



Bushfire Hazard Assessment

Proposed Mixed-use Development
135 Badgerys Creek Road, Bradfield

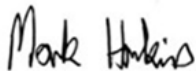
Prepared for
Bradfield Corporation Pty Ltd

12 January 2026

Version V1.0



| | | | | |
|------------------------|---|--------------------|--------------------|-----------------------|
| Project Name: | Proposed Mixed-use Development | | | |
| Prepared by: | Mark Hawkins | | | |
| Client Details: | Bradfield Corporation Pty Ltd c/o Creative Vision Level 2, 14 Railway Parade Burwood, NSW | | | |
| Project Address | 135 Badgerys Creek Road, Bradfield | | | |
| Project Number | J4250 | | | |
| Version | Primary Author | Reviewed By | Description | Date Completed |
| 1.0 | Mark Hawkins | Lew Short | Final | 12 January 2026 |

**Senior Bushfire Specialist | Blackash Bushfire Consulting**0483 227 500 | mark.hawkins@blackash.com.au | Blackash.com.au

PO Box 715 Wahroonga NSW 2075

BSc (Newc), Grad. Dip. (Design for Bushfires) UWS

Disclaimer

Blackash Bushfire Pty Ltd has prepared this document in good faith based on the information provided to it, and has endeavored to ensure that the information in this document is correct. However, many factors outside the current knowledge or control of Blackash affect the recipient's needs and project plans. Blackash does not warrant or represent that the document is free from error or omissions and does not accept liability for any errors or omissions. The scope of services was defined in consultation with the client by time and budgetary constraints imposed by the client and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an on-going basis and readers should obtain up-to-date information. To the fullest extent possible Blackash expressly excludes any express or implied warranty as to condition, fitness, merchantability or suitability of this document and limits its liability for direct or consequential loss at the option of Blackash to re-supply the document or the cost of correcting the document. In no event shall responses to questions or any other information in this document be deemed to be incorporated into any legally binding agreement without the express written consent of an officer of Blackash. The information in this document is proprietary, confidential and an unpublished work and is provided upon the recipient's promise to keep such information confidential and for the sole purpose of the recipient evaluating products / services provided by Blackash. In no event may this information be supplied to third parties without written consent from Blackash.

Contents

| | | |
|------|---|----|
| 1. | Summary | 4 |
| 2. | Introduction | 5 |
| 3. | Proposed Development | 7 |
| 4. | Legislative Framework | 11 |
| 5. | Planning for Bushfire Protection Requirements | 12 |
| 5.1. | Buildings of Class 5 to 8 under the NCC | 13 |
| 5.2. | Commercial and Industrial Development | 13 |
| 6. | Bushfire Threat Assessment | 15 |
| 6.1. | Methodology | 15 |
| 6.2. | Bushfire Prone Land Mapping | 15 |
| 6.3. | Fire Danger District | 19 |
| 6.4. | Vegetation Assessment | 19 |
| 6.5. | Slopes Influencing Bushfire Behavior | 19 |
| 7. | Bushfire Protection Measures | 21 |
| 7.1. | Asset Protection Zones | 22 |
| 7.2. | Bushfire Attack Levels | 24 |
| 7.3. | Application of AS3959 (2018) | 24 |
| 7.4. | Water Supplies | 24 |
| 7.5. | Gas and electrical supplies | 25 |
| 7.6. | Access | 25 |
| 7.7. | Emergency Management | 30 |
| 8. | Compliance Summary Tables | 31 |
| 8.1. | Aim and Objectives | 31 |
| 8.2. | Buildings of Class 5 to 8 under the NCC | 32 |
| 8.3. | PBP Chapter 5: Performance Criteria | 33 |
| 9. | Recommendations | 35 |
| 10. | Conclusion | 36 |
| | Appendix 1: References | 37 |

1. Summary

Table 1 is a summary of compliance with relevant documents and approaches to limit bushfire attack and meet the requirements of the NSW planning framework for new development in Bushfire Prone Areas.

Table 1: Summary

| | |
|---|---|
| Planning for Bushfire Protection 2019 Classification (s) | Mixed-use Development |
| NCC Classification (s) | Class 5 to 8, Class 9b & Class 10a |
| Location | Lot 7/-/DP243457, 135 Badgerys Creek Road, Bradfield |
| Local Government Area | Liverpool City Council |
| Can this proposal comply with AS3959:2018 | Yes, the proposed buildings can be constructed to comply with AS3959:2018 |
| Does this development comply with the requirements of <i>Planning for Bushfire Protection 2019</i>? | Yes |
| Does this development comply with the Aims and objectives of <i>Planning for Bushfire Protection 2019</i>? | Yes |
| Is the proposal for a State Significant Development (SSD) | Yes |
| Is referral to the NSW RFS required? | Yes |
| Is a Bush Fire Safety Authority (BFSA) required? | Yes |

| | |
|-----------------------------|--|
| Assessment Framework | <input checked="" type="checkbox"/> <i>Planning for Bushfire Protection 2019</i> : |
| | <input checked="" type="checkbox"/> Meets the deemed to satisfy provisions |
| | <input type="checkbox"/> Alternate solution/ performance-based assessment |

2. Introduction

Bradfield Corporation Pty Ltd c/o Creative Vision have commissioned Blackash Bushfire Consulting Pty Ltd (Blackash) to prepare a Bushfire Hazard Assessment for a proposed residential, commercial and childcare centre development at 135 Badgerys Creek Road, Bradfield (the site), which is legally known as Lot 7, DP243457. (Figure 1). The site is approximately 2.02 hectares in size and is designated Bushfire Prone Land. The site will be a focal part of the proposed commercial hub of the future Bradfield City Centre.

In accordance with section 4.39 of the *Environmental Planning & Assessment Act 1979* (EP&A Act), Secretary's Environmental Assessment Requirements (SEARs) for SSD 77458970 were issued on 30 January 2025. This report has been prepared to respond to the relevant issued SEARS, requesting a *bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with Planning for Bush Fire Protection*.

Similarly, both Liverpool City Council (LCC) and the NSW Rural Fire Service (RFS) have requested a bushfire assessment report for the proposal. As such, a Bush Fire Safety Authority (BFSA) is required under Section 100B of the *Rural Fires Act, 1997* (RF Act).

The Western Sydney Aerotropolis Development Control Plan (WSADCP; Department of Planning, Housing and Infrastructure [DPHI], 2024) identifies the subject site as located within the Aerotropolis Core Precinct and has recently been rezoned under the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 to facilitate mixed use development (Figure 2). MU zoning also applies to land situated to the north, south and east of the subject site while to the west, the adjacent lots are zoned Enterprise (ENT).

The approach taken in this report and in the design of the subdivision has been to comply with *Planning for Bushfire Protection 2019* (PBP). One of the key considerations for the NSW Rural Fire Service (RFS) is the concept of proportionality which refers to ensuring that planning controls, conditions, and requirements are appropriate and commensurate with the scale, nature, risk and potential impacts of a proposed development.

The requirement of proportionality places a requirement on the RFS through the DA process to balance regulatory demands with practical feasibility, ensuring that responses to risks such as bushfire hazards are neither excessive nor insufficient. This is demonstrated in this report which can meet the requirements of PBP with practical recommendations which can be met onsite.

Proportionality when considering the DA ensures that planning decisions are fair, evidence-based, and appropriately tailored to the specific context of each development, avoiding both over-regulation and under-protection. The DA meets these requirements.

