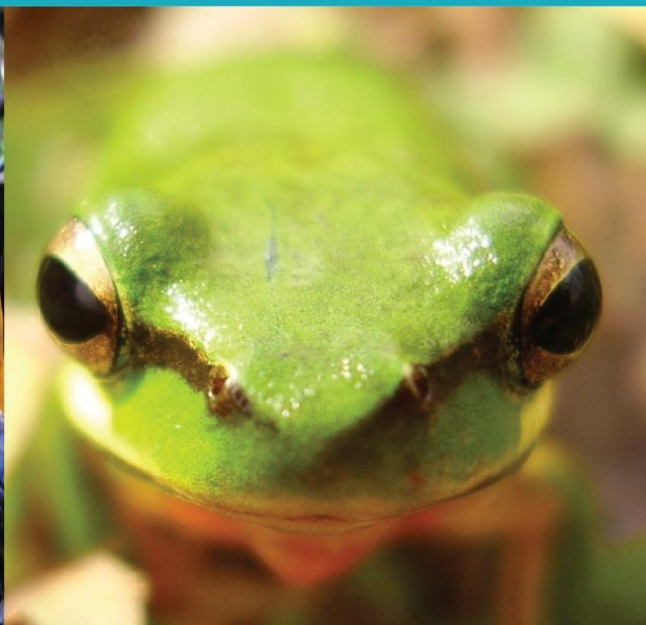




TRAVERS BUSHFIRE & ECOLOGY

A TBE ENVIRONMENTAL COMPANY



BUSHFIRE PROTECTION ASSESSMENT

Proposed Residential Subdivision

Lot B DP370222

4 Forest Road,
Warriewood

Under Section 100B of the Rural Fires Act (1997)

13 December 2024

(REF: BMN02COURT)



BUSHFIRE PROTECTION ASSESSMENT

Proposed Residential Subdivision

Lot B DP 370222

4 Forest Road, Warriewood

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Date:	13/12/24
File:	BMN02COURT



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The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features is to be confirmed by a registered surveyor.

EXECUTIVE SUMMARY

Travers bushfire & ecology (TBE) has been engaged by BMN Properties Pty Ltd to undertake a bushfire protection assessment (BPA) for a proposed residential subdivision located at Lot B DP370222, 4 Forest Way, Warriewood. The development will involve the subdivision of thirteen residential allotments. *TBE* previously prepared a BPA in relation to a previous proposal of the development.

The subject-land (Lot B DP370222) is situated on Bush Fire Prone Land (BFPL) mapped by the Northern Beaches Council. This triggers a formal assessment by Council in respect of the NSW Rural Fire Service (RFS) policy against the provisions of *Planning for Bush Fire Protection 2019 (PBP)*. Under S100B of the *Rural Fires Act 1997 (RF Act)* the development will also be required to obtain a Bush Fire Safety Authority (BFSA) from the NSW RFS prior to the granting of development consent.

This assessment has found that bushfire can potentially affect the proposed development from forest vegetation to the west of the subject-land. This has the potential to result in future buildings being exposed to potential radiant heat and ember attack.

The proposed residential subdivision must ensure that the extent of bushfire attack that can potentially impact a building envelop should not exceed a radiant heat flux of 29kW/m^2 . This rating assists in determining the size of the asset protection zone (APZ), which provides the necessary defendable space between a potential bushfire and the impact on a building.

Lots 1-9 readily meet the requirements for APZ setbacks at building envelopes/pads. Lot 10 can meet the required setback for APZs however, the building pad has been modified to ensure that no part of the building's walls is within the APZ area. Lots 11-12 require APZs within the western boundaries of the lots and can readily meet the requirements for APZs and achieve a bushfire attack level of no greater than 29kW/m^2 (BAL 29). Lot 13 is constrained; however, a building envelop is achievable within the subject lot to comply with BAL-29. Although the buildable area for Lot 13 is smaller than Lots 11 and 12 it is comparable with Lots 1-5 in area.

The perimeter road to the west of the development is 8m wide with no parking signs installed along Forest Road. Water and electricity supply is underground and compliant with *PBP*.

In recognition of the bushfire risk posed to the development by the surrounding bushland, *TBE* concludes that the proposed residential development satisfies the relevant Standards of *PBP*. As a result, *TBE* propose the following combination of bushfire measures:

- APZ setbacks are required the minimum setbacks for BAL-29 and in accordance with the minimum setbacks outlined with *PBP* for most aspects as shown in table 2-2 and generally depicted in schedule 1,
- Provision of access in accordance with the acceptable solutions outlined in *PBP*, including widening of the perimeter road (Forest Road) to provide a minimum 8m wide carriageway for the southern and western perimeter roads with roll top kerbs and no parking signs for the road carriageway,
- Water and electricity supply in compliance with the acceptable solutions outlined in *PBP*. Gas supply is not proposed or recommended, and
- Future dwelling construction in compliance with *PBP* and the appropriate construction sections of AS3959-2018 (or NASH Standard).

GLOSSARY OF TERMS

AHIMS	Aboriginal Heritage Information System
APZ	asset protection zone
AS1596	<i>Australian Standard – The storage and handling of LP Gas</i>
AS2419	<i>Australian Standard – Fire hydrant installations</i>
AS3745	<i>Australian Standard – Planning for emergencies in facilities</i>
AS3959	<i>Australian Standard – Construction of buildings in bushfire-prone areas 2018</i>
BAL	<i>bushfire attack level</i>
BCA	<i>Building Code of Australia</i>
BPMS	Bush fire protection measures
BFSA	Bush Fire Safety Authority
DA	development application
EP&A Act	<i>Environmental Planning & Assessment Act 1979</i>
FDI	Fire Danger Index
GFDI	Grassland Fire Danger Index
IPA	inner protection area
LEP	Local Environmental Plan
LGA	local government area
m	metres
NCC	<i>National Construction Code</i>
OPA	outer protection area
PBP	<i>Planning for Bush Fire Protection 2019</i>
RF Act	<i>Rural Fires Act 1997</i>
RFS	NSW Rural Fire Service
Subject-land	Lot B DP370222, 4 Forest Road, Warriewood.
TBE	<i>Travers bushfire & ecology</i>

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1. INTRODUCTION

Travers bushfire & ecology (TBE) has been engaged by BMN Properties Pty Ltd to undertake a bushfire protection assessment (BPA) for a proposed residential subdivision located at Lot B DP370222, 4 Forest Road, Warriewood. *TBE* previously prepared a BPA in relation to a previous proposal of the development (*TBE* 2022). The subject-land (Lot B DP370222) is located on Bush Fire Prone Land (BFPL) mapped by Northern Beaches Council. (Refer Figure 1-1). This triggers a formal assessment by Council and in respect of the NSW Rural Fire Service (RFS) policy against the provisions of *Planning for Bush Fire Protection 2019 (PBP)*. The proposed development will also require consideration for a Bush Fire Safety Authority from the NSW RFS under *S100B of the Rural Fires Act 1997 (RF Act)*.

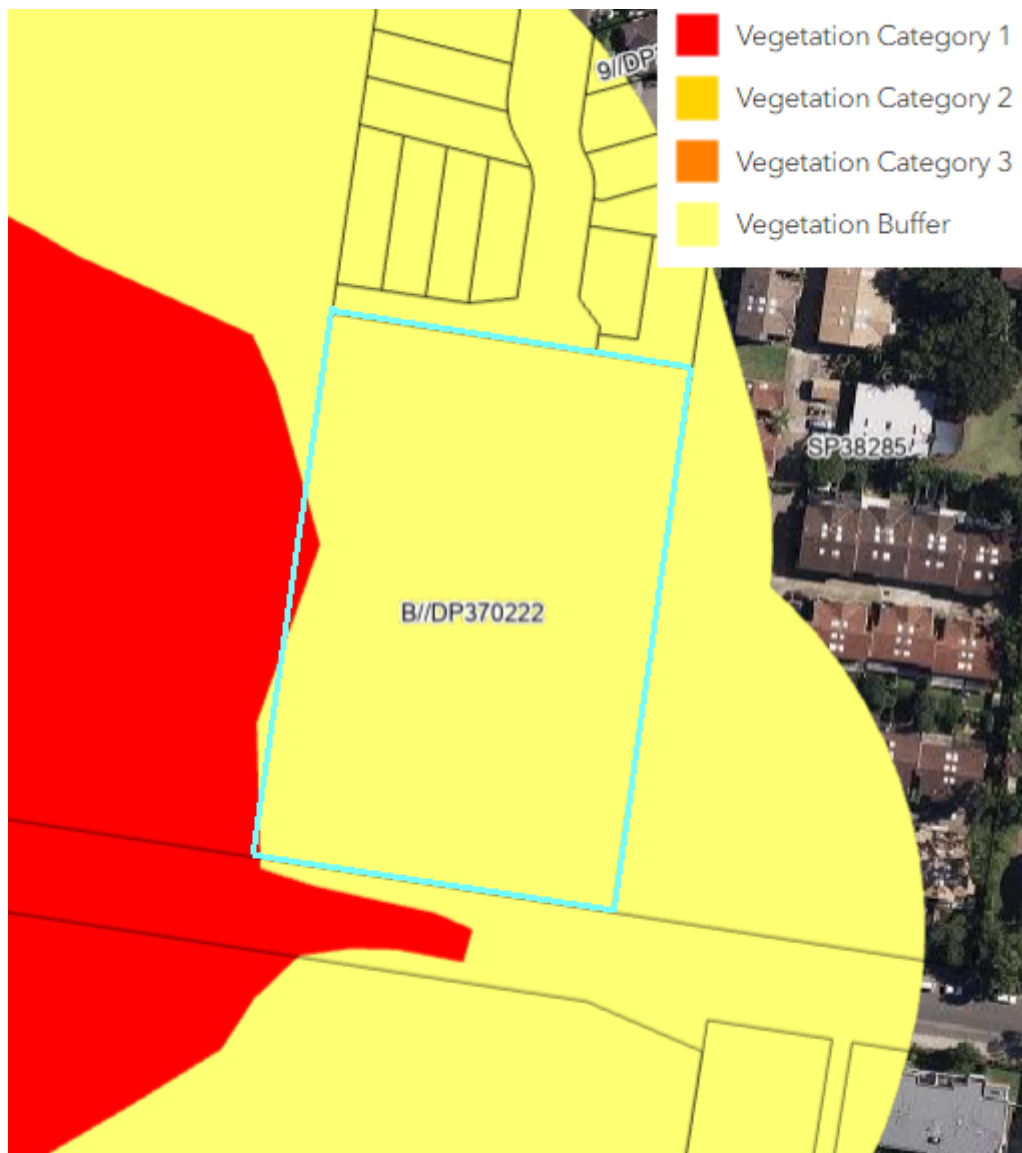


Figure 1-1 – Bushfire Prone Land Map

(Source: NSW Planning Portal, dated: 03/07/2024. Light blue= subject-land)

An inspection of the subject-land and surrounds was undertaken by *TBE* in 2021 to assess the topography, slopes, aspect, drainage, vegetation and adjoining land use. The identification of existing bushfire protection measures and a visual appraisal of potential bushfire hazards and threats were also undertaken. A further inspection was undertaken in August 2024.

