

## Bushfire Assessment Report



## 79 Frenchs Forest Road East Frenchs Forest

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The Client agrees that the Consultant shall have no liability in respect of any damage or loss incurred as a result of bushfire.



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# Bushfire Assessment Certificate

This certificate provides confirmation that the development conforms to the relevant specifications and requirements of *Planning for Bush Fire Protection 2019* (PBP), pursuant to Section 4.14(1)(b) of the *Environmental, Planning and Assessment Act 1979*. It also provides a summary of the report findings for ease of reference.

|                                                                                                    |                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of Development                                                                                | Proposed Level 3 & 4 – internal fit out of Level 3 and filling in existing void on Level 4 to create commercial space                                                                                                                                                |
| Development Plans                                                                                  | Brewster Murray                                                                                                                                                                                                                                                      |
| Relevant section of <i>Planning for Bush Fire Protection 2019</i> (PBP)                            | Aim and Objectives                                                                                                                                                                                                                                                   |
| Does the development rely on acceptable or performance solutions?                                  | The development complies with the Aim and Objectives of PBP 2019                                                                                                                                                                                                     |
| Does the proposal demonstrate compliance with the relevant specifications and requirements of PBP? | Yes                                                                                                                                                                                                                                                                  |
| Report prepared by:<br>Catherine Ryland, Director<br>BPAD Level 3 No.34605                         |   <p>(Recognised by the NSW RFS as a qualified consultant in bush fire risk assessment)</p> |



# 1. Introduction

CR Bushfire Pty Ltd has been engaged by the client to prepare a bushfire assessment report for proposed alterations/additions to the existing building at 79 Frenchs Forest Road East, Frenchs Forest, NSW 2086 (Lot 102 DP 1209504).

The subject site has been identified as being located on bushfire prone land and as such the legislative requirements of *Planning for Bush Fire Protection 2019* (PBP) are applicable.

The aim of PBP is to “*provide for the protection of human life and minimise impacts on property from the threat of bushfire, while having due regard to development potential, site characteristics and protection of the environment*”.

By implementing a suitable suite of bushfire protection measures as listed within this report, that meet the necessary performance criteria of asset protection zones, landscaping, access/egress, construction siting and design, and water and utility services, the vulnerability of the proposed development to bushfire should be minimised and the ability to safely defend increased.

The proposed development is an infill development as defined within PBP and as such this report has been prepared in accordance with the requirements of *Section 4.14 of the Environmental Planning and Assessment Act 1979*.

A site inspection was undertaken on the 27 June 2024 to assess the bushfire potential impacting the site. An assessment of the vegetation to a distance of 140m and the effective slope to a distance of 100m was conducted. Findings were assessed against PBP and AS3959 *Construction of buildings in bushfire prone areas*. The results are described within this report.



## 2. Site Description and Proposal

### 2.1 Site Description

The subject site is located within the commercial area of Frenchs Forest and sandwiched between Frenchs Forest Road East and Warringah Road. There are commercial buildings to the east and west of the building, residential dwellings to the north and remnant forest to the east/south. The property is accessed directly from Frenchs Forest Road east and is situated in close proximity to Wakehurst Parkway and Warringah Road, two major distributor routes.

The site is zoned SP4 Enterprise under the Warringah LEP 2011.

