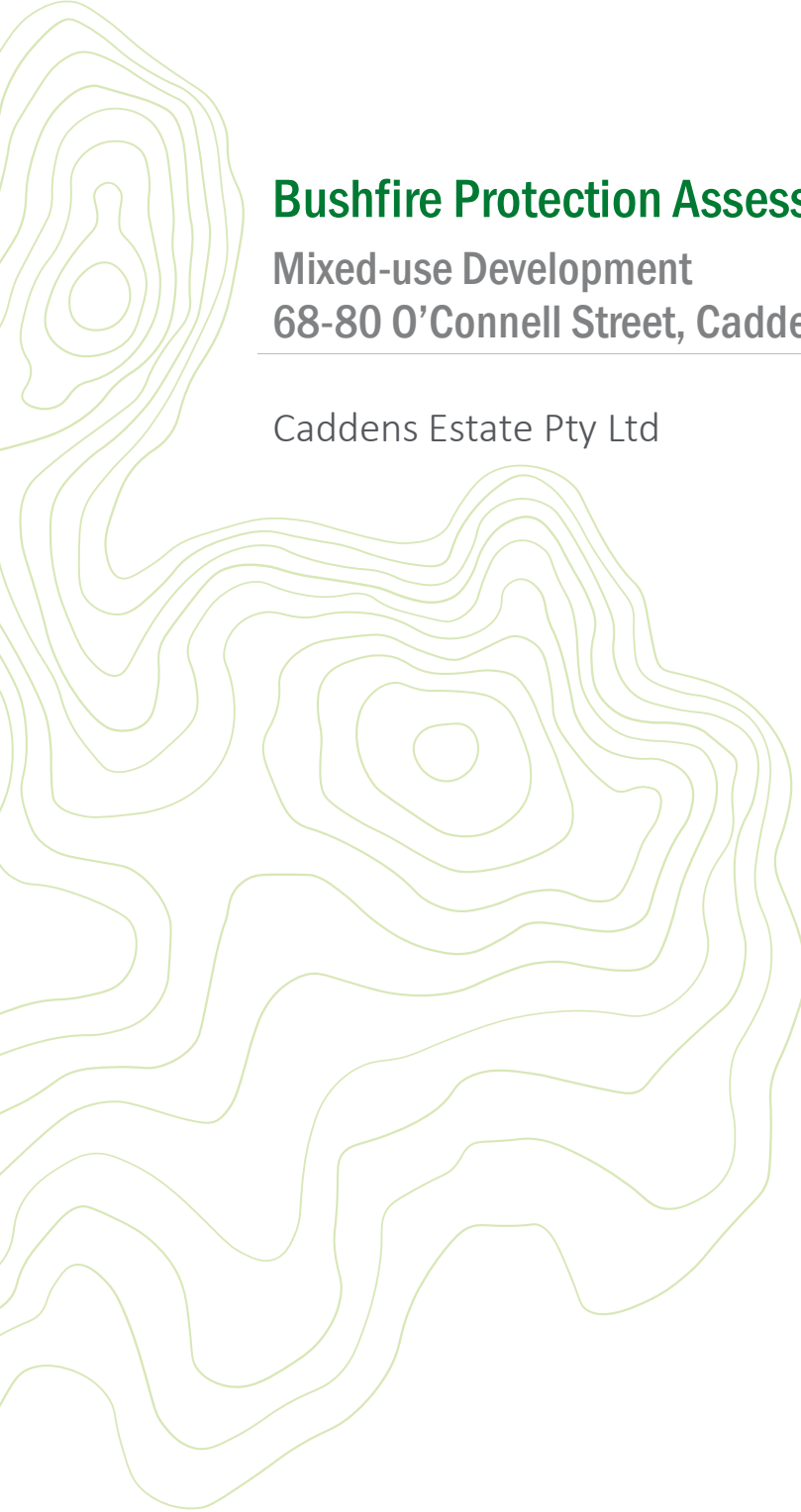




Bushfire Protection Assessment

Mixed-use Development
68-80 O'Connell Street, Caddens

Caddens Estate Pty Ltd

Document Tracking

Project Name:	Bushfire Protection Assessment – 68-80 O’Connell Street, Caddens
Project Number:	25WOL10470
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Limitations

The bushfire protection measures recommended in this report do not completely remove the risk to life and property, and they do not guarantee that a development will not be impacted by a bushfire event. This is substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire, and extreme weather conditions.

Acknowledgements

This document has been prepared by Eco Logical Australia Pty Ltd with support from various members of the project team.

