p>The building will be required to meet a BAL of 12.5. The construction requirements minimize the ability for ember penetration and radiant heat exposure to compromise the building integrity.</p>  |

### 9.1.1 53.02-4.2 Defendable space and construction objective

Defendable space and building construction mitigate the effect of flame contact, radiant heat and embers on buildings.

| Approved Measure | Requirement  |
|------------------|--|
| AM 3.1           | <p><b>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 provided with defendable space in accordance with:</b></p> <p><b>Column A, B or C of Table 2 to Clause 53.02-5 wholly within the title boundaries of the land; or</b></p> <p><b>If there are significant siting constraints, Column D of Table 2 to Clause 53.02-5.</b></p> <p><b>The building is constructed to the bushfire attack level that corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02-5.</b></p> <p><b>Response:</b></p> <p>The house has been sited to achieve BAL 12.5 defendable space (in accordance with Column A of Table 2 to Clause 53.02) within the property boundaries. This is based on the hazard of forest on a 5 to 10 degree downslope to the north west and south and grassland to the east.</p> <p>No native vegetation will need to be removed to achieve BAL 12.5 defendable space within the property boundaries</p> |



## 9.1.2 53.02-4.3 Water supply and access objectives

A static water supply is provided to assist in protecting property.

Vehicle access is designed and constructed to enhance safety in the event of a bushfire.

| Approved Measure | Requirement   |
|------------------|---|
| AM 4.1           | <p><b>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 provided with:</b></p> <ul style="list-style-type: none"> <li>• <b>A static water supply for fire fighting and property protection purposes specified in Table 4 to Clause 53.02-5.</b></li> <li>• <b>Vehicle access that is designed and constructed as specified in Table 5 to Clause 53.02-5.</b></li> </ul> <p><b>The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for fire fighting water supplies.</b></p> <p><b>Response:</b></p> <p>A static water supply will be provided using a fire resistant steel or concrete tank which has a CFA compatible outlet positioned so that a fire truck can drive to within 4 metres of the outlet. 10000 litres will always be retained for fire fighting purposes .(See Table 4 , Appendix 3)</p> <p>Access requirements can be met. A 3.5 metre wide track capable of carrying a 15 ton truck with 4m vertical and 4.5m horizontal clearance will be provided via the proposed track.</p> <p>As the track is longer than 200 metres a passing bay and turning area are required.</p> |

## 10 CONCLUSION

### 53.02 -4.5 Decision guidelines

The proposed development meets the decision guidelines as follows:

The State Planning Policy Framework (SPPF) outlines the broad framework for bushfire protection policy and provisions in the planning scheme. The following policy is included in this;

#### **Clause 13.02-1 S Bushfire planning**

##### *Objective*

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

##### *Strategies*

##### *Protection of human life*

*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*

This proposal has been prepared having regard for this over arching policy

The bushfire hazard landscape and site assessment, and bushfire management statement submitted with the application meets the objectives of Clause 53.02.

Land surrounding the site is a mix of woodland, forest, grassland and modified vegetation. The proper establishment and maintenance of defendable space on site will reduce the overall bushfire risk.

The proposed measures can be practically implemented and maintained in conjunction with the proposed use of the land for rural conservation purposes.

## 11 REFERENCES

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Standards Australia (2009). *AS 39359-2009 Construction of Buildings in Bushfire Prone Areas*. Standards Australia, North Sydney, New South Wales.

DELWP (2017) *Planning Permit Applications – Bushfire Management Overlay Technical Guide* Department of Environment, Land, Water and Planning

DELWP (2018) *Clause 13.02-1S Bushfire planning* Department of Environment, Land, Water and Planning

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DELWP (2018) *Clause 53.02 Bushfire Planning* Department of Environment, Land, Water and Planning

[http://planning-schemes.delwp.vic.gov.au/schemes/vpps/53\\_02.pdf](http://planning-schemes.delwp.vic.gov.au/schemes/vpps/53_02.pdf)

DELWP (2018) *Bushfire Fuel and Risk Management*

<https://www.ffm.vic.gov.au/bushfire-fuel-and-risk-management/joint-fuel-management-program>

Nearmap

<http://maps.au.nearmap.com>



## APPENDIX 1– BUSHFIRE SITE ASSESSMENT

:

|   | North  | South  | East                | West   |
|---|--------|--------|---------------------|--------|
| Vegetation Type                                     | Forest | Forest | Grassland           | Forest |
| Distance from the house site boundary to vegetation | 165    | 138    | 44                  | 170    |
| The effective slope under the vegetation            | 5 - 10 | 5 - 10 | 5 - 10              | 5 - 10 |
| Defendable space                                    | 69     | 69     | Property boundaries | 69     |
| BAL   | 12.5   | 12.5   | 12.5                | 12.5   |