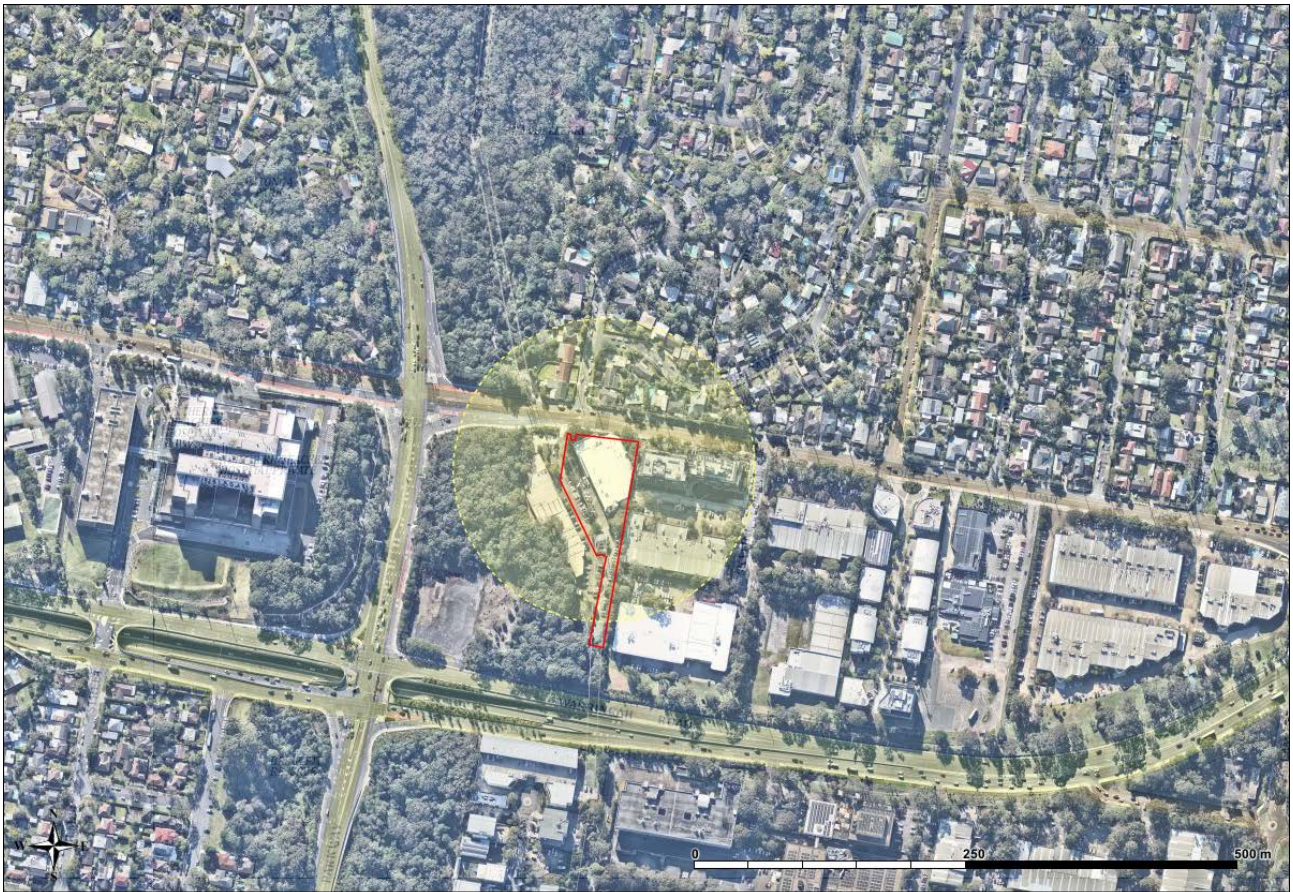
Mapped bushfire prone vegetation is situated to the west and south of the subject site. A site location map is included as Figure 1 below and site details are provided in Table 1.

The methodology within *Planning for Bush Fire Protection 2019* (PBP) has been followed for site assessment and accordingly, a 140m assessment radius has been used. This is also shown in Figure 1.

Table 1: Site Description

|                                 |                                                       |
|---------------------------------|-------------------------------------------------------|
| <b>Address</b>                  | 79 Frenchs Forest Road East, Frenchs Forest, NSW 2086 |
| <b>Title</b>                    | Lot 102 DP 1209504                                    |
| <b>Land Use Zone</b>            | SP4 Enterprise (Warringah LEP 2011)                   |
| <b>LGA</b>                      | Northern Beaches                                      |
| <b>Lot Size (approximate)</b>   | 6773 m <sup>2</sup>                                   |
| <b>Bushfire Prone Land</b>      | Category 1 Vegetation and associated buffer           |
| <b>Forest Fire Danger Index</b> | 100                                                   |





Map Printed from FireMaps on Thu Jun 27 14:00:31 AEST 2024

Figure 1: Site Location and 140m Survey Area

## 2.2 Development Proposal

The development proposal includes the internal fit out of existing Level 3 and the filling in of an existing void area at Level 4 to create a commercial space at this level. The proposed works are largely internal, the only external change is the insertion of fixed windows at Level 4. The proposed alterations and additions are shown in Figures 2-4 below.





