



BUSHFIRE ASSESSMENT REPORT (BAR)

RESIDENTIAL SUBDIVISION (1 INTO 98 LOTS)

(PBP, 2019, PART 5 – RESIDENTIAL AND RURAL
RESIDENTIAL SUBDIVISIONS)

259 Windermere Road, Windermere NSW, 2318
(LOT 1902, DP1112961)



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Table 1 – Document Version and Disclaimer

No:	Reference:	Author:	Reviewer:
Version 1	22/07/6_BAR Windermere Rd_V1	TT	ED
Version 2	22/10/19_BAR Windermere Rd_V2	TT	ED

Disclaimer:

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Any recommendation or advice expressed in this report is made in good faith. It should be borne in mind that the measures recommended in this report cannot guarantee that a building will survive a bushfire event on every occasion. This is due to the degree of vegetation management, the unpredictable behaviour of bushfires and extreme weather conditions. As such, the author is not liable to any person for any damage or loss whatsoever which has occurred or may occur in relation to the person acting or not acting based on the recommendations of this report. It should not be considered safe to inhabit the development at times of bushfire risk. It is strongly recommended that you are away from the area at times of advised risk.

This bush fire assessment report shall remain valid for 12 months from the date of issue.

Notwithstanding the precautions adopted, it should always be remembered that bushfires burn under a wide range of conditions and an element of risk, no matter how small, always remains and although the standard is designed to improve the performance of such buildings, there can be no guarantee because of the variable nature of bushfires that anyone building will withstand bushfire attack on every occasion. This report provides the above required information to assist Council and the RFS in determining compliance in accordance with the PBP and AS 3959-2018. Council is the final consenting authority and the future construction works must comply with the recommendations included in the Council's Notice of Determination for the development.

EXECUTIVE SUMMARY

Perception Planning Pty Ltd has been engaged by NewPro 27 (**the client**) to prepare a Bushfire Assessment Report (this Report) for a residential subdivision, 1 into 98 Lots (the development) at 259 Windermere Road, Windermere NSW 2318 (Lot 1902, DP1112961) (**the site**).

The development is defined as 'rural residential subdivision' under Rural Fire Service, 2019, 'Planning for Bushfire Protection' (PBP) and defined as 'integrated development' under the Environmental Planning & Assessment Act 1979 (s4.46). It therefore will be referred to the NSW RFS for the issue of a Bush Fire Safety Authority (BFSA) under the Rural Fires Act 1997 (s100b).

The site is 59km or a 54-minute drive to the North of the centre of Newcastle and is located within the Maitland City Council Local Government Area (LGA). The site is identified as Bushfire Prone Land (BPL), being Vegetation Category 3 under the Environmental Planning & Assessment Act 1979 (s10.3) (EPA&A).

A Dial Before You Dig (DBYD) request identified that no mains electricity or water is available in the road reserve . A Deposited Plan (DP) was also obtained from 'NSW Land Registry Services' which identified no restrictions in relation to Asset Protection Zones (APZ)s or site access.

This BAR identifies that the predominant bushfire hazard is located to the East of the site. This hazard is classified as Remnant vegetation and is situated on land that has an effective slope of Downslope (0-5). Remnant vegetation is a parcel of vegetation with a size of less than 1 Ha or a shape that provides a potential fire run that could threaten buildings not exceeding 50m, according to A1.11.1. This BAR provides a series of recommendations for the different Bushfire Protection Measures (BPM)s, Refer to Section 4 of report. In relation to BALs for future habitable dwellings within proposed subdivision, refer to Section 2.

The BAR identifies that proposed lots within subdivision have been assessed as BAL-12.5 however, the siting of future dwellings is not currently known, and conditions may change in the future. Accordingly, each future dwelling house will be subject to a separate BAR to determine the exact BAL based on siting.

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1.0 INTRODUCTION

1.1 SITE PARTICULARS

Address:	259 Windermere Rd, Windermere NSW
Legal Description:	LOT 1902, DP1112961
Total Area:	48.12ha lot (Approximate)
Local Government Area:	Maitland
Fire Danger Index:	100 - Greater Hunter
Boundaries: Land Zoned:	The Northern lots of proposed subdivision encroach into RU1 – Primary Production however the most part of the subdivision is located on R1 – General Residential. C3 – Environmental Management located to the Eastern portion of the site.
Current Land Use:	Vacant land. Refer to (Figure 1) for Site Locality and (Figure 2) for Site Plan and Biodiversity Values Map.
Significant Features:	Maitland is characterised by rural residential development. The subdivision will have direct access via Windermere Road, which is currently a sealed public road.
Bushfire Prone Land Map:	The site is identified as BPL, being Vegetation Category 3.
Environmental Features:	The site is mapped as containing Biodiversity Values being a riparian corridor and threatened species or communities under the Biodiversity Conservation Act 2016.
Archaeological Features:	A basic search of the AHIMS database identified at least one sites and/or places (ATTACHMENT 1) .

1.2 SCOPE

The scope of this BAR is to identify the bush fire hazard and provide measures to assist Council and the RFS that the identified fire hazard would be reduced to a level that is considered necessary to provide adequate protection to life and property.

This BAR provides the required information to assist Council and the RFS in determining compliance in accordance with the PBP-2019 and AS3959-2018. Council is the final consenting authority and the future construction works must comply with the conditions listed in the Notice of Determination issued by Council.

1.3 PROPOSAL

The proposal is for a 'residential and rural subdivisions' Under the Environmental Planning and Assessment Act 1979, 'subdivision' is defined as 'the division of land into two or more parts that, after the division, would be adopted for separate occupation, use or disposition', which includes boundary adjustments (PBP, 2019, p.40).

The development involves the subdivision of one existing lot into 98 lots; an illustration of site location is provided as **(FIGURE 1)**.

