25 August 2026

Our Ref: A26.201_BMPA_0_FINAL


| | | | |
|---|---|---|---|
| **Name:** | Adam D'Alessandro | **Project No:** | A26.201 |
| **Company:** | Eglinton Estates Pty Ltd ATF SNS Trust c/- Woodsome Management Pty Ltd | **Enquiries:** | Eva Cronin |
| **Email:** | adam@woodsome.com.au | | |


# Bushfire Management Plan Addendum: Eglinton District Centre Activity Centre Plan (Central Precinct)

## 1 Background

This Bushfire Management Plan (BMP) Addendum (herein referred to as Addendum) has been prepared to support an amendment to the central precinct of the Eglinton District Centre Activity Centre Plan located at Lot 9101 Pipidinny Road, Eglinton (the Site; Figure 1.1; Figure 1.2). A BMP has previously been prepared for the Eglinton District Centre Activity Centre Plan (Urbis 2021) by Strategen Environmental (now JBS&G) in 2019, noting this BMP was prepared in accordance with bushfire policy and guidelines in effect at the time (that have since been superseded). The Eglinton District Centre Activity Centre Plan (ACP) has since been approved by the Western Australian Planning Commission (WAPC), subject to a number of modifications.

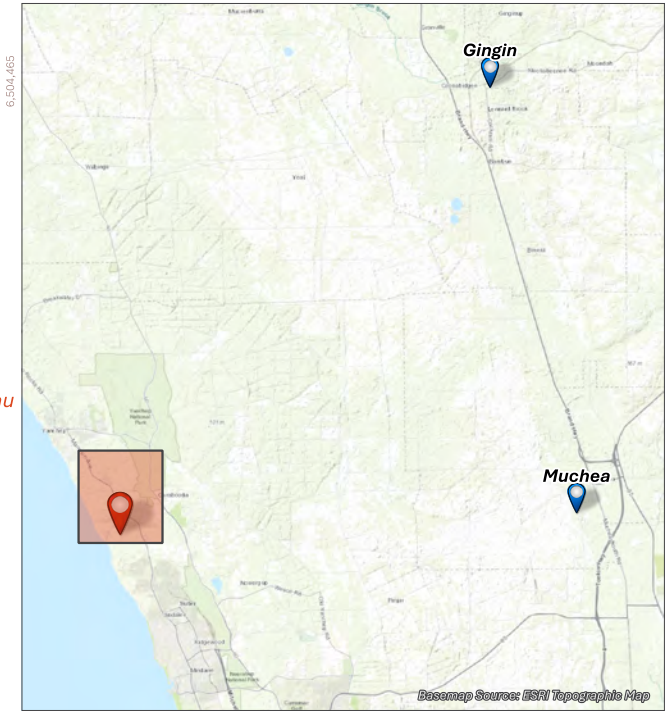
The Site is designated as bushfire prone (Area 2) on the *Western Australian Map of Bushfire Prone Areas* (DFES 2025; Figure 1.3). The amendment must, therefore, address the requirements of *State Planning Policy 3.7 Bushfire* (SPP 3.7; WAPC 2024a) and *Planning for Bushfire Guidelines* (the Guidelines; WAPC 2024b). Rather than prepare a new BMP, a BMP addendum, in conjunction with the previous BMP (Strategen Environmental, 2019) is considered to provide a sufficient level of detail to enable the Central Precinct amendment to be progressed.

Accordingly, Terravias have prepared a BMP addendum to provide an updated bushfire assessment and demonstrate that the proposed Eglinton District Centre ACP (Central Precinct) amendment complies with the current active (in force) version of SPP 3.7 and the Guidelines. This Addendum is to be read in conjunction with the previous BMP (Strategen Environmental, 2019).