### 3. Bushfire Impact Assessment

The bushfire impact assessment was undertaken using the site methodology outlined in Appendix 1 of *Planning for Bush Fire Protection 2019* (PBP) to determine appropriate APZs and associated construction levels.

#### 3.1 Vegetation Assessment

The *Northern Beaches Bush Fire Prone Land Map* shows the site to be within the Buffer (yellow) for Category 1 vegetation. Category 1 vegetation represents the highest bushfire risk. This vegetation category has the highest combustibility and likelihood of forming fully developed fires including heavy ember production (NSW RFS *Guide for Bush Fire Prone Land Mapping*, 2015).

An extract from the Bushfire Prone Land Map is provided in Figure 5 below.



#### Legend

**Bushfire Prone Land**  
■ Vegetation Category 1 ■ Vegetation Category 2 ■ Vegetation Category 3 ■ Vegetation Buffer  
Map printed from Firemaps on 11th July 21 14:20:15 AEST 2024

Figure 5: Extract from Bush Fire Prone Land Map

The site at 79 Frenchs Forest Road East is an existing commercial building within an existing commercial area. The mapped vegetation is a remnant piece of forest within a landscape broken by urban development. The forest is approximately 1.8ha in area and is disconnected from other areas of forest by large roads including Frenchs Forest Road East and Warringah Road. Nevertheless, there is potential for the vegetation to sustain a forest fire. The vegetation is predominantly mapped within the NSW Government Sharing and Enabling Environmental Data (SEED) portal as Sydney Coastal Dry Sclerophyll Forest.

There are trees located around the building generally situated within planter beds, these trees do not pose a bushfire threat due to the lack of understorey or mid-storey.

Table 2 summarises vegetation formations and classifications identified during desktop studies.

Table 2: Vegetation Assessment as per PBP 2019 Appendix 1

| Transect      | Vegetation Classes of NSW Version 3.03 (Keith and Simpson) VIS_ID 3848** | Vegetation Formation (PBP 2019) | Overall Fuel Loads (surface, elevated, bark and canopy)* | Separation distance from the closest external wall to the edge of the unmanaged vegetation |
|---------------|--------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------|
| 1 (west)      | Sydney Coastal Dry Sclerophyll Forest                                    | Forest                          | 27.3 tonnes/ha                                           | 46m***                                                                                     |
| 2 (southwest) | Sydney Coastal Dry Sclerophyll Forest                                    | Forest                          | 27.3 tonnes/ha                                           | 66m***                                                                                     |
| 3 (south)     | Sydney Coastal Dry Sclerophyll Forest                                    | Forest                          | 27.3 tonnes/ha                                           | 70m***                                                                                     |

\* Extracted from NSW RFS Comprehensive vegetation fuel loads, 2019

\*\* Extracted from the Central Resource of Sharing and Enabling Environmental Data in NSW – The NSW Government SEED Portal

\*\*\*Distance measured from closest external wall of existing building to edge of unmanaged vegetation.

## 3.2 Slope Assessment

The land to the west of the subject site has a cross slope which runs parallel of the building of approximately 7 degrees downslope. This is not the slope measured perpendicular to the building and would represent a flank fire. Measured perpendicular over a 100m distance, the effective slope underneath the vegetation to the east is upslope. Vegetation to the south is flat. Nevertheless, an effective slope of 1 degree downslope has been utilised to take account of the downward flank slope within the vegetation.