This assessment has been prepared by Mark Hawkins, Senior Bushfire Specialist and reviewed by Mr. Lew Short, Principal at Blackash Bushfire Consulting (Level 3 FPAA BPAD-A Certified Practitioner No. BPD-PA-16373) who is recognised by the NSW Rural Fire Service (RFS) as qualified in bushfire risk assessment and has been accredited by the Fire Protection Association of Australia as a suitably qualified consultant to undertake alternative solution proposals.

The application has been completed to comply with the acceptable solutions of *Planning for Bushfire Protection 2019* (PBP 2019).

A site inspection was undertaken by Mark Hawkins 16 December 2025.

3. Proposed Development

The subject site is located at 135 Badgerys Creek Road, in the proposed new city of Bradfield, which is under major construction with the Sydney Metro – Western Sydney Airport train station being currently developed directly to the west.

It is legally described as Lot 7 DP 243457 and is located approximately 4 km to the Western Sydney Airport (Figure 1). The subject site shares a western frontage with Badgerys Creek Road and the eastern boundary of the site adjoins the State government-led Bradfield City Centre. Lots to the north and south of the subject site are currently used for rural-residential purposes, however, are identified for future development (Figure 2).

The proposed development will seek consent for the redevelopment of the subject site, comprising:

- Enabling works including vegetation removal and earthworks;
- The construction of three buildings (herein referred to as the eastern and western building), comprising:
 - Residential use, including approximately 400 apartment units;
 - Hotel use, including approximately 450 hotel rooms;
 - Commercial use, including supermarket, food and drink and other commercial uses;
 - Medical centre use;
 - Childcare centre use;
- Construction of two basement structures, including approximately 800 carparking spaces;
- Public domain upgrades, including:
 - Construction of an internal road;
 - A public plaza;
- Rehabilitation and augmentation of the existing riparian corridor;
- Landscaping embellishments on the ground level and within the built form; and
- Services augmentation as required.



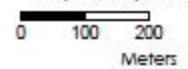
Legend

-  Roads
-  Watercourse
-  Subject Land



Date: 18/12/2025

Prepared By: DK



Coordinate System:
GDA2020 MGA Zone 56

Base Data: NSW Spatial Services 18/12/2025; Imagery: ©Hearmap

Figure 1: Site Location

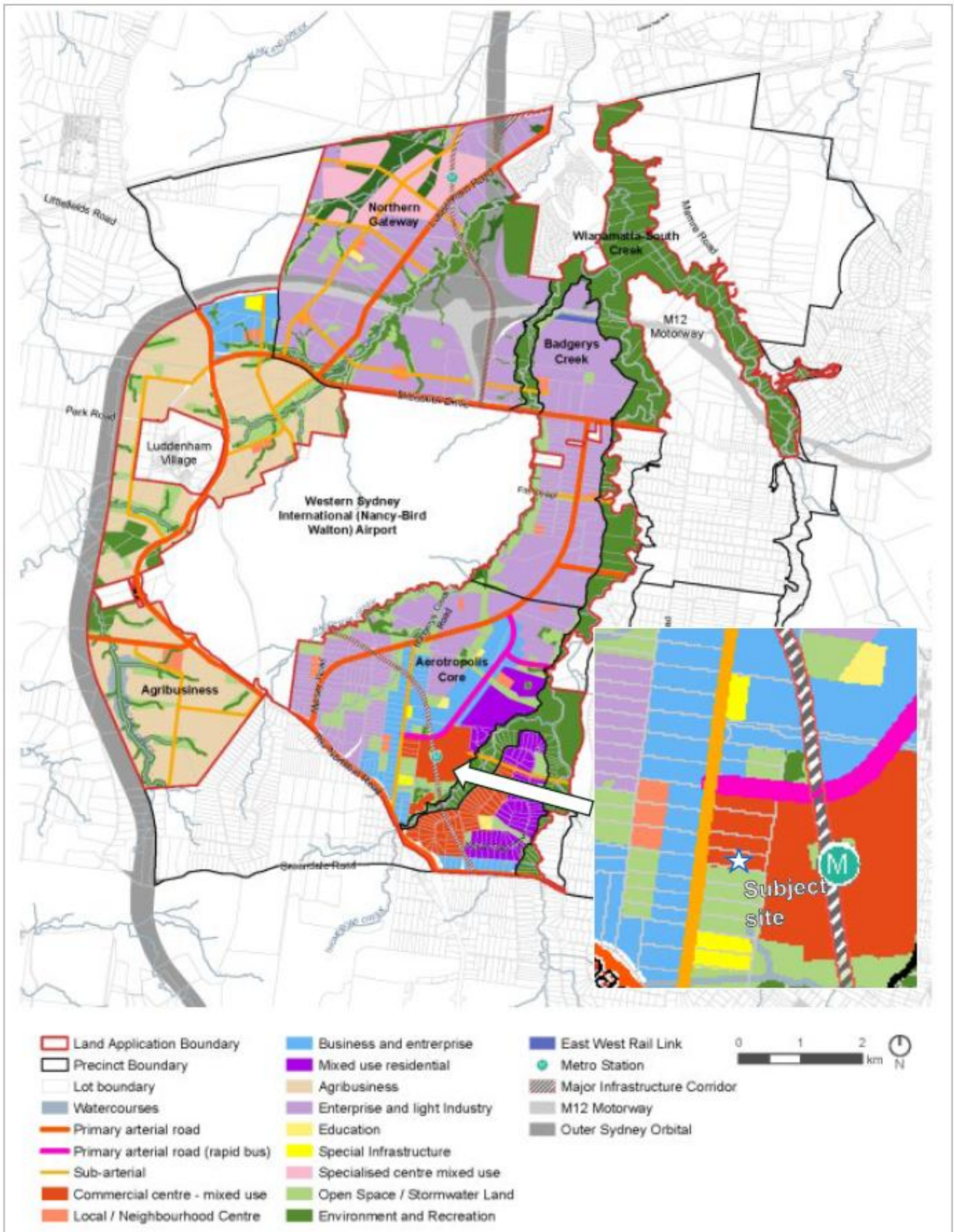


Figure 3: Aerotropolis Land Use and Structure Plan (DPE, 2022)

4. Legislative Framework

The site is identified as 'bush fire prone land' (see Figure 4) for the purposes of Section 10.3 of the EPA Act and the legislative requirements for building on bush fire prone lands are applicable.

Development on land that is identified as being bushfire prone must comply with the NSW RFS document *Planning for Bushfire Protection 2019* (PBP 2019) under s4.39 of the *Environmental Planning and Assessment Act, 1997* (EPA Act).

Integrated development which requires development consent from Council and General Terms of Approval from the NSW RFS. Any development applications for such a purpose must obtain a Bush Fire Safety Authority (BFSA) from the Commissioner of the NSW RFS in accordance with Section 100B of the *Rural Fires Act, 1997* (RF Act).

A BFSA authorises development to the extent that it complies with PBP 2019 including standards regarding setbacks, provision of water supply and other measures in combination considered by the Commissioner necessary to protect persons, property or the environment from danger that may arise from a bushfire.

In acknowledgement of the multiple building classifications of the proposal, the childcare centre has the highest level of vulnerability of occupants and subsequent bushfire requirements. The childcare centre is categorised as a Special Fire Protection Purpose (SFPP) development and must also comply with the bushfire provisions in the National Construction Code (NCC) which must be addressed, including Specification 43.

Being a mixed-use proposal, the development is subject to several NCC classifications, therefore the development has been assessed against:

- Chapter 5, Residential Subdivisions of PBP 2019, to appropriately consider the subdivision component;
- Chapter 6, Special Fire Protection Purpose of PBP 2019 to consider the childcare centre; and
- Chapter 8 – Other development of PBP 2019 for the Class 10 structures, commercial and multi-storey component.

