



AEP

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NEWCASTLE SYDNEY

Bushfire Threat Assessment

Proposed Child Care Centre
Lot 205 Sophia Waters Subdivision, Chisholm, NSW, 2322



Prepared for: HPC Planning

26 August 2024

AEP Ref: 5138

Revision: 01

Newcastle | Sydney

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1.0 Introduction

A Childcare facility is proposed within land identified as Lot 205 at Sophia Waters Subdivision, Chisholm NSW, 2322 (the Study Area).

At the request of HPC Planning (the client), Anderson Environment & Planning (AEP) have undertaken the necessary investigations to inform the production of a Bushfire Threat Assessment (BTA) report addressing the proposed development.

This report is specifically intended to assess the bushfire protection measures required by the NSW Rural Fire Service's "Planning for Bushfire Protection 2019" (PBP) and the construction requirements of the proposed development in accordance with the provisions of the Building Code of Australia – Volume 2, Edition 2022 and Australian Standard 3959-2018 (AS 3959) – "*Construction of buildings in bushfire-prone areas*".

The proposal will involve the construction of a Childcare facility which is defined as a Special Fire Protection Purpose (SFPP) development as per Section 100B of the Rural Fires Act 1997 (RF Act). As a result, a Bushfire Safety Authority (BSA) is required from the Rural Fire Service (RFS) to enable the development to proceed. This report addresses the required heads of consideration relevant to obtaining a BSA.

For the purposes of referencing, this document should be referred to as:

Anderson Environment & Planning (2024). *Bushfire Threat Assessment for Childcare facility within Lot 205 at Sophia Waters Subdivision, Chisholm NSW 2322*. Unpublished report HPC Planning, August 2024.

2.0 Site Particulars

The proposed childcare facility development is described as described in **Table 1**.

Figure 1 depicts the extent of the Subject Site overlain on an aerial photograph of the locality.

Table 1 – Site Particulars

Item	Comments
Client	HPC Planning
Address	Sophia Waters Subdivision, Chisholm, NSW, 2322
Title(s)	Lot 205 at Sophia Waters Subdivision
Study Area	The entirety of Lot 205 at Sophia Waters Subdivision and out to 140m.
Subject Site	The Subject Site encompasses an area of 0.38ha in Lot 205.
LGA	Maitland
Zoning	Under the <i>Maitland Local Environmental Plan 2011</i> (the LEP), the Study Area comprises land zoned R1 – General Residential.
Current Land Use	The land is currently being developed as part of an approved subdivision for residential development.
Surrounding Land Use	The Subject Site is located in Chisholm and is surrounded by other approved residential development to the east and west. Land to the north is zoned R1 and is earmarked for future development. The site is bordered by Raymont Terrace Road to the South, and further beyond in to the grounds of other residential properties.

3.0 Proposed Development

It is proposed to construct a Childcare facility, carpark and other associated structures.

Figure 2 depicts the plan of the proposed development within the Subject Site.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

 Subject Site



Note:
1. Boundaries are not survey accurate
2. Do not scale off this plan



Figure 1 - Site Location

Date: Aug 2024

Location: Lot 205 Sophia Waters Subdivision, Chisholm

Client: HPC Planning

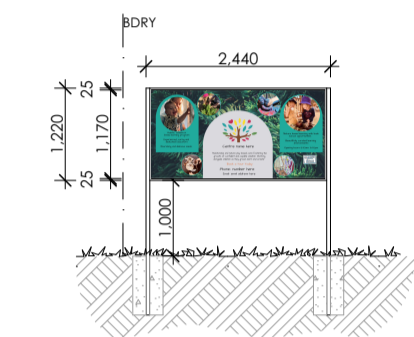
AEP Ref: 5138

PROPERTY DESCRIPTION

LOT No: Lot 205 on DISCLOSURE PLAN
 STREET No: -
 STREET NAME: Ballymore Drive
 LOCALITY: Chisalm NSW 2905
 RP: -
 AREA: 3602m²