1.1 Aims of the assessment

This bushfire protection assessment has been provided in support of a development application and approval under section 100B of the Rural Fires Act. The aims of the bushfire protection assessment are to:

- Review the bushfire threat to the development,
- Undertake a bushfire attack assessment in accordance with *PBP*, and
- Provide advice on bushfire protection measures, including the provision of asset protection zones (APZs), construction standards and other specific bushfire management measures.

1.2 Site description

The subject-land is approximately 0.95 Ha in area and has an irregular shape. It features a residential dwelling at its centre, multiple sheds, and grassy areas with surrounding bushland. The only access point is provided from Forest Road in the southeastern corner, with additional frontage to Bert Close along the northern boundary. (Refer to Figure 1-2).

The adjoining-land to the north, east and northwest, is the Warriewood urban landscape. The Mater Marie College is situated to the south, and dense bushland of the Warriewood Escarpment is to the west. Overall, the subject-land exhibits a moderate downslope from the southwest to northeast.

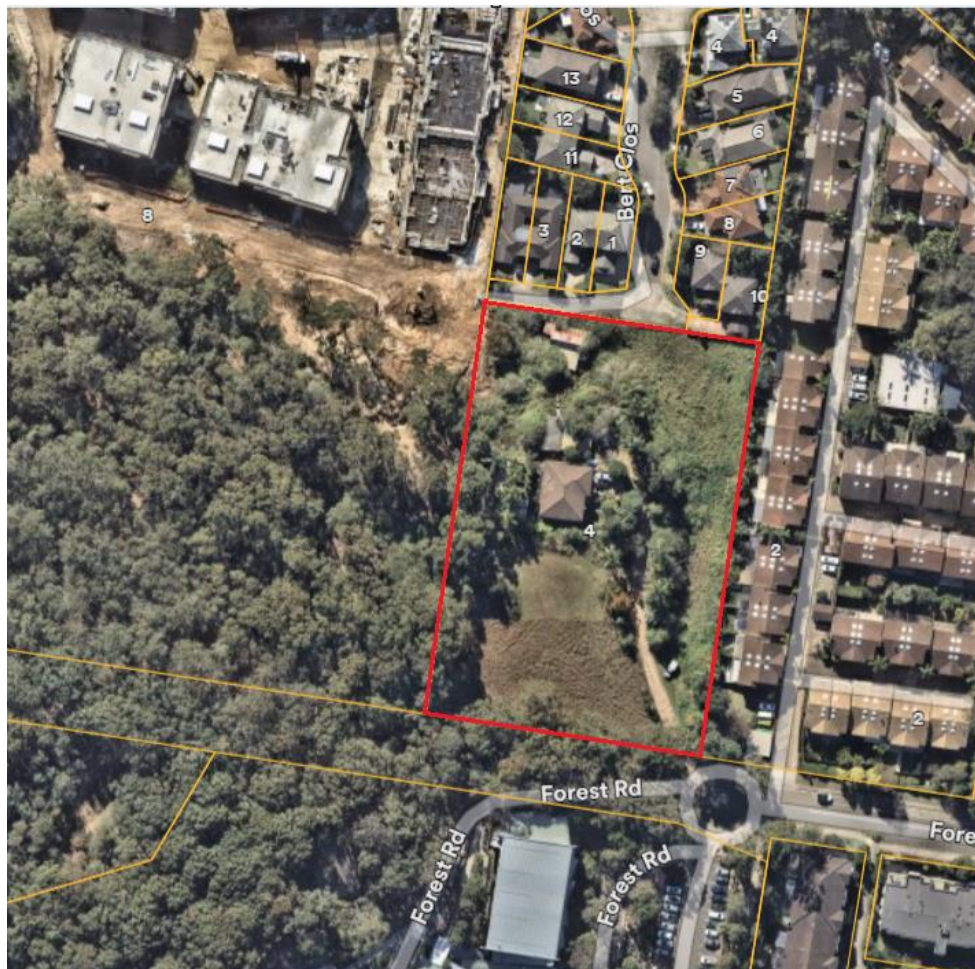


Figure 1-2 – Aerial appraisal

(Source: NearMap Aerial Photography, dated: 03/07/2024. Red= subject-land)

1.3 Proposed development

The proposed development involves demolishing the existing structures (including the house on proposed Lot 11) and subdividing the subject-land into thirteen residential allotments. Forest Road will be extended to provide an access point and through road from the southeastern corner, as well as a second access point from the northwestern corner of the subject-land. Additionally, an easement in the northeastern corner will be designated for the storage of an OSD/ WSUD (on-site detention) tank. A 4m rock cut wall of varying heights up to 2.04 m will be constructed along the southwestern perimeter of the Road MC01, and all future residential lots will be terraced with retaining walls. (Refer to Figure 1-4). The entire site is to be managed as an APZ.

1.4 Legislative and planning instruments

Table 1-1 – Legislative and planning instruments summary

Is the site mapped as bush fire prone?	Yes. (Refer to Figure 1-1).
Proposed development type	Residential subdivision.
Is the development considered integrated for the purposes of Section 100B of the <i>Rural Fires Act 1997</i> ?	Yes – referral to the NSW RFS is required for the issue of a BFSa under s100B of the <i>RF Act</i> .
Is the proposal located in an Urban Release Area as defined under Clause 273 of the EP&A Regulations?	Yes. Sector 501 of the Warriewood Valley Release Area Map. (Refer to section 1.4.1).
Zoning	R3 – Medium Density Residential.
Does the proposal rely on a performance solution?	No.

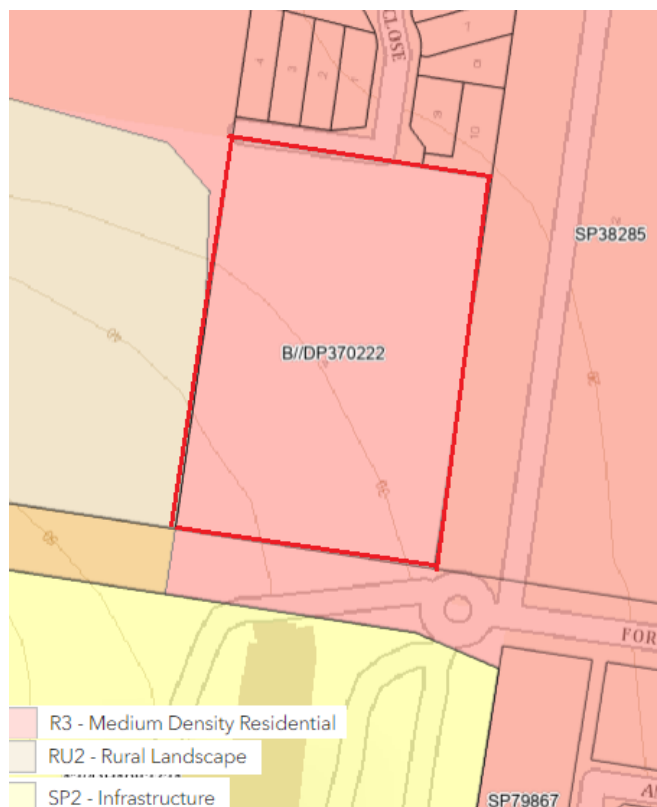


Figure 1-3 – Zoning

(Source: NSW Planning Portal, dated: 03/07/2024. Red= subject-land)