The childcare application needs to be able to justify that the proposal can achieve a worst-case Bushfire Attack Level (BAL) of a maximum of BAL-12.5 to comply with the SFPP requirements of PBP 2019.

As a new residential development with commercial components, the application needs to be able to justify that the proposal can achieve a worst-case Bushfire Attack Level (BAL) of a maximum of BAL-29. This can be achieved for the development and is demonstrated in this report.

The proposed retail / commercial premises is considered by PBP 2019 as 'other non-residential development' for the commercial aspects, including the Medical Centre. As such, the application for the commercial aspects must be able to meet the aim and objectives of Section 8.3.1 of PBP 2019, which has been assessed using expert judgement and included in Section 9.1 of this report.

5. Planning for Bushfire Protection Requirements

The Aim of and Objectives of PBP (p. 10) overall are:

All development on BFPL must satisfy the aim and objectives of Planning for Bush Fire Protection (PBP).

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 objectives are to:

- *afford buildings and their occupants protection from exposure to a bush fire;*
- *provide for a defensible space to be located around buildings;*
- *provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;*
- *ensure that appropriate operational access and egress for emergency service personnel and occupants is available;*
- *provide for ongoing management and maintenance of BPMs; and*
- *ensure that utility services are adequate to meet the needs of firefighters.*

Chapter 8 of PBP (p. 74) explains that for Other Developments (Commercial) there are bush fire provisions or requirements that need to be applied, that align with the unique features of the development type.

In order to comply with PBP the following conditions must be met:

- *satisfy the aim and objectives of PBP outlined in Chapter 1;*
- *consider any issues listed for the specific purpose for the development set out in this chapter; and*
- *propose an appropriate combination of BPMs.*

5.1. Buildings of Class 5 to 8 under the NCC

Section 8.3.1 of the PBP applies the following objectives to Class 5 to 8 buildings (p.76):

- *To provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation.*
- *To provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;*
- *To 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; and*
- *Provide for the storage of hazardous materials away from the hazard wherever possible.*

Compliance with Section 8.3.1 of PBP 2019 is addressed in Section 9.2.

5.2. Commercial and Industrial Development

Section 8.3.10 of the PBP applies the following objectives to commercial development (p.79):

- *Where no residential component is included, commercial and industrial development is addressed through the aim and objectives of PBP (Chapter 1); and*
- *A suitable package of BPMs should be proposed commensurate with the assessed level of risk to the development. The scale of the development and numbers of people likely to be occupying the building will be directly relevant to the BPMs proposed.*

All requirements for BPMs that relate to the development must be provided unless there are specific circumstances to render a BPM irrelevant.

Compliance with Table 8.3.10 of PBP 2019 is addressed in Section 9.1.

5.3. Specification 43 Building Code of Australia

Specification 43 Bushfire protection for certain Class 9 buildings (Specification 43) is the acceptable solution within the National Construction Code 2022 (NCC) for certain Class 9 buildings including hospitals on designated bushfire prone areas. The 2022 edition of the NCC contains amendments to its bushfire protection provisions. This includes a suite of new provisions for Class 9 buildings on designated bushfire prone areas that accommodate a hospital. The Building Code of Australia component of NCC is given legal effect through the EPA Act.

In NSW, all new buildings and new building work must comply with the NCC. NCC contains bushfire protection requirements that operate in conjunction with the bushfire protection measures (BPMs) in PBP 2019. Accordingly, buildings on bushfire prone areas must comply with both the requirements of PBP 2019 and the NCC.

The RFS Planning for Bushfire Protection – Addendum 2022 states (p. 5) that:

NCC 2022 identifies additional bush fire provisions for the construction, separation and access requirements for certain Class 9 buildings accommodating vulnerable occupants on bush fire prone land.

Class 9 buildings include some Special Fire Protection Purpose (SFPP) developments under section 100B of the Rural Fires Act 1997, such as Class 9a hospitals, Class 9b Hospitals and aged care centres and Class 9c residential care buildings.

Consistent with section 100B of the Rural Fires Act 1997, proposed SFPP's that are Class 9 Buildings in bush fire prone areas may be required to have bush fire protection measures additional to those specified in NCC 2022.

The satisfactory provision of the Specification 43 requirements will ensure a safer and better prepared facility for the new and especially for the existing facility structures.

6. Bushfire Threat Assessment

6.1. Methodology

PBP provides a methodology to determine the bushfire threat and commensurate size of any Asset Protection Zone (APZ) that may be required to offset possible bushfire attack. These elements include the potential hazardous landscape that may affect the site and the effective slope within that hazardous vegetation. For new SFPP and residential development, APZ requirements are based on keeping radiant heat levels at the new buildings below 12kW/m² and 29kW/m² respectively.

This requirement aligns with the impending strata subdivision component of the development, that will be addressed in a subsequent DA.

The following assessment is prepared in accordance with PBP 2019 and Method 1 from AS3959. This assessment is based on the following resources:

- Site inspection by Mark Hawkins on the 16th of December 2025;
- Planning for Bush Fire Protection (NSW RFS, 2019);
- Liverpool City Council Bushfire Prone Land Map;
- Aerial mapping; and
- Detailed GIS analysis.

The methodology used in this assessment is in accordance with PBP 2019 and is outlined in the following sections.

6.2. Bushfire Prone Land Mapping

The site is identified as 'bush fire prone land' (see Figure 4) for the purposes of Section 10.3 of the EPA Act and the legislative requirements for building on bush fire prone lands are applicable.

Bushfire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bushfire prone land (BPL) is land that has been identified by council, which can support a bushfire or is subject to bushfire attack. Bushfire prone land maps are prepared by local council and certified by the Commissioner of the NSW RFS.

The site and adjoining areas are mapped as BPL – refer Figure 4. The internal area of the site is mapped as predominantly Category 3 Vegetation, with a small section of Category 1 Vegetation to the northeast and western aspects.

The scale of development in the area cannot be understated and adjoining properties are considered “managed land” to all aspects with vegetation either completely removed or modified to the point of incapable of supporting a ground fire.

It is not known at this time, how many other surrounding properties are also in the process of being developed as part of the Bradfield City Commercial Centre however site inspection indicates the subject site is being ringed by development.

Road, electricity and services upgrading, which is currently occurring is also removing roadside vegetation and increasing the width of Badgerys Creek Road as an active separation between properties.

Information supplied by the client indicates that, despite being identified for future development, adjoining property owners directly to the north (Lot 6, DP243457) have repeatedly been offered to sell their property, however have signified their intention to remain and continue their property management as it is currently undertaken.

The neighbour to the immediate north has significant infrastructure constructed onsite associated with all manner of horse husbandry and large animal transport vehicles and has expressed concern over the impact of the proposed development to their animals, which have reduced their pasture to the point where additional fodder is required to feed them.

The property to the south 125 Badgerys Creek Road (Lot 8, DP243457) is being developed as a Sports Field. In recognition of the future development (and potential land ownership changes), the owners of the subject site have been made responsible through legal mechanisms to continue the management of 125 Badgerys Creek Road, Bradfield until such time as Lot 8, DP 243457 is a managed sports field (see Appendix 2).