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Abbreviations

Abbreviation	Description
APZ	Asset Protection Zone
BFPL	Bush Fire Prone Land
BPA	Bushfire Protection Assessment
BPM	Bushfire Protection Measures
DA	Development Application
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DtS	Deemed to Satisfy
ELA	Eco Logical Australia
FDI	Fire Danger Index
GIS	Geographic Information System
IPA	Inner Protection Area
LGA	Local Government Area
NCC	National Construction Code
NSW	New South Wales
PBP	Planning for Bush Fire Protection
RF Act	Rural Fires Act 1997
RFS	Rural Fire Service (New South Wales)
SEARs	Secretary’s Environmental Assessment Requirements
SSDA	State Significant Development Application
VMP	Vegetation Management Plan

Executive Summary

This Bushfire Protection Assessment has been prepared for Caddens Estate Pty Ltd to accompany a State Significant Development Application (SSDA) for a mixed-use development (including in-fill affordable housing) at 68-80 O’Connell Street, Caddens, within the Penrith Local Government Area (LGA).

This report has been prepared to address the Secretary’s Environmental Assessment Requirements (SEARs) issued for the project (SSD-80875966) on 14 March 2025.

The proposed development is split into two discrete areas, being development located >140 m from any bushfire prone vegetation and not mapped as bush fire prone land (BFPL), which is most of the proposal; and development that is <140 m of bushfire prone vegetation *and* located within the mapped BFPL area.

For the first area mentioned above, the main finding of the assessment is that due to the recent removal of the bushfire hazard on adjoining lands, along with the small onsite remnant area being assessed as ‘low-threat vegetation’ and therefore excluded, this aspect of the development is not considered bushfire prone. As demonstrated in the assessment, no bushfire protection measures are required. This finding is consistent with the NSW Rural Fire Service (RFS) recommendations for a previous similar Development Application for the subject site and it is recommended that the same is done for the current SSDA for proposed development in this area.

The proposed retail building in the south-west is located within 140 m of bushfire prone vegetation and therefore requires a response to PBP via Chapter 8 (Other development). In accordance with Chapter 8.3.1 (Buildings of Class 5 to 8 under the NCC) and Section 8.3.10 (Commercial and industrial development) of PBP, this report has assessed the consistency of the proposed retail building against the aim and objectives of PBP, and the specific objectives prescribed in Section 8.3.1 of PBP; utilising Chapter 7 of PBP as a guide to develop a suite of bushfire protection measures commensurate to the bushfire risk. It is recommended that the measures outlined in this report are implemented, and the development be approved.

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Appendix A Asset Protection Zones and Landscaping Standards

1. Property and Proposal

Table 1 identifies the subject property and outlines the type of development proposed.

Table 1: Subject site and development proposal summary

Street address:	68-80 O’Connell Street, Caddens
Postcode:	2747
Lot/DP no:	Lot 1 and Lot 2, DP 1268507
Local Government Area:	Penrith
Fire Danger Index (FDI)	100
Current land zoning:	R4: High Density Residential and E1: Local Centre
Type of development proposed:	Master Plan Development for the construction of multi-storey residential and retail buildings

1.1. Description of Proposal

The State Significant Development Application (SSDA) seeks development consent for a mixed-use development (including in-fill affordable housing) comprising a combination of shop-top housing, residential flat buildings and a commercial premises (shop) at 68-80 O’Connell Street, Caddens (herein referred to as subject site). The proposed works include site preparation works, excavation, infrastructure, construction of the buildings and associated landscaping works (Figure 1).

Specifically, the SSDA seeks development consent for:

- demolition of an existing at grade car park
- construction of 4 x 4 - 6 storey shop top housing buildings at 68 O’Connell Street, Caddens, comprising:
 - approximately 180 residential dwellings
 - ground floor commercial, retail and medical uses
- construction of a single storey commercial premises (shop) located at the south western corner of 68 O’Connell Street
- construction of basement carparking to service the shop top housing, ground floor commercial and commercial premises at the southwestern corner
- construction of 11 x 4 – 6 storey residential flat buildings at 80 O’Connell Street, including:
 - approximately 300 residential dwellings
 - basement carparking
- internal roads
- associated infrastructure and services
- landscaping and communal open spaces including a ‘public square’

This report has been prepared in response to the requirements contained within the Secretary’s Environmental Assessment Requirements (SEARs) dated 14 March 2025 (SSD-80875966). Specifically, the bushfire related SEARs requirements (Table 2).