1.4 ASSUMPTIONS OF THIS REPORT

The following assumptions have been made in the development of this report:

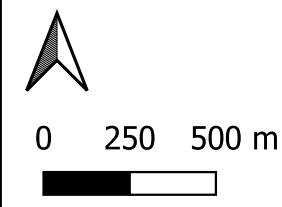
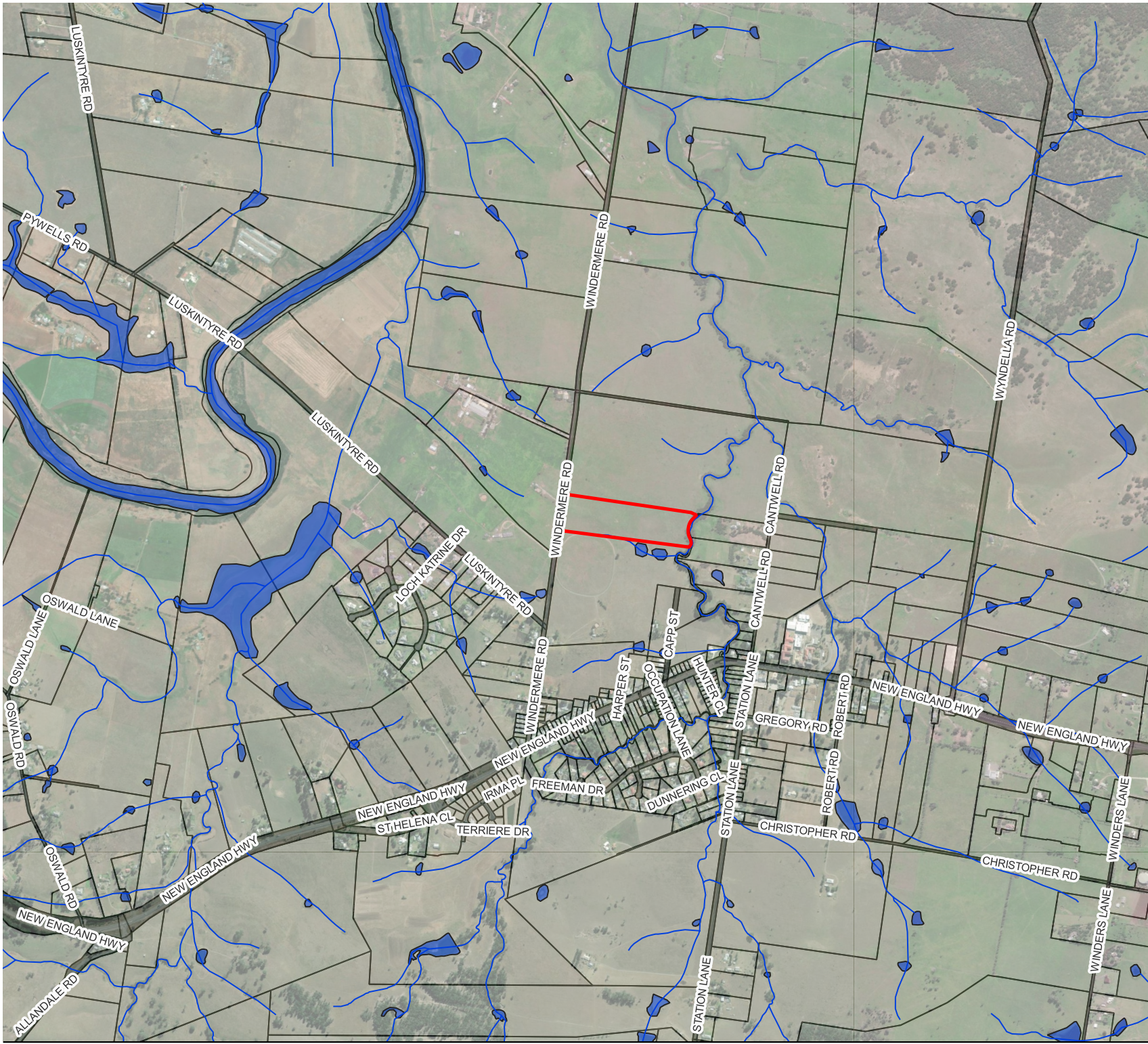
1. Architectural Plans have been provided **(ATTACHMENT 2)**.
2. The BAR will be assessed by Council who will develop conditions of consent. Any construction must comply with the conditions issued by Council, not this BAR.

259 Windermere Road,
Windermere, NSW 2321

Figure 1 - Locality Map



- Site Boundaries
- hydroline
- hydroarea
- Road



Disclaimer: While every effort is made to ensure this map is free of errors, there is no warranty that the map or its features are either spatially or temporally accurate or fit for a particular use. This map is provided without any warranty of any kind whatsoever, either express or implied. Reference should always be made to the Architectural Plans for site features, such as the building footprint.