terravias

0 70 140 210 280 m

COORDINATE REFERENCE SYSTEM:
**GDA2020 / MGA Zone 50**

SCALE: **1:7,900**

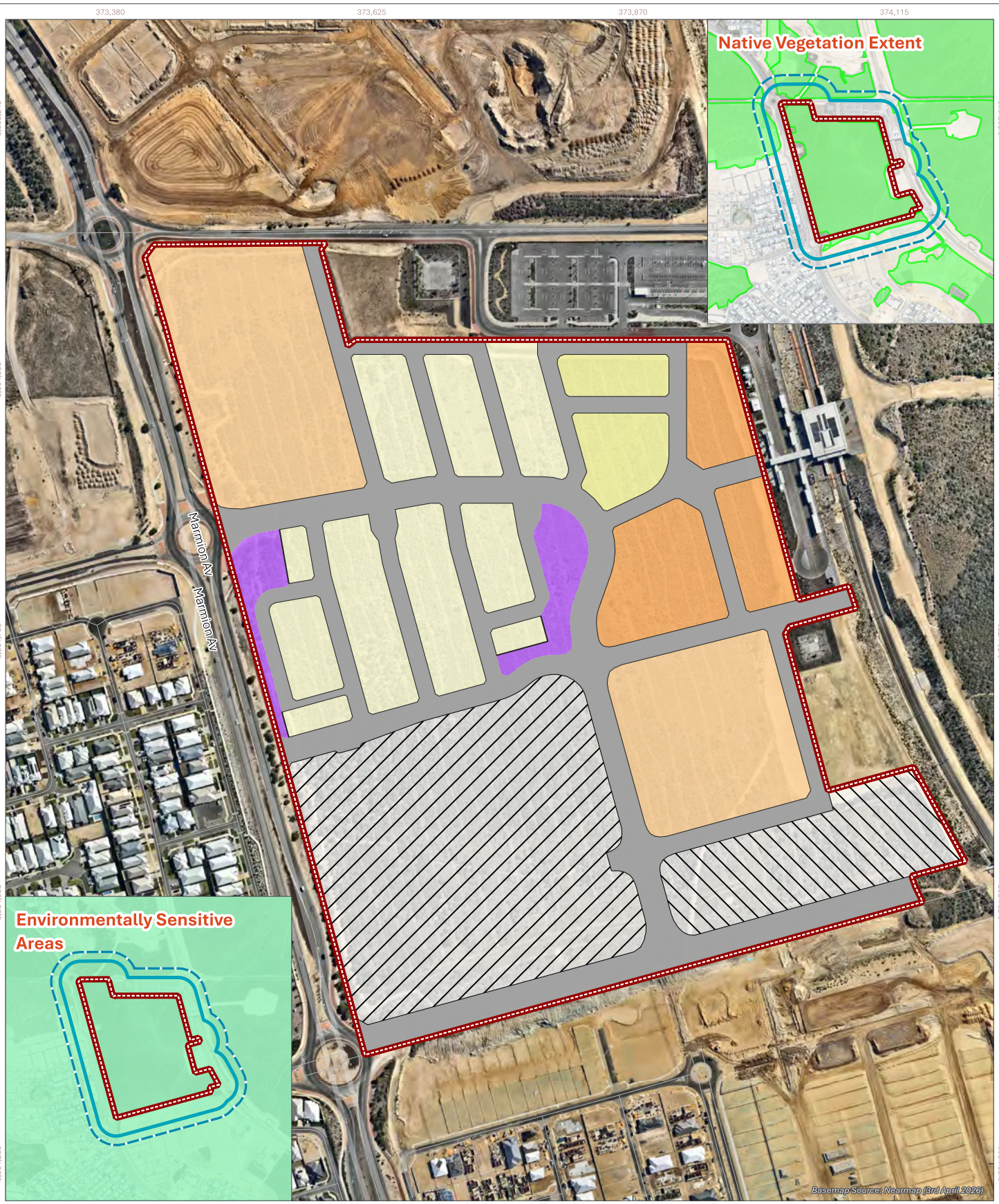
PROJECT NUMBER: **A26.201**

DRAWN BY / REVIEWED BY: **SC / EC** **24/8/2026**

## Figure 1.1: Site Overview

terravias.com.au

- Subject Site
- Buffer 100m
- Buffer 150m




terravias

0 40 80 120 160 m

COORDINATE REFERENCE SYSTEM:
**GDA2020 / MGA Zone 50**

SCALE: **1:4,900**

PROJECT NUMBER: **A26.201**

DRAWN BY / REVIEWED BY: **SC / EC** **24/8/2026**

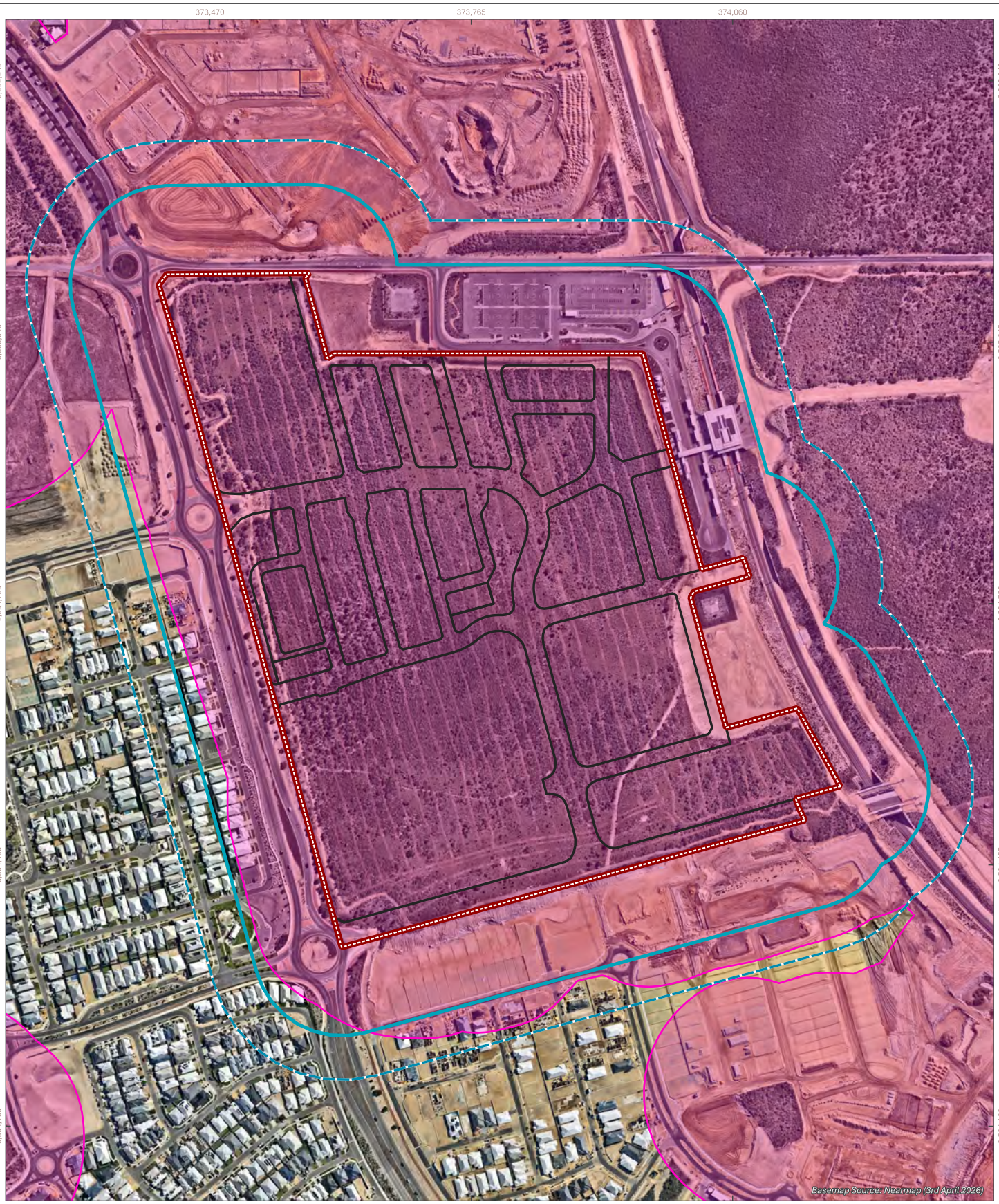
N

## Figure 1.2: Site Plan

terravias.com.au

- Subject Site
- Commercial
- Service Commercial
- R40
- R60
- R80
- R100
- POS
- Road Reserve
- Native Vegetation Extent (DPIRD-005)
- Environmentally Sensitive Areas (DWER-046)

\\TVSNAS01\DataMgmt\GIS\Project Data\2026\A26_201\3. Projects\2_BMPAddendum\A26_201_BALAdd.qgz




terravias

0 50 100 150 200 m

COORDINATE REFERENCE SYSTEM:
**GDA2020 / MGA Zone 50**

SCALE: **1:5,900**

PROJECT NUMBER: **A26.201**

DRAWN BY / REVIEWED BY: **SC / EC**

**24/8/2026**

N

## Figure 1.3: Bushfire Prone Areas

terravias.com.au

- Subject Site
- Buffer 100m
- Buffer 150m
- Site Plan

**Bush Fire Prone Area Planning (OBRM-023)**

- Bushfire Prone Area 2

# 2 Environmental Considerations

Environmental assessments have been undertaken and subsequent approvals obtained as part of the previously prepared Eglinton District Centre ACP. Therefore, Terravias assumes that environmental values within the site (as shown in Figure 1.1) will not prohibit the ability to achieve the bushfire mitigation strategies in this Addendum. The developer is responsible for ensuring all prior approvals obtained still remain valid prior undertaking clearing for this development.

# 3 Bushfire Assessment

Terravias have undertaken a site assessment on 17 July 2026 to identify any changes that may have occurred since the assessment was undertaken in 2019. Key points to note regarding this assessment are summarised below:

- As the site is a potential UXO area, access to all vegetated areas within the assessment area (within the Site and surrounding 150 m) was not possible. Therefore, Terravias have adopted a conservative classification for remnant native vegetation within and surrounding the site that takes into consideration the pre-European vegetation mapping of Western Australia dataset (DPIRD-006) which indicates the site is mapped as vegetation type 107 Scrub-heath / Thicket. Species within this vegetation type located on the Swan Coastal Plain largely consist of Thickets of *Acacia rostellifera* (summer-scented acacia) and *Melaleuca cardiophylla* (tangling melaleuca) that are interspersed with *A. lasiocarpa* (panjang) and *Melaleuca systena* (coastal melaleuca) heath (Beard et al 2013). The height of these species at maturity is generally 2 m or more.
- Vegetation within the railway corridor has been excluded under Clause 2.2.3.2 of AS 3959: 2018 which is consistent with approved BMPs (Strategen 2019; JBS&G 2024) associated with the Eglinton District Centre ACP and the Eglinton District Centre East ACP Amendment respectively. This vegetation is not considered to represent a significant bushfire threat given the narrow linear nature of this vegetation in the context of what will be a highly built-up landscape.
- It is anticipated that vegetation classifications in this Addendum will be refined at subsequent planning stages when a more detailed analysis is undertaken to prepare the Bushfire Attack Level (BAL) Contour assessments.
- Effective slopes have been assessed based on observations during the site visit along with analysis of the publicly available 2 metre contour dataset (DPIRD-072).
- The inclusion of a BAL Contour assessment as part of the updated bushfire assessment presented in this Addendum (in lieu of a Bushfire Hazard Level [BHL] Assessment) is considered appropriate, given sufficient detail regarding lot layout is available.

The pre-development classified vegetation and effective slope for the site from each of the identified vegetation plots are identified below in Table 3.1and Figure 3.1.