Table 2: SEARs – Bushfire Requirements

Item	Requirement	Report Section
20. Bush Fire Risk	If the development is on mapped bush fire prone land, or a bush/grass fire threat is identified on or adjoining the site, provide a bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with <i>Planning for Bush Fire Protection</i> .	Section 2 and 3

The development layout is shown in Figure 1 and the locality context shown in Figure 2. The development forms an integral part of the overall residential and business precinct centre development contemplated under the Penrith Development Control Plan (DCP) 2014 Part E1 Caddens, as shown in Figure 3. The proposed development is partially located on land identified as bush fire prone land (BFPL; Figure 4).

1.2. Assessment Process

The development contemplated by the SSDA is assessed in accordance with *Planning for Bush Fire Protection* (RFS 2019) and *Addendum to Planning for Bush Fire Protection* (RFS 2022), collectively referred to as ‘PBP’.

This assessment is based on the following information sources:

- Background documentation provided by members of the project team;
- Information contained within the Site Plan (Group GSA 2025);
- Information contained within Vegetation Management Plans (ELA 2020, 2025)
- Information contained within Landscape Plans and Design Reports (GeoScapes 2021, Site Image 2025);
- Information within the Penrith Development Control Plan pertaining to the Caddens Release Area Structure Plan (Penrith DCP Part E1 2014); and
- GIS analysis including online spatial resources (i.e. Arc GIS Earth, Google Earth, SIX Maps, Nearmap and the NSW Government Planning Portal)

The majority of the development is located greater than 140 m from bushfire prone vegetation and does not require a response to PBP however, the proposed retail building to the south-west is located within 140 m of bushfire prone vegetation and must respond to the requirements of PBP. This building has therefore been assessed in accordance with PBP using Section 8.3.1 (Buildings of Class 5 to 8 under the NCC) and Section 8.3.10 (Commercial and industrial development). These chapters outline a merit-based assessment process to achieve consistency with the aim and objectives of PBP, and the specific objectives prescribed in Section 8.3.1 of PBP. In accordance with PBP, Chapter 7 is utilised as a guide in considering relevant bushfire protection measures (BPM) commensurate with the bushfire risk to the development.

Table 3 identifies the bushfire protection measures assessed for the proposed retail building.

Table 3: Summary of bushfire protection measures assessed for the proposed retail building

Bushfire Protection Measure	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	☐	☒	3.2.3
Access	☐	☒	3.2.4
Water supplies	☐	☒	3.2.5
Electricity services	☐	☒	3.2.6
Gas services	☐	☒	3.2.7
Construction standards	☐	☒	3.2.8
Landscaping	☐	☒	3.2.9

1.3. Significant Environmental Features

An assessment of significant environmental features, threatened species, populations or ecological communities under the *Biodiversity Conservation Act 2016* that may potentially be affected by the proposed bushfire protection has not been undertaken in this report as it is covered by other parts of the SSDA process.

The impact footprint of the bushfire protection measures (e.g. Asset Protection Zone [APZ]) is identified within this report and therefore capable of being assessed by a suitably qualified person. NSW Department of Planning, Housing, and Infrastructure (DPHI) is the determining authority for this development; they will assess more thoroughly any potential environmental issues.

1.4. Aboriginal Cultural Heritage

An assessment of any Aboriginal cultural heritage objects (within the meaning of the *National Parks and Wildlife Act 1974*) that may potentially be affected by the proposed bushfire protection measures has not been undertaken in this report as it is covered by other parts of the SSDA process.

The impact footprint of the bushfire protection measures (e.g. APZ) is identified within this report and therefore capable of being assessed by a suitably qualified person. DPHI is the determining authority for this development; they will assess more thoroughly any potential Aboriginal cultural heritage issues.



Figure 1: Draft layout (GroupGSA 2025)



Figure 2: Site Locality (Site Image 2025)



Figure 3: Caddens Release Area Structure Plan (Penrith DCP Part E1 2014)

2. Bushfire Hazard Assessment

2.1. Process

The site assessment methodology from Appendix 1 of PBP has been applied in this assessment to determine the APZ requirements for the subject site.

Figure 5 and Table 4 show the effective slope and predominant vegetation representing the highest bushfire threat potentially posed to the development from various directions.

2.2. Vegetation Assessment

In accordance with PBP, the predominant vegetation formation has been assessed for a distance of at least 140 m from the proposed buildings in all directions. The predominant vegetation has been assessed using the NSW State Vegetation Type Map (DCCEEW 2020), site assessment, proposed Landscape Plans (GeoScapes 2021, Site Image 2025) and relevant Vegetation Management Plans (VMP; ELA 2020, 2025).

2.3. Slope Assessment

In accordance with PBP, the slope that would most significantly influence fire behaviour was determined over a distance of 100 m from the boundary of the proposed development under the classified vegetation.

The effective slope has been determined from 2 m contour data.