259 Windermere Rd,
Windermere

Figure 2 - Site Plan and Biodiversity Values Map



- Watercourses
- Water Bodies
- Site Boundaries
- Road

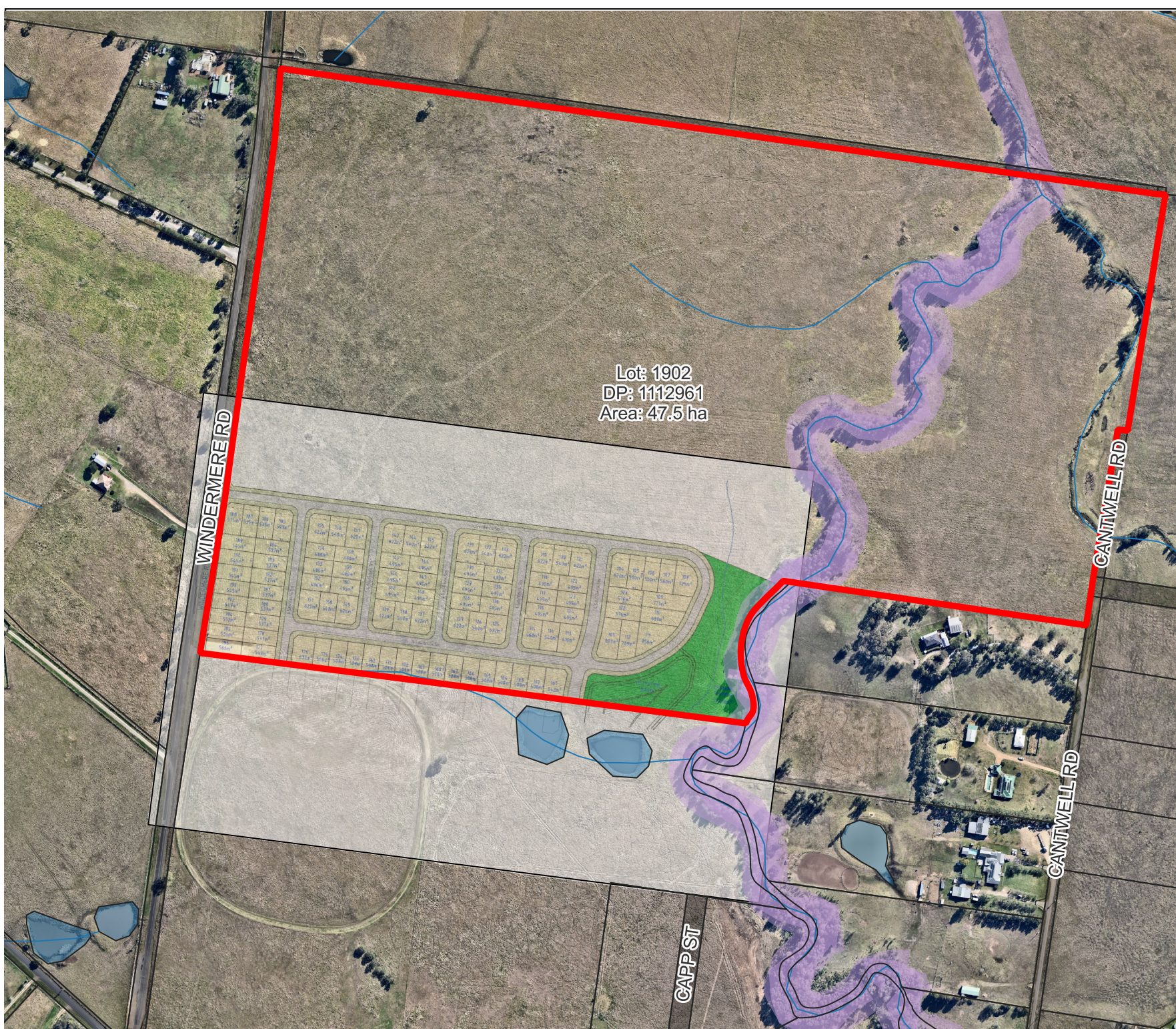
- Biodiversity Values
- Biodiversity Values
 - Biodiversity Values added in the last 90 days



0 100 200 m

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Job No: J003111 Date: 18/10/2022



Lot: 1902
DP: 1112961
Area: 47.5 ha

WINDERMERE RD

CANTWELL RD

CANTWELL RD

CAPP ST

2.0 ASSESSMENT

2.1 VEGETATION ASSESSMENT

The vegetation was determined by the following methods:

1. NearMap to identify vegetation cover;
2. Sharing and Enabling Environmental Data (SEED) Portal to identify Vegetation Classification, Biodiversity Value and Bushfire Prone Land Map;
3. Vegetation formation using Keith, 2004, 'Ocean Shores to Desert Dunes'.

The predominant vegetation formation within 140m to the East of the subdivision has been identified to be Forested Wetlands (Coastal Swamp Forest) with a Surface & Elevated Fuel Load of 22.6t/ha and a Total Fuel Load of 34.1t/ha in accordance with the RFS, March 2019, 'Comprehensive Fuel Loads'. This vegetation is a parcel of vegetation that provides a potential fire run that could threaten buildings not exceeding 50m and this is classified as Remnant vegetation in accordance with A1.11.1.

The removal of native flora or fauna will not be required for the subdivision including the establishment of APZs.

2.2 SLOPE ASSESSMENT

The effective slope was determined by the following methods:

- Elevation, Depth and Slope – Spatial Map Viewer to identify 2m Contours;
- Site Survey completed by Pace Land Surveying

The effective slope of the land within 140m to the Eastern elevation is Downslope (0-5°). The effective slope for the subdivision is outlined below in **(Table 3)**.

2.3 DETERMINATION OF FIRE DANGER INDEX (FDI)

The FDI was determined by identifying the FDI rating within PBP (Part A1.6) (p.84). The FDI is 100 - Greater Hunter.

2.4 DETERMINATION OF BUSHFIRE ATTACK LEVEL (BAL)

The assessment of vegetation and slope has been used to calculate the following BALs for the subdivision – See Table 4. Refer to **(FIGURE 2)** for the Vegetation and BAL Map.

Table 3 – BALs for Future habitable dwellings within Subdivision

Direction	Vegetation	Slope (°)	Separation (m) to vegetation	APZ to be provided	BAL according to PBP 2019
Transect 1 (N)	Managed Land ¹	N/A	>100m	N/A	BAL-LOW
Transect 2 (E)	Managed Detention basin and drainage reserve to the East then Remnant vegetation ²	Downslope (0-5°)	>50m	An APZ of >50m from Eastern lot boundaries to classified vegetation is established and maintained inclusive of an >8m road reserve, detention basin and drainage reserve. Lots to be managed as an IPA.	BAL-12.5
Transect 3 (S)	Managed Land	N/A	>100m	N/A	BAL-LOW
Transect 4 (W)	Managed Land	N/A	>100m	N/A	BAL-LOW

* BAL-12.5 applies as the elevation is subject to direct line of sight / exposure from the source (vegetation) of bushfire attack, located East of the proposed subdivision over a distance of >50m. Elevations shielded by building bulk or not directly exposed to the source of bushfire attack can be reduced by one level of construction standard, in accordance with A.1.8 (**Shielding**) of PBP, however this does not apply to BAL-12.5.

The BAR identifies that proposed lots within subdivision have been assessed as BAL-12.5 however, the siting of future dwellings is not currently known, and conditions may change in the future. Accordingly, each future dwelling house will be subject to a separate BAR to determine the exact BAL based on siting.