**Table 3.1: Pre-Development Classified Vegetation as per AS 3959: 2018.**

| Plot | Vegetation classification | Effective slope |
|---|---|---|
| **1** | Class C Shrubland | Downslope >0 to 5 degrees |
| **2** | Class D Scrub | Downslope >0 to 5 degrees |
| **3** | Class D Scrub | All upslopes and flat land (0 degrees) |
| **4** | Class G Grassland | All upslopes and flat land (0 degrees) |
| **5** | Excluded - clause 2.2.3.2 (e) | - |
| **6** | Excluded - clause 2.2.3.2 (f) | - |

Photographs relating to each individual vegetation plot identified are included in Appendix A.

The post-development vegetation classifications are depicted in Table 3.2 and Figure 3.2 and are based on the following assumptions:

- The entirety of the subject site will be cleared of vegetation.
- All landscaping within proposed Public Open Space (POS) will be established and maintained to a low threat state in accordance with Clause 2.2.3.2(f) of AS 3959:2018.

### Table 3.2: Post-Development Classified Vegetation as per AS 3959: 2018.

| Plot | Vegetation classification | Effective slope |
|---|---|---|
| 1 | Class C Shrubland | Downslope >0 to 5 degrees |
| 2 | Class D Scrub | Downslope >0 to 5 degrees |
| 3 | Class D Scrub | All upslopes and flat land (0 degrees) |
| 4 | Class G Grassland | All upslopes and flat land (0 degrees) |
| 5 | Excluded - clause 2.2.3.2 (c) | - |
| 6 | Excluded - clause 2.2.3.2 (e) | - |
| 7 | Excluded - clause 2.2.3.2 (f) | - |

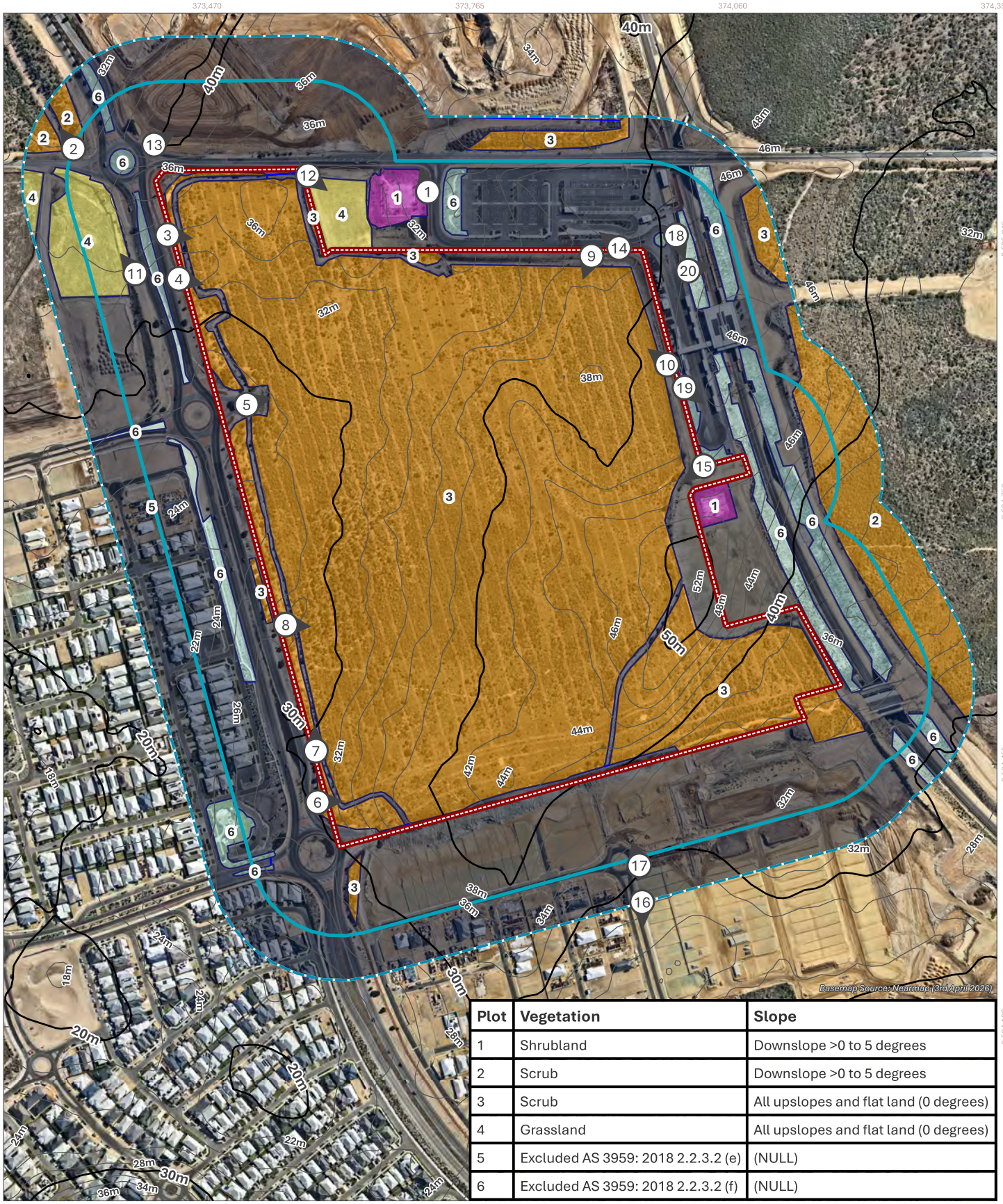
Broadly, the key difference between the post-development vegetation classifications in the Terravias assessment and the previous assessment (Strategen 2019) is the exclusion of surrounding areas to the north, west and south of the subject site as low threat under Clause 2.2.3.2 of AS 3959: 2018. This reflects the change in status of vegetation surrounding the site due to recent clearing associated with urban expansion.

Table 3.3 and Figure 3.3 display the post-development bushfire assessment outputs for the Site in the form of Bushfire Attack Level (BAL) contours. The assessment has been undertaken in accordance with methodology in AS 3959: 2018 (Method 1 Procedure) and the Guidelines.

### Table 3.3: Method 1 BAL Calculation (BAL Contours)

| Plot | Vegetation classification | Effective slope | Separation distances required (m) | | | | |
|---|---|---|---|---|---|---|---|
| | | | BAL-FZ | BAL-40 | BAL-29 | BAL-19 | BAL-12.5 |
| 1 | Class C Shrubland | Downslope >0 to 5 degrees | <7 | 7-<10 | 10-<15 | 15-<22 | 22-<100 |
| 2 | Class D Scrub | Downslope >0 to 5 degrees | <11 | 11-<15 | 15-<22 | 22-<31 | 31-<100 |
| 3 | Class D Scrub | All upslopes and flat land (0 degrees) | <10 | 10-<13 | 13-<19 | 19-<27 | 27-<100 |
| 4 | Class G Grassland | All upslopes and flat land (0 degrees) | <6 | 6-<8 | 8-<12 | 12-<17 | 17-<50 |
| 5 | Excluded - clause 2.2.3.2 (c) | - | No separation distances required - BAL-LOW | | | | |
| 6 | Excluded - clause 2.2.3.2 (e) | - | No separation distances required - BAL-LOW | | | | |
| 7 | Excluded - clause 2.2.3.2 (f) | - | No separation distances required - BAL-LOW | | | | |

BMPs prepared for individual precincts within the site will need to consider vegetation that is retained on a temporary basis given the subject site will be cleared and developed through a staged approach.