2.4. Summary of Assessment

To the north, the recently approved development at 46-66 O’Connell Street Caddens (Lot 6 DP 593628, Lot 3 DP 1103503 & Lot 2 DP 1217434) has removed any previous bushfire hazard. This adjoining development was granted consent by the Land and Environment Court of NSW for DA21/0323 (LEC 2021/00222237) dated 28 June 2022 for a staged community title subdivision.

To the east of the site is ‘managed land’ within the Werrington Campus of the University of Western Sydney and is maintained by regular slashing. To the south of the subject site is existing developed lands. To the south-west there is recently approved development currently occurring in relation to a 39 residential lot Community Title Subdivision under DA22/1041, which has removed all bushfire hazard.

To the south-west, across O’Connell Street, vegetation is mapped as ‘PCT 4025: Cumberland Red Gum Riverflat Forest’ (DCCEEW 2020), which falls under the vegetation class Coastal Floodplain Wetlands (Keith 2004) and is classified as ‘Forested Wetlands’ under PBP. The riparian corridor to the north-west is considered managed where within 140 m of the building.

Onsite, there is a small area of remnant ‘woodland’ vegetation being retained and regenerated that extends onto the adjoining land to the north. The VMP boundaries for both sites have been used to confirm the future extent of this vegetation (Figure 6 and Figure 7) and the total area is 0.95 ha. Given this remnant vegetation is less than 1 ha and greater than 100 m from other bushfire prone vegetation (closest is >244 m to the west as per Figure 5), it is excluded as ‘low threat vegetation’ in accordance with A1.10 of PBP.

All other lands within the 140 m assessment buffer are assessed as ‘managed land’ in accordance with A1.10 of PBP

Table 4: Bushfire hazard assessment and APZ requirements

Transect	Slope	Vegetation	Required APZ	Proposed APZ	Comment
1	All upslopes and flat land	Forested Wetland	10 m	≥10 m	APZ provided by the managed riparian corridor/O’Connell Lane
All other directions	Managed lands/excluded vegetation				