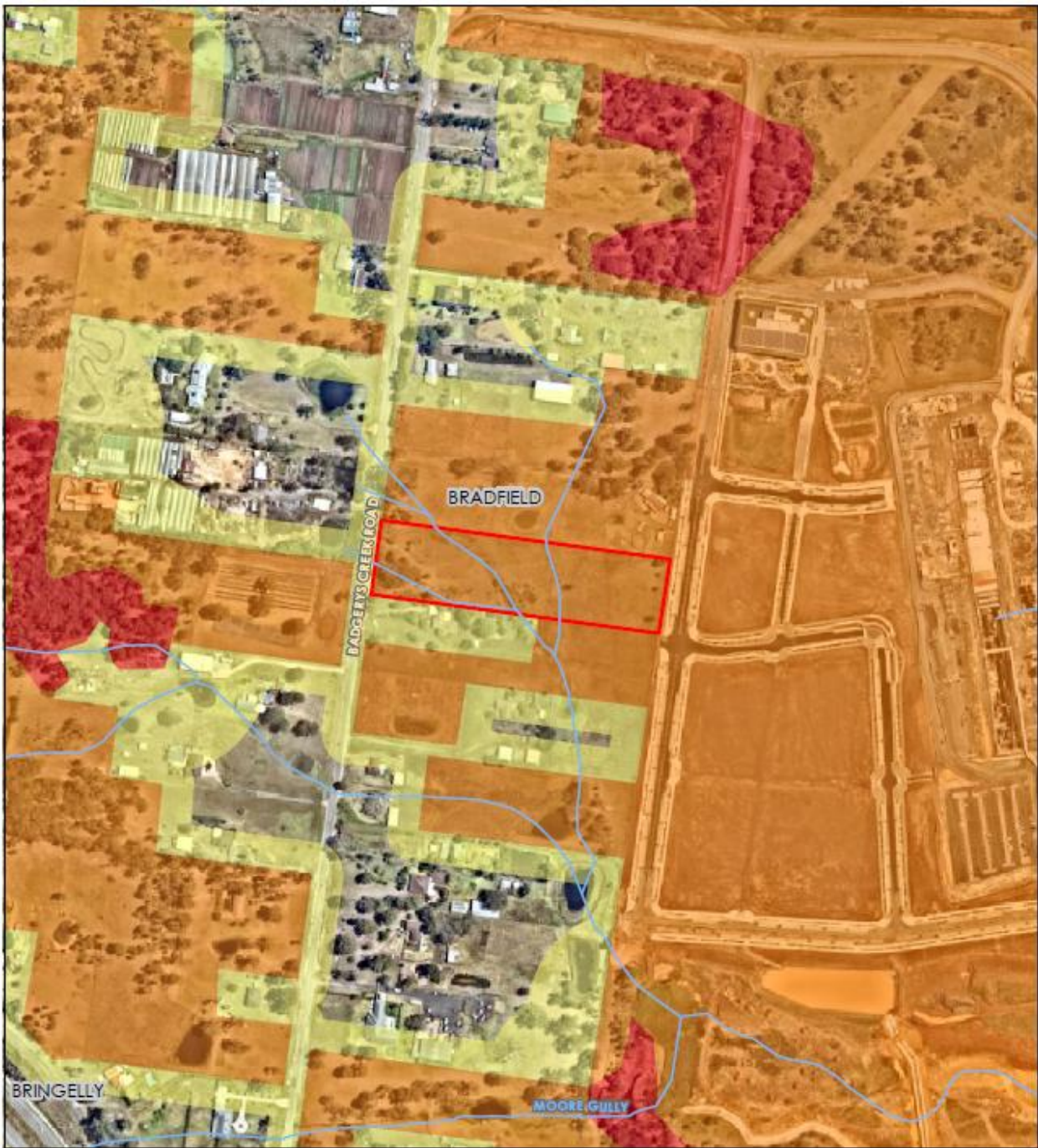
The nearest area of vegetation which could possibly be construed as a hazard is to the north, however this is a very conservative observation, and the vegetation has not been mapped as bush fire prone.

Category 1 Vegetation is mapped further to the north with existing trees being retained onsite as shade for livestock which graze the grass beneath the trees. This area is beyond the scope of assessment in accordance with PBP 2019 for the proposed development.


A further area of Category 1 Vegetation is mapped to the west, however this area is beyond the scope of assessment in accordance with PBP 2019 for the proposed development.

The area of mapped Category 3 Vegetation for the local area is inaccurate and should be revised and amended. Field-based Vegetation verification onsite is supported by the aerial photography in the figures of this report from Nearmap 14/12/2025.

A proportionate response from Council and the RFS will take into account the current vegetation removal from development that can be witnessed onsite and recognise the discontinuity of vegetation and fuels as a result.



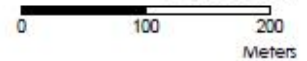
Legend

-  Watercourse
-  Subject Land
- Bushfire Prone Land**
-  Vegetation Buffer
-  Vegetation Category 1
-  Vegetation Category 3



Date: 18/12/2025

Prepared By: DK



Coordinate System:
GDA2020 MGA Zone 56

Base Data: NSW Spatial Services 18/12/2025; Bushfire Prone Land: NSW Spatial Services 18/12/2025; Imagery: ©Nearmap 14/12/2025

Figure 4: Bush Fire Prone Land Map

6.3. Fire Danger District

The Liverpool City Council is within the Greater Sydney Region and has a Forest Fire Danger Index (FFDI) set at 100 by PBP.

6.4. Vegetation Assessment

The RF Regulation requires a classification of the vegetation on and surrounding the property (out to a distance of 140 metres from the boundaries of the property) in accordance with the system for classification of vegetation contained in PBP.

Predominant Vegetation is classified by structure or formation using the system adopted by Keith (2004) and by the general description using PBP and is demonstrated in Figure 5.

6.5. Slopes Influencing Bushfire Behavior

The RF Reg requires an assessment of the slope of the land on and surrounding the property (out to a distance of 100 metres) from the boundaries of the property or from the proposed development footprint.

The effective slope influencing fire behaviour approaching the site has been assessed in accordance with the methodology specified within PBP. The effective slope is the slope of the ground under the hazard (vegetation). It is not the slope between the vegetation and the building (slope located between the asset and vegetation is the site slope).

The effective slopes impacting on the proposed development are demonstrated in Figure 5.



Legend

-  Watercourse
-  Contour - 2m
-  Subject Land
-  Cadastre
-  Vegetation Assessment Buffer
- Vegetation Classification**
-  Coastal Valley Grassy Woodlands



Date: 18/12/2025

Prepared By: DK



Coordinate System:
GDA2020 MGA Zone 56

Base Data: NSW Spatial Services 18/12/2025; Vegetation: SVTM Extant edited based on imagery 18/12/2025; Contours: NSW Elevation and Depth Theme layers 18/12/2025; Imagery: ©Nearmap 14/12/2025

Figure 5: Vegetation & slope map

7. Bushfire Protection Measures

PBP promotes detailed site analysis and the application of a combination of BPMs to achieve an acceptable outcome.

The BPMs work in combination to provide a suite of measures that meet the Aim and Objectives, and various Chapters of PBP 2019. The BPMs are shown in Figure 6.

Appropriate combinations depend upon the type of development, and the specific geographic location and site circumstances.