| Plot | Vegetation | Slope |
|---|---|---|
| 1 | Shrubland | Downslope >0 to 5 degrees |
| 2 | Scrub | Downslope >0 to 5 degrees |
| 3 | Scrub | All upslopes and flat land (0 degrees) |
| 4 | Grassland | All upslopes and flat land (0 degrees) |
| 5 | Excluded AS 3959: 2018 2.2.3.2 (e) | (NULL) |
| 6 | Excluded AS 3959: 2018 2.2.3.2 (f) | (NULL) |

terravias

0 50 100 150 200 m

COORDINATE REFERENCE SYSTEM:
**GDA2020 / MGA Zone 50**

SCALE: **1:5,900**

PROJECT NUMBER: **A26.201**

DRAWN BY / REVIEWED BY: **SC / EC** **24/8/2026**

## Figure 3.1: Pre-Development Vegetation Classification

terravias.com.au

- Subject Site
- Buffer 100m
- Buffer 150m
- Photo Location

**Contours (DPIRD-072)**
- 2m
- 10m

**Vegetation Classification**
- Class C - Shrubland
- Class D - Scrub
- Class G - Grassland
- Excluded AS 3959: 2018 2.2.3.2 (e)
- Excluded AS 3959: 2018 2.2.3.2 (f)




| Plot | Vegetation | Slope |
|---|---|---|
| 1 | Shrubland | Downslope >0 to 5 degrees |
| 2 | Scrub | Downslope >0 to 5 degrees |
| 3 | Scrub | All upslopes and flat land (0 degrees) |
| 4 | Grassland | All upslopes and flat land (0 degrees) |
| 5 | Excluded AS 3959: 2018 2.2.3.2 (c) | (NULL) |
| 6 | Excluded AS 3959: 2018 2.2.3.2 (e) | (NULL) |
| 7 | Excluded AS 3959: 2018 2.2.3.2 (f) | (NULL) |

terravias

0 50 100 150 200 m

COORDINATE REFERENCE SYSTEM:
**GDA2020 / MGA Zone 50**

SCALE: **1:5,900**

PROJECT NUMBER: **A26.201**

DRAWN BY / REVIEWED BY: **SC / EC**

**24/8/2026**

N

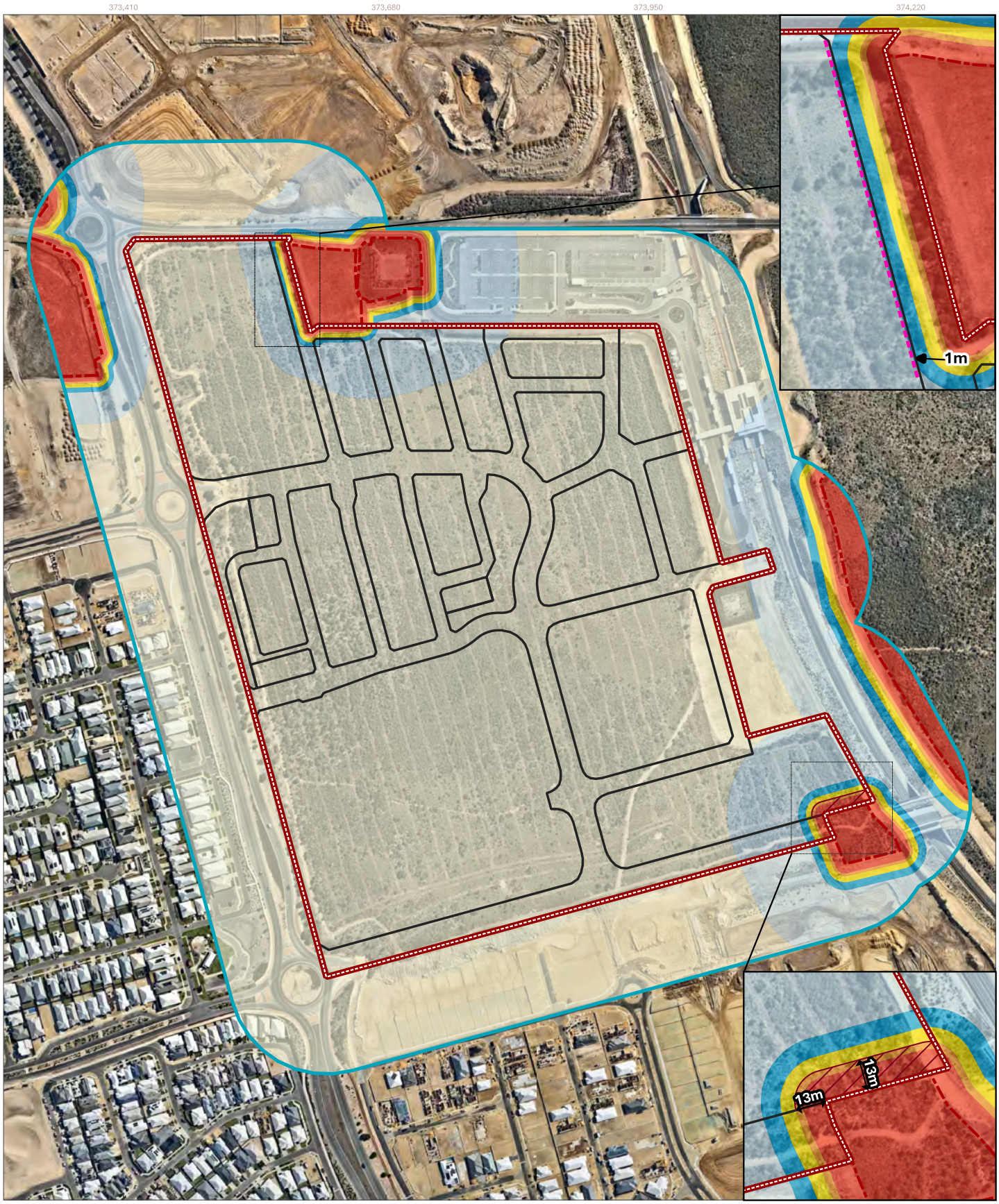
## Figure 3.2: Post-Development Vegetation Classification

terravias.com.au

Subject Site
Buffer 100m
Buffer 150m

**Vegetation Classification**

Class C - Shrubland
Class D - Scrub
Class G - Grassland
Excluded AS 3959: 2018 2.2.3.2 (c)
Excluded AS 3959: 2018 2.2.3.2 (e)
Excluded AS 3959: 2018 2.2.3.2 (f)




## Figure 3.3: Bushfire Attack Level (BAL) Contours

terravias.com.au

- Subject Site
- Buffer 100m
- Site Plan
- Bushfire Hazard Interface
- Asset Protection Zone (APZ)
- Distance
- 1m Setback

**Bushfire Attack Level (BAL)**

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW

terravias

0 40 80 120 160 m

COORDINATE REFERENCE SYSTEM:
**GDA2020 / MGA Zone 50**

SCALE: **1:5,400**

PROJECT NUMBER: **A26.201**

DRAWN BY / REVIEWED BY: **SC / EC**

**24/8/2026**

N

\\TVSNAS01\DataMgmt\GIS\Project Data\2026\A26_201\3. Projects\2_BMPAddendum\A26_201_BALAdd.qgz

# 4 Assessment Against the Bushfire Protection Criteria,

The previous BMP (Strategen Environmental, 2019) assessed the ACP against a now superseded version of the Guidelines. Terravias has therefore assessed the Eglinton District Centre ACP (Central Precinct) amendment against Bushfire Protection Criteria (BPC) 5 (Structure plans and subdivision applications) of the current Guidelines, as detailed in Table 4.1. Assessment against BPC 5 is considered appropriate as the lot layout and internal road network is known. Bushfire mitigation measures are depicted in Figure 4.1 where relevant.