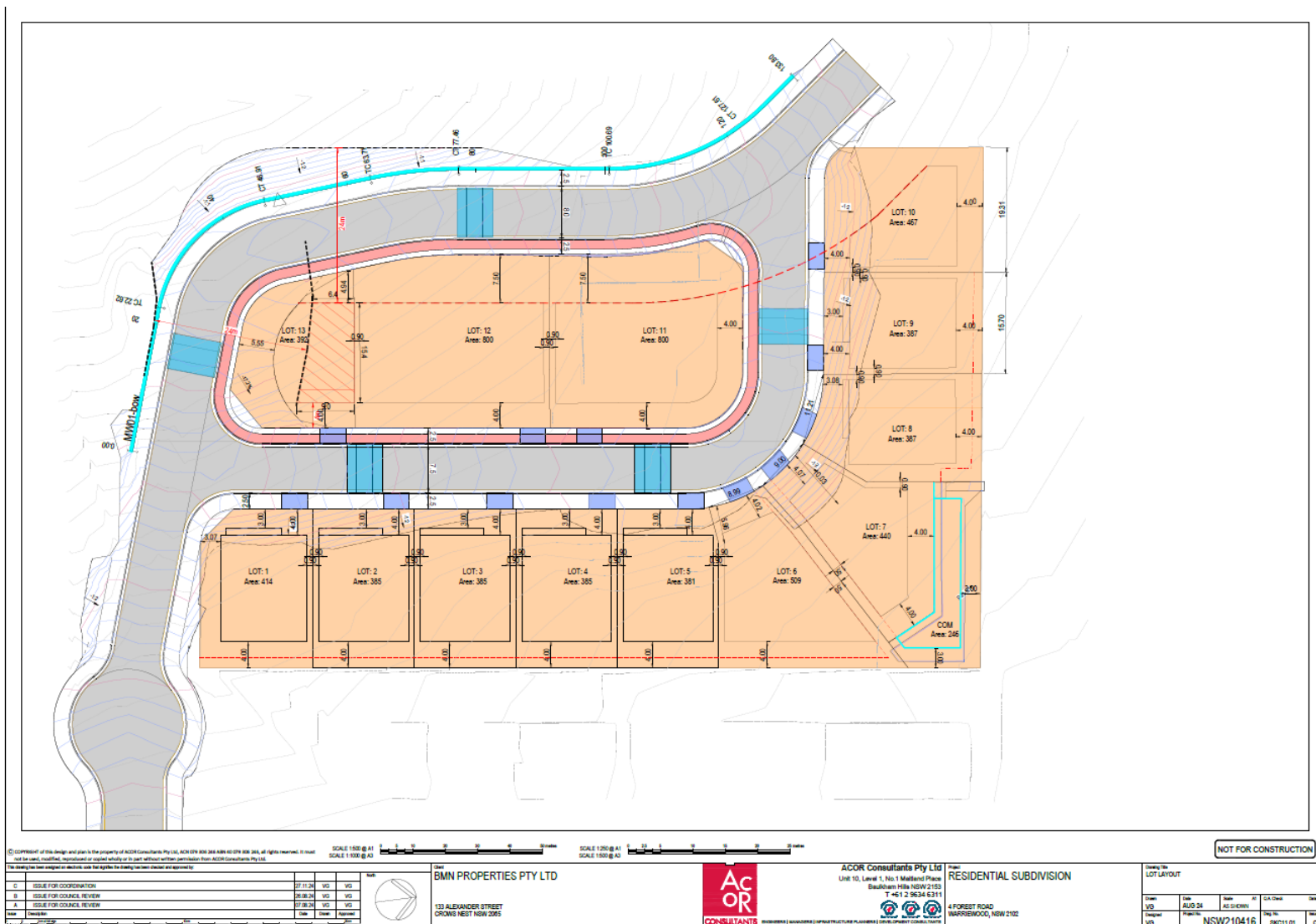


Figure 1-4 – Subdivision plan
(Source: Acor Consultants, Lot Layout– Residential Subdivision – 4 Forest Road, Warriewood, NSW 2101', no. NSW210416, Rev C, dated 27.11.2024.)

1.4.1 Pittwater Local Environmental Plan 2014 (Pittwater LEP)

Under the *Pittwater LEP*, the subject-land is currently zoned as R3 – Medium Density Residential. The LEP's *Land Use Table* for such zoning identifies that dwelling houses and roads are permitted types of development with consent. Consequently, the proposed development is permitted development with consent from council. (Refer to Figure 1-4).

The subject-land is also situated within sector 501 of the Warriewood Valley Release Area. As a result, development on the subject-land is subject to the Warriewood Valley Strategic Review Report and Warriewood Valley Strategic Review Addendum Report. However, there are no specific bushfire related development control measures that are applicable to the subject-land other than the proposal complies with the provisions of *PBP* (Pittwater Council 2017).

1.4.2 Planning for Bush Fire Protection 2019 (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 of *PBP* are to:

- Afford buildings and their occupants protection from exposure to a bush fire.
- Provide for a defendable 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 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 bushfire protection measures (BPMs). And.
- Ensure that utility services are adequate to meet the needs of firefighters.

Under the *Environmental Planning & Assessment Act 1979 (EP&A Act)*, a subdivision is defined as “the division of land into two or more parts, which after the division, would be adapted for separate occupation, use or disposition.....” Under *S100B* of the *RF Act*, residential subdivisions situated on BFPL require a Bush Fire Safety Authority (BFSA) from the NSW RFS. An application for a BFSA must address the extent to which the development complies with standards within *PBP*.

The subdivision stage of land development provides an opportunity for early consideration of siting and access and for the incorporation of the appropriate combination of bush fire protection measures (BPMs). The BPMs for residential and rural subdivisions include measures relating to APZs, future construction standards, access to structures and provision of water. Electricity and gas services should be provided so that they do not add to the bush fire risk to any buildings.

1.5 Environmental and Aboriginal heritage constraints

Submission requirements require the following environmental and heritage considerations that have the potential to be a constraint for implementing APZs within the subject-land and may require further assessments before construction proceeds within the subject-land:

- Identification of any significant environmental features on the property.
- The details of any threatened species, population or ecological community identified under the *Biodiversity Conservation Act 2016 (BC Act)* and/ or the *Environmental Planning and Assessment Act 1979 (EPBC Act)* that is known to the applicant to exist on the property.
- The details and location of any Aboriginal object (within the meaning of the *National Parks and Wildlife Act 1974*) or Aboriginal place (within the meaning of the Act) that is known to the applicant to be situated on the property.

The following sources databases were reviewed to determine whether any environmental and Aboriginal heritage constraints were present within the subject-land:

Table 1-2 – Constraints search databases

Potential constraint	Database
Aboriginal Heritage significant sites and places.	Aboriginal Heritage Information Management System (AHIMS).
Significant Environmental Features.	NSW Planning Portal.

Searches of each database used a 50m buffered area from the subject-land's boundaries to identify features. A basic search of the AHIMS database identified no-known significant Aboriginal sites or places. Consequently, there are no-known Aboriginal heritage that will be a constraint to implementing APZs.

The subject-land is identified as having mapped biodiversity values (BV). (Refer to Figure 1-5 below). However, these values have been assessed in implementing APZs within the subject-land. This includes a perimeter road along the western boundary.



Figure 1-5 – Biodiversity values
(Source: NSW Planning Portal, dated: 03/07/2024. Red= subject-land)

2. BUSHFIRE THREAT ASSESSMENT

To assess the bushfire threat and to determine the required width of an APZ for a development include the determination of the regional fire weather conditions (FDI) and an assessment of the predominant vegetation that has the potential to be a bushfire threat to the development, as well as the effective slope within such vegetation. The known fire history for the subject-land and the surrounding landscape is also considered.

2.1 Fire history

A fire history search of the development site and its surrounding areas was conducted using the NSW National Parks and Wildlife Services (NPWS) 'NPWS Fire History- Wildfires and Prescribed Burns' database within the NSW SEED Portal.

There have been no-known fires to have directly impacted the subject-land itself. However, between the period of 1943-2024, a total of 565 fires: 409 prescribed burns and 156 wildfires, were recorded within a 10km radius from the subject-land's boundaries. Majority of wildfire activity occurred to the west, north west and southwest in highly vegetated areas such as Garigal National Park and Ku-ring-gai Chase National Park. The wildfire extents ranged from less than a hectare to 10 650 Ha in size. (Refer to Figure 2-1).

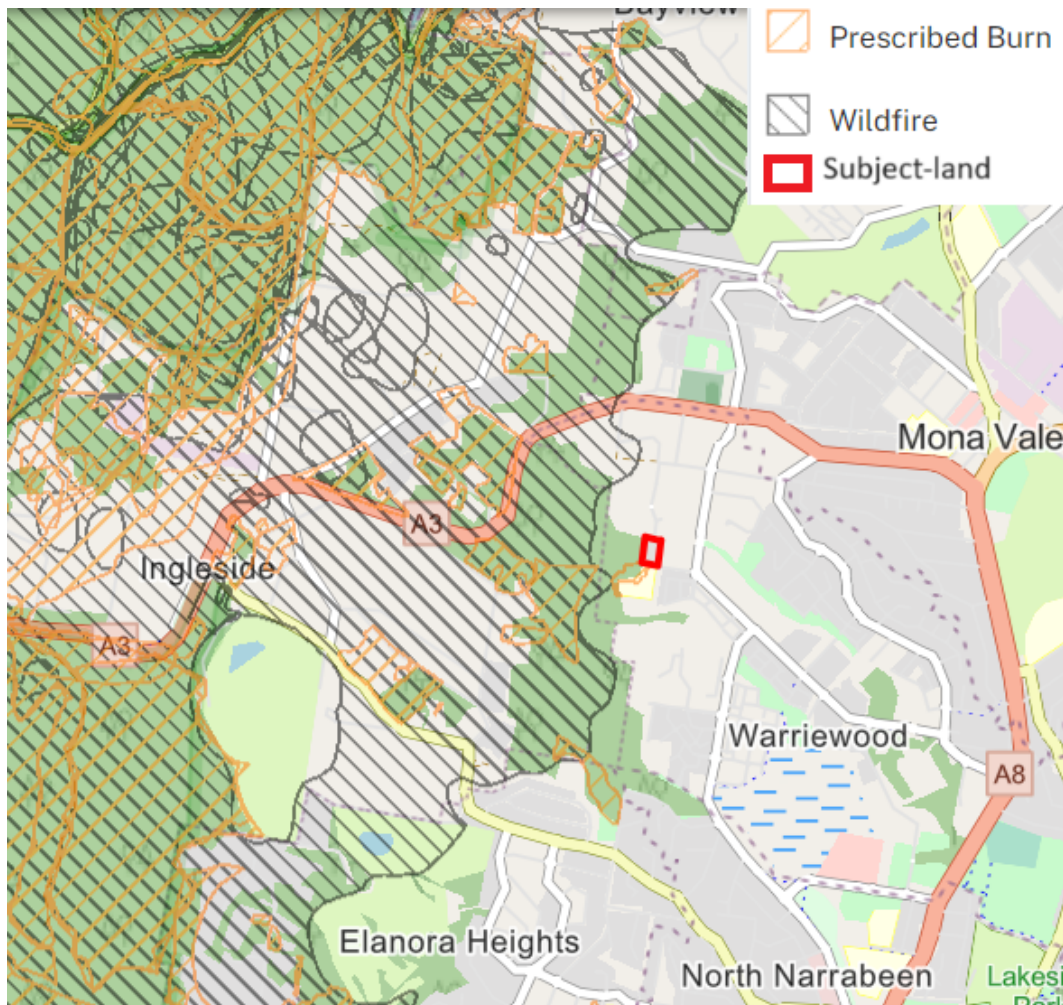


Figure 2-1 – Fire history
 (Source: NSW SEED Portal, dated: 05/07/2024)

2.2 Predominant vegetation

PBP requires the identification of the predominant vegetation formation in accordance with David Keith (2004) when using the simplified acceptable solutions in *PBP*. The vegetation is calculated for a distance of at least 140m from a proposed building envelope. The identified vegetation within 140m of the site was identified from the Geocortex viewer within the NSW SEED Portal which includes layers relating to NSW BioNet PCT sites and NSW State Vegetation Mapping. The vegetation formations were then assessed in light of Appendix 1 of *PBP* and a site visit.