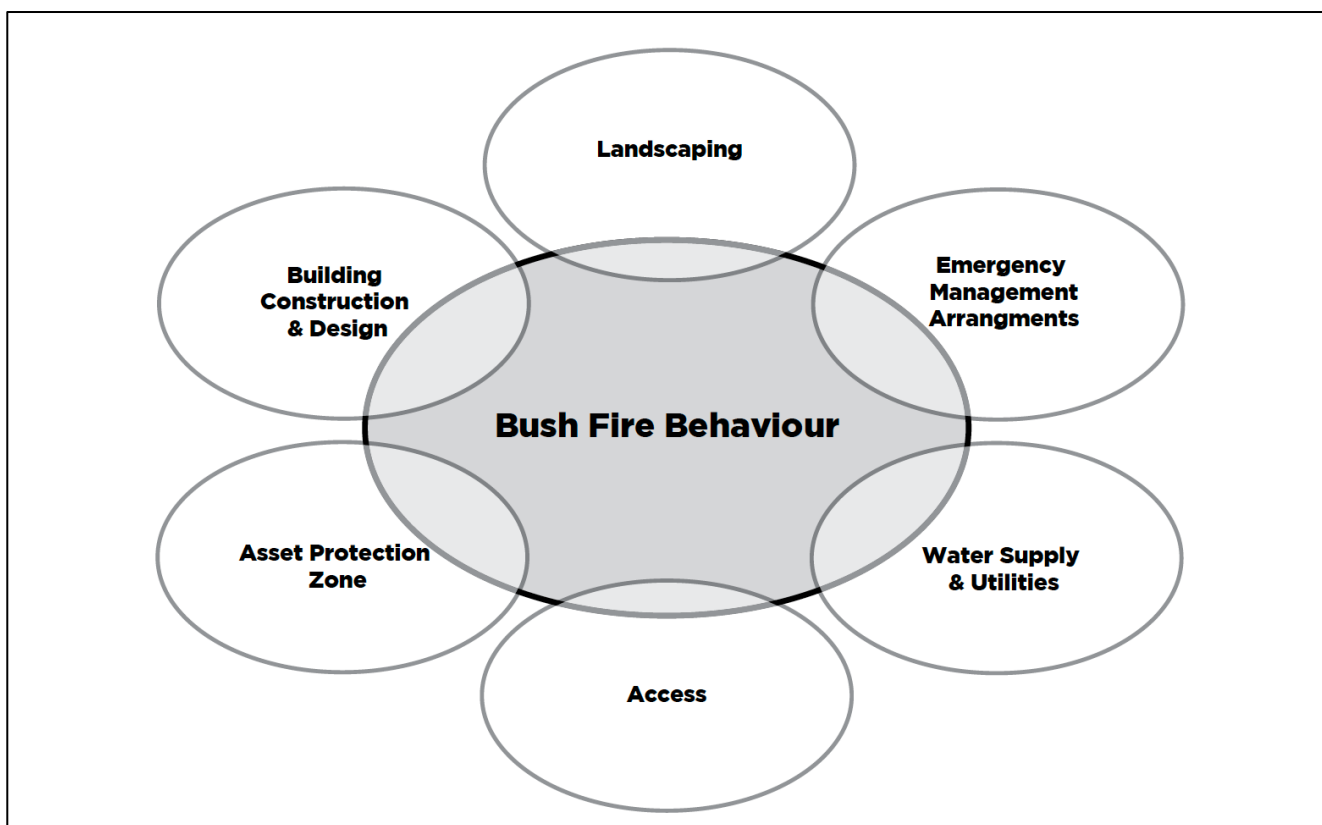


Figure 6: Bushfire Protection Measures in combination (PBP p.26)

7.1. Asset Protection Zones

For proposed new development, PBP 2019 requires that a minimum separation is provided in the form of an APZ. The APZ is a fuel-reduced, physical separation between buildings and bushfire hazards. For SFPP developments, APZ requirements are based on keeping radiant heat levels at buildings below 10kW/m² (BAL-12.5) as the maximum exposure on all sides of the building.

For residential developments, APZ requirements are based on keeping radiant heat levels at buildings below 29kW/m² (BAL-29) as the maximum exposure on all sides of the building.

The proposal includes civil works, residential apartments and commercial tenancies, and the entire property will be managed as an APZ by a single entity. The proposed revegetated riparian corridor will be fuel managed as a central feature point of the site.

Table 2 below summarises the APZs and Figure 7 depicts the separation to possible hazard vegetation.

Table 2: APZ assessment

| Direction | Slope | Vegetation | Minimum Required APZ | APZ provided |
|-----------|--------------|-------------------|----------------------|--------------|
| North | 1.1° Upslope | Grassy Woodlands* | 42 metres | 47.9 metres |
| East | NA | Managed land | NA | NA |
| South | NA | Managed land | NA | NA |
| West | NA | Managed land | NA | NA |

*Conservatively assessed as grassy woodland vegetation.

The entire site will be managed to Inner Protection Area (IPA) standards in accordance with Appendix 4 of PBP 2019 and the NSW RFS "Asset protection zone standards".

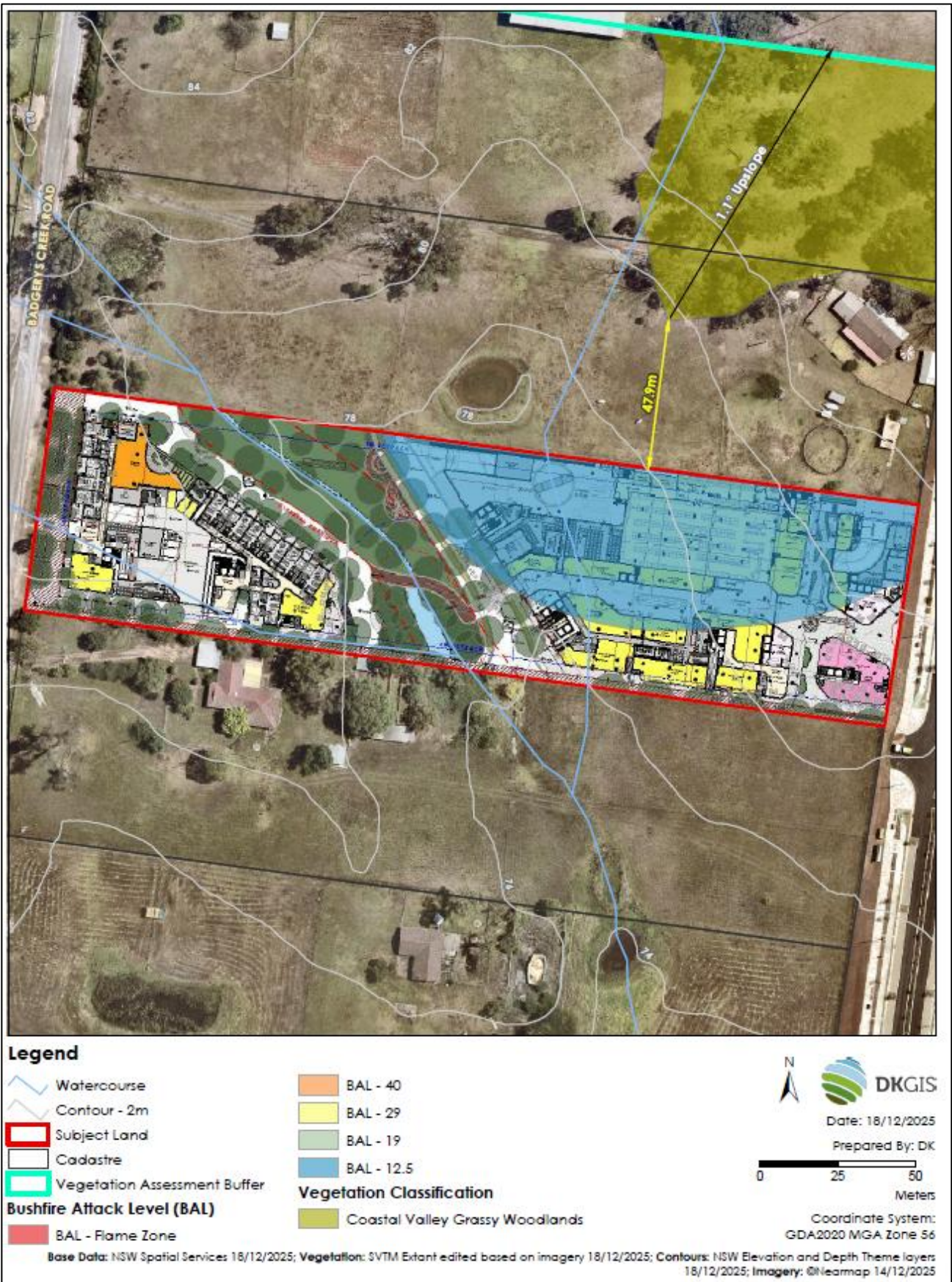


Figure 7: Minimum separation to vegetation and Bushfire Attack Levels

7.2. Bushfire Attack Levels

The Bushfire Attack Levels (BAL) is a means of measuring the ability of a building to withstand attack from bushfire. The form of bushfire attack and the severity will vary according to the conditions (FDI, vegetation, slope and setback) on the site.