¹ Managed Land until development occurs as this land will form part of this subdivision

² Remnant vegetation is a parcel of vegetation with a size of less than 1 Ha or a shape that provides a potential fire run that could threaten buildings not exceeding 50m.

3.0 BUSHFIRE PROTECTION MEASURES

3.1 ASSET PROTECTION ZONES

The RFS, 2019, PBP states that the intent of an APZ is ‘to provide sufficient space and maintain reduced fuel loads, to ensure radiant heat levels at buildings are below critical limits and to prevent direct flame contact.’ (p.43).

Compliance with Table 5.3a – Performance criteria and acceptable solutions for APZs for residential and rural residential subdivisions in relation to APZs is demonstrated below.

Table 5 - Compliance with PBP for Asset Protection Zones

Performance Criteria	Acceptable Solution	Response
Potential building footprints must 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 and A1.12.3 based on FFDI.	Complies with Acceptable Solution - This BAR identifies that the APZ has been calculated in accordance with tables A1.12.2 to demonstrate that the lot configuration and future dwellings may be capable of achieving BAL-12.5, indicative of the remnant vegetation to the East of proposed subdivision. The proposed building footprints are not exposed to radiant heat levels exceeding 29 kW/m ² on each proposed lot.
APZs are managed and maintained to prevent the spread of a fire to the building.	APZs are managed in accordance with the requirements of Appendix 4 of PBP.	Complies with Acceptable Solution - The BAR identifies that the building envelope is to be managed as an Inner Protection Area (IPA) and is in accordance with Appendix 4 of PBP, refer to (Attachment 4) .
<ul style="list-style-type: none"> The APZ is provided in perpetuity. APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised. 	<p>APZs are wholly within the boundaries of the development site.</p> <p>APZs are located on lands with a slope less than 18 degrees.</p>	Complies with Acceptable Solution – APZs on site occur entirely within the site’s boundary and occurs on land <18 degrees.
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	<ul style="list-style-type: none"> Landscaping and fencing constructed; 	Complies with Acceptable Solution - All landscaping and fencing to be constructed in accordance with Appendix 4 and Section 7.6.

3.2 ACCESS

The RFS, 2019, Planning for Bushfire Protection states that the intent of these Bushfire Protection Measures is 'to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area' (p.44).

Compliance with Table 5.3a – Performance criteria and acceptable solutions for access for residential and rural residential subdivision is demonstrated below.

Table 6 – Compliance with PBP for Access

Performance Criteria	Acceptable Solutions	Response
Firefighting vehicles are provided with safe, all-weather access to structures.	<ul style="list-style-type: none"> -Property access roads are two-wheel, all weather roads. -Perimeter roads are provided for residential subdivisions of 3 or more allotments. -Subdivisions of three or more allotments have more than one access in and out of the development. -Traffic management devices are constructed to not prohibit access by emergency services vehicles. -Maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient. -All roads are through roads. -Dead end roads are not recommended, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end. -Where kerb and guttering are provided on perimeter roads, roll top kerbing should be used to the hazard side of the road. -Where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the existing public road system. -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. 	<p>Complies with Acceptable Solution –</p> <p>All roads within the site are designed to meet the requirements of the acceptable solution. Surrounding vegetation to the North and South is to be managed for future development.</p>
The capacity of access roads is	The capacity of road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes), bridges and	Complies with Acceptable Solution – All roads within the site are

Performance Criteria	Acceptable Solutions	Response
adequate for firefighting vehicles.	causeways are to clearly indicate load rating.	designed to meet the requirements of the acceptable solution.
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. Hydrants are provided in accordance with the relevant clauses of AS2419.1:2005. There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	Complies with Acceptable Solution – Hydrants are to be positioned appropriately across the site.
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. Minimum 8 m carriageway width kerb to kerb. Parking is provided outside of the carriageway width. Hydrants are located clear of parking areas. Are through roads, and these are linked to the internal road system at an interval of no greater than 500m. Curves of roads have a minimum inner radius of 6m. The maximum grade road is 15 degrees and average grade of not more than 10 degrees. The road crossfall does not exceed 3 degrees. A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	Complies with Acceptable Solution – The proposed subdivision incorporates a perimeter road to the north and eastern boundaries in accordance with the acceptable solution requirements. Surrounding vegetation to the North and South is to be managed for future development.
NON-PERIMETER ROADS		
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.	Minimum 5.5m carriageway width kerb to kerb. Parking is provided outside of the carriageway width. Hydrants are located clear of parking areas. Roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m. Curves of roads have a minimum inner radius of 6m. The road crossfall does not exceed 3 degrees.	Complies with Acceptable Solution – All access roads are designed to meet the requirements of the acceptable solution being: Minimum 5.5m carriageway width kerb to kerb. Parking is provided outside of the carriageway width. Hydrants are located clear of parking areas.

Performance Criteria	Acceptable Solutions	Response
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	Roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m. Curves of roads have a minimum inner radius of 6m. The road crossfall does not exceed 3 degrees. A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.
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 70 kph) that supports the operational use of emergency firefighting vehicles.	Complies with Acceptable Solution – All future lots are to be connected to a public road by a driveway <70m.

3.3 SERVICES – WATER, ELECTRICITY AND GAS

The RFS, 2019, Planning for Bushfire Protection states that the intent of these Bushfire Protection Measures is ‘to provide adequate services of water for the protection of buildings during and after the passage of bushfire, and to located gas and electricity so as not to contribute to the risk of fire to a building’ (p.47).

Compliance with Table 5.3c – Performance criteria and acceptable solutions for residential infill development in relation to water, electricity and gas is demonstrated below.

Table 7 – Compliance with PBP for Water Supplies

Performance Solutions	Acceptable Solutions	Response
An adequate water supply is provided for firefighting purposes.	-Reticulated water is provided to the development, where available, and -A static water supply is provided where no reticulated water is available. -Static water supplies shall comply with Table 5.3d.	Complies with Acceptable Solution – All lots are to be connected to reticulated water.