Vegetation community	Vegetation classification	Vegetation formation	<i>PBP</i> classification
Sydney Coastal Enriched Sandstone Forest (PCT 3592)	Sydney Coastal Dry Sclerophyll Forests	Dry Sclerophyll Forests (shrubby)	Forest
Sydney Coastal Sandstone Gully Forest (PCT 3595)	Sydney Coastal Dry Sclerophyll Forests	Dry Sclerophyll Forests (shrubby)	Forest

The existing vegetation within the subject-land is predominantly grassland in its south, east and northeastern sections. A mix of planted and weedy vegetation surrounds the driveway, existing dwelling and the northwestern section. Forest vegetation is present to the west and southwest, slightly encroaching into the western part of the subject-land. (Refer to Figure 2-2). The adjoining (managed) land to the north, east and southwest is an existing urban landscape.

To the south, the adjoining-land is the Mater Marie College. The NSW Rural Fire Service granted a BFSa for the college under **DA2021/2083**, which included a requirement to manage the north and northwestern areas of the college, for a 30m distance, as an APZ to the standard of an inner protection area (IPA) (NSW Rural Fire Service 2022). This area of the college directly borders the southern boundary of the subject-land. For more information, refer to *TBE's* correspondence with the Northern Beaches Council attached in schedule 3.



Figure 2-2 – Forest vegetation to the west of the subject-land

2.3 Effective slope

In general, the subject-land has a moderate downslope topography in a southwest to northeast direction. The adjoining-land to the west exhibits an undulating landscape, causing the forest vegetation to be a mixture of upslope, cross-slope and downslope in relation to the development. As such, multiple assessments will be required, especially to the west. (Refer to Schedule 1).

The effective slope has been assessed for up to 100m from the development site. Effective slope refers to that slope which provides the greatest effect upon likely fire behaviour. A mean average slope may not in all cases provide sufficient information such that an appropriate assessment can be determined.

The effective slope within the predominant vegetation is described in detail within Table 2-2 below.

2.4 Regional fire weather conditions

The study area assessment methodology relies on the application of the relevant fire weather conditions, referred to as Fire Danger Index (FDI) or Grassland Fire Danger Index (GFDI) for grassland vegetation. The acceptable solutions for the Northern Beaches LGA are associated with the Greater Sydney Fire Weather District and is given as an FFDI of 100. For these given values, Table A1.12.2 of *PBP* is used for determining the relevant APZs (NSW Rural Fire Service 2017).

2.5 Bushfire attack assessment

Table 2-2 provides a summary of the bushfire attack assessment based on a residential development and the methodologies used to determine APZs within *PBP*.

The APZs are required to be wholly within the subject-land's lot boundaries and should not rely on being on adjoining land. APZs can extend beyond the boundaries in cases where structures or features of a landscape are considered permanent and act as barriers against fire spread. Examples are road carriageways, urban landscapes or land with vegetation that is considered managed. The minimum APZ setback required for residential and rural-residential subdivisions is a rating of BAL-29, which ensures buildings are not exposed to a radiant heat flux exceeding 29 kW/m².

It should be noted that this assessment makes no assumption that development in the form of schools, hospitals or medical centres, seniors living or other retirement accommodation, or group homes will be developed. These developments are considered special fire protection purposes and require a significantly greater setback to achieve a maximum radiant heat flux of no more than 10kW/m².

The greatest threat arises for the western lands adjoining the site. Bushfire attack is determined across multiple slopes and vegetation. This site has a mixed slope profile with the area close to the boundary rising and then falling further away at a distance of approximately 40m (up to 5 degrees downslope). As such, the slope which has the greatest effect on fire behaviour lies further away from the subject land and the building footprints, but the slope which has the greatest influence on bushfire attack lies closer (being upslope) and within 24m. The vegetation across the adjoining land to the west is assessed as forest.

The APZ requirements for the proposed subdivision are identified within Table 2-1 below.

Table 2-1 – Bushfire attack assessment

Aspect	Vegetation formation	Effective slope	APZ required (BAL-29)	APZ provided	Comments
North, east, south and northwest (includes Lots 1-9 inclusive)	Managed-land		N/A		Complies. The adjoining-land to the north, east and northwest is the Warriewood urban area. To the south is the Mater Marie College, that border the subject-lands southern boundary. This school is managed land however some vegetation exists on the road reserve to the south. (Refer to the discussion in section 2.2 and schedule 3).
West (Lot 10)	Managed land	Upslope	N/A	N/A	From the southwestern corner of the lot there is a 24m setback. The APZ includes the future road and the cleared managed-land on the adjoining-land to the northwest. The bushland to the west of the proposed perimeter road is forest and has multiple slopes.
	Forest	Upslope	24m	24m	
West (Lot 11-13)	Forest	Upslope	24m	24m	Complies. There is an APZ of 24m provided along the western boundary of the site.
	Forest	>0-5° Downslope (at 33-40m)	29m	33m* distance	The distance to the >0-5° downslope is approx. 33-40m or greater.

In summary, the primary threat of bushfire to the development is from the forest vegetation to the west. The minimum APZ setback distance, required by *PBP*, encroaches into proposed Lots 10 and 13 however, there is still sufficient room in the lot for a future 'bespoke' building as shown in Figure 1-4. This is based on acceptable solutions and a performance based solution may be available at house DA stage if required.

Lots 1-9 readily comply with a setback (APZ) in compliance with *PBP*. Lots 11-13 are impacted on the western sides of the lots, however, suitable building envelopes are achievable in compliance with *PBP*. The APZ will require maintenance on the western side of the road in the south-west (with cut for roadworks). The APZ will be subject to a community title arrangement to Lots 11-13.

Therefore, overall, the proposed development will be able to provide the minimum APZ setbacks required by *PBP* and ensure all future buildings are not exposed to a radiant heat-flux exceeding 29kW/m². Lots 10 and 13 are constrained when compared to Lots 11 and 12 however has a similar buildable area as provided on Lots 1-5.

3. BUSHFIRE PROTECTION MEASURES

This section outlines the required bush fire protection measures (BPMs) for the proposed development based on *Chapter 5* of *PBP*. The BPMs for residential and rural subdivisions include measures relating to APZs, road conditions and access to structures and the provision of water supplies for firefighting. Electricity and gas services should be provided so that they don't add to the bush fire risk to buildings.

All requirements for BPMs that relate to the development must be provided, unless where specific circumstances apply to render a BPM irrelevant (i.e. no landscaping required).

3.1 Asset protection zones (APZs)

The intent of measures for APZs is to provide sufficient space and maintain reduced loads to ensure radiant heat levels at the buildings are below critical limits and prevent direct flame contact.

The detailed landscaping plans are yet to be finalised. However, the entire subject-land is to be managed as an inner-protection area (IPA) as per *Appendix 4* of *PBP* and *Schedule 2*. This should be applied throughout the lifetime of the development and until each lot is sold / developed and the hazard is removed.

Table 3.1 outlines the proposal's compliance with the performance criteria for APZs.

Table 3-1 – Standards for asset protection zones (PBP)

Performance criteria	Acceptable solutions	Complies	Comment
Potential building footprints will not be exposed to radiant heat levels exceeding 29kW/m ² on each proposed lot.	APZs are provided in accordance with Tables A1.12.2;	☑	APZs will ensure future residential dwellings are not exposed to radiant heat levels exceeding 29kW/m ² . Lot 10 required modification to the building pad to ensure compliance. Lot 13 is constrained but a suitable buildable area is available.
APZs are managed and maintained to prevent the spread of a fire towards the building	APZs are managed in accordance with the requirements of Appendix 4.	☑	Detailed landscaping plans finalised. (Refer to the above discussion and Figure).
The APZ is provided in perpetuity	APZs are wholly within the boundaries of the development site	☑	Complies – APZs are wholly within the boundaries of the lot boundaries of the subject-land and include future road carriageways.
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised	The APZ is located on lands with a slope of less than 18°	☑	Complies. All slopes are less than 18 degrees.
Landscaping is designed and managed to minimise flame contact	Landscaping is in accordance with Appendix 4	☑	Can readily comply. Detailed landscaping plans to be finalised. (Refer to the above discussion).

3.4 Access for firefighting operations

The subject-land currently has a single access road from Forest Road in its southwestern corner which extends in a loop providing additional access to the south. The proposed residential subdivision will introduce two access/ egress points from Forest Road in the southeastern corner of the subject-land, creating a through-road that will connect to a future road network in the northwestern corner, providing a second access/ egress point for the development back to Forest Road. Despite the challenging topography all roads within the site will generally have a gradient of 9 degrees or less as detailed in the engineering plans developed by ACAR (2024). An exception to this is for a short section of roadway of approximately 25m in the area highlighted in that report.

Overall, the development has a perimeter road provided along the southern and western boundaries of the development, offering frontage access to the primary bushfire threat to the west. All proposed roads will be through-roads, allowing firefighting vehicles to keep moving continuously in a forward direction. The perimeter road currently has a 7.5m width with box kerbs but will need to have a carriageway width of 8m kerb-to-kerb. (Refer to Figure 1-4). The road widths can be accommodated within the road corridor and would assist in maintenance of the APZ to the south-west. The perimeter road is to be signposted as 'No Parking.' Roll top kerbing should be installed along the western side of the perimeter road.

Street landscaping plans for the development are only general and lack specific detail about matters such as tree plantings, the nature of footpaths (other than widths) and whether parking is to be provided outside of the road carriageway. This could be subject to conditions of consent.