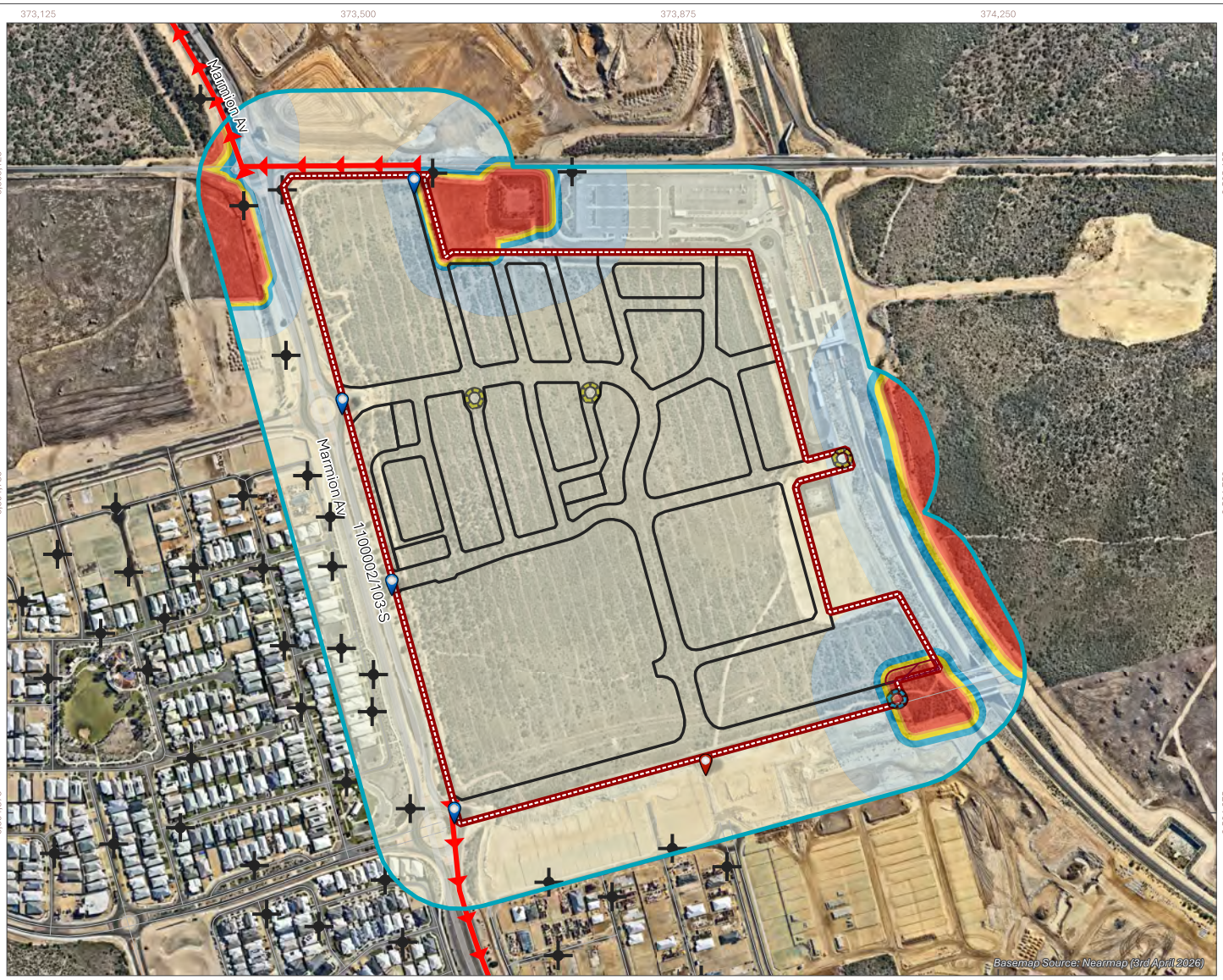
### Table 4.1: Assessment Against Bushfire Protection Criteria

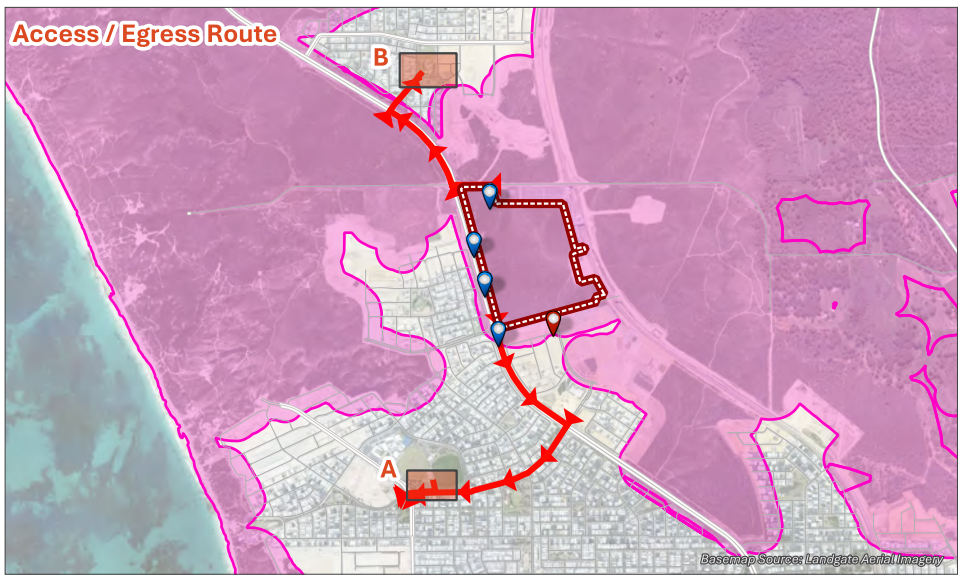
| Bushfire Protection Criteria 5 | AS | OA | N/A |
|---|---|---|---|
| **Element 1: Location**<br>**A1.1 Broader Landscape Type** | ☐ | ☐ | ☑ |
| Given the subject site has been previously assessed against SPP 3.7 and the Guidelines as part of the Eglinton District Centre Activity Centre Plan (ACP), a Broader Landscape Assessment is not required. | | | |
| **Element 2: Siting and design**<br>**A2.1 Siting and design** | ☑ | ☐ | ☐ |
| Areas identified for future development will be subject to BAL ratings of ≤BAL-29, as shown in Figure 3.3. A small portion of the service commercial lot in the southeast of the site is subject to BAL-FZ and BAL-40 ratings (in proximity to the east and southeast boundaries), however, this lot contains a sufficient development site that achieves ≤BAL-29 (2.17 ha).<br>Note: Future development within the northeastern portion of the 3.578 ha (R80) lot can achieve a BAL-12.5 rating with a 1 m setback from the eastern boundary. The indicative setback line is depicted in Figure 3.3.<br>The proposed Eglinton District Centre ACP (Central Precinct) amendment is considered to be compliant with A2.1. | | | |
| **A2.2 Asset Protection Zone (APZ)** | ☑ | ☐ | ☐ |
| Future proposed development within the service commercial lot in the southeast of the site has an APZ sufficient for the potential radiant heat flux to not exceed 29 kW/m$^2$ (Figure 3.3) and will be managed in accordance with the Asset Protection Zone Technical Requirements (WAPC, 2024b; Appendix B).<br>The APZ can be contained within the boundaries of the lot or managed in perpetuity in a low fuel state. All other development areas will be suitably separated from bushfire hazards by roads and low threat developed areas such as carparks, etc. Temporary APZs for staged development within the subject site may also be required and this will be assessed in further detail at subsequent planning stages.<br>The proposed Eglinton District Centre ACP (Central Precinct) amendment is considered to be compliant with A2.2. | | | |
| **A2.3 Clearing of native vegetation** | ☐ | ☐ | ☑ |
| Not applicable - As detailed in Section 2, Terravias assumes that the clearing of native vegetation has been assessed as part of the ACP and the Site can be cleared to facilitate future development. No additional clearing of native vegetation is required to comply with SPP 3.7 and the Guidelines beyond what is currently planned. | | | |
| **Element 3: Vehicular access**<br>**A3.1 Public roads** | ☑ | ☐ | ☐ |
| The subject site is currently accessed via multiple existing public roads. The Guidelines do not prescribe values for the trafficable (carriageway/pavement) width of public roads as they should be in accordance with the class of road as specified in the IPWEA Subdivision Guidelines, Liveable Neighbourhoods, Austroad Standards and/or any applicable standard in the local government area. Proposed roads within the subject site will be designed according to Liveable Neighbourhoods.<br>Terravias' assessment, however, has identified that the roads surrounding the development are bitumen with estimated width of the sealed surface achieving a minimum width of 6 m and therefore consider the existing | | | |

