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Bushfire Protection Assessment – Cherrybrook Station Government Land State Significant Precinct

Landcom

DOCUMENT TRACKING

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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.

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Abbreviations

Abbreviation	Description
AS 3959	Australian Standard AS 3959-2018 Construction of buildings in bushfire prone areas
APZ	Asset protection zone
BAL	Bushfire attack level
BFPL	Bush fire prone land
DA	Development application
DtS	Deemed-to-satisfy
EP&A Act	Environmental Planning and Assessment Act 1979
FDI	Fire danger index
IPA	Inner protection area
NASH	National Association of Steel-framed Housing
NCC	National Construction Code
OPA	Outer protection area
PBP	Planning for Bush fire Protection 2019
RFS	NSW Rural Fire Service

1. Property and proposal

Table 1 identifies the Developable Government Land (DGL) and outlines the type of development proposed.

Table 1: Subject site and development proposal summary

Street address:	1-19, 2, 4 & 6 Bradfield Parade, Cherrybrook
Postcode:	2126
Lot/DP no:	Lot 30- 34 DP 1253104
Local Government Area:	Hornsby Shire Council
Fire Danger Index (FDI)	FDI 100
Current land zoning:	R2 Low Density Residential
Type of development proposed:	B4 Mixed Use, R4 High Density Residential & RE1 Public Recreation

1.1 Description of proposal

This study relates to a proposal to develop land called the ‘Cherrybrook Station Government Land State Significant Precinct’ (the State Significant Precinct) by Landcom on behalf of the landowner, Sydney Metro. The State Significant Precinct is centred around Cherrybrook Station on the Sydney Metro North West Line.

The proposed development achieves the specific study requirements (DPIE 2020) for bushfire as shown in Table 2.

Table 2: Specific study requirements

Section	Specific requirement	Report section
20.1	Address the bushfire protection measures in the publication Planning for Bush Fire Protection (2006),	PBP 2006 was superseded by PBP 2019 in March 2020. This report assesses the proposed development against the specific requirements of PBP 2019 as outlined in Section 1.2.
20.1	Avoiding removal of native vegetation	Section 3.1, 3.7 and 4
20.2	Ensure any bushfire Asset Protection Zone can be located entirely within the site.	Section 3.1

The proposed planning controls comprise amendments to the Hornsby Local Environmental Plan 2013 (HLEP 2013) to accommodate:

- Rezoning of the site for a combination of R4 High Density Residential, B4 Mixed Use and RE1 Public Recreation zoned land;
- Heights of between 18.5 m – 22 m;
- FSR controls ranging between 1:1 – 1.25:1;
- Inclusion of residential flat buildings as an additional permitted use on the site in the B4 Mixed Use zone;
- Site specific LEP provisions requiring the delivery of a minimum quantity of public open space and a maximum amount of commercial floor space; and
- New site-specific Design Guide addressing matters such as open space, landscaping, land use, built form, sustainability and heritage.

The Reference Scheme (see Figure 1) seeks to create a vibrant, transit-oriented local centre, which will improve housing choice and affordability and seeks to integrate with Hornsby's bushland character. The Reference Scheme includes the following key components:

- Approximately 33,350 m² of residential GFA, with a yield of approximately 390 dwellings across 12 buildings ranging in height from 2 to 5 storeys (when viewed from Bradfield Parade).
- A multi-purpose community hub with a GFA of approximately 1,300 m²;
- Approximately 3,200 m² of retail GFA;
- Over 1 hectare of public open space, comprising:
 - A village square with an area of approximately 1,250 m², flanked by active retail and community uses.
 - A community gathering space with an area of approximately 3,250 m².
 - An environmental space around the pond and Blue Gum High Forest with an area of approximately 8,450 m².
- Green corridors and pedestrian through site links, providing opportunities for potential future precinct-wide integration and linkages to the north.