APPENDIX 2 DEFENDABLE SPACE CHECKLIST FOR SITE  
(TABLE 6, CLAUSE 53.02 -3)

| Requirement   | Compliance | Comment         | Is a permit required to remove vegetation |
|---|------------|-----------------|---|
| All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.           | Yes        |                 | No  |
| Grass must be short cropped and maintained during the declared fire danger period.                                      | No         | Grass to be cut | No  |
| Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.    | Yes        |                 | No  |
| Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building. | Yes        |                 | No  |
| Shrubs must not be located under the canopy of trees.   | Yes        |                 | No  |
| Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.        | Yes        |                 | No  |
| Trees must not overhang or touch any elements of the building.  | Yes        |                 | No  |
| The canopy of trees must be separated by at least 5 metres.   | Yes        |                 | No  |
| There must be a clearance of at least 2 metres between the lowest tree branches and ground level.                       | Yes        |                 | No  |

## APPENDIX 3 ACCESS AND WATER SUPPLY REQUIREMENTS

**Table 4 Water supply requirements****Capacity, fittings and access**

| Lot sizes<br>(square meters) | Hydrant<br>available | Capacity<br>(litres) | Fire authority fittings<br>and access required |
|------------------------------|----------------------|----------------------|--|
| Less than 500                | Not applicable       | 2,500                | No   |
| 500-1,000                    | Yes                  | 5,000                | No   |
| 500-1,000                    | No                   | 10,000               | Yes  |
| 1,001 and above              | Not applicable       | 10,000               | Yes  |

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

**Fire Authority requirements**

Unless otherwise agreed in writing by the relevant fire authority, the water supply must:

- Be stored in an above ground water tank constructed of concrete or metal.
- Have all fixed above ground water pipes and fittings required for firefighting purposes made of corrosion resistant metal.
- Include a separate outlet for occupant use.

Where a 10,000 litre water supply is required, fire authority fittings and access must be provided as follows:

- Be readily identifiable from the building or appropriate identification signage to the satisfaction of the relevant fire authority.
- Be located within 60 metres of the outer edge of the approved building.
- The outlet/s of the water tank must be within 4 metres of the accessway and unobstructed.
- Incorporate a separate ball or gate valve (British Standard Pipe (BSP 65 millimetre) and coupling (64 millimetre CFA 3 thread per inch male fitting).
- Any pipework and fittings must be a minimum of 65 millimetres (excluding the CFA coupling).

**Table 5 Vehicle access design and construction**

Vehicle access (or part thereof) of a length specified in Column A implements the design and construction requirements specified in Column B.

| Column A                                    | Column B   |
|---|--|
| 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 <b>AM4.1</b> .  |
| Length of access is less than 30 metres     | Where fire authority access to the water supply is required under <b>AM4.1</b> fire authority vehicles should be able to get within 4 metres of the water supply outlet.   |
| 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</li> </ul> |
|   | <p>than 1 in 5 (20%) (11.3°) for no more than 50 metres.</p> <ul style="list-style-type: none"> <li>▪ Dips must have no more than a 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle.</li> </ul>  |
| 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>  |
| Length of access is greater than 200 metres | <ul style="list-style-type: none"> <li>▪ Passing bays must be provided at least every 200 metres.</li> <li>▪ Passing bays must be a minimum of 20 metres long with a minimum trafficable width of 6 metres.</li> </ul>   |

*Note 1: The length of access should be measured from a public road to either the building or the water supply outlet, whichever is longer.*



**SCHEDULE OF BUSHFIRE PROTECTION MEASURES****Defendable space**

The area of defendable space is shown hatched for a distance of 69m around the proposed dwelling or to the property boundaries, where vegetation (and other flammable materials) will be modified and 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.

**Construction standards**

The building will be designed and constructed a minimum Bushfire Attack Level of (BAL) 12.5.

**Water supply**

A tank on site will hold 10 000 litres of effective water supply for fire fighting purposes which meets the following requirements:

- Is 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

The water supply must also

- Incorporate a ball or gate valve (British Standard Pipe (BSP) 65mm) and coupling (64 mm CFA 3 thread per inch male fitting).
- The outlet/s of the water tank must be within 4m of the access way and 60m of all parts of the building and be unobstructed.
- Be readily identifiable from the building or appropriate identification signage to the satisfaction of CFA must be provided.
- Any pipework and fittings must be a minimum of 65 mm (excluding the CFA coupling).

**Access**

The driveway shown on the plan will provide access for trucks for fire fighting purposes which meets the following requirements:

- A load limit of at least 15 tonnes
- Curves must have a minimum inner radius of 10m.
- The average grade must be no more than 1 in 7 (14.4 per cent) (8.1 degrees) with a maximum of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50m.
- Have a minimum trafficable width of 3.5m of all weather construction.
- Be clear of encroachments for at least 0.5m on each side and 4m above the access way.
- Dips must have no more than a 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle.

A turning area will be provided for fire fighting vehicles close to the building by one of the following:

- A turning circle with a minimum radius of eight metres.
- A driveway encircling the dwelling.
- 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.

20m long, 6m wide passing bays will be provided at 200 m intervals