| Bushfire Protection Criteria 5 | AS | OA | N/A |
|---|---|---|---|
| road network would provide suitable access and egress for the community and emergency services personnel in the event of a bushfire.<br>Vehicular access technical requirements in accordance with the Guidelines are detailed in Appendix C.<br>The proposed Eglinton District Centre ACP (Central Precinct) amendment is considered to be compliant with A3.1. | | | |
| **A3.2 Access routes** | ☑ | ☐ | ☐ |
| Multiple access routes from the subject site to more than two suitable destinations are available via the existing public network (Figure 4.1). Access to the site is available via four different access points. An additional (fifth) access point will be available once urban development south of the site is completed.<br>Refer to A3.1 above for details regarding vehicular access technical requirements for public roads.<br>The proposed Eglinton District Centre ACP (Central Precinct) amendment is considered to be compliant with A3.2. | | | |
| **A3.3a No-through roads** | ☑ | ☐ | ☐ |
| Four proposed roads within the subject site are no through roads.<br>The eastern terminus of Eglinton Boulevard will be temporary, and will be connected (via a bridge over the rail corridor) to the future roads associated with development within the Eglinton District Centre ACP precinct east of rail corridor.<br>All of these roads are less than 200 m in length, with the exception of the temporary no-through road on Eglinton Boulevard. However, this temporary road is considered compliant as its terminus is within 200 m of BAL-LOW.<br>The proposed Eglinton District Centre ACP (Central Precinct) amendment is considered to be compliant with A3.3a. | | | |
| **A3.3b No-through road requirements** | ☑ | ☐ | ☐ |
| The terminus of Eglinton Boulevard to the east will contain a temporary cul-de-sac in accordance with the Guidelines until future road connections remove the requirement. The remaining three roads will be permanent no through roads and will contain a permanent cul-de-sac in accordance with specifications in the Guidelines (Appendix C).<br>The proposed Eglinton District Centre ACP (Central Precinct) amendment is considered to be compliant with A3.3b. | | | |
| **A3.4 Emergency access way** | ☐ | ☐ | ☑ |
| Not applicable - No emergency access ways are required or proposed as part of this development given the proposed development complies with A3.2 and A3.3. | | | |
| **A3.5a Perimeter roads** | ☑ | ☐ | ☐ |
| All areas identified for future development will be suitably separated from adjacent significant bushfire hazards. A perimeter road (or Fire Service Access Route [FSAR] in lieu of a perimeter road) is not considered to be required between the service commercial lot in the southeast of the site and the adjacent patch of remnant Class D Scrub vegetation (Plot 3) given the size of this patch, its isolation from other areas of classified vegetation and taking into consideration it only impacts the lot from one aspect.<br>The proposed Eglinton District Centre ACP (Central Precinct) amendment is considered to be compliant with A3.5a. | | | |
| **A3.5b Fire service access route** | ☐ | ☐ | ☑ |
| No Fire Access Routes are required or proposed as part of this development. | | | |
| **A3.6 Battle-axe access legs** | ☐ | ☐ | ☑ |
| Not applicable – no battle-axe access legs are proposed as part of this development. | | | |
| **Element 4: Water supply**<br>**A4.1 Water supply for structure plans** | ☑ | ☐ | ☐ |

| Bushfire Protection Criteria 5 | AS | OA | N/A |
|---|---|---|---|
| Existing reticulated water is present within the area and the subject site will be connected to this water supply. The nearest existing hydrants are located along Pipidinny Road and Marmion Avenue (Figure 4.1). Terravias assumes the surrounding network of hydrants meet Water Corporation specifications given they are established and within the Perth metropolitan area.<br>The proposed Eglinton District Centre ACP (Central Precinct) amendment is considered to be compliant with A4.1. | | | |

Note: AS - Acceptable Solution, OA - Outcomes-based Approach, N/A - Not Applicable.










terravias

0 60 120 180 240 m

COORDINATE REFERENCE SYSTEM:
**GDA2020 / MGA Zone 50**

SCALE: **1:7,500**

PROJECT NUMBER: **A26.201**

DRAWN BY / REVIEWED BY: **SC / EC**

**24/8/2026**

## Figure 4.1: Bushfire Mitigation Measures

terravias.com.au

- Subject Site
- Buffer 100m
- Site Plan
- Asset Protection Zone (APZ)
- Permanent cul-de-sac
- Temporary cul-de-sac
- Water Hydrant (WCORP-070)
- Access Point
- Additional Access Point
- Access / egress route
- Bushfire Prone Area 2 (OBRM-023)

**Bushfire Attack Level (BAL)**

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW

# 5 Additional Considerations

The Central Precinct overall concept plan (Figure 1.2) has been used to inform the assessment in this BMP addendum. As part of this assessment, the following matters have been identified as needing to be addressed at subsequent planning stages:

- The two POS areas will need to be designed to a public parkland specification to meet the definition of low threat vegetation under Clause 2.2.3.2 (f) of AS 3959: 2018. If vegetation within the designated POS areas is unable to be established and maintained to low threat, these areas will need to be classified in accordance with AS 3959: 2018, resulting in potential changes to the master plan layout.
- All subdivision stages will need to demonstrate that each lot has access to two different access routes providing access in different directions to two different suitable destinations.
- Evidence that a reticulated water supply can be provided to service the subject site and future development.

# 6 Conclusion

In the professional opinion of the author, the Eglinton District Centre ACP (Central Precinct) amendment satisfies the intent, aim and objectives of SPP 3.7 and is recommended for approval.

# 7 References

Beard et al. (2013). *The vegetation of Western Australia at the 1:3,000,000 scale. Explanatory memoir. Second edition,* vol. 9, no. 6, pp 1-152. Conservation Science Western Australia.

JBS&G. (2024). *Eglinton District Centre East – Activity Centre Plan Amendment Eglinton Estates Pty Ltd Bushfire Management Plan (Strategic Planning Application).* Rev 0. December 2024.

Standards Australia (SA). (2018). *Construction of buildings in bushfire-prone areas (AS 3959: 2018)*.

Strategen Environmental (Strategen). (2019). *Eglinton District Centre, Activity Centre Structure Plan Bushfire Management Plan*. Final. March 2019.

Urbis. (2021). *Eglinton District Centre Activity Plan*. Final. May 2021.

Western Australian Planning Commission (WAPC). (2024a). *State Planning Policy 3.7 Bushfire*. Government of Western Australia.

Western Australian Planning Commission (WAPC). (2024b). *Planning for Bushfire Guidelines*. Government of Western Australia.

## Datasets Used

Department of Fire and Emergency Services (DFES). (2025). *Bush Fire Prone Area Planning (OBRM-023)*. Retrieved on 23/07/2026 from: http://www.dfes.wa.gov.au/regulationandcompliance/bushfireproneareas/Pages/default.aspx.

Department of Primary Industries and Regional Development (DPIRD). (2025). *Native Vegetation Extent (DPIRD-005)*. Retrieved on 23/07/2026 from https://catalogue.data.wa.gov.au/dataset/native-vegetation-extent.

Department of Primary Industries and Regional Development (DPIRD). (2019). *2 metre contours (DPIRD-072)*. Retrieved on 23/07/2026 from https://catalogue.data.wa.gov.au/dataset/dpird-2-metre-contours.

Department of Primary Industries and Regional Development (DPIRD). (2022). *10 metre contours (DPIRD-073)*. Retrieved on 23/07/2026 from https://catalogue.data.wa.gov.au/dataset/dpird-2-metre-contours.