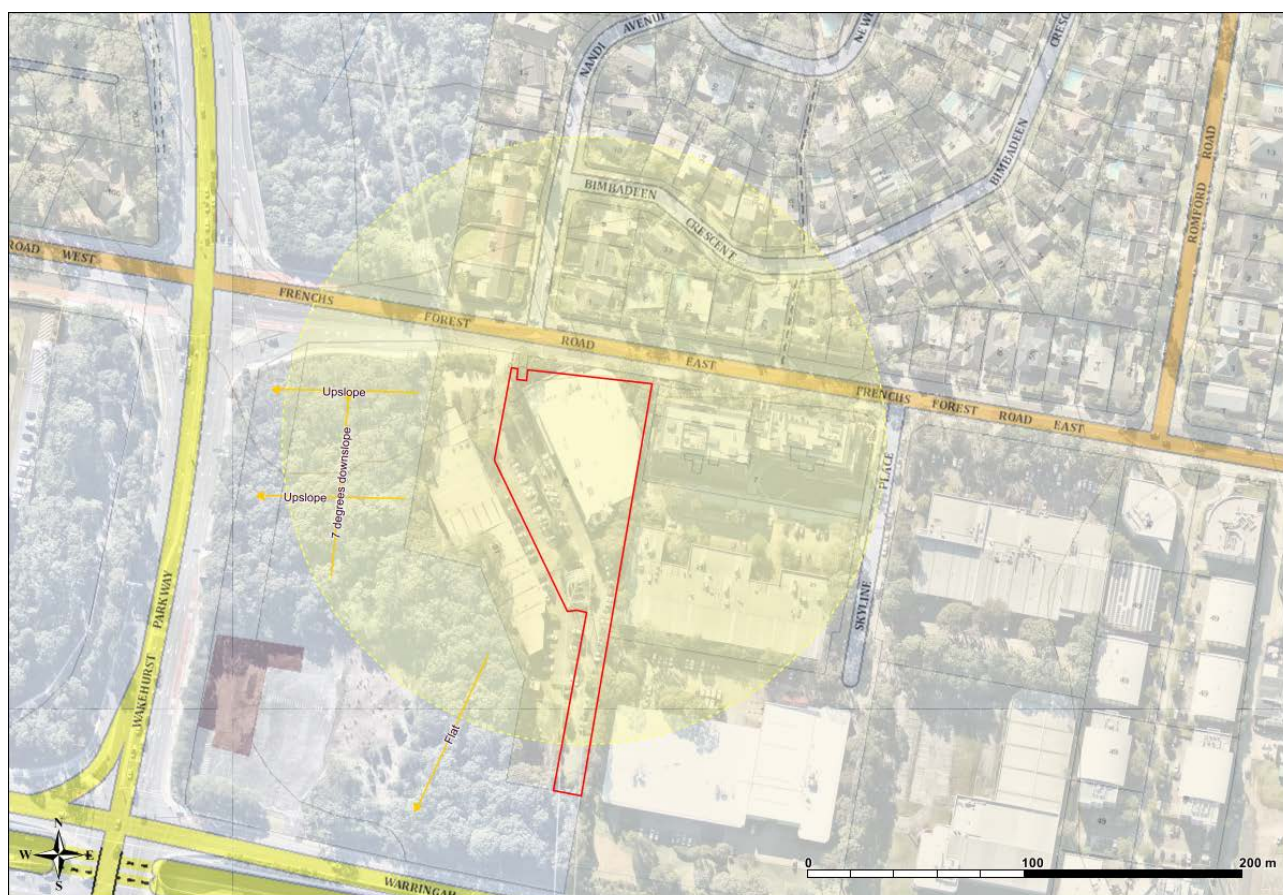


Figure 6: Slope Profiles

Table 3: Effective slope Assessment

| Transect      | Effective Slope | Direction |
|---------------|-----------------|-----------|
| 1 (west)      | 3 degrees       | Upslope   |
| 2 (southwest) | 1 degrees       | Upslope   |
| 3 (south)     | 0 degrees       | Flat      |

### 3.3 Category of Bushfire Attack

The Bushfire Attack Level (BAL) of the proposed development was determined using a Forest Fire Danger Index (FFDI) of 100 as per NSW Rural Fire Service document "NSW Local Government Areas FDI" (May 2017). The FFDI measures the degree of danger using a 1:50 year fire weather scenario.

The determination of the Bushfire Attack Level (BAL) is based on a worst-case scenario and a calculation derived from maximum fuel loads, rate of fire spread and anticipated radiant heat (kW/m<sup>2</sup>) at the receiver or building.

The inputs which determine this calculation are derived from Table 2 and 3 above and include the vegetation formations, effective slope and the separation distance between the bushfire hazardous vegetation and the closest external wall of the proposed development. Please note, the measurements are taken between the site boundary and the closest external wall of the building. The BAL map produced below includes a level of precaution in incorporating a 1 degree downslope, nevertheless the building works fall within the lowest risk area of the building.