Performance Solutions	Acceptable Solutions	Response
Water supplies are located at regular intervals. The water supply is accessible and reliable for firefighting purposes	Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005. Hydrants are not located within any road carriageway. Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	Complies with Acceptable Solution – Hydrants are to be positioned appropriately across the site and is to comply with the relevant clauses of AS 2419.1:2005.
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.	Complies with Acceptable Solution – Fire hydrant flows and pressure are to comply with the relevant clauses of AS 2419.1:2005.
The integrity of the water supply is maintained.	All above-ground water service pipes external to the building are metal, including and up to any taps.	Complies with Acceptable Solution – All above ground water service pipes are to meet the requirements being metal pipes including and up to any taps.

Table 8 – Compliance with PBP for Electricity Supplies

Performance Solutions	Acceptable Solutions	Response
location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings	-where practicable, electrical transmission lines are underground; where overhead, electrical transmission lines are proposed as follows: lines are installed with short pole spacing of 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 <i>Guideline for Managing Vegetation Near Power Lines</i> .	Complies with Acceptable Solution – All future dwellings are to meet the requirements for electricity services.

Table 9 – Compliance with PBP for Gas Supplies

Performance Solutions	Acceptable Solutions	Response
location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - <i>The storage and handling of LP Gas</i> , the requirements of relevant authorities, and metal piping is 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 metal; polymer-sheathed flexible gas supply lines are not used; and above-ground gas	Complies with Acceptable Solution – All future dwellings are to meet the requirements for gas services.

4.0 RECOMMENDATIONS

This BAR provides the following recommendations:

General

1. Council is to refer the Development Application to the NSW RFS because the development is for residential subdivision and requires a Bush Fire Safety Authority (BFSA) to be issued by the NSW Rural Fire Service (RFS) under the Rural Fires Act 1997 (s100B – Bush Fire Safety Authority).

Asset Protection Zones

2. To achieve a Bushfire Attack Level (BAL) of BAL-12.5, the proposed lots within subdivision are to be managed as an Inner Protection Area (IPA), as described under 'Planning for Bushfire Protection (Appendix 4 – Asset Protection Zone Requirements)' and the document titled 'Standards for Asset Protection Zones'.
 - a. Trees
 - Canopy cover should be less than 15% at maturity
 - Trees (at maturity) should not touch or overhang the building
 - Low limbs should be removed up to a height of 2m above ground
 - Canopies should be separated by 2 to 5m
 - Preference should be given to smooth barked and evergreen trees
 - a. Shrubs
 - Create a discontinuities or gaps in the vegetation 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 vegetation
 - a. Grass
 - Should be kept mown (as a guide grass should be kept to no more than 100mm in height)
 - Leaves and vegetation debris should be removed.
3. Fencing is to be constructed in accordance with RFS, 2019, 'Planning for Bushfire Protection' (Section 7.6).

Access

4. Property Access are to comply with Section 5.3a of the NSW RFS, 2019, 'Planning for Bushfire Protection'

Water and Utilities

5. Water, electricity and gas are to comply with the requirements of Section 5.3a of the NSW RFS, 2019, 'Planning for Bushfire Protection'.

Construction

6. The new subdivision has been assessed as BAL-12.5 as defined in Australian Standard AS 3959 – Construction of buildings in bushfire-prone areas or NASH Standard (1.7.14 updated) and National Standard Steel Framed Constructed in Bushfire Areas – 2014 as appropriate and section A3.7 Addendum Appendix 3 of the NSW RFS, 2019, 'Planning for Bushfire Protection'. All building envelopes within the lots have been assessed as BAL-29 or less.

The BAR identifies that proposed lots within subdivision have been assessed as BAL-12.5 however, the siting of future dwellings is not currently known, and conditions may change in the future. Accordingly, each future dwelling house will be subject to a separate BAR to determine the exact BAL based on siting.

Refer to **(ATTACHMENT 3)** for Construction Requirements Table.

7. The BAL can achieve BAL-29 or less and therefore the fencing and gates are to be hard-wood or non-combustible material in accordance with PBP (7.6 – Fences and gates).

Landscaping

8. Landscaping is to be consistent with the requirements of NSW RFS, 2019, 'Planning for Bushfire Protection' (Appendix 4 – Asset Protection Zone Requirements), which includes:
 - a. A clear area of low-cut lawn or pavement is maintained adjacent to the dwelling;
 - b. Fencing details in accordance with PBP (7.6 – Fences and gates);
 - c. The branches will not overhang the roof;
 - d. The tree canopy is not continuous; and
 - e. Any proposed windbreak is located on the elevation from which fires are likely to approach.

Emergency Management

9. The need to formulate an emergency evacuation plan is suggested. To do so, occupants can complete a Bush Fire Safety Plan on the NSW RFS Website (www.rfs.nsw.gov.au) under publications/bushfire safety.

Note: The above are recommendations of the BAR. Any development approval is to comply with the Conditions listed on the Council Notice of Determination, not the above recommendations. The above recommendations are only intended to assist Council in their assessment of the DA.

5.0 CONCLUSION

The site is 59km or a 54-minute drive to the North of the centre of Newcastle and is located within the Maitland City Council Local Government Area (LGA). The site is identified as Bushfire Prone Land (BPL), being Vegetation Category 3 under the Environmental Planning & Assessment Act 1979 (s10.3) (EPA&A).

A Dial Before You Dig (DBYD) request identified that no mains electricity or water is available in the road reserve . A Deposited Plan (DP) was also obtained from 'NSW Land Registry Services' which identified no restrictions in relation to Asset Protection Zones (APZ)s or site access.

This BAR identifies that the predominant bushfire hazard is located to the East of the site. This hazard is classified as Remnant vegetation and is situated on land that has an effective slope of Downslope (0-5). Remnant vegetation is a parcel of vegetation with a size of less than 1 Ha or a shape that provides a potential fire run that could threaten buildings not exceeding 50m, according to A1.11.1. This BAR provides a series of recommendations for the different Bushfire Protection Measures (BPM)s, Refer to Section 4 of report. In relation to BALs for future habitable dwellings within proposed subdivision, refer to Section 2.