The BAL assesses the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per square metre, which is the basis for establishing the requirements for construction to improve protection of a building from potential attack by a bushfire, as defined in *Australian Standard AS 3959-2018 Construction of buildings in bushfire-prone areas* (AS 3959-2018).

The BAL ratings are used as the basis for establishing the requirements for construction to improve protection of a building from potential bushfire attack. All building envelopes can achieve BAL-12.5 or less (refer Figure 7).

A non-combustible metal radiant heat shield will be constructed along the northern boundary of the property, adjoining proposed structures. The heat shield is not required on the section of property boundary containing the revegetated watercourse.

7.3. Application of AS3959 (2018)

Construction must comply with the corresponding Bushfire Attack Level (BAL) as demonstrated in Figure 7. The application of each BAL is as defined in Figure 7 and is not broadly applied across the entire elevation / building.

The construction must comply with corresponding sections of the Australian Standard AS3959-2018 *Construction of buildings in bush fire-prone areas* or NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Areas – 2014* as appropriate, and Section 7.5 of *Planning for Bush Fire Protection 2019*. The construction of the buildings in this manner complies with *Planning for Bush Fire Protection 2019* and the National Construction Code (NCC).

7.4. Water Supplies

The Site will be adequately serviced by the existing reticulated water supply, with hydrants located at regular intervals to comply with AS2419 and PBP (see Figure 8). All future structures will be connected to the reticulated town's water main for domestic needs.

This complies with PBP 2019.

7.5. Gas and electrical supplies

Electricity supply for the new development will comply with PBP. Any gas services are to be installed and maintained in accordance with *Australian Standard AS/NZS 1596 'The storage and handling of LP Gas'* (Standards Australia 2008).

This complies with PBP 2019.

7.6. Access

Vehicular access to the site is to be provided via multiple entry/exit driveways off Innovation Road to the south and Centre Loop Road to the west. Off-street parking is to be provided on each site as well as "on-street" on the proposed internal roadways in accordance with Council's requirements.

The proposed Central Road will be a dead-end road (unless connection is provided at a later date to the north) and will be less than 200m from Innovation South Road, however, this temporary dead end will not provide a turning head area. Instead, temporary use of the proposed driveway may provide a Type C multipoint turn as described in A3.3 of PBP for fire vehicles. The curve radius of this turn is <40 m, requiring a minimum 4 m swept path width. The proposed carriageway provides a 7m two-way access, in which both lanes may be utilised to meet the swept path width requirement.

Proposed access is provided external to the site and those roads have already been approved by Council and therefore will be in accordance with the requirements of PBP 2019.

7.7. Multi-storey Development Response

PBP 2019 has specific requirements for buildings exceeding three stories. *Buildings exceeding three storeys in height are considered to be multi-storey buildings. The rise in storeys shall be calculated as per the definition in Volume 1 of the NCC 2019. A residential flat building under the meaning within the Standard Instrument LEP is a multi-storey building in the context of PBP¹.*

Both the east and west buildings contain up to 11 levels, as well as two basement levels and a lower ground floor, and is considered 'multi-storey' development under PBP. Multi-storey development is to comply with the performance criteria outlined within Chapter 5 of PBP, including the requirement of an APZ meeting a threshold of 29 kW/m² and the additional requirements detailed in Table 8.2.2 of PBP using a performance-based solution.

¹ Planning for Bushfire Protection 2019 p. 74

The proposed high-rise development will achieve a level of bushfire resilience that exceeds the minimum construction outcomes contemplated by *Planning for Bush Fire Protection 2019* (PBP) through the incorporation of comprehensive internal fire detection and suppression systems. While PBP primarily addresses building separation, construction standards, and external asset protection measures for low-rise and residential forms of development, the subject building is designed in accordance with contemporary high-rise fire engineering principles, including automatic fire detection, alarm and sprinkler systems, smoke control measures, and dedicated fire-fighting infrastructure. These systems provide early detection, rapid suppression, and effective internal compartmentation, significantly reducing the likelihood of bushfire-related ignition leading to structural involvement or risk to occupants. Collectively, these measures deliver a level of life safety and property protection that is demonstrably above the baseline intent of PBP, while remaining consistent with its overarching objective of protecting human life and minimising property loss from bushfire without imposing disproportionate or unnecessary external bushfire construction controls.

| Issue | Specific Concern | Technical Considerations | Response |
|----------------------|---|---|---|
| Population | <ul style="list-style-type: none"> Impact on existing community and infrastructure | <ul style="list-style-type: none"> What capacity does the existing infrastructure have to allow evacuation of existing and proposed residents in the event of a bush fire? | <ul style="list-style-type: none"> The activation of the broader precinct, will result in the subject site being no longer considered bushfire prone land. Extensive road network development will also contribute to the capacity for adequate evacuation. Emergency services have direct access to the bushfire hazard from Badgerys Creek Road (existing) to the west of the subject site. Multiple evacuation routes to the new city centre (Bradfield City) will have already started being developed. In summary, evacuation due to a bushfire is an unlikely scenario given the current and proposed development with the broader area which will remove bushfire hazard in an ongoing manner. |
| Location of Building | <ul style="list-style-type: none"> Locating on ridge tops emphasizes the risk of convective plume interaction and wind related impacts. | <ul style="list-style-type: none"> Can the building be located away from ridge tops to areas that have a reduced bush fire exposure? If unavoidable, what is the impact on modelling and risk to the building? Is this risk appropriate for the building and occupant numbers? | <ul style="list-style-type: none"> Development is not located on a ridge top. |
| Design Fire | <ul style="list-style-type: none"> Different elements of the flame could have different impacts on different levels of the building; and The whole building could be impacted by ember attack and multiple floors could | <ul style="list-style-type: none"> What are the flame dimensions including the flame angle? Where is the hottest part of the flame located? How would this impact on the proposed building? | <ul style="list-style-type: none"> The development is NOT exposed to a hazard within 50m of the proposed multi-storey building. The proposed multi-storey building is exposed to a conservative BAL-12.5 with limited opportunity for ember attack. |