Table 4: Bushfire Attack Summary, FFDI 100

| Transect      | Vegetation Formation | Effective Slope   | Separation distance from the bushfire hazardous vegetation | Bushfire Attack Level |
|---------------|----------------------|-------------------|------------------------------------------------------------|-----------------------|
| 1 (west)      | Forest               | 3 degrees upslope | 46m***                                                     | BAL-12.5              |
| 2 (southwest) | Forest               | 1 degrees upslope | 66m***                                                     | BAL-12.5              |
| 3 (south)     | Forest               | 0 degrees flat    | 70m***0                                                    | BAL-12.5              |

\*Distance measured from closest external wall of proposed building works to edge of unmanaged vegetation.

The highest BAL calculated for the actual building works is BAL-12.5. The resultant BAL for the proposed construction works on this basis is **BAL-12.5**, shown in Figure 10 below. Note that there are no downgrades available at BAL-12.5 so all elevations of the building will be BAL-12.5.



## BAL Map 79 Frenchs Forest Road East



Map Printed from FireMaps on Tue Dec 19 21:11:30 AEDT 2023

Figure 7: BAL Map

## 4. Recommendations

### 4.1 Asset Protection Zones

An Asset Protection Zone (APZ) is an area surrounding a development that provides sufficient space and is managed to reduce fuel loads to ensure radiant heat levels at buildings are kept below critical limits and prevent direct flame contact. An APZ can consist of both an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

It is recommended that the entire property at 3B Iluka Road is managed in continuity as an IPA in accordance with performance criteria outlined within Section 7.4 of PBP, that is:

- ☐ The APZ is provided commensurate with the construction of the new building and a defensible space is provided.
- ☐ The APZ is managed to prevent the spread of a fire to the building.
- ☐ The APZ is provided and maintained in perpetuity.
- ☐ APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimized.

#### 4.1.1 Inner Protection Area

The IPA is designed to minimise direct flame contact and radiant heat and provide residents and emergency service personnel with a defensible space to work within.

The IPA shall have the following attributes in accordance with Appendix 4 of PBP:

- ☐ Tree canopy cover should be less than 15%, with canopies separated by 2 to 5m.
- ☐ Trees should not touch or overhang any buildings.
- ☐ Lower limbs should be removed up to a height of 2m above the ground.
- ☐ Shrubs shall be separated or planted and maintained in discontinuous clumps or garden beds.
- ☐ Shrubs shall be separated from buildings in particular windows and doors by a minimum 2 metres.
- ☐ Grass shall be kept mown (as a guide less than 100mm).
- ☐ Fallen leaves, barks, branches, and debris shall be raked up and removed from site.

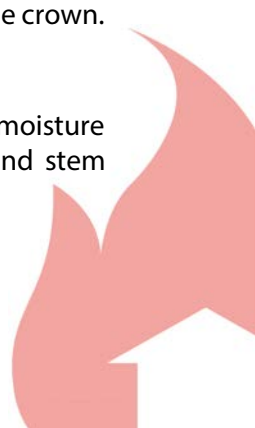
In terms of the built environment within the IPA:

- ☐ Any new fences, gates and retaining walls shall be constructed of non-combustible material.
- ☐ Existing and proposed impervious areas such as pavements, pathways and driveways shall be kept clear of vegetation and debris in order to provide a defensible space. There shall also be no storage of flammable or combustible materials or structures within this area.

#### 4.1.2 New Plantings

Any new plantings proposed, shall be in line with the following landscaping measures:

- ☐ Restrict planting in the immediate vicinity of buildings.
- ☐ When considering landscape species, the size of the plant at maturity and its proximity to the building and other vegetation should be considered.
- ☐ 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 which generally do not carry a fire up the bark and into the crown.
- ☐ Avoid planting of deciduous species that may increase fuel at surface/ground level,
- ☐ Avoid climbing species to walls and pergolas.
- ☐ Use low flammability species, that is species which display large glossy leaves, high moisture content, low level of volatile oils, smooth bark and no accumulation of dead leaves and stem material held within or around the plant.