The BAR identifies that proposed lots within subdivision have been assessed as BAL-12.5 however, the siting of future dwellings is not currently known, and conditions may change in the future. Accordingly, each future dwelling house will be subject to a separate BAR to determine the exact BAL based on siting.

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ATTACHMENT 1 – AHIMS RESULTS

A basic search of the AHIMS database identified at least one sites and/or places.

Erin Daniel

Date: 29 March 2022

PO Box 61

Dungog New South Wales 2420

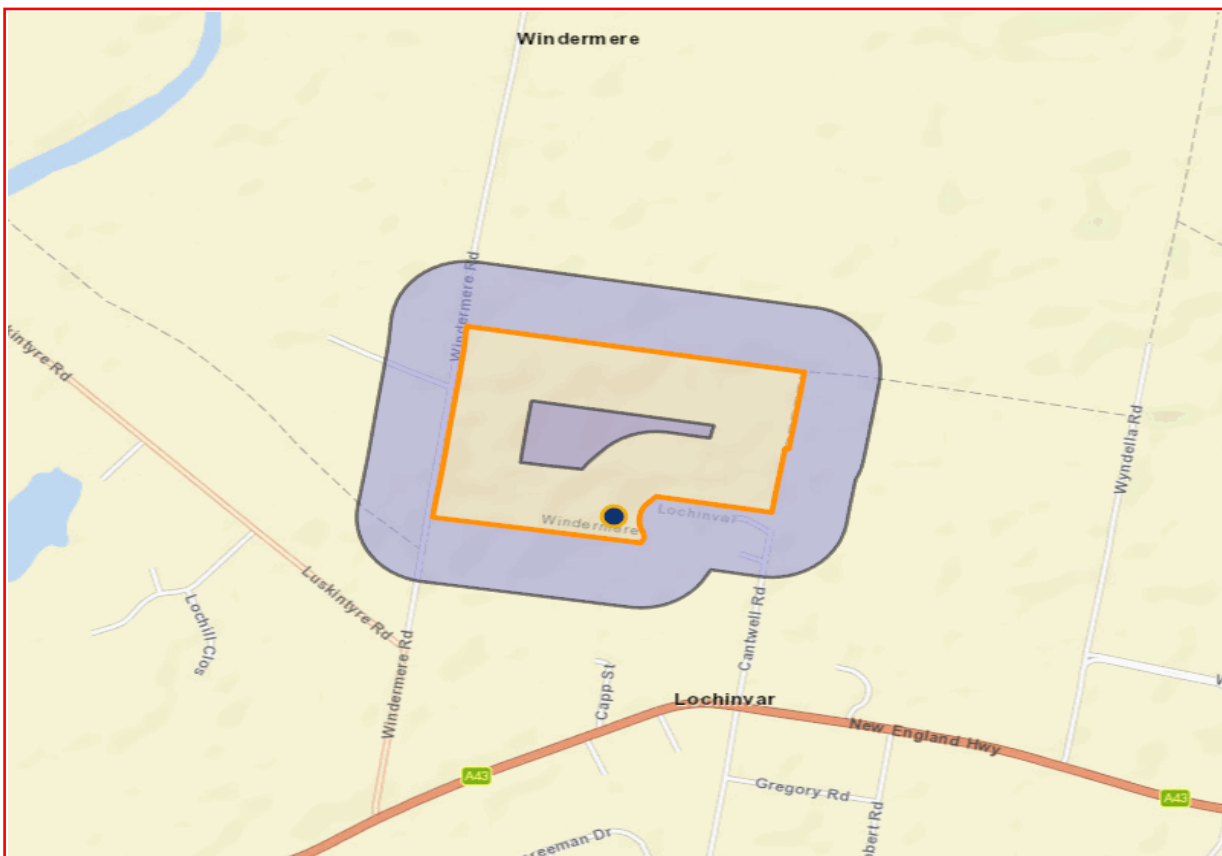
Attention: Erin Daniel

Email: erin@perceptionplanning.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 1902, DP:DP1112961, Section : - with a Buffer of 200 meters, conducted by Erin Daniel on 29 March 2022.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

1	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?


- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(https://www.legislation.nsw.gov.au/gazette\)](https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