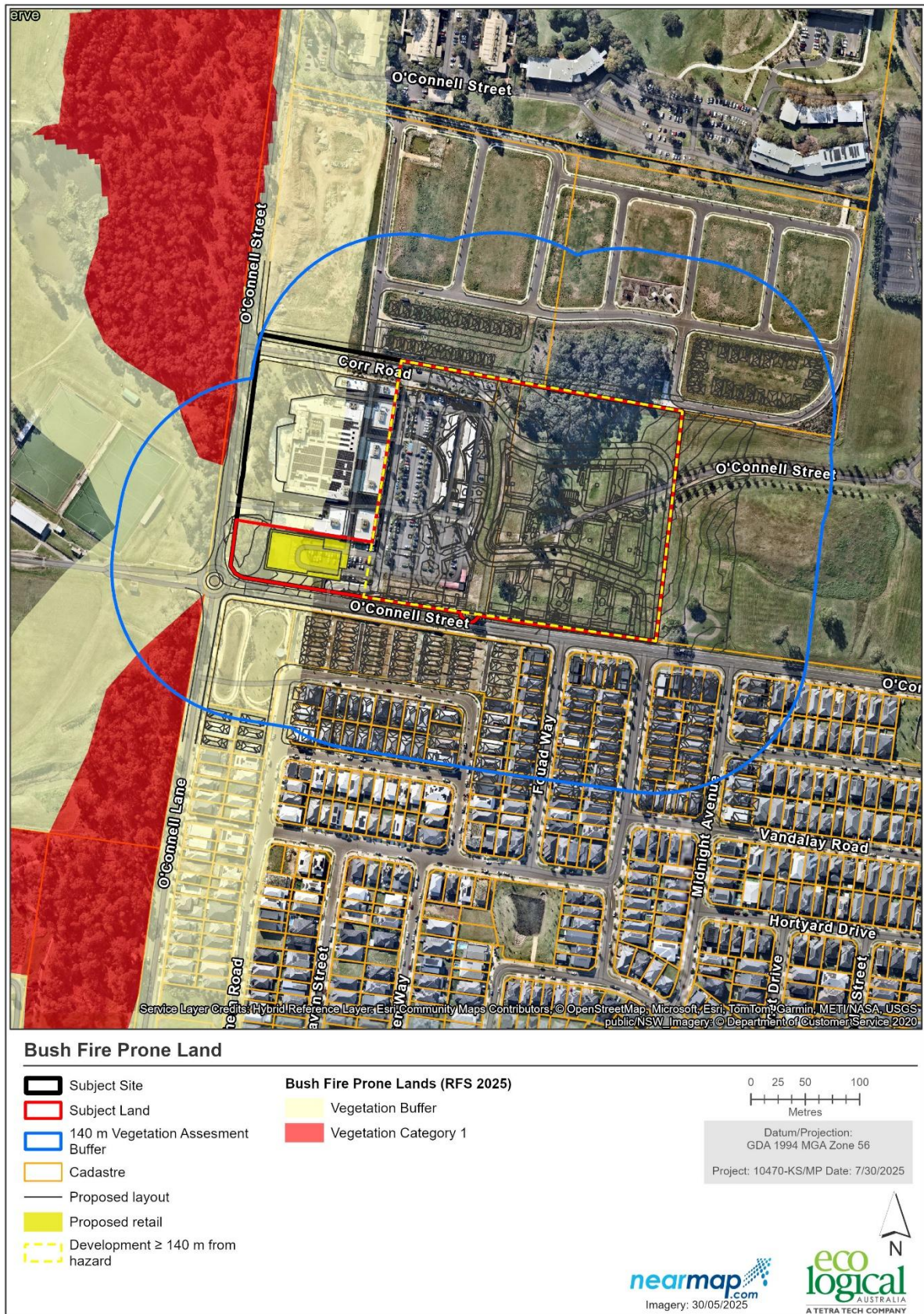


Figure 4: Bush Fire Prone Land (RFS 2025)