The proposed development is not located on land currently classified as bushfire prone on the Hornsby Shire Council bush fire prone land (BFPL) map¹(Figure 2). Figure 3 shows the Cherrybrook Station State Significant Precinct. Figure 4 shows the Developable Government Land.



Figure 1: Reference Scheme

Source: SJB

¹ <https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address>

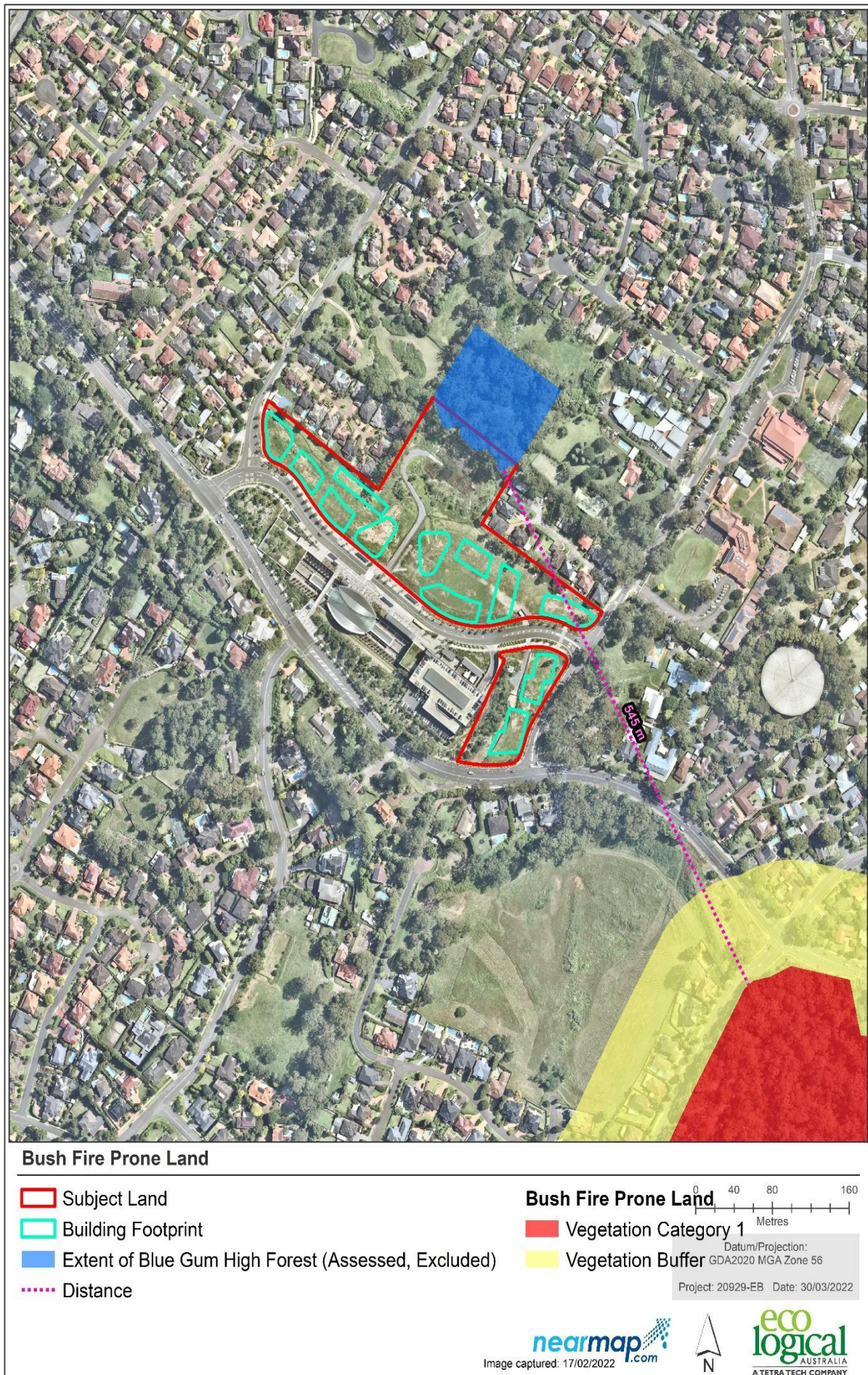


Figure 2: Bush Fire Prone Land



Figure 3: Cherrybrook Precinct and Cherrybrook Station State Significant Precinct