| | | | |
|-----------------------|---|---|--|
| | be alight simultaneously. | <ul style="list-style-type: none"> • How would the warning and suppression systems in the building cope with this? | <ul style="list-style-type: none"> • Specification 43 and the standard conditions of the NCC will provide the building with National Standard warning and fire suppression systems. |
| Egress | <ul style="list-style-type: none"> • Elevations exposed to bush fire risk. | <ul style="list-style-type: none"> • How does the emergency evacuation procedure take account of the location of bush fire prone vegetation? | <ul style="list-style-type: none"> • The bushfire hazard is considered 'low risk' given the removal of grassland hazard within 50 m to the north and south of the subject site, • Once developed, the site will be within the commercial centre of Bradfield and will not require evacuation from bushfire. |
| Building Construction | <ul style="list-style-type: none"> • Performance of the building façade in a bush fire scenario. • Balconies may contain external features which could ignite and contribute to building ignition and fuel loads. | <ul style="list-style-type: none"> • What wall and cladding materials are proposed and what is proposed for the openings/penetrations (i.e. windows and doors)? • How does the proposed building construction deal with fire spread from the vegetation to the inside of the building? • Is compliance with AS 3959 sufficient to ensure that the bush fire risk is mitigated? • Is this appropriate for the design fire scenario? • Are there balconies proposed? • What may be stored on the balconies? • Can there be restrictions on what is stored on the balconies due to fire risk? | <ul style="list-style-type: none"> • The building is subject to BAL-12.5 and therefore, the general fire safety provisions of the NCC are required. • The requirements of Specification 43 are in force, despite the 'low risk' rating of the surrounding area. The application of Specification 43 will add considerable fire engineering scrutiny to the safety requirements of the proposed building. |

| | | | |
|---|--|--|---|
| <p>Car parking</p> | <ul style="list-style-type: none"> • Lower storey car park could be subject to ember attack and high radiant heat loads. | <ul style="list-style-type: none"> • Is the warning and suppression system designed to take account of bush fire impact? • Where are exits located? Are they guiding occupants away from the car park? | <ul style="list-style-type: none"> • Carparking and sprinkler system is to meet the NCC standards. • Carparking for the development is at basement level (two storeys) as well as a lower ground level, with exits at ground level for both the western and eastern buildings guiding residents and occupants away from the carpark and offsite. |
| <p>Other Engineering Considerations</p> | <ul style="list-style-type: none"> • Access for fire fighters may be restricted or challenging; and • Risk implications of floor-to-floor fire spread. | <ul style="list-style-type: none"> • What would this mean for fire suppression? • How would warning and suppression systems take account of this? • What would this mean for evacuation? | <ul style="list-style-type: none"> • The development to comply with NCC and any fire engineering requirements, which will provide access for fire appliance vehicles. • Sprinkler systems to comply with NCC standards. • The risk of bushfire on the development is considered low risk, and any evacuation risk would be mitigated by National Standard fire suppression systems while evacuating and once outside would be within the commercial centre of Bradfield and will not require evacuation from bushfire. |

7.8. Emergency Management

A Bush Fire Emergency Management and Evacuation Plan (BFEMEP) should be prepared consistent with the:

- The NSW RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*;
- *NSW RFS Schools Program Guide*;
- Australian Standard AS 3745:2010 *Planning for emergencies in facilities*; and
- Australian Standard AS 4083:2010 *Planning for emergencies – Health care facilities* (where applicable).







The Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of the child care centre occupants, until such time as the site is no longer mapped as being bush fire prone land.

8. Compliance Summary Tables

8.1. Aim and Objectives

PBP provides the Aim and Objectives for all development on BFPL (Section 1.1). Table 3 is an assurance approach using expert judgement.





Table 3: Aim and Objectives:

| Specific Objective for Retail Premises | Compliance | Comment |
|---|---|--|
| Afford buildings and their occupants protection from exposure to a bush fire. |  | APZs provided to achieve the required kW/m ² radiant heat for the respective buildings. |
| Provide for a defendable space to be located around buildings. |  | Sufficient defendable space provided within the proposed site. |
| Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings. |  | APZs provided to achieve the required kW/m ² radiant heat and the respective buildings. |
| Ensure that appropriate operational access and egress for emergency service personnel and occupants is available. |  | Access arrangements are compliant with PBP 2019. |
| Provide for ongoing management and maintenance of BPMs. |  | A Bushfire Emergency Management and Evacuation Plan to be prepared prior to occupation of the development. |
| Ensure that utility services are adequate to meet the needs of firefighters. |  | Reticulated water supply. |

8.2. Buildings of Class 5 to 8 under the NCC

PBP provides Specific Objectives for Buildings of varying Classes under the NCC. Table 4 is an assurance approach using expert judgement.

Table 4: Specific Objectives for Buildings under the NCC:

| Specific Objective for Retail Premises | Compliance | Comment |
|---|---|---|
| To provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation. |  | Access arrangements are compliant with PBP Section 3.4. A Bushfire Emergency Management and Evacuation Plan to be prepared prior to occupation of the development. |
| To provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development. |  | A Bushfire Emergency Management and Evacuation Plan to be prepared prior to occupation of the development. |
| To 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. |  | Water, gas and electrical supplies are to be installed in compliance with PBP. |
| To provide for the storage of hazardous materials away from the hazard wherever possible. |  | Hazardous materials are to be stored away from the hazard wherever possible. |

8.3. PBP Chapter 5: Performance Criteria

Table 6: Compliance summary against performance criteria:

| | Performance Criteria | Comment | Complies |
|-------------------------------|---|---|----------|
| Asset Protection Zones | Potential building footprints must not be exposed to radiant heat levels exceeding nominated kW/m ² for respective class of buildings. | APZs are to be provided as per PBP 2019. | YES |
| | APZs are managed and maintained to prevent the spread of a fire towards the building. | APZs to be managed in accordance with Appendix 4 of PBP 2019. | YES |
| | The APZs is provided in perpetuity. | APZs are implemented either within the adjoining road corridors or within the site. | YES |
| | APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised. | APZs are located on land with a slope less than 18 degrees. | YES |
| Landscaping | Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions. | Landscaping is to comply with Appendix 4 of PBP. Fencing is to be constructed in accordance with section 7.6 of PBP. Consideration required during design phase of the development - can be achieved. | YES |
| Access (General Requirements) | Firefighting vehicles are provided with safe, all-weather access to structures. | Access roads are two-wheel drive, all weather access. | YES |
| | The capacity of access roads is adequate for firefighting vehicles. | Access provided via roads external to the site. | YES |
| | There is appropriate access to water supply. | Reticulated water supply. | YES |

| | | | |
|-----------------------------|---|--|------------|
| Perimeter Roads | Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface. | Complies. | YES |
| Non-Perimeter Roads | Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating. | Complies. | YES |
| Property Access | Firefighting vehicles can access the dwelling and exit the property safely. | Direct access via public road network. | YES |
| Water supplies | Adequate water supplies is provided for firefighting purposes. | Reticulated water supply. | YES |
| | Water supplies are located at regular intervals. | Reticulated water supply. | YES |
| | The water supply is accessible and reliable for firefighting operations. | Reticulated water supply. | YES |
| | Flows and pressure are appropriate. | Reticulated water supply. | YES |
| | The integrity of the water supply is maintained. | Reticulated water supply. | YES |
| Electricity Services | Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings. | Consideration required during design phase of the development - can be achieved. | YES |
| Gas services | Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings. | Any new gas services are to be installed and maintained in accordance with AS/NZS 1596:2008. Consideration required during design phase of the development - can be achieved. | YES |

9. Recommendations

The following recommendations have been made within this report to ensure the proposed development is compliant with Section 4.39 of the EPA Act and *Planning for Bush Fire Protection 2019*:

Recommendation 1: The proposed new buildings are to be constructed to comply with:

- The corresponding Bushfire Attack Level (BAL) as demonstrated in Figure 7 and AS3959-2018 – *Australian Standard Construction of buildings in bushfire-prone areas*.
- A fire-engineered performance-based assessment to evaluate the design proposal of the childcare centre against the bushfire hazard and risk shall be prepared by a fire engineer or appropriately qualified individual.

Recommendation 2: Access roads within the proposed development must comply with section 7.6 of this report and PBP 2019.