NOTES

USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE DRAWINGS FROM PLANS.
 BUILDING ZONE IS TO BE CLEARED OF ANY VEGETATION AND TREES TO SUIT - CHECK ON SITE.
 ALL SURVEY DATA TAKEN FROM DWG/PDF COPY BY OTHERS. CYBER DRAFTING & DESIGN TAKE NO RESPONSIBILITY OF THE PROPOSED SLAB & PAD LEVELS DUE TO THE POSSIBILITY OF INACCURACY OF THE DISCLOSURE PLAN.
 VERIFY ALL BEARINGS AND DIMENSIONS ON SITE PRIOR TO CONSTRUCTION. ALL MISSING PEGS TO BE RE-INSTATED PRIOR TO ANY CONSTRUCTION. NOTIFY HEAD CONTRACTOR IMMEDIATELY OF ANY DISCREPANCIES IN SETOUT DIMENSIONS. DO NOT START CONSTRUCTION UNTIL ALL BOUNDARIES ARE CONFIRMED.
 ENSURE ALL DRAWINGS AND ACCOMPANYING DETAILS AND/OR SPECIFICATIONS HAVE BEEN STAMPED AS APPROVED BY THE RELEVANT LOCAL AUTHORITIES PRIOR TO USE.
 ALL SITE DRAINAGE TO BE CHARGED TO STREET OR TO LEGAL POINT OF DISCHARGE IN COMPLIANCE WITH AS/NZS 3500 &/OR NCC 2019 VOL. 2 PARTS 3.1.2 & 3.5.2