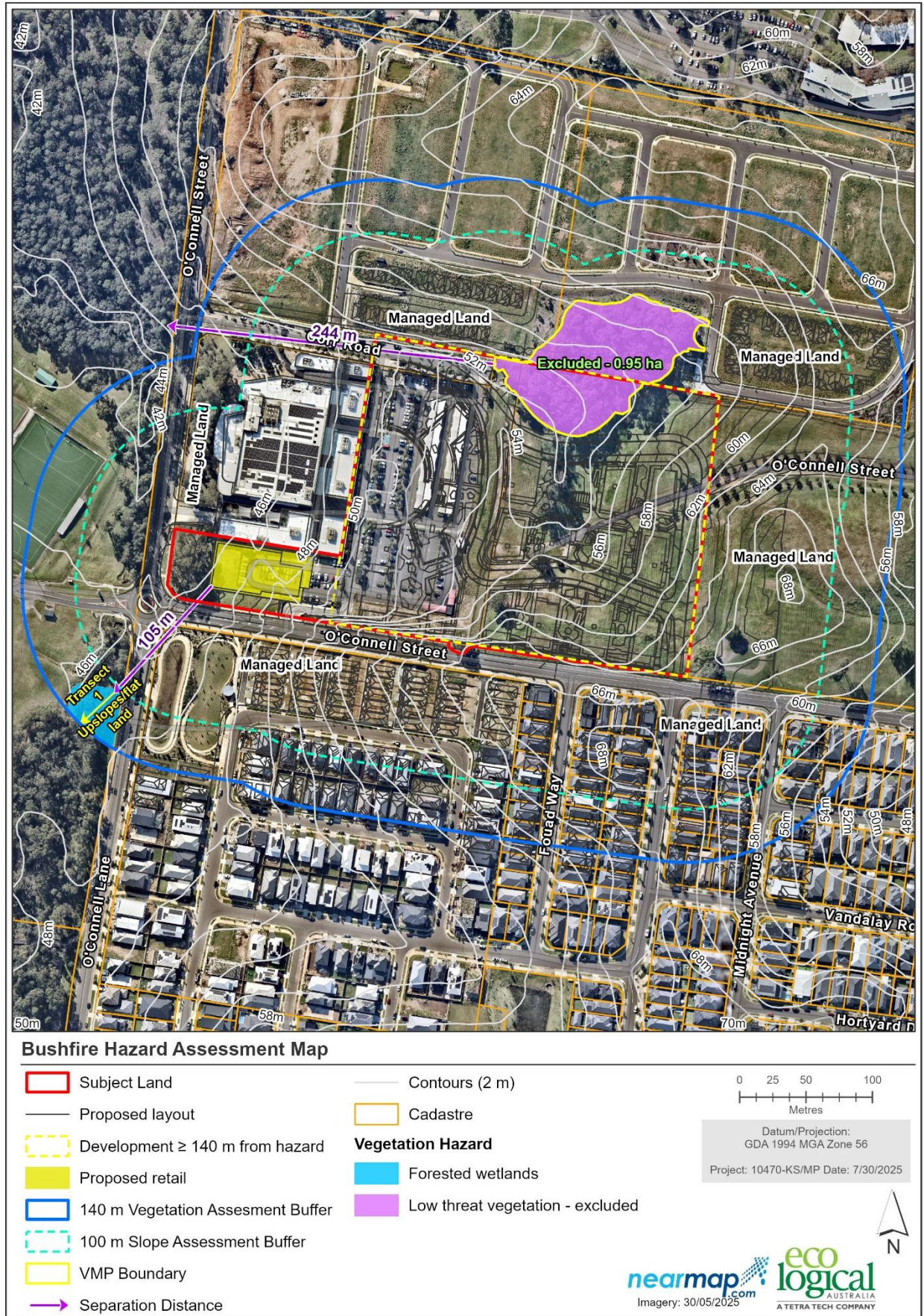


Figure 5: Bushfire Hazard Assessment



Figure 6: VMP Boundary - Subject Site (ELA 2025)

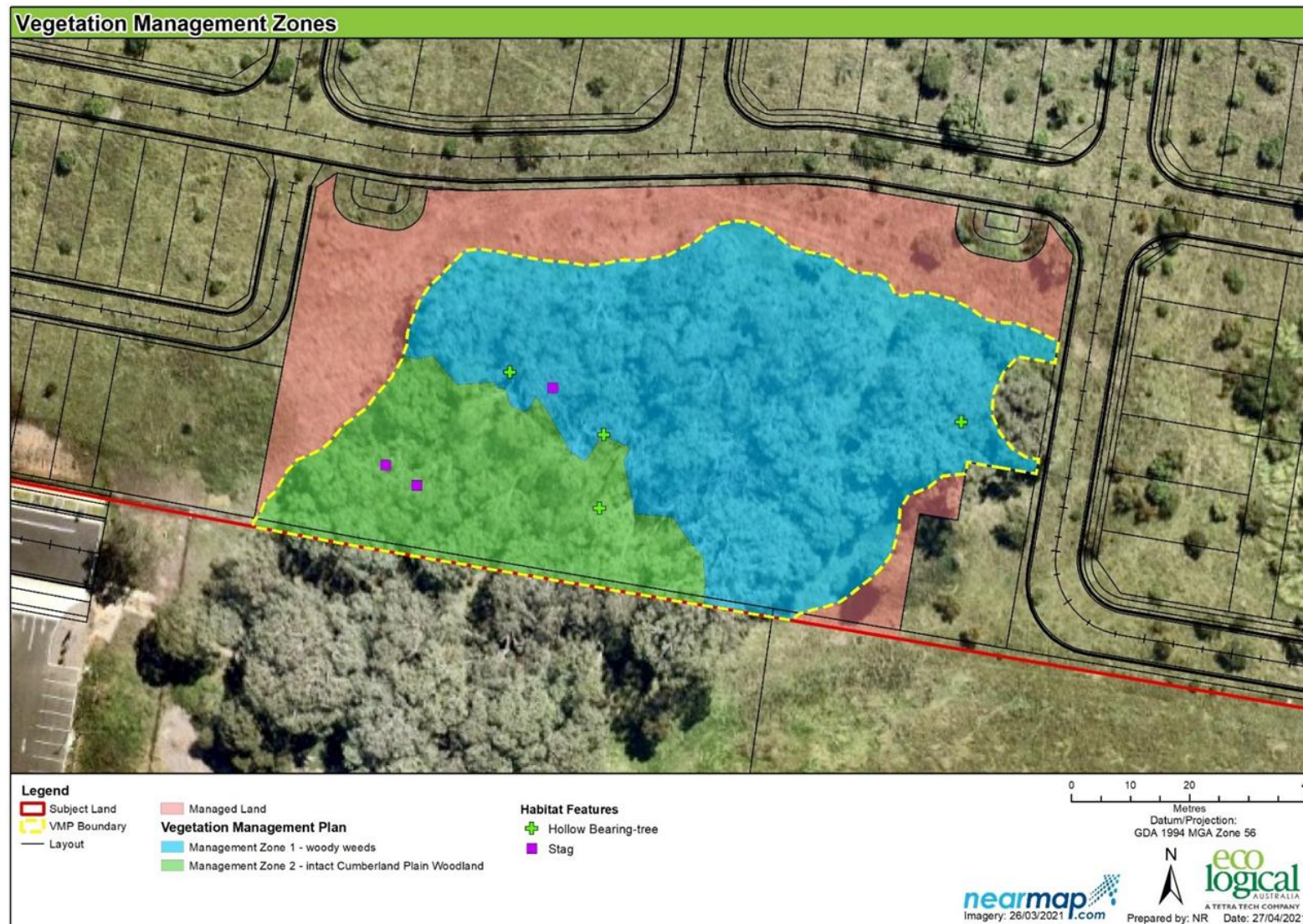


Figure 7: VMP Boundary - Adjoining Site (ELA 2020)

3. Bushfire Protection Measures

3.1. Development Located >140 m From Bushfire Prone Vegetation

No specific bushfire protection measures are required for development located over 140 m bushfire prone vegetation and not mapped as BFPL (Figure 4 and Figure 5).