Department of Water and Environmental Regulation (DWER). (2025). *Clearing Regulations - Environmentally Sensitive Areas (DWER-046)*. Retrieved on 23/07/2026 from https://catalogue.data.wa.gov.au/dataset/clearing-regulations-environmentally-sensitive-areas-dwer-046.

Water Corporation. (2026). *Water Hydrant (WCORP-070)*. Retrieved on 28/07/2026 from https://catalogue.data.wa.gov.au/dataset/water-hydrant.

**Terravias Disclaimer Statement**

© Terravias Pty Ltd (Terravias). The content and layout of this Deliverable are subject to copyright owned by Terravias, except to the extent that copyright has been legally assigned or licenced to Terravias. It is provided in confidence. The Deliverable must not be copied, reproduced, transmitted or distributed without Terravias' prior written consent. It may only be used for the purpose for which it was prepared.

This Deliverable has been prepared by Terravias at the instruction of and for the sole use of Client, for the specific purpose for which it was prepared. It is subject to Client's instructions, supplied information and budgetary constraints. It must not be used or relied upon by any other person or for any other purpose without Terravias' prior written consent. To the extent permitted by law, Terravias accepts no liability to any person other than Client in connection with this Deliverable.

This Deliverable is based on conditions observed, information provided or reasonably available and assumptions reasonably made at the time of preparation. Environmental conditions, site circumstances and regulatory requirements may change over time, and Terravias accepts no responsibility for any such changes occurring after the date of this report.

Approval decisions are made by relevant authorities and are outside Terravias' control. No warranty or guarantee is given that any application or proposal will be approved, or as to the timing or conditions of any approval.

This Deliverable is intended to inform business and operational decision-making. Client must determine whether to act on the recommendations given, and should obtain independent legal, financial or other professional advice as appropriate.

Bushfire behaviour is inherently unpredictable and influenced by factors outside of Terravias' control, including weather, fuel conditions, topography, construction standards and maintenance. Because of this, where Terravias' services include bushfire planning, management and mitigation measures, Terravias does not warrant or guarantee that any recommended measures will prevent or mitigate damage to buildings or infrastructure or prevent personal injury or death. Terravias excludes all liability for loss or damage arising from bushfire events.

Terravias is not responsible for the implementation of any recommendations contained in this deliverable, or for any construction, remediation or operational activities carried out by others.

# Appendix A
# Classified Vegetation Photos

| Plot 1 | Class C Shrubland |
|---|---|
| **Photo 1**<br>This plot consists of Class C – Shrubland, primarily containing mixed species of planted shrubs within re-vegetated drainage basins. Predominant vegetation height is less than 2 m.<br>The slope under this vegetation was assessed to be >0 to 5 degrees downslope. |  |

| Plot 2 | Class D Scrub |
|---|---|
| **Photo 2**<br>This plot consists of Class D - Scrub, primarily containing shrubs that are approximately 2 to 4 m in height. Foliage cover is greater than 30%.<br>The slope under this vegetation was assessed to be >0 to 5 degrees downslope. |  |

| Plot 3 | Class D Scrub |
|---|---|
| **Photo 3**<br>This plot consists of Class D - Scrub, primarily containing shrubs that are approximately 2 to 4 m in height. Foliage cover is greater than 30%.<br>The slope under this vegetation was assessed to be upslope/flat land. |  |

| Plot 3 | Class D Scrub |
|---|---|
| **Photo 4**<br>This plot consists of Class D - Scrub, primarily containing shrubs that are approximately 2 to 4 m in height. Foliage cover is greater than 30%.<br>The slope under this vegetation was assessed to be upslope/flat land. |  |
| **Plot 3** | **Class D Scrub** |
| **Photo 5 (background)**<br>This plot consists of Class D - Scrub, primarily containing shrubs that are approximately 2 to 4 m in height. Foliage cover is greater than 30%.<br>Access to vegetation within this area was limited due to potential UXO areas. Therefore, Terravias have adopted a conservative classification for this area that takes into consideration the pre-European vegetation mapping of Western Australia dataset (DPIRD-006) which indicates the site is mapped as vegetation type 107 Scrub-heath / Thicket. Species within this vegetation type located on the Swan Coastal Plain largely consist of Thickets of *Acacia rostellifera* (summer-scented acacia) and *Melaleuca cardiophylla* (tangling melaleuca) that are interspersed with *A. lasiocarpa* (panjang) and *Melaleuca systena* (coastal melaleuca) heath (Beard et al 2013). The height of these species at maturity is generally 2 m or more.<br>The slope under this vegetation was assessed to be upslope/flat land. |  |
| **Plot 3** | **Class D Scrub** |
| **Photo 6**<br>This plot consists of Class D - Scrub, primarily containing shrubs that are approximately 2 to 4 m in height. Foliage cover is greater than 30%.<br>The slope under this vegetation was assessed to be upslope/flat land. |  |

| Plot 3 | Class D Scrub |
|---|---|
| **Photo 7**<br>This plot consists of Class D - Scrub, primarily containing shrubs that are approximately 2 to 4 m in height. Foliage cover is greater than 30%.<br>The slope under this vegetation was assessed to be upslope/flat land. |  |

| Plot 3 | Class D Scrub |
|---|---|
| **Photo 8**<br>This plot consists of Class D - Scrub, primarily containing shrubs that are approximately 2 to 4 m in height. Foliage cover is greater than 30%.<br>The slope under this vegetation was assessed to be upslope/flat land. |  |

| Plot 3 | Class D Scrub |
|---|---|
| **Photo 9 (background)**<br>This plot consists of Class D - Scrub, primarily containing shrubs that are approximately 2 to 4 m in height. Foliage cover is greater than 30%.<br>Access to vegetation within this area was limited due to potential UXO areas. Therefore, Terravias have adopted a conservative classification for this area that takes into consideration the pre-European vegetation mapping of Western Australia dataset (DPIRD-006) which indicates the site is mapped as vegetation type 107 Scrub-heath / Thicket. Species within this vegetation type located on the Swan Coastal Plain largely consist of Thickets of *Acacia rostellifera* (summer-scented acacia) and *Melaleuca cardiophylla* (tangling melaleuca) that are interspersed with *A. lasiocarpa* (panjang) and *Melaleuca systena* (coastal melaleuca) heath (Beard et al 2013). The height of these species at maturity is generally 2 m or more.<br>The slope under this vegetation was assessed to be upslope/flat land. |  |

| Plot 3 | Class D Scrub |
|---|---|

**Photo 10 (background)**

This plot consists of Class D - Scrub, primarily containing shrubs that are approximately 2 to 4 m in height. Foliage cover is greater than 30%.

Access to vegetation within this area was limited due to potential UXO areas. Therefore, Terravias have adopted a conservative classification for this area that takes into consideration the pre-European vegetation mapping of Western Australia dataset (DPIRD-006) which indicates the site is mapped as vegetation type 107 Scrub-heath / Thicket. Species within this vegetation type located on the Swan Coastal Plain largely consist of Thickets of *Acacia rostellifera* (summer-scented acacia) and *Melaleuca cardiophylla* (tangling melaleuca) that are interspersed with *A. lasiocarpa* (panjang) and *Melaleuca systena* (coastal melaleuca) heath (Beard et al 2013). The height of these species at maturity is generally 2 m or more.

The slope under this vegetation was assessed to be upslope/flat land.




| Plot 4 | Class G Grassland |
|---|---|

**Photo 11**

This plot consists of Class G – Grassland, containing unmanaged grasses on vacant land within the assessment area.

The slope under this vegetation was assessed to be upslope/flat land.




| Plot 4 | Class G Grassland |
|---|---|

**Photo 12**

This plot consists of Class G – Grassland, containing unmanaged grasses on vacant land within the assessment area.