Source: NSW Department of Planning, Industry & Environment

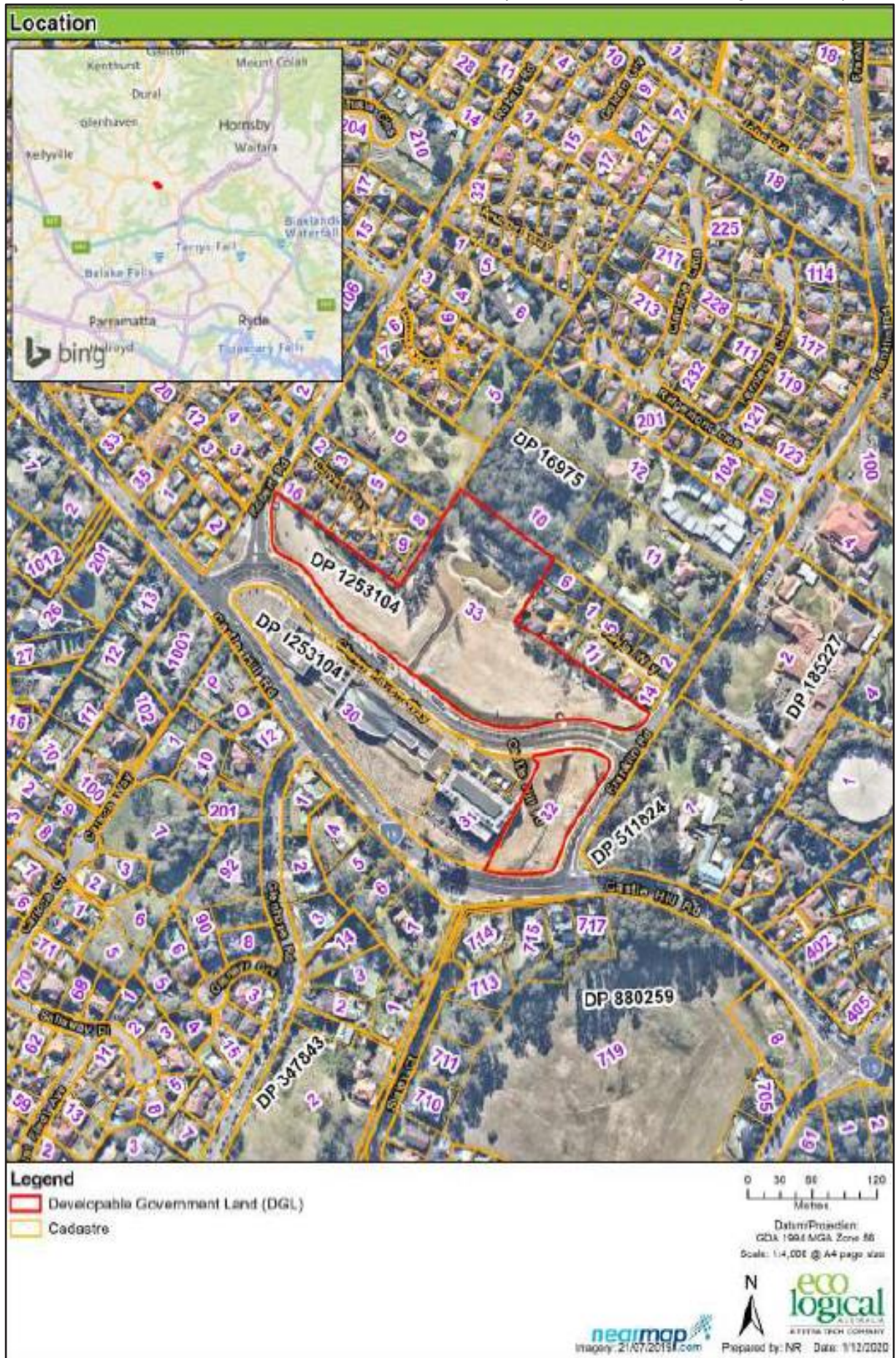


Figure 4: Developable Government Land

1.2 Assessment process

The proposal was assessed in accord with ‘*Planning for Bush Fire Protection*’ (RFS 2019), herein referred to as PBP. This version of PBP was legislatively adopted in the Environmental Planning & Assessment Regulations on 1 March 2020. Although study requirements note PBP 2006, the assessment has been undertaken in accordance with the current legislated version.

Given the proposal is mixed use, this assessment has considered residential, commercial, and special fire protection purpose development and the respective bushfire protection measures in accordance with PBP.

This assessment is based on the following information sources:

- Background documentation provided by Landcom;
- Information contained within the Reference Scheme from Landcom (Figure 1);
- GIS analysis including online spatial resources (i.e. SIX Maps, Nearmaps and the NSW Government Planning Portal);
- Bushfire Protection Assessment - Cherrybrook Precinct, Government Lands (ELA 2017);
- Bushfire Protection Assessment – Cherrybrook Station State Significant Precinct (ELA 2020); and
- Site Inspection by ELA in July 2019.

Table 3 identifies the bushfire protection measures assessed and whether an acceptable or performance solution is being proposed.

Table 3: Summary of bushfire protection measures assessed

Bushfire Protection Measure	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.1
Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.2
Water supplies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.3
Electricity services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.4
Gas services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.5
Construction standards	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.6
Landscaping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.7

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 measures has been undertaken as part of this development proposal and addressed in a separate report.