ATTACHMENT 2 – SUBDIVISION PLANS

ATTACHMENT 3: CONSTRUCTION REQUIREMENTS TABLE

	BAL-LOW	BAL-12.5	BAL-19	BAL-29	BAL-40	BAL-Flame Zone
SUBFLOOR SUPPORTS	No Construction Requirements	No Construction Requirements	No Construction Requirements	enclosed by external wall or by steel, bronze or aluminium mesh. where the subfloor is unenclosed, support posts, columns, stumps, piers and poles shall be of non-combustible material or fire-resistant timber.	Subfloor space enclosed with a wall, sarking not required, where subfloor Unenclosed, support posts, columns, stumps, piers to be non-combustible material or tested for bushfire resistance to as 1530.8.1.	subfloor supports- enclosed by external wall = no construction requirements. Subfloor space unenclosed incl. support posts, columns, stumps, piers and poles to be non-combustible with an frl of 30/-/- or be tested for bushfire resistance to as 1530.8.2.
FLOORS	No Construction Requirements	No Construction Requirements	No Construction Requirements	concrete slab on ground or enclosure by external wall, metal mesh with 2mm aperture for elevated floors above 400mm. If <400mm above finished ground level, Bearers and joists to be non-combustible, fire-resistant timber, flooring the same or protected and lined on the underside with sarking or mineral wool insulation.	concrete slab on ground or enclosure by external wall. Unenclosed subfloor space, bearers, joists and flooring to be protection of underside with a non-combustible material such as fibre cement sheet or metal or be non-combustible or be tested for bushfire resistance to as 1530.8.1	concrete slab on ground – no construction requirements. Enclosed subfloor space by external wall. Unenclosed subfloor space an FRL of 30/30/30 or protection of underside with 30-minute incipient spread of fire system or be tested for bushfire resistance to as 1530.8.2.
EXTERNAL WALLS	No Construction Requirements	Same as BAL-19	Exposed external wall that is <400mm from ground or above decks to be of non-combustible material min 90mm thick Or timber logs (high density) Or fixed cladding that is non-combustible, fire resistant, 6mm fibre cement. all joints to be less than 3mm & vents to be screened.	non-combustible material – min 90mm thick - (masonry, brick veneer, mud brick, aerated concrete, concrete), timber framed, steel framed walls sarked on the outside and clad with 6mm fibre cement or steel sheeting or bushfire resistant timber. All joints covered, sealed and overlapped <3mm & vents to be screened with mesh	non-combustible material (Masonry, brick veneer, mud brick, aerated concrete, concrete), timber framed, steel framed walls sarked on the outside and clad with 9mm fibre cement sheeting or steel sheeting to be tested for bushfire resistance to as 1530.8.1. All joints covered, sealed and overlapped <3mm & vents to be screened with mesh.	non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete) with a min 90mm thick OR a system with an FRL of -/30/30 when tested from outside OR be tested for bushfire resistance to as 1530.8.2.
EXTERNAL WINDOWS	No Construction Requirements	Bushfire shutter Or external screens covering entire assemble Or window frame <400mm from ground: material bushfire resistant or metal/metal-reinforced uPVC. Glazing grade A safety glass min 4mm thick. No require. For	Bushfire shutter Or external screens covering entire assemble Or window frame <400mm from ground: material bushfire resistant or metal/metal-reinforced uPVC. Glazing is toughened glass 5mm thick with openable	Bushfire shutter or frames & joinery bushfire resisting timber metal or uPVC, glazing 5mm toughened glass or double glazed external panel, where screen glazing <400mm off ground or <400mm above decks and extending >110mm	Bushfire shutter conforms with clause 3.7 & 8.5.1 Or window frames and hardware to be metal. Glazing 6mm toughened glass. fixed and openable portion screened with steel or bronze mesh.	protected by bushfire shutter to conform with 3.7, Openable portion of window to be screened with steel or bronze mesh internally or externally with 3.6 and FRL of -/30/- OR be tested for bushfire resistance to as 1530.8.2.

		seals or hardware. Openable portion of window to be screened internally.	portion of windows screened internally or externally Or annealed glass may be used to AS1288 standards with fixed & openable windows screened externally only. No require, for seals.	in width from window frame = glazing is to be externally screened.		
EXTERNAL DOORS – French doors, panel fold, bi-fold and sliding	No Construction Requirements	As for BAL-19, except that door framing can be naturally fire resistant (high density) timber	Protected by bushfire shutters Or by external screens Or door material being non-combustible, solid timber with framing made from metal, fire resistant timber or uPVC. Glazing toughened glass 5mm thick. No requir for hardware or screens.	Protected by bushfire shutters Or by external screens Or door material being non-combustible, solid timber with framing made from metal, fire resistant timber or uPVC. Metal hardware and trims, Doors with glazing shall be toughened glass 6mm thick. Doors tight fitting and weather stirps or seals installed.	Protected by bushfire shutters with 3.7 Or door panel non-combustible or 35mm solid timber protected by screened with steel or bronze mesh, metal framed, hardware material to be metal. Glazing toughened glass 6mm thick. Doors tight fitting with weather strips at base.	Protected by bushfire shutter with 3.7 OR door frames and doors with glazed panels to have FRL of min -/30/- OR conform with AS1530.8.2 tested from outside. tight-fitting with weather strips at base and seals shall not compromise the FRL or performance achieved in AS1530.4.
ROOFS	No Construction Requirements	Non-combustible covering. roof/wall junction sealed. openings fitted with non-combustible ember guards. Tiled and sheet roofs to be fully sarked. Verandah, carport or awning roof connected to main roof shall meet require. Of main roof, if separated from main, shall be non-combustible.	Roof tiles, sheets and covering to be non-combustible. roof/wall junction sealed. openings fitted with non-combustible ember guards. Verandah, carport or awning roof connected to main roof shall meet require. Of main roof, if separated from main, shall be non-combustible covering.	non-combustible covering. roof/wall junction sealed. openings fitted with non-combustible ember guards. Tiled and sheet roofs to be fully sarked. Sheet roofs sealed at fascia by mesh, mineral wool. Verandah, carport or awning roof connected to main roof shall meet require. Of main roof, if separated from main, shall be non-combustible or fire resisting timber.	All types of roofs shall be non-combustible, junction sealed by fascia and eaves linings or sealing wall and underside of roof. openings fitted with non-combustible ember guards. roof to be fully sarked and roof mounted evaporative coolers NOT permitted. No requir for downpipes, if installed to be non-combustible.	Roof with FRL of 30/30/30 or tested for bushfire resistance to as 1530.8.2. Roof junction sealed by fascia and eaves linings or sealing wall and underside of roof. openings fitted with non-combustible ember guards. Roof to be fully sarked and roof mounted evaporative coolers NOT permitted. Verandah, carport or awning roof connected to main roof shall meet require. Of main roof, if separated from main, shall be non-combustible mat OR timber rafters lined with fibre-cement sheet of min 6mm thick OR AS1530.8.2
VERANDAHS, DECKS ETC	Same as BAL-29	Same as BAL-29	Same as BAL-29	enclosed subfloor space conforms with clause 7.4, All openings protected in accordance 3.6 to be made of resistant steel or bronze. Enclosed no requirement for supports or framing. Unenclosed subfloor space supports, framing, decking, balustrades, verandah posts to be non-combustible or bushfire resistant timber.	No requirement to enclosed subfloor space except for decking, stair treads to be non-combustible OR Fibre-cement sheet OR AS1530.8.2 Unenclosed subfloor space supports, framing and decking to be non-combustible or system conforming with AS1530.8.1. Balustrades & handrails <125mm from glazing or combustible wall shall be of non-combustible. Verandah posts, non-combustible.	No requirement to enclosed subfloor space except for decking, stair treads to be non-combustible OR Fibre-cement sheet OR AS1530.8.2 Unenclosed subfloor space supports, framing and decking to be non-combustible or system conforming with AS1530.8.1. Balustrades & handrails <125mm from ANY glazing to be non-combustible. Verandah posts, non-combustible.