Recommendation 3: Water, electricity and gas supplies through the proposed development must comply with section 5.3.3 of PBP 2019.

Recommendation 4: The entire site is to be established and maintained to Inner Protection Area (IPA) standards in accordance with Appendix 4 of PBP 2019 and the NSW RFS "Asset protection zone standards".

Recommendation 5: A non-combustible metal radiant heat shield will be constructed around the northern perimeter of the property, where it adjoins proposed structures. The heat shield is not required on the section of property boundary containing the revegetated watercourse.

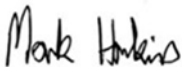
Recommendation 6: A Bushfire Emergency Management and Evacuation Plan is to be produced as of the development to ensure suitable emergency and evacuation arrangements, with special significance placed upon the occupants of the proposed childcare development.

10. Conclusion

One of the key considerations for the NSW Rural Fire Service in assessing development is the principle of proportionality. This principle seeks to ensure that bushfire planning controls, conditions and requirements are appropriate and commensurate with the scale, nature, level of risk and potential impacts of a proposed development. In this case, the site is located within a low bushfire risk area that is undergoing rapid urban development, and any bushfire protection measures should therefore be proportionate to the actual hazard and risk profile of the locality. As the surrounding land has been developed and is managed, no external APZs are required.

This assessment has demonstrated that the proposed development can comply with *Planning for Bush Fire Protection 2019*. All proposed SFPP and residential building envelopes achieve the minimum APZ requirements for 10kW/m² (BAL-12.5) and all proposed retail / commercial premises meet the aim and objectives of Section 8.3.1 of PBP 2019. The recommendations have been provided to ensure compliance with *Planning for Bush Fire Protection 2019*.

In the authors professional opinion, the bushfire protection measures demonstrated in this report comply with the aim and objectives of *Planning for Bush Fire Protection 2019* and allow for the Consent Authority to support the application subject the recommendations.



Senior Bushfire Specialist | Blackash Bushfire Consulting

0483 227 500 | mark.hawkins@blackash.com.au | Blackash.com.au

PO Box 715 Wahroonga NSW 2075

BSc (Newc), Grad. Dip. (Design for Bushfires) UWS



Lew Short | Principal

BlackAsh Bushfire Consulting

B.A., Grad. Dip. (Design for Bushfires), Grad. Cert. of Management (Macq), Grad. Cert. (Applied Management)

Fire Protection Association of Australia BPAD Level 3 BPD-PA 16373



Appendix 1: References

Councils of Standards Australia AS3959-2018 – *Australian Standard Construction of buildings in bushfire-prone areas*

Councils of Standards Australia AS2419-2017 – *Fire Hydrant Installations*

Department of Planning, Housing and Infrastructure. (2024). *Aerotropolis Phase 2 DCP: Amendment 1, September 2024. New South Wales Government.*
https://www.planningportal.nsw.gov.au/sites/default/files/documents/2024/Aerotropolis%20Phase%202%20DCP_Amendment%201_September%202024.pdf

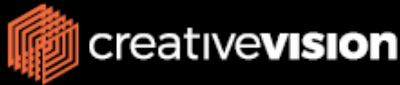
Keith, David (2004) – *Ocean Shores to Desert Dunes – The Native Vegetation of New South Wales and the ACT.* The Department of Environment and Climate Change

NSW Rural Fire Service (2015) *Guide for Bushfire Prone Land Mapping*

NSW Rural Fire Service (2019). *Planning for Bushfire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners.* Draft for Public Exhibition

NSW Government (1979) *Environmental Planning and Assessment Act 1979.* NSW Government Printer.

Appendix 2: Consent for Temporary Management of Lot 8 DP243457



OFFICIAL

23 July 2025

TEMPORARY BUSHFIRE MANAGEMENT – LETTER OF CONSENT

Bradfield Corporation Pty Ltd
(ABN: 30 649 760 074)
of 101 Mary Street Merrylands 2160
("the Owner")

Western Parkland City Authority, trading as Bradfield Development Authority
(ABN: 84 369 219 084)
of 50 Belmore Street PENRITH NSW 2750
("the Authority")

The Authority, as the legal owner of the land located at 125 Badgerys Creek, Bradfield – identified as Item 4 on the map enclosed (the Subject Lot), hereby grants consent for the Owner to undertake vegetation management activities within the Subject Lot for the purpose of establishing a temporary Asset Protection Zone (APZ).

It is acknowledged that vegetation will be managed in accordance with an ongoing maintenance plan, as mutually agreed by both parties, to ensure compliance with the APZ specifications set out in Section A4.1.1 of Planning for Bushfire Protection (PBP).

The Authority confirms its agreement to the implementation of the maintenance plan and associated activities, which will be formalised through an appropriate legal agreement in a prompt timeframe. This legal agreement shall remain binding and effective regardless of any changes in land ownership and will continue to apply until such time as the bushfire hazard has been permanently mitigated or removed, or until such time as ownership of the Subject Lot is no longer with the Bradfield Development Authority, whichever occurs first. It is acknowledged that future ownership of the Subject Lot may transfer to entities such as Liverpool Council or Sydney Water, and at that time, the Owner will continue discussions with the relevant landowner to ensure ongoing risk mitigation in accordance with applicable bushfire protection standards.

Signed: *Dilukshi Brock*
Name: Mrs Dilukshi (Dee) Brock, Acting Project Director – Enabling Works, Bradfield Development Authority
Date: 23 July 2025

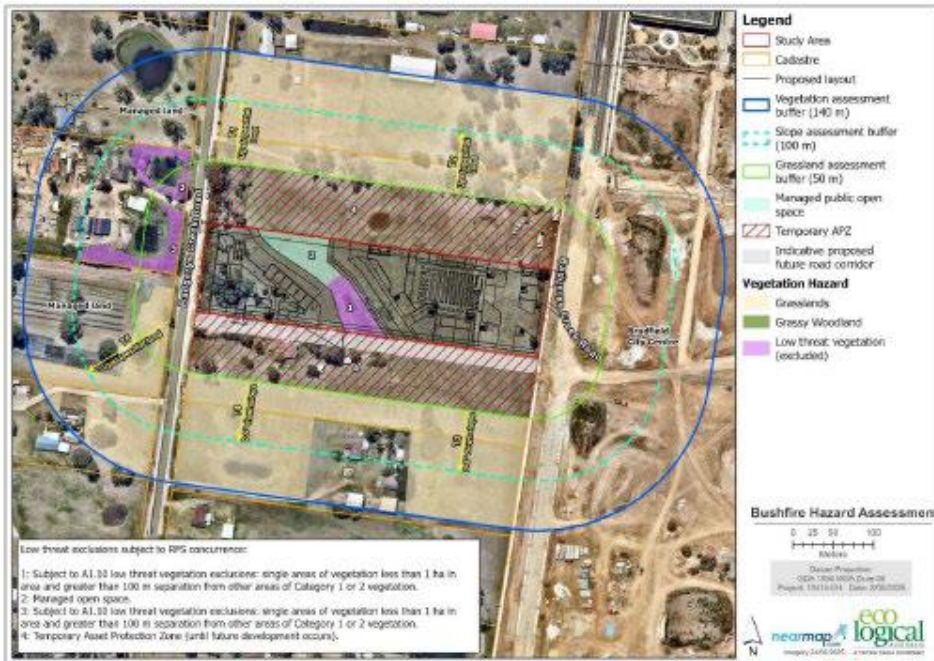


property advisory | development management | design & planning
project management | construction management | client representative
OFFICIAL

Page 1 of 2



Temporary APZ



property advisory | development management | design & planning
 project management | construction management | client representative
OFFICIAL