FRONT ELEVATION
Scale: 1:100

SIDE ELEVATION
Scale: 1:100

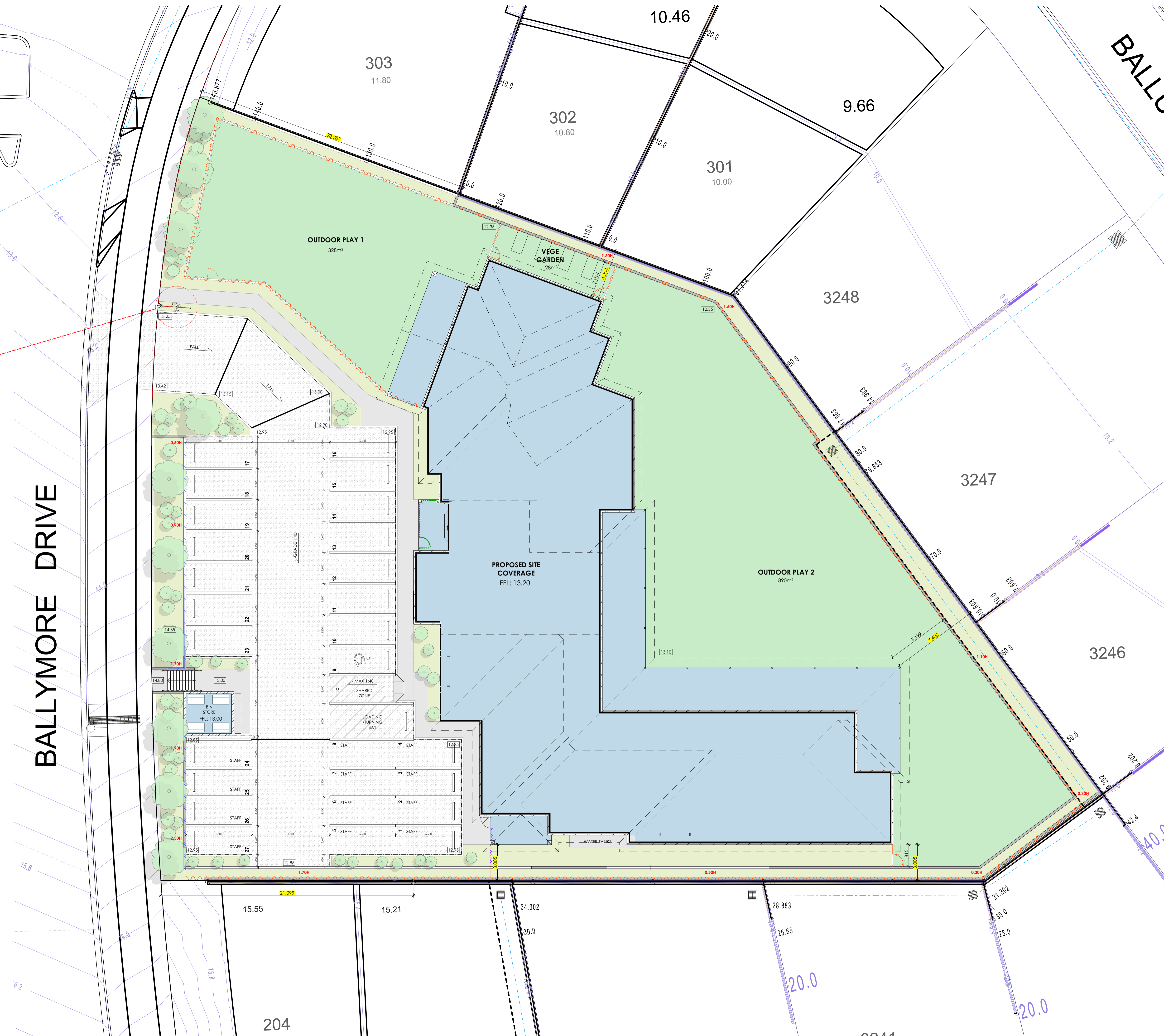
AREA ANALYSIS
106 PLACES

TOTAL SITE AREA	3603m ²
SITE COVERAGE	1110m ²
BUILDING AREA	1207m ²
GFA	927m ²
HARDSTAND (driveway/path)	860m ²
TOTAL USABLE OUTDOOR PLAY AREA (min 742m ² required for 106 places)	1246m ²

PARKING SCHEDULE	
STAFF/VISITOR PARKING	26 SPACES
ACCESSIBLE PARKING	1 SPACE
TOTAL	27 SPACES

- BUILDING FOOTPRINT
- OUTDOOR PLAYSCAPE
- LANDSCAPING
- DRIVEWAY
- PATH - BFC
- 1800H ACOUSTIC FENCE (REFER ACOUSTIC REPORT FOR DETAILS)
- 1800H TIMBER PALING FENCE
- 1200H VERTICAL TUBULAR FENCE
- 1200H SEMI FRAMELESS GLASS FENCE

PROPOSED SITE PLAN
Scale: 1:150



PRELIMINARY DRAWINGS - NOT FOR CONSTRUCTION.

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DIMENSIONS
DIMENSIONS SHALL NOT BE OBTAINED BY SCALING. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. SETOUT DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO ANY WORK BEING CARRIED OUT. ANY PROBLEMS SHALL BE DIRECTED TO THE BUILDER FOR CLARIFICATION & CORRECTION.

REAL PROPERTY DESCRIPTION
 LOT No: 205 on DISCLOSURE PLAN
 AREA: 3602m²
 ZONE: EMERGING COMMUNITY TRANSITION
 AUTHORITY: MAITLAND

BUILDING CLASSIFICATION
 CHILD CARE: CLASS 9B TYPE B CONSTRUCTION

REVISION HISTORY

ISSUE	DATE	DESCRIPTION
A	05/05/23	Concept Design Issue_1
B	31/08/23	Concept Design Issue_2
C	10/07/24	Preliminary Drawings Issue

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DRAWING TITLE
PROPOSED SITE PLAN
 CLIENT
 Excellence in Education
 - Ballymore Drive
 Chisalm NSW 2905

SCALE
 AS SHOWN @ A1

230083
 JOB No.

C
 REVISION

SHEET
1

4.0 Bushfire Hazard Assessment

4.1 Bushfire Prone Land Mapping

Examination of the NSW Planning Portal, Bushfire Prone Land (BPL) mapping (2021) confirms that part of the Subject Site is mapped as “Bushfire Prone Land – Category 1” and “Bushfire Prone Land – Category 2”. This designation has triggered the need for the assessment herewith. It should be noted that the locality has undergone extensive changes and it is considered that the Bushfire Prone Land Map is out of date.