The proposal's compliance with the acceptable solutions outlined in *PBP* is detailed within Table 3-2 below

Table 3-2 –Standards for access within residential subdivisions (PBP)

Performance criteria		Acceptable solution	Compliance	Comment
ACCESS (GENERAL REQUIREMENTS)	Firefighting vehicles are provided with safe, all-weather access to structures.	Property access roads are two-wheel drive, all-weather roads	☑	Complies. All roads will be two-way sealed roads.
		Perimeter roads are provided for residential subdivisions of three or more allotments.	☑	Complies. Frontage access to the main bushfire threats will be provided to firefighters. (Refer to the above discussion).
		Subdivisions of three or more allotments have more than one access in and out of the development.	☑	Complies. There will be two access/ egress points for the development. (Refer to the above discussion).
		Traffic management devices are constructed to not prohibit access by emergency services vehicles.	☑	Complies Traffic management devices are not proposed and will need to be agreed to by Council.
		Maximum grades for sealed roads do not exceed 15 degrees and an average grade of not	☑	The grades of the road design do not exceed 10 degrees,

Performance criteria		Acceptable solution	Compliance	Comment
		more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient.		although the site rises generally from the east to the west along the southern boundary.
		All roads are through roads	☑	Complies. All roads will be through-roads to Forest Road.
		Dead end roads are not recommended, but if unavoidable, dead ends are not more than 200m in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end.	☑	Complies. Dead-end roads are not proposed for the development. The extension of Forest Road leads into a development in the north-west which is not a through road. This development has access to the north via Jubilee Rd.
		Where kerb and guttering are provided on perimeter roads, roll top kerbing should be used to the hazard side of the road.	☒	Deviates. Roll top kerbing is not specified along the western perimeter road on the side adjacent to the forest vegetation due to cut and topography to the west within the subject-land. (Refer to the above discussion).
		Where access / egress can only be achieved through forest, woodland or heath vegetation, secondary access shall be provided to an alternate point on the existing public road system.	☑	Complies. Western access/egress road transits past forest vegetation in part. A secondary road is provided to the east which travels through residential streets. Secondary access is available to the east of the development.
		One way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.	N/A	Not applicable. All roads will be two-way and meet perimeter road widths or non-perimeter road widths.
	The capacity of access roads is adequate for firefighting vehicles.	The capacity of perimeter and non-perimeter road surfaces and any bridges / causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges /	☑	Complies. Roads to meet Council requirements for public roads.

Performance criteria		Acceptable solution	Compliance	Comment
		causeways are to clearly indicate load rating.		
	There is appropriate access to water supply.	Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression.	☑	Must comply. Detailed water plans are to be finalised. (Refer to section 3.4.1).
		There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	☑	Reticulated water is provided.
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.	Are two-way sealed roads.	☑	Complies. Roads are two way and sealed.
		Minimum 8m carriageway width kerb to kerb.	☑	Complies. The carriageway width is 8m wide. 'No parking' signs to be provided on western perimeter. (Refer to the above discussion).
		Parking is provided outside of the carriageway width.	☑	Must comply. Carparking to be provided on each lot. It is recommended that 'no parking' signs be installed along both sides of the extension to Forest Road. (Refer to the above discussion).
		There are through roads, and these are linked to the internal road system at an interval of no greater than 500m.	☑	Complies. See Figure 1-4.
		Curves of roads have a minimum inner radius of 6m.	☑	Complies. The inner radius of the roads curve in the southwestern corner of the development has an inner radius greater than 6m. (Refer to Figure 1-4).
		The maximum grade road is 15° and average grade is 10°.	☑	Complies. See Engineering design.
		The road crossfall does not exceed 3°.	☑	

Performance criteria		Acceptable solution	Compliance	Comment
		A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	☑	Can readily comply. Street landscaping plans – See Figure 3-1. (Refer to the above discussion).
NON-PERIMETER ROADS	Access roads are designed to allow safe access and egress for medium rigid firefighting vehicles while residents are evacuating.	Minimum 5.5m carriageway width kerb to kerb.	☑	Complies. The road carriageway width of all non-perimeter roads (Road MC02) is currently 7.5m. (Refer to Figure 1-4).
		Parking is provided outside of the carriageway width.	☑	Detailed street landscaping plans are to be finalised. No parking signs of Forest Rd. (Refer to the above discussion).
		Roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m.	☑	Complies. (Refer to Figure 1-4).
		Curves of roads have a minimum inner radius of 6m.	☑	Complies. Turning Circle on Forest Road also meets requirement. (Refer to Figure 1-4).
		The road crossfall does not exceed 3°.	☑	Complies.
		A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	☑	Can readily comply. Detailed street landscaping plans are to be finalised. (Refer to the above discussion).
PROPERTY ACCESS	Firefighting vehicles can access the dwelling and exit the property safely.	There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles.	☑	Complies.

In summary, road access complies with *PBP*. All roads meet the necessary standards in relation to grades, cross-slopes, loads however due to topography cannot meet the

specification for roll-top kerbs adjacent to the bushland interface. Road curvatures and swept paths are also able to meet the requirements for an 8.8m MRV, similar to a standard category 1 RFS tanker or a standard FRNSW Pumper.

The extension of Forest Road provides for a perimeter road of 8m width between the bushland and the residential lots. No-parking signs should be displayed along the extension of Forest Road and off-street parking utilised.

The development to the north-west of the proposed development has existing access via Jubilee Road to the north. Should a dead end be proposed at this boundary, an appropriate turning circle as shown in Figure 3-1 below should be provided.

Compared to the previous proposal, the current proposed amendments are fully compliant with access for road widths, grades, curvatures and loads.

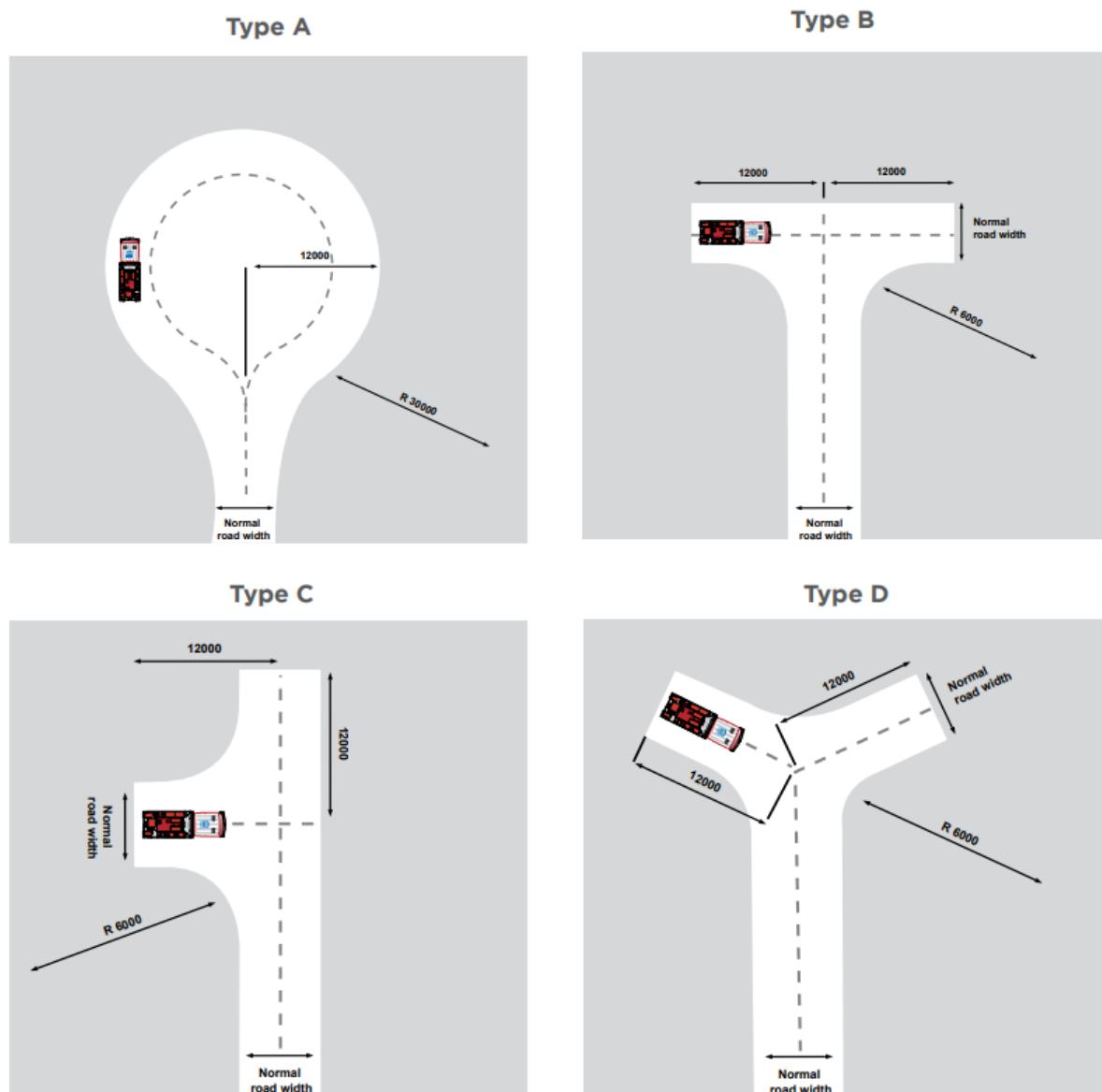


Figure 3-2 – Dead end road design
(Source: Figure A3.3 of PBP)

3.5 Utility services

The intent of measures for utility services is to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as to not contribute to the risk of fire to a building.

3.5.1 Water supplies

Table 3-3 outlines the proposal's compliance with the acceptable solutions for water supply.