## 4.2 Construction Standards

All new construction shall comply with Section 3 'Construction general' of AS3959-2018 *Construction of buildings in bushfire prone areas* or the NASH Standard. The following construction standards also apply:

- New works shall comply with Section 5 'BAL-12.5' of AS3959-2018 *Construction of buildings in bushfire prone areas* or the NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Area* 2014 as appropriate for BAL-12.5 construction.

The additional construction requirements detailed within Section 7.5 of PBP may also be applicable to the new building works.

## 4.3 Access

Access to the site shall be in accordance with Section 7.4 of PBP, that is it shall provide safe all-weather access for fire fighting vehicles to structures and water supply and allow for the safe evacuation of residents.

Public road access to the site is from Frenchs Forest Road East, which is a sealed all-weather road with four lanes. There are no traffic management devices that prohibit access by emergency service vehicles. Maximum grades do not exceed 10 degrees with a carriageway width in excess of 5.5 metres and minimum vertical clearance of 4 metres to overhanging obstructions and tree branches. The capacity of the road is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes).

## 4.4 Water Supply, Gas and Electricity Services

Water supply, gas and electricity shall be in accordance with Section 7.4 of PBP, that is to provide adequate water supply for firefighting purposes and to ensure gas and electricity does not contribute to the risk of fire to the building.

### 4.4.1 Water

The site is serviced by a mains reticulated water supply. The site is also a commercial building and must comply with the National Construction Code for firefighting water supply. Water supply is therefore compliant with PBP 2019.

### 4.4.2 Gas and Electricity

Electricity is via an overhead power line. Where possible any overhanging tree branches within 1 metre should be pruned away from the power line as per the *ISSC3 Guide for the Management of Vegetation in the Vicinity lines of Electricity Assets*.

At the time of this report, it was not known if connection to a gas supply currently exists. Any new connections to either mains or bottled gas supply should be in line with the following requirements:

- Reticulated or bottled gas is to be installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities and metal piping is to be used.
- All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side.
- Connections to and from gas cylinders are to be metal.
- Polymer-sheathed flexible gas supply lines are not used.
- Above-ground gas service pipes are metal, including and up to any outlets.



## 5. PBP 2019 Compliance Summary

The following table provides a summary of the proposal's compliance with PBP 2019.

Table 5: PBP 2019 Compliance Summary

| Bush Fire Protection Measure | PBP 2019 Performance Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Compliance with Acceptable Solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliance with specifications and requirements of PBP. |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| APZs                         | <ul style="list-style-type: none"> <li><input type="checkbox"/> APZs are provided commensurate with the construction of the building; and</li> <li><input type="checkbox"/> A defensible space is provided.</li> <li><input type="checkbox"/> APZs are managed and maintained to prevent the spread of a fire to the building.</li> <li><input type="checkbox"/> The APZ is provided in perpetuity.</li> <li><input type="checkbox"/> APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> As part of the consent, the subject lot can be required to be maintained as an Inner Protection Area (IPA) in perpetuity.</li> <li><input type="checkbox"/> The IPA will be managed in accordance with the requirements of Appendix 4 of PBP.</li> <li><input type="checkbox"/> The IPA required to be managed within the consent for the works is wholly within the boundaries of the development site.</li> <li><input type="checkbox"/> The IPA is located on slopes less than 18 degrees (the subject site is flat).</li> <li><input type="checkbox"/> The APZ is provided in accordance with the calculated BAL within Appendix 1 of PBP.</li> </ul> | YES.                                                    |
| Access                       | <ul style="list-style-type: none"> <li><input type="checkbox"/> Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.</li> <li><input type="checkbox"/> The capacity of access roads is adequate for firefighting vehicles.</li> <li><input type="checkbox"/> There is appropriate access to water supply.</li> <li><input type="checkbox"/> Firefighting vehicles can access the building and exit the property safely.</li> </ul>                                                                              | <ul style="list-style-type: none"> <li><input type="checkbox"/> Frenchs Forest Road East is a two-wheel drive, all weather road.</li> <li><input type="checkbox"/> The capacity of the road surface of Frenchs Forest Road East and the surrounding road network is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes). There are no bridges or causeways in the immediate vicinity.</li> <li><input type="checkbox"/> There is a hydrant which meets AS2419.1:2005.</li> <li><input type="checkbox"/> Firefighters can gain access to the site from the driveway, allowing for an unobstructed path to all elevations of the building.</li> </ul>                                                  | YES.                                                    |
| Water Supply                 | <ul style="list-style-type: none"> <li><input type="checkbox"/> An adequate water supply is provided for firefighting purposes.</li> <li><input type="checkbox"/> Water supplies are located at regular intervals.</li> <li><input type="checkbox"/> The water supply is accessible and reliable for firefighting operations.</li> <li><input type="checkbox"/> Flows and pressures are appropriate.</li> </ul>                                                                                                                                                  | <ul style="list-style-type: none"> <li><input type="checkbox"/> Reticulated water is provided in Frenchs Forest Road East.</li> <li><input type="checkbox"/> As a reticulated system, the water supply is accessible, reliable and has appropriate flows and pressures. The integrity of the water supply will also be maintained.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                             | YES                                                     |