There is no impact footprint due to bushfire protection measures as identified within this report. The Department of Planning and Environment (DPE) 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 been undertaken as part of this development proposal and addressed in a separate report.

There is no impact footprint due to bushfire protection measures as identified within this report. DPE is the determining authority for this development; they will assess more thoroughly any potential Aboriginal cultural heritage issues.

2. Bushfire hazard assessment

2.1 Process

The site assessment methodology set out in Appendix 1 of PBP has been utilised in this assessment to determine the required APZ and construction requirements.

Figure 4 and Table 4 show the effective slope and predominant vegetation representing the highest bushfire threat potentially posed to the proposed 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 DGL in all directions.

The vegetation has been determined from a site visit carried out by ELA in August 2019 and spatial information sources.

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 and revised where required by site assessment.

2.4 Summary of assessment

The north-east boundary and northern adjoining property contains a small area of vegetation assessed as Blue Gum High Forest (Biosis 2022, DPIE 2016, VIS ID 4489) and less than 1 ha in size. In accordance with A1.10(1) of PBP, as this is a single area of vegetation less than 1 hectare in area and greater than 100 m from other areas of Category 1 or Category 2 vegetation, this vegetation is assessed as low threat vegetation and excluded as depicted in Figure 1 and Figure 5.

In all other directions, there are managed lands in the form of residential lots and public roads. Photos are provided in Section 7.

Table 4: Bushfire hazard assessment, APZ requirements and BALs

Location	Size	Vegetation Formation	Distance to other Bush Fire Prone vegetation	Bushfire Attack Level (BAL)	Comments
North	<1 ha	Forest	>500 m (South-east)	BAL-LOW	Proposed landscaping within 100 m of the remnant Blue Gum High Forest to achieve APZ specifications.
All other directions				Managed Land	