Table 3-3 – Standards for water supplies (PBP)

Performance criteria	Acceptable solutions	Compliance	Comment
Adequate water supplies are provided for firefighting purposes.	Reticulated water is to be provided to the development, where available.	☑	Complies. Reticulated water will be provided to the development.
	A static water supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed	N/A	Not applicable. Reticulated water will be provided to the development.
	Static water supplies shall comply with Table 5.3d.	N/A	
Water supplies are located at regular intervals.	Fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2021.	☑	Must comply. Detailed hydrant layout and water plans to be finalised.
The water supply is accessible and reliable for firefighting operations.	Hydrants are not located within any road carriageway.	☑	
	Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	☑	
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2021.	☑	
The integrity of the water supply is maintained.	All above-ground water service pipes are metal, including and up to any taps.	☑	Must comply where applicable.
	Above ground water storage tank shall be of concrete or metal	N/A	Not applicable. Reticulated water will be supplied to the development.

3.5.2 Gas

Reticulated gas is not proposed for connection to the site, nor the provision of gas cylinders. A condition of consent should ensure the restriction of reticulated or bottled gas connections.

3.5.3 Electricity

Table 3-4 outlines the required acceptable solutions for the development's electricity supply.

Table 3-4 – Standards for electricity services (PBP guidelines)

Performance criteria	Acceptable solutions	Compliance	Comment
Location of electricity services limit the possibility of ignition of surrounding bushland or the fabric of buildings.	Where practicable, electrical transmission lines are underground.	☒	Electrical transmission lines will be underground.
	Where overhead electrical transmission lines are proposed: lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and no part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines.	N/A	Not applicable. Electrical transmission lines will be underground.

3.6 Specific objectives for residential and rural subdivisions

The specific objectives for residential and rural subdivisions with a dwelling entitlement are as follows:

Objective	Compliance	Comment
Minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);	☒	Complies. (Refer to the discussion in sections 2.5, 3.1 and 3.3).
Minimise vegetated corridors that permit the passage of bush fire towards buildings	☒	Complies. No vegetation corridors exist within the development. (Refer to the discussion in section 2.5 and 3.1).
Provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests	☒	Complies. The development is situated away from ridge tops, saddles and narrow ridge crests. The subject-land is moderately sloped downward in a southwest to northeast direction. However, all proposed residential lots will be terraced and the road appropriately graded. (Refer to Figure 1-4).
Ensure that APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bush fire attack mechanisms	☒	Complies. All APZs achieve BAL 29. Lot 10 required a building pad amendment to meet BAL-29. (Refer to the discussion in section 2.5 and 3.1).
Ensure the ongoing maintenance of APZs	☒	Detailed landscaping plans are to be finalised. The entire subject-land is to be managed as an IPA for the lifetime of the development, or until all potential bushfire threats are removed. (Refer to section 3.1).
Provide adequate access from all properties to the wider road network for residents and emergency services	☒	Complies. There will be more than one access point to the development. Perimeter roads are currently 8m wide and will need to have 'no parking' signs. (Refer to the discussion in section 3.3).
Provide access to hazard vegetation to facilitate bush fire mitigation works and fire suppression; and	☒	Complies. (Refer to the discussion in section 3.3).
Ensure the provision of an adequate supply of water and other services to facilitate effective firefighting	☒	Complies. Note that reticulated and bottled gas is not proposed. (Refer to the discussion in section 3.4.1).

4. CONCLUSION & RECOMMENDATIONS

4.1 Conclusion

This bushfire protection assessment has been undertaken for the proposed residential subdivision located at Lot B DP370222, 4 Forest Road, Warriewood. In total, there will be thirteen residential allotments. Existing structures, including the house on proposed lot 11 will be demolished.

This assessment has found that bushfire can potentially affect the development from forest vegetation to the west. This has the potential to result in future buildings being exposed to potential radiant heat and ember attack.

In recognition of the bushfire risk posed to the development by the surrounding bushland, *TBE* concludes that the proposed residential development can satisfy the Standards of *PBP*. *TBE* propose the following combination of bushfire measures:

- APZ in accordance with the minimum setbacks outlined with *PBP* for all aspects as shown in table 2-2 and generally depicted in Schedule 1. Lots 10 and 13 building pads has been modified to accommodate a building on these lots,
- Provision of access in accordance with the acceptable solutions outlined in *PBP*, including a minimum 8m wide carriageway for the southern and western perimeter road and no parking signs within the road carriageway,
- Water and electricity supply in compliance with the acceptable solutions outlined in *PBP*. Gas supply is not proposed or recommended, and
- Future dwelling construction in compliance with *PBP* and the appropriate construction sections of AS3959-2018.

The following specific recommendations are provided to ensure that the development is in accordance with, or greater than, the requirements of *PBP*.

4.2 Recommendations

Recommendation 1 – The development including APZs is as generally indicated on the attached Schedule 1- Plan of Bushfire Protection Measures and in Table 2-2 of this report. Lot 10 building pad has been modified such that no part of the building's wall (or deck) is exposed to a radiant heat flux exceeding 29kW/m².

Recommendation 2 – The entire subject-land is to be managed as an inner-protection area (IPA) throughout the lifetime of the development and until each lot is sold/ developed and the on-site hazard is removed.

Recommendation 3 – Street landscaping to be managed in accordance with *Appendix 4* of *PBP* and as shown in Schedule 2- Management of Assessment Protection Zones.

Recommendation 4 – Access requirements to comply with *section 5.3.2* of *PBP*. This includes a minimum 8m wide carriageway for the western perimeter road and provision of no parking signs.

Recommendation 5 – Reticulated water and electricity supply shall comply with *Section 5.3.3* of *PBP*. Gas supply is not proposed or supported.

Recommendation 6 – Building construction standards for the proposed future dwellings situated on BFPL and within 100m of bushland, are to be applied in accordance with AS3959

Construction of buildings in bushfire prone areas (2018), (or NASH Standard) and Section 7.5 of *PBP*. These buildings will be subject to future development applications or in accordance with the complying development provisions of SEPP Exempt and Complying Development. Any building located within Lot 10 and 13 will need to be designed to fit within the APZ shown in Schedule 1. The buildings on Lots 10 and 13 will need to be of a 'bespoke' nature in the areas shown on Figures 2-3 and 3-1.

5. INFORMATION SOURCES

5.1 Information collation

- 1) Aboriginal Heritage Management Information System (AHIMS).
- 2) *Pittwater Local Environmental Plan 2014 (Pittwater LEP)*
- 3) NSW Planning Portal.
- 4) NSW Rural Fire Service 2017. '*NSW Local Government Areas FDI*', dated: May 2017.
- 5) NSW Rural Fire Service 2022. '*Integrated Development Application – s100B – SFPP – School – 5 Forest Road Warriewood NSW 2102, 13//DP1083731*', ref. DA20211125005140-Original-1, dated: 14 August 2022.
- 6) NSW SEED Portal.
- 7) Pittwater Council 2017. '*Warriewood Valley Strategic Review Addendum Report*', adopted. 17 November 2014, amended. 19 December 2017.
- 8) *Rural Fires Act 1997 (RF Act)*.
- 9) Travers bushfire & ecology 2022. '*Bushfire Protection Assessment – Proposed Residential Subdivision*', ref. 21BMN02, dated: 20 December 2022.
- 10) ATC 2024. Proposed Public Domain Landscape Details, Drawing L/02E, dated 2/12/2024.
- 11) Acor Consultants, 2024. Lot Layout, Drawing No. SKC11.01, Rev C.

5.2 Bibliography

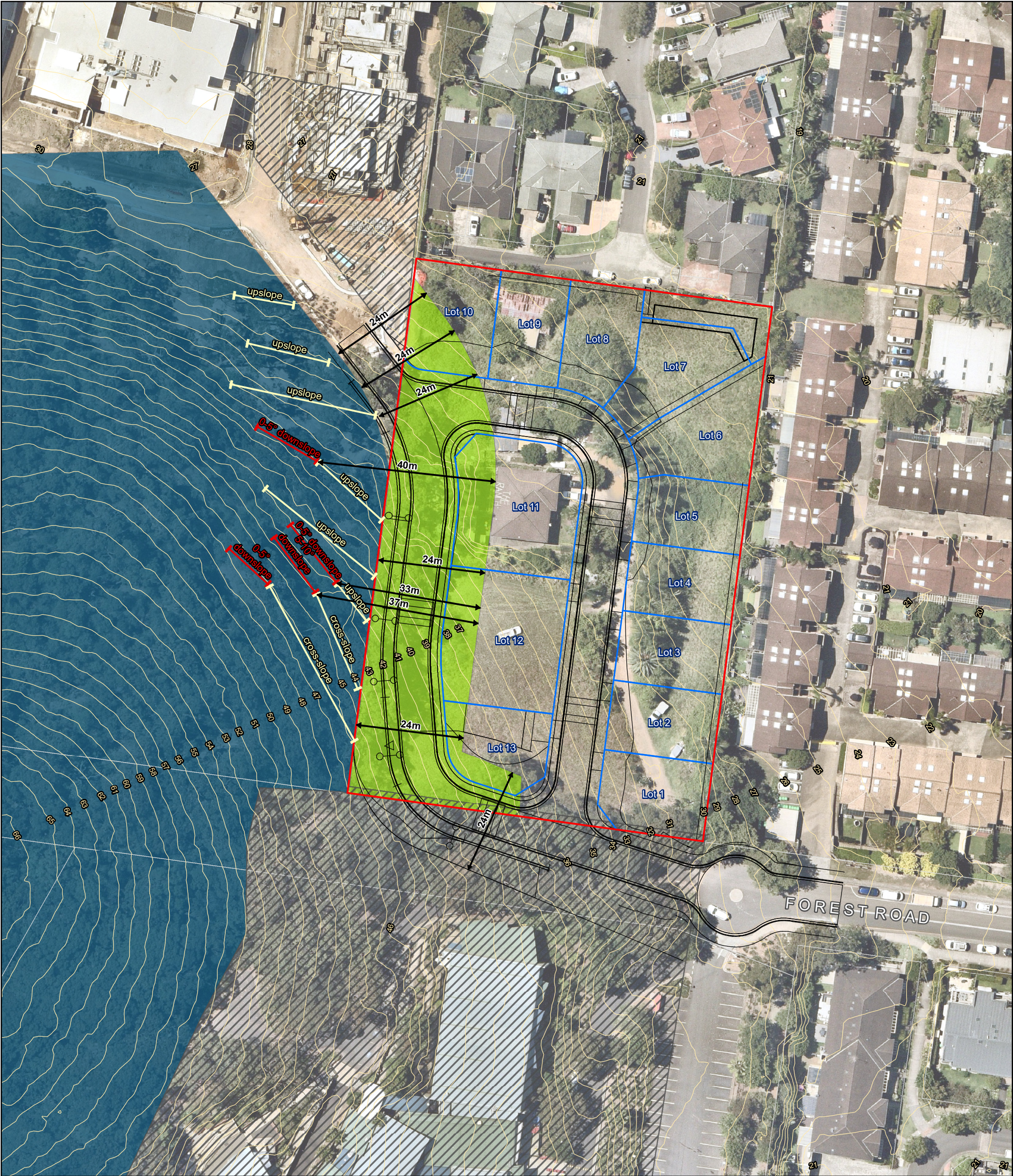
Australian Building Codes Board (2022), Building Code of Australia: Volume 1 Class 1 and 10 Buildings Provisions. National Construction Code. Canberra.