Figure 3 shows the extent of the mapped Bushfire Prone Land, overlain on a current aerial map showing the extent of current vegetation.






Appendix 1 of the PBP provides the steps required to determine the level of bushfire hazard that applies to the site. Factors influencing the hazard level include:

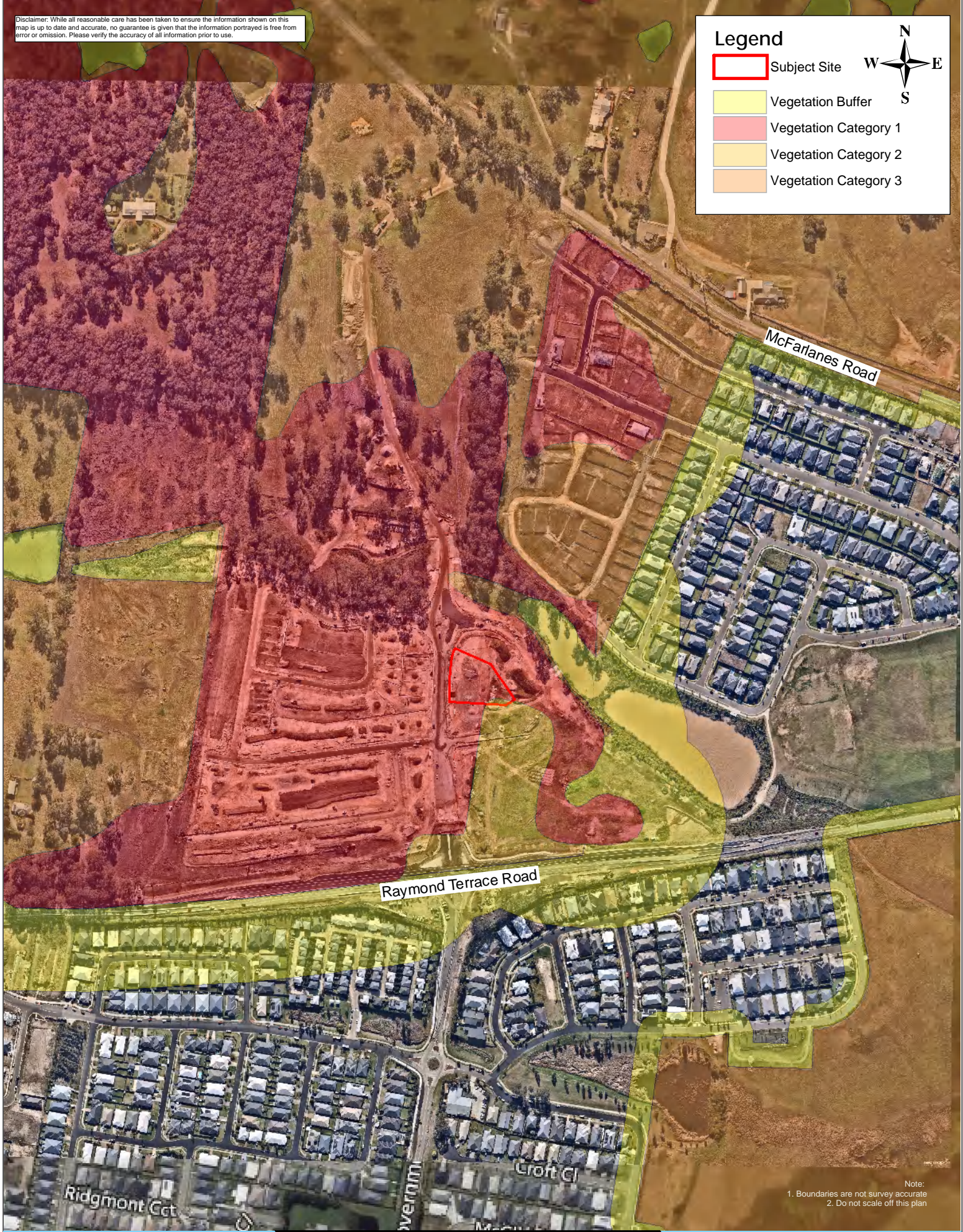
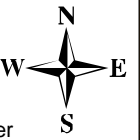
- The formation of vegetation surrounding the site (as defined by Keith 2004);
- The distance between vegetation and the site (or proposed buildings therein);
- The effective slope for each patch of vegetation; and
- The Fire Danger Index (FDI) of the council area within which the development occurs.