3.2. Development Located Within <140 m of Bushfire Prone Vegetation

The proposed retail building is located within the mapped BFPL area and within 140 m of bushfire prone vegetation (Figure 4 and Figure 5), therefore further assessment has been undertaken.

3.2.1. Specific Aim and Objectives for Commercial Development

Below is the aim and objectives of PBP (Chapter 1), applicable to commercial development, and a comment on how they are achieved. As directed in Section 8.3.10 of PBP, the BPMs identified in Chapter 7 (of PBP) have been used as the baseline (where applicable), and either the acceptable solution or performance criteria has been achieved:

- **Aim** - The aim of PBP is to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.
 - The proposed development complies with the aim of PBP by achieving the specific objectives for commercial development identified below.
- **Specific Objective 1** - *afford buildings and their occupants protection from exposure to a bush fire;*
 - The development ensures occupant and building protection through the provision of >100 m separation to the narrow hazard, which exceeds the required separation and meets the general fire safety provisions of the National Construction Code (NCC).
- **Specific Objective 2** - *provide for a defensible space to be located around buildings;*
 - The site provides a defensible space by way of approximately 4 to 12 m separation between the adjacent building to the north. To the east and south of the building is existing hardstand (carpark and O’Connell Street). The bushfire prone vegetation is located >100 m from the building.
- **Specific Objective 3** - *provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;*
 - The building is separated from the hazard by > 100 m (Figure 5), by the existing road corridor therefore preventing the likely fire spread to the building.
- **Specific Objective 4** - *ensure that appropriate operational access and egress for emergency service personnel and occupants is available;*
 - Access to the hazard by emergency service personnel is provided by O’Connell Street/O’Connell Lane whilst access/egress for occupants will be facilitated by the existing entrance point that is to be retained (Figure 1).
- **Specific Objective 5** - *provide for ongoing management and maintenance of BPM; and*

- The entire development site can be managed as per Appendix 4 of PBP and outlined in Appendix A.
- **Specific Objective 6** - *ensure that utility services are adequate to meet the needs of firefighters.*
 - The development is capable of complying with the acceptable solutions for utilities under Section 7 of PBP and specific objectives outlined in Section 3.2.5 to 3.2.7.

3.2.2. Specific objectives for Class 5-8 buildings

Below are the Specific Objectives for Class 5 - 8 buildings and a comment on how they are achieved.

- **Specific Objective 1** - *provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation.*
 - The proposed development has direct access to the public road system providing safe access/egress for occupants whilst access to the hazard is provided by O’Connell Street/O’Connell Lane (Figure 1 and Figure 5).
- **Specific Objective 2** - *provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development.*
 - An emergency plan meeting requirements of the relevant legislation is to be prepared for the building prior to Occupation Certificate.
- **Specific Objective 3** - *provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.*
 - The proposed development will be serviced by reticulated water. Electricity to the development is underground and complies with PBP. Supply of gas (if any) will be installed and maintained in accordance with Section 3.2.7 of this report.
- **Specific Objective 4** - *provide for the storage of hazardous materials away from the hazard wherever possible.*
 - The building will be required to store any hazardous materials (if any) in accordance with the relevant safety guidelines and safety data sheets.

3.2.3. Asset Protection Zones

No formal APZ is proposed as the proposed retail building is >100 m from the bushfire prone vegetation to the south-west and separation is provided by subject site and existing road network. Any landscaping within 140 m surrounding the building is to be consistent with the principles of PBP, as addressed in Section 3.2.9 of this report.

3.2.4. Access

No additional public roads are proposed, as primary access to the proposed retail building is via the existing access point from O’Connell Street. Access for occupants is by a two-way ‘driveway’ with lane widths of 3.5 m, connecting to a carpark with 32 proposed parking spaces proposed outside of the carriageway. O’Connell Street is considered suitable for direct access to the hazard for emergency personnel.

3.2.5. Water Supplies

The subject site is currently serviced by reticulated water and the new building is to comply with the relevant NCC specifications, including fire hydrant network design complying with the relevant version of Australian Standard AS 2419.1.

3.2.6. Electricity Services

Electrical services should be located underground.

3.2.7. Gas Services

Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 – The Storage and handling of LP gas (2014), the requirements of relevant authorities, and metal piping is to be used.