The slope under this vegetation was assessed to be upslope/flat land.



| Plot 5 | Excluded - clause 2.2.3.2 (e) |
|---|---|
| **Photo 13**<br>Non-vegetated area including cleared land for development. |  |

| Plot 5 | Excluded - clause 2.2.3.2 (e) |
|---|---|
| **Photo 14**<br>Non-vegetated area including roads and bike paths. |  |

| Plot 5 | Excluded - clause 2.2.3.2 (e) |
|---|---|
| **Photo 15**<br>Non-vegetated area including cleared land for development. |  |

| Plot 5 | Excluded - clause 2.2.3.2 (e) |
|---|---|
| **Photo 16**<br>Non-vegetated area including cleared land for development. |  |
| **Plot 5** | **Excluded - clause 2.2.3.2 (e)** |
| **Photo 17**<br>Non-vegetated area including cleared land for development. |  |
| **Plot 8** | **Excluded - clause 2.2.3.2 (e)** |
| **Photo 18**<br>Non-vegetated area including roads. |  |

| Plot 6 | Excluded - clause 2.2.3.2 (f) |
|---|---|
| **Photo 19**<br>Low threat vegetation including landscaped nature strips within hard landscaped features such as bike paths, roads and car parks. |  |
| **Plot 6** | **Excluded - clause 2.2.3.2 (f)** |
| **Photo 20**<br>Low threat vegetation including narrow strips of vegetation (nature strips) associated with the railway corridor. |  |

# Appendix B
# Asset Protection Zone Technical Requirements (WAPC, 2024b)

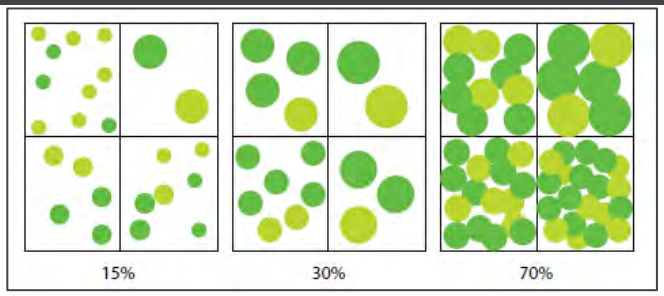
The following standards have been extracted from the *Planning for Bushfire Guidelines* (WAPC, 2024b).

Every habitable building is to be surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements:

1. Width: the APZ is measured from the development site, and of sufficient size to ensure the radiant heat impact of a bushfire does not exceed 29 kW/m$^2$ (BAL-29) in all circumstances.
2. Location: the APZ should be contained solely within the boundaries of the lot, except in instances where:
    - the vegetation on the adjoining lot(s) is, and will continue to be, low threat as per Clause 2.2.3.2 of AS 3959 or the APZ technical requirements, or an alternative standard on a local planning scheme, on an ongoing basis in perpetuity; or
    - the adjoining land is and will remain in perpetuity, non-vegetated.
3. Management: the APZ is managed in accordance with the APZ technical requirements (below), or an alternative standard in a gazetted local planning scheme.

## APZ Technical Requirements

| Object | Requirement |
|---|---|
| Fences within the APZ | • Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959). |
| Fine fuel load (Combustible, dead vegetation matter less than 6 mm in thickness) | • Should be managed and removed on a regular basis to be maintained as a low threat vegetation.<br>• Should be maintained at less than two tonnes per hectare (on average).<br>• Mulches should be non-combustible such as stone, gravel, shells, rock or crushed mineral earth or wood mulch more than five millimetres in thickness. |
| Trees*<br>(more than 6 m in height) | • Trunks at maturity should be a minimum distance of six metres from all elevations of the building.<br>• Branches at maturity should not touch or overhang a building or powerline.<br>• Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation.<br>• Canopy cover within the APZ should be less than 15 per cent of the total APZ area.<br>• Tree canopies at maturity should be at least 5 m apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided the total canopy cover within the APZ does not exceed 15 per cent and is not connected to the tree canopy outside the APZ. |

| Object | Requirement |
|---|---|
| |  |
| | • Tree canopy cover – ranging from 15 to 70 per cent at maturity |
| Shrub* and scrub* (0.5 m to 6 m in height). Shrub and scrub more than 6 m in height are to be treated as trees. | • Should not be located under trees or within three metres of buildings.<br>• Should not be planted in clumps more than five square metres in area.<br>• Clumps should be separated from each other and any exposed window or door by at least 10 metres. |
| Ground cover*(less than 0.5 m in height. Ground cover more than 0.5 m in height is to be treated as shrub) | • Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above<br>• Can be located within two metres of a structure but three metres from windows or doors if more than 100 mm in height. |
| Grass | • Grass should be maintained at a height of 100 mm or less, at all times<br>• Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation. |
| Defendable space | • Within three metres of each wall or supporting post of a habitable building; the area is kept free from vegetation but can include ground cover, grass and non- combustible mulches as prescribed above. |
| Liquid petroleum gas cylinders | • Should be located on the side of a building farthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building.<br>• The pressure relief valve should point away from the house.<br>• No flammable material within six metres from the front of the valve.<br>• Must sit on a firm, level and non-combustible base and be secured to a solid structure. |

* Plant flammability, landscaping design and maintenance should be considered - refer to explanatory notes in the Guidelines.

## ADDITIONAL NOTES

An Asset Protection Zone (APZ) is a low fuel area, maintained around a building to increase the likelihood a building will survive a bushfire, by reducing the potential for direct flame contact, radiant heat exposure and ember attack. The APZ allows emergency services access and provides an area for firefighters and homeowners to defend their property.

An APZ should be contained within the boundaries of the lot on which the building is situated, except in instances where it is demonstrated the vegetation on the adjoining land is, and will continue to be, low threat as per cl. 2.2.3.2 of AS 3959, or the vegetation on the adjoining lot is, and will remain in perpetuity, non-vegetated. However, it should be noted there is no requirement for a neighbouring landowner or land manager (public or private) to be party to a legal agreement to undertake ongoing management of vegetation as low threat, in perpetuity.

# Appendix C
# Vehicular Access Technical Requirements (WAPC, 2024b)

| Technical requirements | Perimeter Roads | | Public Roads | | Emergency Access Way[3] | | Fire Service Access Route[3] | | Battle-Axe and Private Driveways[1] | |
|---|---|---|---|---|---|---|---|---|---|---|
| Map of Bush Fire Prone Areas Designation | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 | Area 2 | Area 1 |
| Minimum horizontal clearance (m) | 12 | 8 | See note 5 | | 10 | 6 | 10 | 6 | 6 | |
| Minimum vertical clearance (m) | 4.5 | | | | | | | | | |
| Minimum weight capacity (t) | 15 | | | | | | | | | |
| Maximum grade unsealed road2 | See note 5 | | See note 5 | | 1:10 (10% or 6 degrees) | | | | | |
| Maximum grade sealed road[2, 4] | | | | | 1:7 (14.3% or 8 degrees) | | | | | |
| Maximum average grade sealed road | | | | | 1:10 (10% or 6 degrees) | | | | | |
| Minimum inner radius of road curves (m) | | | | | 8.5 | | | | | |

**NOTES**

1. Driveways and battle-axe legs to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision where not required to comply with the widths in this Appendix or the Guidelines.
2. Dips must have no more than a 1 in 8 (12.5% - 7.1 degrees) entry and exit angle.
3. To have crossfalls between 3 per cent and 6 per cent.
4. For sealed roads only the maximum grade of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50 metres is permissible, except for short constrictions to 3.5 metres for no more than 30 metres in length where an obstruction cannot be reasonably avoided or removed.
5. As outlined in the Institute of Public Works Engineering Australasia (IPWEA) subdivision guidelines, Liveable Neighbourhoods, Austroads Standards Main Roads standard, supplement, policy or guideline and/or any applicable or relevant local government standard or policy.

## Design requirements for a turn-around area