|                        |                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                     |     |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|                        | <input type="checkbox"/> The integrity of the water supply is maintained.                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                     |     |
| Electricity and Gas    | <input type="checkbox"/> Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.<br><input type="checkbox"/> Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.                                                         | <input type="checkbox"/> The existing electricity supply is above ground and compliant.<br><input type="checkbox"/> Any proposed gas supply will need to be compliant with PBP.                                                     | YES |
| Construction Standards | <input type="checkbox"/> The proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.<br><input type="checkbox"/> Proposed fences and gates are designed to minimise the spread of bush fire.<br><input type="checkbox"/> Proposed Class 10a buildings are designed to minimise the spread of bush fire. | <input type="checkbox"/> New construction shall comply with Section 3 of AS3959-2018 or the NASH Standard.<br><input type="checkbox"/> New construction shall comply with Section 5 'BAL-12.5' of AS3959-2018 or the NASH Standard. | YES |
| Landscaping            | <input type="checkbox"/> Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.                                                                                                                                                                      | <input type="checkbox"/> The property can be managed as an Inner Protection Area in accordance with Appendix 4 of PBP.<br><input type="checkbox"/> Any new planting will be in accordance with PBP 2019.                            | YES |



## 6. Conclusion

The proposal meets the specifications and requirements of PBP pursuant to S4.14 of the *Environmental Planning and Assessment Act 1979*. The proposed level of bushfire protection is appropriate for the bushfire risk setting and provides an improved bushfire outcome over and above the existing situation

The proposal complies with the overall Aim and Objectives of PBP 2019.

As such, there is no objection to the development occurring providing the following development consent conditions can be applied:

- ☐ At the commencement of construction and in perpetuity the property will be managed as an IPA in perpetuity as detailed within Section 5.1 of this report.
- ☐ New construction shall comply with Section 3 'Construction general' of AS3959-2018 *Construction of buildings in bushfire prone areas* or the NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Area 2014*.
- ☐ New construction shall comply with Section 5 'BAL-12.5' of AS3959-2018 *Construction of buildings in bushfire prone areas* or the NASH Standard (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Area 2014* as appropriate for BAL-12.5 construction.
- ☐ The existing access to the site shall be maintained in accordance with Section 5.3 of this report. Unrestricted pedestrian access shall be provided around all elevations of the building and Asset Protection Zone.
- ☐ Water supply shall be in accordance with Section 4.4.1 of this report.
- ☐ Gas and Electricity services shall be installed and maintained in accordance with Section 4.4.2 of this report.

It is recommended that the residents complete a Bushfire Survival Plan. A copy of which can be downloaded from the Rural Fire Service website (<https://www.rfs.nsw.gov.au>).



## 7. References

Australian Building Codes Board (2005) *National Construction Code Volume 2*.

ISSC3 *Guide for the Management of Vegetation in the Vicinity lines of Electricity Assets*. 2016.

Keith D (2004) *Ocean Shores to Desert Dunes*, Department of Environment and Conservations Sydney.

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NSW Rural Fire Service (2019) *Comprehensive vegetation fuel loads*, NSW Rural Fire Service.

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Standards Australia and Australian Building Codes Board (2018) *AS 3959 Construction of buildings in bushfire prone areas*.

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<https://geo.seed.nsw.gov.au/PublicViewer/index.html?viewer=PublicViewer&locale=en-AU>