3.2.8. Construction Standards

There are no Deemed to Satisfy (DtS) specifications for bushfire specific construction requirements under the NCC for the proposed retail building, and therefore the general fires safety provisions of the NCC are considered the acceptable solution. Given the separation distance is >100 m from the nearest bushfire prone vegetation and the hazard is narrow and disturbed in nature, minimal attack from radiant heat and flame due is expected, and although some attack by burning debris is potentially possible, there is insufficient threat to warrant specific construction requirements.

3.2.9. Landscaping

Proposed landscaping within 140 m of the proposed commercial building should comply with the following PBP requirements:

- Compliance with APZ standards in Appendix 4 of PBP (see Appendix A);
- Clear area of low-cut lawn or pavement is maintained adjacent to the building;
- Any fencing is constructed in accordance with Section 7.6 of PBP being:
 - All fencing and gates are to be constructed of hardwood or non-combustible material;
 - Where fencing is within 6 m of the building it should be made of non-combustible material only.
- Trees and shrubs are located so that:
 - Branches will not overhang the roof;
 - Tree canopy is not continuous; and
 - Any proposed windbreak is located on the elevation from which fires are likely to approach.

4. Conclusion

The proposed development is split into two discrete areas, being development located >140 m from any bushfire prone vegetation and not mapped as bush fire prone land (BFPL), which is most of the proposal, and development that is <140 m of bushfire prone vegetation *and* located within the mapped BFPL area (Figure 4 and Figure 5).

Due to the recent removal of the bushfire hazard on adjoining lands, along with the small onsite remnant vegetation being assessed as ‘low-threat vegetation’ and therefore excluded, this portion of the development is located >140 m from bushfire prone vegetation. This assessment demonstrates that no bushfire protection measures are required which is consistent with the RFS recommendations for a previous similar DA for the subject site and it is recommended that the same is done for the current SSDA.

The proposed retail building in the south-west is located within 140 m of bushfire prone vegetation and therefore requires a response to PBP via Chapter 8, specifically Section 8.3.1 (Buildings of Class 5 to 8 under the NCC) and 8.3.10 (Commercial and industrial development).

While the bushfire protection measures recommended for the retail building are considered performance solutions, as there are no Deemed to Satisfy provisions, the proposed development meets the objectives of PBP and the specific objectives prescribed in Section 8.3.1 of PBP, as outlined in Section 3.2.1 and 3.2.2 and summarised in Table 5 below. It is recommended that the measures outlined in this report are implemented and the development be approved.

Table 5: Development bushfire protection measures and associated recommendations

Bushfire Protection Measures	Recommendations	Acceptable Solution	Performance Solution	Report Section
Development located greater than 140 m from bushfire prone vegetation				
No bushfire protection measures recommended.				
Development located within than 140 m of bushfire prone vegetation				
Asset Protection Zones	Existing separation provides >100 m from bushfire prone vegetation and no dedicated APZ is recommended.	☐	☒	3.2.3
Access	No new access proposed as part of the retail building development.	☐	☒	3.2.4
Water Supplies	Reticulated water supply to relevant NCC specifications.	☐	☒	3.2.5
Electricity Services	Electricity supply should be located underground.	☐	☒	3.2.6
Gas Services	Gas services (if in design) are to be installed and maintained in accordance with AS/NZS 1596:2014.	☐	☒	3.2.7
Construction	In accordance with the general fire safety provisions of the NCC.	☐	☒	3.2.8
Landscaping	Any future landscaping meets the requirements of Table 7.4a (Landscaping) of PBP.	☐	☒	3.2.9

5. Recommendations

It is recommended that the development be approved based on this assessment and the recommendations in Section 4.

Erin Hodgkin
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Principal Bushfire Consultant
FPAA BPAD Certified Practitioner: BPAD23575-L3



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Appendix A Asset Protection Zones and Landscaping Standards

The following APZ management specifications apply to landscaping within 140 m of the proposed retail building.

Further details on APZ implementation and management can be found on the NSW RFS website (<https://www.rfs.nsw.gov.au/resources/publications>).

Table 6: APZ management specifications

Vegetation Strata	Inner Protection Area (IPA)
Trees	• Tree canopy cover should be less than 15% at maturity; • Trees (at maturity) should not touch or overhang the building; • Lower limbs should be removed up to a height of 2 m above ground; • Canopies should be separated by 2 to 5 m; and • Preference should be given to smooth barked and evergreen trees.
Shrubs	• Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided; • Shrubs should not be located under trees; • Shrubs should not form more than 10% ground cover; and • Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
Grass	• Should be kept mown (as a guide grass should be kept to no more than 100 mm in height); and • Leaves and vegetation debris should be removed.