These factors together provide an indication of the level of threat posed to the development from any vegetation retained within the site and surrounding vegetation in the event of a bushfire, and the required mitigation measures to be taken in the form of Asset Protection Zones (APZs) and building construction standards. These measures are detailed further in **Section 5** below.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

-  Subject Site
-  Vegetation Buffer
-  Vegetation Category 1
-  Vegetation Category 2
-  Vegetation Category 3



Note:
1. Boundaries are not survey accurate
2. Do not scale off this plan



Figure 3 - Bushfire Prone Land

Date: Aug 2024

Location: Lot 205 Sophia Waters Subdivision, Chisholm

Client: HPC Planning

AEP Ref: 5138

4.2 Vegetation and Slope Analysis

The site and surrounds occur within the Greater Hunter Region, with existing vegetation subsequently classified with a Fire Danger Index (FDI) of 100 as NSW Rural Fire Service (2017) NSW Local Government Areas FDI.

Vegetation communities present within the 140m surrounding the development and slope assessment within 100m from hazard vegetation are shown in **Table 2** and **Figure 4**.

Table 2 – Hazard Vegetation and Slope Assessment

Aspect	Hazard Vegetation (140m)	Slope (100m)	SFPP Asset Protection Zone (m)
North	Rainforest (Simplified Approach)	0 – 5 degrees Downslope	47
North East	Rainforest (Simplified Approach)	0 – 5 degrees Downslope	47
East	Low Threat – Fringing Vegetation	0 – 5 degrees Downslope	-
South East	Managed Lands	Flat/upslope	-
South	Managed Lands	Flat/upslope	-
South West	Managed Lands	Flat/upslope	-
West	Managed Land	Flat/upslope	-
North West	Rainforest (Simplified Approach)	0 – 5 degrees Downslope	47







Appendix A contains a photo of the vegetation to the North and Northeast of the Subject Site – noting that surrounding lands are currently in a state of flux and development.