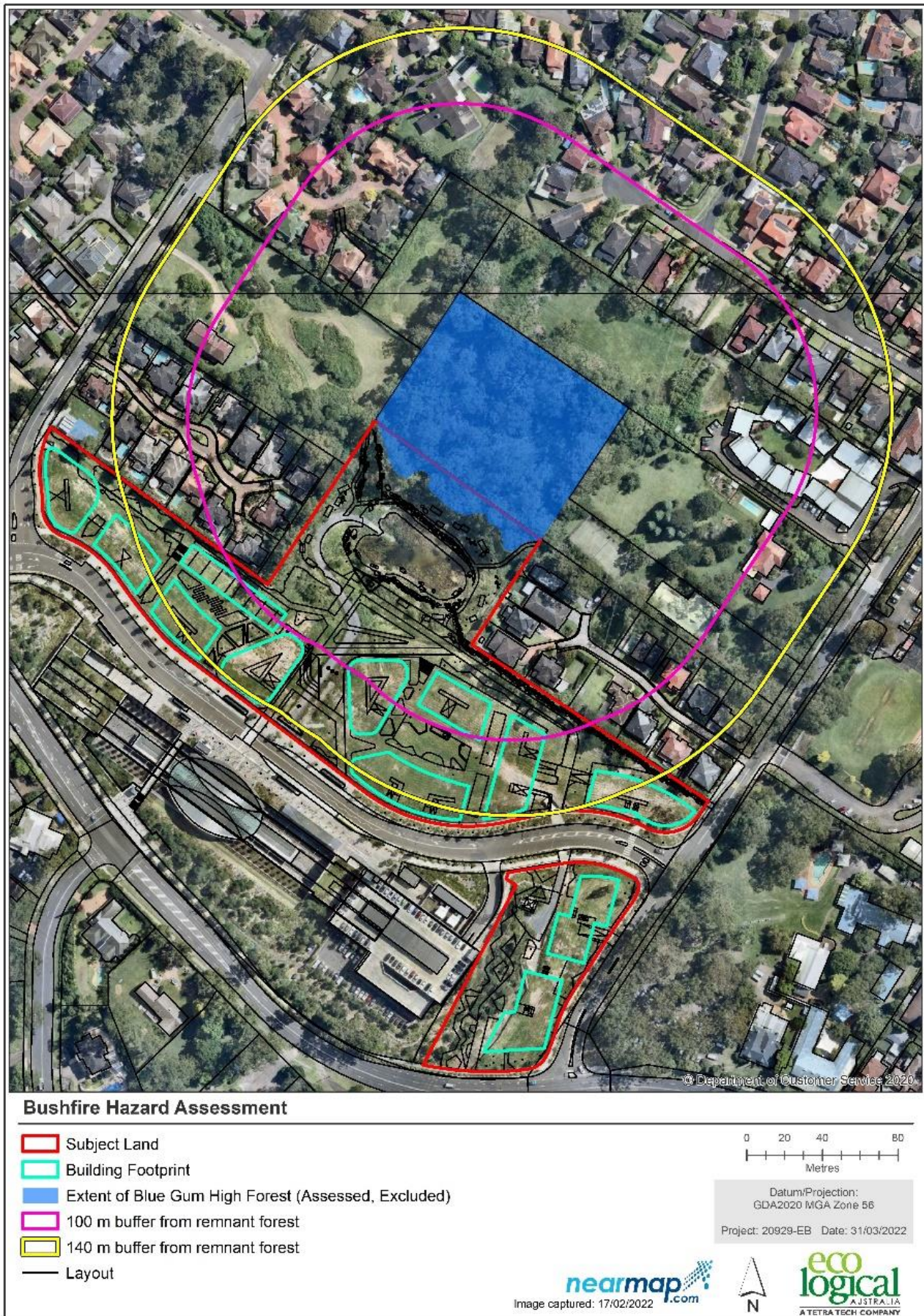


Figure 5: Bushfire hazard assessment

Source: NSW Department of Planning, Industry & Environment

3. Bushfire protection measures

As the site is not impacted by a bushfire hazard as identified in Section 2, compliance with the below bushfire protection measures is not required. They are listed for information purposes only. To ensure no bushfire hazard is created it is recommended that future landscaping follows the guidance in Section 3.7.