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. Sydney

Rural Fire Service (2019), Planning for bushfire protection – a guide for councils, planners, fire authorities and developers. NSW Rural Fire Service. Sydney.

Standards Australia (2018), AS3959: 2018 - Australian Standard - Construction of buildings in bush fire-prone areas. Sydney.

SCHEDULE 1. PLAN OF BUSHFIRE PROTECTION MEASURES



Legend

Site boundary (source:LPI)

Subdivision boundary (source:CAD)

Contour 1m (source:LiDAR)

Asset Protection Zone

Managed-land

Forest

Aerial source: Nearmap



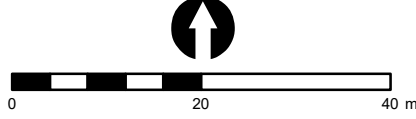
PROJECT & MXD REFERENCE
4 Forest Rd, Warriewood
BMN02_BF001

DATE & ISSUE NUMBER
12/12/2024
Issue 1

SCALE & COORDINATE SYSTEM
1:800 @ A3
GDA2020 MGA Zone 56

TITLE

Schedule 1 - Bushfire Protection Measures



0 20 40 m

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

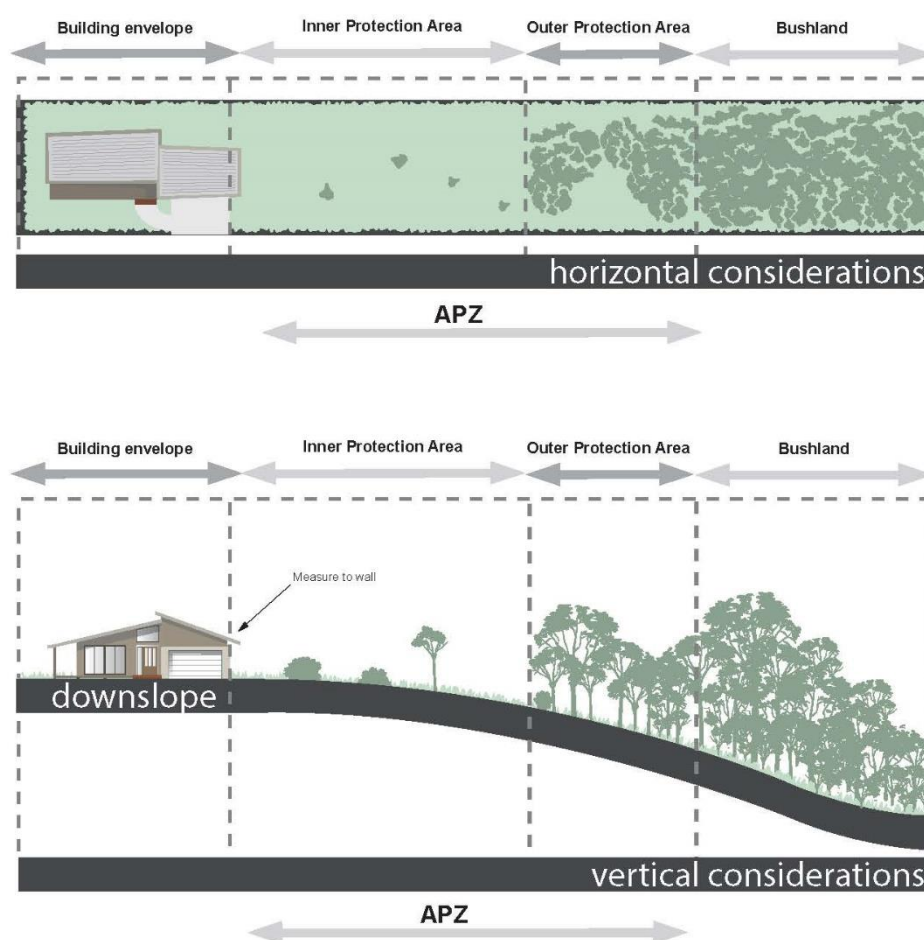
Document Path: N:\GIS STORAGE\N Drive\1_GDA2020 MappingProjects\BMN02_ForestRd Warriewood\MXDs\BMN02_BF001.mxd

SCHEDULE 2. MANAGEMENT OF ASSET PROTECTION ZONES

The RFS provides basic advice in respect of managing APZs through documents such as, *Standards for Asset Protection Zones* (RFS, 2005), with landscaping to comply with Appendix 4 of *PBP*.

In forest vegetation an APZ may consist of two subordinate areas, an inner protection area (IPA) and an outer protection area (OPA). The IPA is the area immediately surrounding the building and the OPA (up to 30% of the total APZ width) is between the IPA and the hazard.

A typical APZ is graphically represented below.



APZs and progressive reduction in fuel loads
(Source: PBP, 2019)

Note: Vegetation management as shown is for illustrative purposes only. Specific advice is to be sought regarding vegetation removal and retention from a qualified and experienced expert to ensure APZs comply with the RFS performance criteria.

The following table adapted from *PBP* provides maintenance advice for vegetation within the IPA and OPA. The APZ is to be maintained in perpetuity and maintenance should be undertaken regularly, particularly in advance of the bushfire season.

	Inner Protection Area	Outer Protection Area
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 2m above the ground; ➤ Tree canopies should be separated by 2 to 5m; and ➤ Preference should be given to retaining smooth barked and evergreen trees.	➤ Tree canopy cover should be less than 30%; and ➤ Canopies should be separated by 2 to 5m.
Shrubs	➤ Large discontinuities or gaps in the vegetation should be provided to slow down or break the progress of fire towards buildings; ➤ Shrubs should not be located under trees; ➤ Shrubs should form less 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.	➤ Shrubs should not form a continuous canopy; and ➤ Shrubs should form less than 20% of ground cover.
Grass and Leaf Litter	➤ Grass should be kept mown to a height of less than 100mm; and ➤ Leaves and other debris should be removed	➤ Grass should be kept mown to a height of less than 100mm; and ➤ Leaf and other debris should be removed.

	All Management Zones
Weeds	➤ All weeds should be removed in accordance with best practice guidelines, and measures taken to prevent their further spread
Landscaping	➤ Suitable impervious areas being provided immediately surrounding the building such as courtyards, paths and driveways; ➤ Restrict planting in the immediate vicinity of the building which may over time and if not properly maintained come into contact with the building; ➤ When considering landscape species consideration needs to be given to estimated size of the plant at maturity; ➤ Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies; ➤ Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown; ➤ Avoid planting of deciduous species that may increase fuel at surface / ground level (i.e. leaf litter); ➤ Avoid climbing species to walls and pergolas; ➤ Locate combustible materials such as woodchips / mulch, flammable fuel stores away from the building; ➤ Locate combustible structures such as garden sheds, pergolas and materials such timber garden furniture way from the building; and ➤ Use of low flammability vegetation species.

SCHEDULE 3. TBE CORRESPONDENCE WITH NORTHERN BEACHES COUNCIL

Our Ref: BMN02COURT

2 July 2024

BMN Properties Pty Ltd
119 Willoughby Road
CROWS NEST NSW 2065

Attention: Brad Pym

Dear Brad,

Re: Confirmation of Asset Protection Zone (APZ) Development Consent within The Mater Marie Catholic College at Lot 13 DP 1083731, 5 Forest Road, Warriewood.

Travers bushfire & ecology (TBE) previously prepared a bushfire protection assessment for BMN Properties Pty Ltd for a thirteen-lot residential subdivision located at Lot B DP370222, 4 Forest Road, Northern Beaches ref. 21BMN02 dated: 20 December 2022. BMN Properties Pty Ltd has now engaged TBE to provide a bushfire letter for the Northern Beaches Council. The letter aims to confirm whether there is an existing Asset Protection Zone (APZ) on the adjoining-land to the south and southwest, and whether this area can be considered managed-land, thereby excluding it as a potential bushfire threat to the residential development at 4 Forest Road.

The adjoining property to the south is Lot 13 DP 1083731, 5 Forest Road, Warriewood, owned by The Mater Marie Catholic College. On 17 October 2000, AVK Environmental Management prepared a Bushfire Hazard Assessment and Management Guidelines Report for a development proposal under DA N1038/00 at the college. The proposal involved redeveloping the site, including removal of three existing buildings, construction of new buildings and outdoor sporting facilities, and extensive landscaping of the site including new roads.

The assessment by AVK Environmental Management's assessment identified that the greatest bushfire risk to the development would come from large fires burning down the Warriewood Escarpment from the west and north-west, including from wind-blown burning debris. To mitigate this risk, the assessment recommended implementing a 30m fire protection zone along the north-western and northern boundaries of the college which borders the southern boundary of 4 Forest Road. This fire protection zone was proposed to be a fuel free zone.

Pittwater Council approved DA N1038/00, with *consent condition E32(h)* requiring compliance with the NSW Rural Fire Service (NSWRFS) requirements dated 28 August 2002, as detailed in appendix 1. These requirements included establishing a 30m APZ, consisting of a 20-meter inner protection area and 10-meter outer protection area, measured at a radial distance around the Chapel building.