ATTACHMENT 4: APPENDIX 4 – ASSET PROTECTION ZONES

APPENDIX 4

ASSET PROTECTION ZONE REQUIREMENTS

In combination with other BPMS, a bush fire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be done by designing and managing landscaping to implement an APZ around the property.

Careful attention should be paid to species selection, their location relative to their flammability, minimising continuity of vegetation (horizontally and vertically), and ongoing maintenance to remove flammable fuels (leaf litter, twigs and debris).

This Appendix sets the standards which need to be met within an APZ.

A4.1 Asset Protection Zones

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard.

For a complete guide to APZs and landscaping, download the NSW RFS document *Standards for Asset Protection Zones* at the NSW RFS Website www.rfs.nsw.gov.au.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows for suppression of fire;
- an area from which backburning or hazard reduction can be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Bush fire fuels should be minimised within an APZ. This is so that the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

The methodology for calculating the required APZ distance is contained within Appendix 1. The width of the APZ required will depend upon the development type and bush fire threat. APZs for new development are set out within Chapters 5, 6 and 7 of this document.

In forest vegetation, the APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

A4.1.1 Inner Protection Areas (IPAs)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defensible space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

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 smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- 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.

A4.1.2 Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

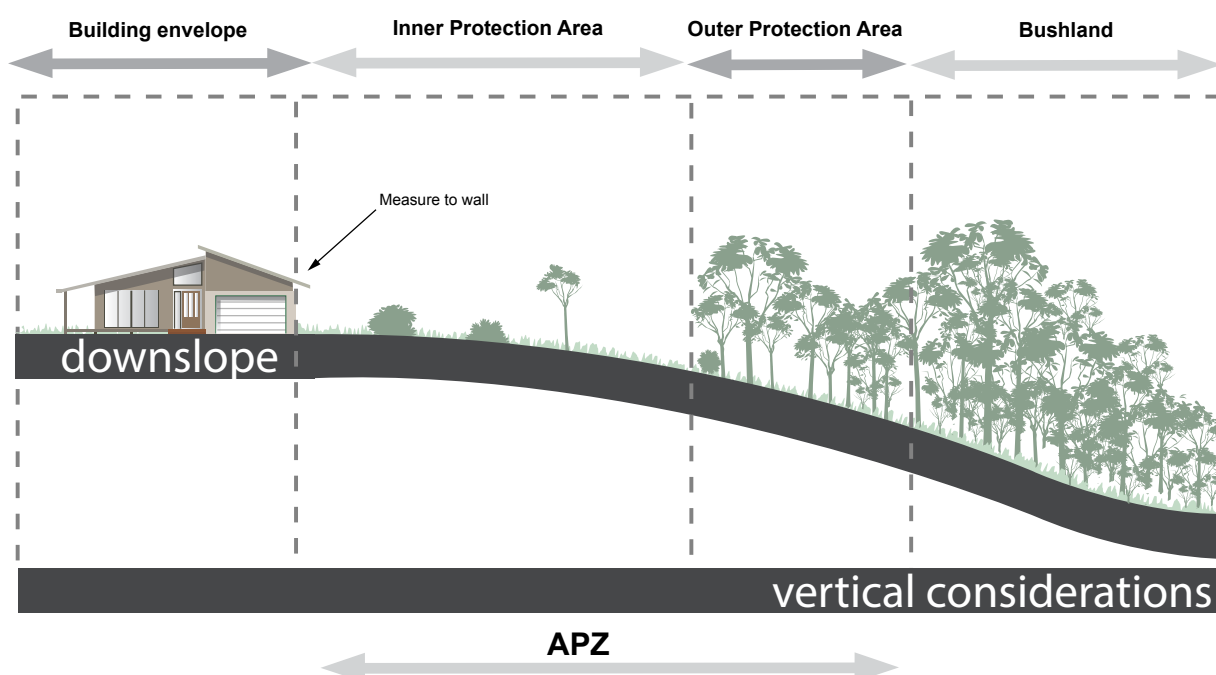
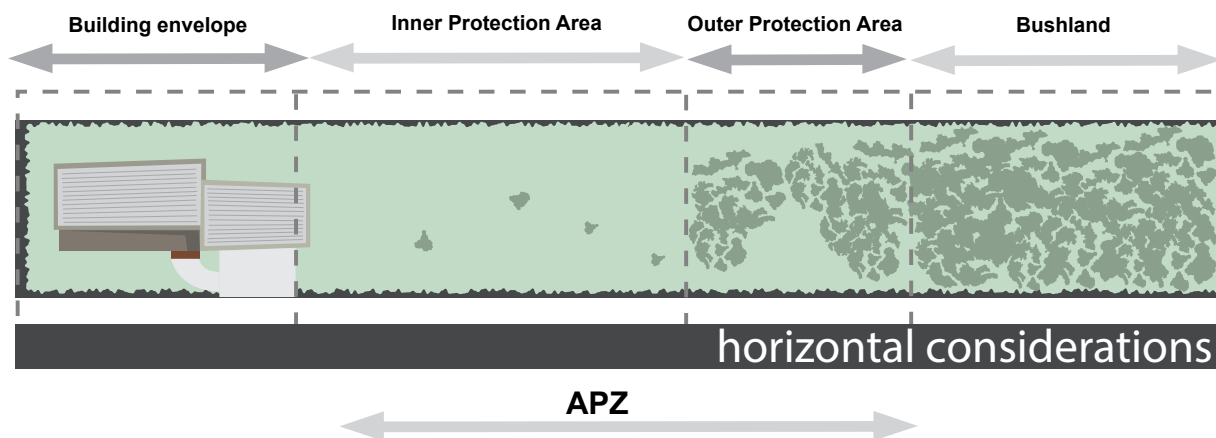
Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

Figure A4.1

Typical Inner and Outer Protection Areas.





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