3.1 Asset Protection Zones

There is no bushfire hazard within 140 m of the DGL, therefore no Asset Protection Zone (APZ) are required for this development. This assessment confirms, as per the Study Requirements (DPIE 2020), that the development does not require the removal of native vegetation areas.

3.2 Access

Access to the proposed development is via Bradfield Parade, Robert Road and Franklin Road and no additional public roads are proposed. Additional access provisions for bushfire protection are not required to support this proposal.

3.3 Water supplies

Reticulated water is available to the proposed development. No requirements apply (PBP). The standard construction requirements for this development type apply i.e. NCC, hydrants standard and NSW Fire + Rescue guidelines.

3.4 Electricity services

Electrical services are located underground.

3.5 Gas services

All gas services to comply with the relevant standards under the NCC.

3.6 Construction standards

The building construction standard is based on the determination of the BAL in accordance with Appendix 1 of PBP. The BAL is based on known vegetation type, effective slope and managed separation distance between the development and the bushfire hazard.

The proposal is exposed to a maximum of **BAL-LOW** identified in Table 4. BAL-LOW is based on insufficient risk to warrant specific bushfire construction standards.

3.7 Landscaping

Future landscaping within 100 m of the BGHF remnant is recommended to meet the specifications detailed in Table 5 below.

Unmanaged BGHF revegetation is limited to the existing extent of the BGHF remnant.

No native vegetation removal is required.

Table 5: Landscaping requirements and compliance

Performance Criteria	Acceptable Solutions
The intent may be achieved where:	
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause ignitions.	<p>Compliance with the NSW RFS 'asset protection zone standards' (see Appendix 4 of PBP);</p> <p>A clear area of low-cut lawn or pavement is maintained adjacent to the buildings;</p> <p>Fencing and retaining walls are constructed in accordance with section 7.6; and</p> <p>Trees and shrubs are planted such that:</p> <ul style="list-style-type: none"> the branches will not overhang any rooves; the tree canopy is not continuous; and if proposed, a windbreak is located on the elevation from which fires are likely to approach.

4. Conclusion

The proposed new development is not located within 140 m of any bushfire hazard (Section 2.4) and complies with the specifications and requirements of *'Planning for Bush Fire Protection 2019'*, as outlined in Table 6 below.

Table 6: Development Bushfire Protection Solutions and Recommendations

Bushfire Protection Measures	Recommendations	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	No APZ is required and no native vegetation removal is required. The landscaping and management specifications in Appendix A should be considered.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.1
Access	Additional access provisions for bushfire protection are not required to support this proposal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.2
Water supplies	Site serviced by reticulated water supply	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.3
Electricity service	Electricity supply located underground.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.4
Gas service	Gas services are to be installed and maintained in accordance with NCC.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.5
Construction standard	The proposed buildings are exposed to BAL-LOW . BAL-LOW is based on insufficient risk to warrant specific bushfire construction standards.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.6
Landscaping	Any future landscaping meets the requirements of PBP.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.7

5. Recommendations

The proposal has been assessed as BAL-LOW based on the following recommendations:

- Unmanaged BGHF revegetation does not extend beyond current extent of BGHF remnant;
- Detailed landscape design within 100 m of the BGHF remnant meets the specifications of APZ standards from Appendix 4 of PBP;
- Maintenance of environmental open space south of the BGHF remnant for 100 m is ongoing.



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6. References

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7. Photos



Photo 1: View of vegetation on north-eastern elevation



Photo 2: View of vegetation on south-eastern elevation

Appendix A - Asset protection zone and landscaping standards

The following APZ management specifications in Table 7 should be considered for any landscaping and ongoing management within the previously identified locations.

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

Table 7: APZ management specifications

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