The Mater Marie College subsequently lodged DA2021/2083 to increase the existing student numbers at the college from 850 to 1100 students. The NSWRFS issued a Bush Fire Safety Authority (BFSA) for this development on 14 August 2022 *ref. DA20211125005140-Original-1*, subject to general terms of approval (GTAs) attached in Appendix 2. *Condition 1* of the BFSA specifies that a 30m inner protection area must be maintained to the north northwestern areas of the site, in accordance with *Appendix 4 of Planning for Bush Fire Protection 2019*. Australian Bushfire Protection Planners Pty Ltd confirmed in their bushfire protection assessment for the development *ref. B223880 dated: 21.06.2022* that these APZ areas of the site were established and being managed.

On 4 November 2022, Northern Beaches Council issued a Notice of Determination approving DA2021/2083, subject to consent conditions, including *condition 4*, which mandates compliance with NSWRFS BFSA conditions *ref. DA20211125005140-Original-1*. Urbis later requested on 10 May 2023 under **Mod2023/0262**, a *S4.55(1A)* application to amend DA2021/2083 *consent conditions 2 and 5*, related to footpath construction. On 20 July 2023, Northern Beaches Council issued a further Notice of Determination, approving MOD2023/0262 without affecting *condition 4* of DA2021/2083.

Based on the above information, BMN Properties Pty Ltd's proposed thirteen-lot subdivision development at Lot B DP370222, 4 Forest Road, Warriewood, can rely on a distance of 30m for the adjoining-land to its south and southwest being considered to be managed-land and excluded as a potential bushfire threat to the development.

Should Council be unhappy with the current situation, it is able to exercise it's powers under the EP&A Act to enforce any conditions.

If you require any further information, please do not hesitate to contact the undersigned on (02) 4340 5331 or at servicedesk@traverseecology.com.au

Yours faithfully



Luke Simpson
Bushfire Consultant



Grahame Douglas
Principal Bushfire Consultant

APPENDIX 1. NSWRFs BUSH FIRE SAFETY AUTHORITY AUGUST 2002

* All communications to be addressed to:

Warringah Pittwater District
NSW Rural Fire Service
P.O. Box 111
Terry Hills 2084

Telephone: (02) 9460 3000
e-mail: laurence.mccoy@rfs.nsw.gov.au

Warringah Pittwater District
NSW Rural Fire Service
Thompson Drive off Kamber Road
Terry Hills 2084

Facsimile: (02) 9460 1028



Mathew Edmonds

Pittwater Council

Your Ref: N1038/00

Our Ref: N1038/00

DATE: 28-Aug-02

RE: DEVELOPMENT AND/OR BUILDING APPLICATION

House No: 5 Lot No: 1 DP No: 765132

Forest Road Warriewood

DA No: N1038/00 BA No: File No:

As per Planning for Bushfire Protection (2001) and Australian Standard 2969 "Construction of Buildings in bushfire-prone areas", the following is the Bushfire Attack Category and the necessary level of construction.

Bushfire Attack Category: MEDIUM

Construction Type: Level 1 Construction Required

Following an inspection of the proposal at the above address, please be advised that the NSW Rural Fire Service recommends Pittwater Council impose the following conditions:

The development is deemed a 'Special Protection Development' of Planning for Bushfire Protection 2001. This requires for the slope and vegetation type an Asset Protection Zone to be maintained to a distance of 30 meters, surrounding the chapel. The Asset Protection Zone is to be comprised of a 20 meter Inner Protection Area and 10 meter Outer Protection Area.

Inner Protection Area - This zone is the area immediately adjacent to the dwelling to a radial distance of 20 meters. This area is to be kept free of flammable/combustible plants, rubbish and debris. It is suited to lawns, separated trees and low flammability gardens. No tree is to hang directly over the proposed structure.

Outer Protection Area - This zone is the area immediately adjacent to the Inner Protection Area. It is to be to a radial distance of 10 meters. This area is to be maintained to a maximum vegetation level of 3 tonnes per hectare.

For further information refer to section 4.2 Planning for Bushfire Protection 2001

The access road to the structure and perimeter fire trail around the structure are to be established to a minimum standard to allow access for firefighting vehicles. That is at least 4m wide and capable of carrying vehicles up to 28 tonnes, or 9 T per axle. One meter either side of the trail/access road should be free from overhanging vegetation.

Leafless Gutters or other mechanical means to be installed on the structures to prevent the build up of flammable materials with the gutters.

Due to the extensive area of adjacent bushland, consideration should be given to the installation of other fire protection measures such as shutters, garden/house sprinkler systems, fire pumps & hoses and the use of fire resistant/retardant plant species.

If water supply is not reticulated, supply is to comply with Policy GOV-PL 720 Water Storage for Domestic and Rural Fire Fighting Purposes. Tanks must be of minimum 45000L capacity with 10000L reserved for fire fighting, outlet to be fitted with a 'stop valve' and start fittings.

Providing the above conditions are implemented, the NSWRFs has no objections to this proposal.

Please do not hesitate to call if you have any queries.

Yours Sincerely,

Laurence McCoy
Planning and Mitigation Officer

BMN02COURT

3

SCHEDULE 4. RFS BUSH FIRE SAFETY AUTHORITY



NSW RURAL FIRE SERVICE

Northern Beaches Council
PO Box 882
MONA VALE NSW 1660

Your reference: DA2021/2083 (CNR-31158)
Our reference: DA20211125005140-Original-1

ATTENTION: Northern Beaches Council

Date: Sunday 14 August 2022

Dear Sir/Madam,

Integrated Development Application
s100B – SFPP – School
5 Forest Road Warriewood NSW 2102, 13//DP1083731

I refer to your correspondence dated 15/02/2022 seeking general terms of approval for the above Integrated Development Application.

The New South Wales Rural Fire Service (NSW RFS) has considered the Information submitted. General Terms of Approval, under Division 4.8 of the *Environmental Planning and Assessment Act 1979*, and a Bush Fire Safety Authority, under section 100B of the *Rural Fires Act 1997*, are now issued subject to the following conditions:

Asset Protection Zones

Intent of measures: to provide suitable building design, construction and sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants.

1. From the commencement of application approval and in perpetuity, the area within the school site must be maintained as an inner protection area to the following distances and aspects around the existing buildings in accordance with the following requirements of Appendix 4 of *Planning for Bush Fire Protection 2019*:

- north and north-west for a distance of 30 metres;
- east to the site boundary;
- south to the site boundary; and,
- west for a distance of 20 metres.

When establishing and maintaining an inner protection area, the following requirements apply:

- 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 the ground;
- tree canopies should be separated by 2 to 5 m;
- preference should be given to smooth-barked and evergreen trees;

1

Postal address

NSW Rural Fire Service
Locked Bag 17
GRANVILLE NSW 2142

Street address

NSW Rural Fire Service
4 Murrey Place Ave
SYDNEY OLYMPIC PARK NSW 2127

T (02) 6741 5555
F (02) 6741 5550
www.rfs.nsw.gov.au

- large discontinuities or gaps in the shrubs layer should be provided to slow down or break the progress of fire towards buildings;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover;
- 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 100mm in height); and
- leaves and vegetation debris should be removed regularly.

2. Landscaping within the required asset protection zone must comply with Appendix 4 of *Planning for Bush Fire Protection 2019*. In this regard, the following principles are to be incorporated:

- A minimum 1 metre wide area (or to the property boundary where the setbacks are less than 1 metre), suitable for pedestrian traffic, must be provided around the immediate curtilage of the building;
- Planting is limited in the immediate vicinity of the building;
- Planting does not provide a continuous canopy to the building (i.e. trees or shrubs are isolated or located in small clusters);
- Landscape species are chosen to ensure tree canopy cover is less than 15% (IPA), and less than 30% (OPA) at maturity and trees do not touch or overhang buildings;
- Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies;
- Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown;
- Avoid planting of deciduous species that may increase fuel at surface/ ground level (i.e. leaf litter);
- Avoid climbing species to walls and pergolas;
- Locate combustible materials such as woodchips/mulch, flammable fuel stores away from the building;
- Locate combustible structures such as garden sheds, pergolas and materials such as timber garden furniture away from the building; and
- Low flammability vegetation species are used.

Emergency and Evacuation Planning Assessment

The intent of measure is to provide suitable emergency and evacuation arrangements for occupants of SFPP developments.

3. A Bush Fire Emergency Management and Evacuation Plan must be prepared in accordance with Table 6.8d of *Planning for Bush Fire Protection 2019* and be consistent with the NSW RFS document *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*. The plan must also include the following:

- that the School is not to be occupied on days with a 'catastrophic' fire danger rating;
- a mechanism for the relocation of occupants on days with a 'catastrophic' fire danger rating;
- contact details for the local Rural Fire Service office;
- procedures for coordinated evacuation of the site in consultation with local emergency services.

A copy of the Bush Fire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to the occupation of the development.

General Advice – Consent Authority to Note

The NSW RFS advises that it does not endorse or approve Bushfire Emergency Evacuation Plans (BEEP) for specific facilities. This function rests with the certifying authority. The BEEP once completed shall be provided to the local Bush Fire Emergency Management Committee for their information prior to the occupation of the facility.

For any queries regarding this correspondence, please contact Adam Small on 1300 NSW RFS.

Yours sincerely,

Nika Fomin
Manager Planning & Environment Services

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Built & Natural Environment



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BUSH FIRE SAFETY AUTHORITY

SFPP – School
5 Forest Road Warriewood NSW 2102, 13//DP1083731
RFS Reference: DA20211125005140-Original-1
Your Reference: DA2021/2083 (CNR-31158)

This Bush Fire Safety Authority is issued on behalf of the Commissioner of the NSW Rural Fire Service under s100b of the Rural Fires Act (1997) subject to the attached General Terms of Approval.

This authority confirms that, subject to the General Terms of Approval being met, the proposed development will meet the NSW Rural Fire Service requirements for Bush Fire Safety under *s100b of the Rural Fires Act 1997*.

Nika Fomin
Manager Planning & Environment Services
Built & Natural Environment

Sunday 14 August 2022