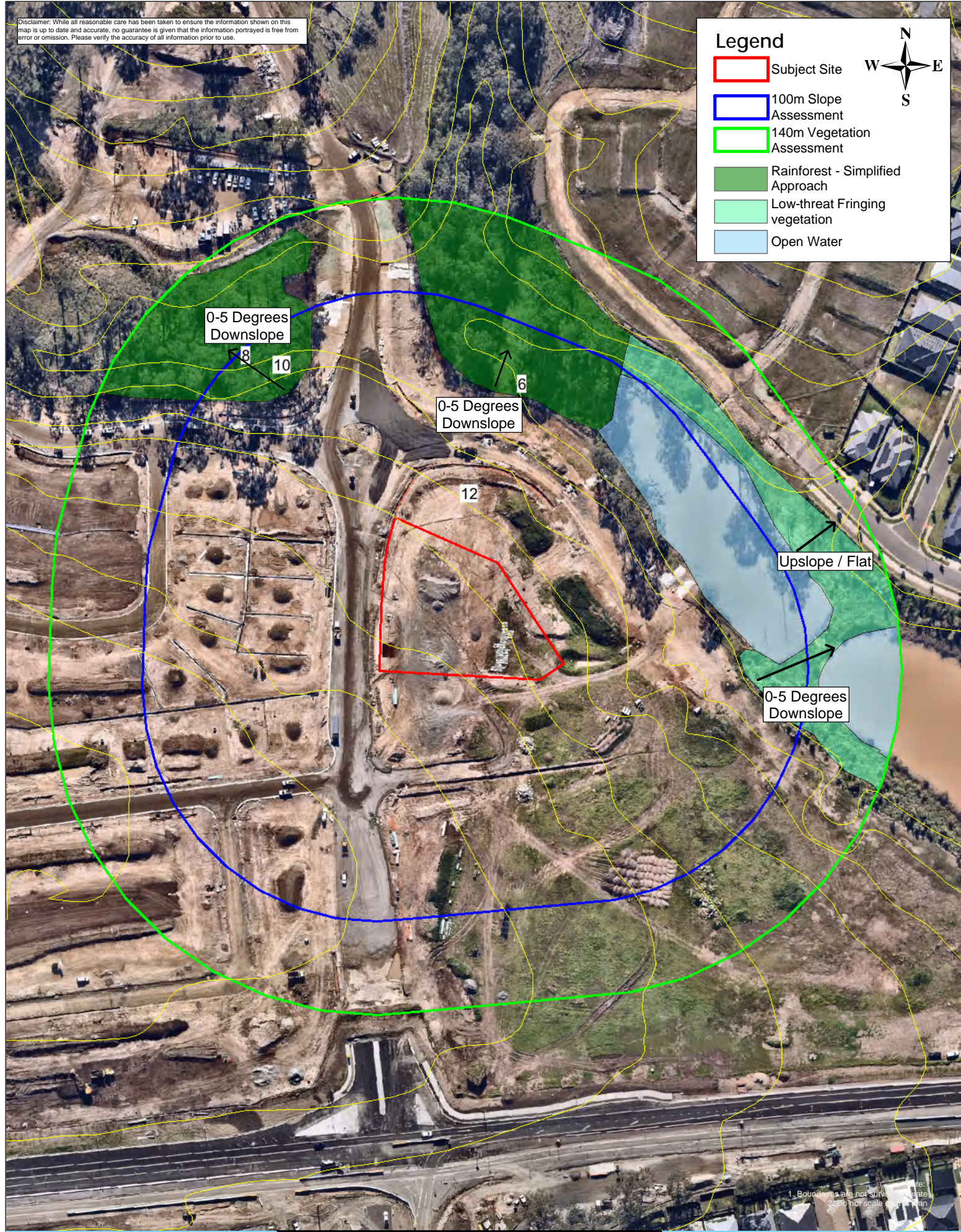
The vegetation to the North, Northwest and Northeast has been designated as Rainforest hazard vegetation as the likely fire run towards the development is less than 50m in length. The vegetation is located in a riparian corridor bounded by residential development on either side, reducing the likelihood that a fire could form and reach its full potential.

Vegetation to the east has been described as Low-threat as it is fringing vegetation surrounding a large body of water. The very small width and low level of fuel has led to this designation.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

-  Subject Site
-  100m Slope Assessment
-  140m Vegetation Assessment
-  Rainforest - Simplified Approach
-  Low-threat Fringing vegetation
-  Open Water



1. Boundaries are not surveyed
2. Do not scale from the map



Figure 4 - Slope and Vegetation Assessment

Date: Aug 2024

Location: Lot 205 Sophia Waters Subdivision, Chisholm

Client: HPC Planning

AEP Ref: 5138

4.3 PBP Performance Criteria Assessment

A Special Fire Protection Purpose (SFPP) development is one which is occupied by people who are considered to be at-risk members of the community. In a bush fire event, these occupants may be more susceptible to the impacts of bush fire. Evacuating at-risk members of the community is more challenging because they may be physically or psychologically less able to relocate themselves or are unfamiliar with their surroundings. Examples of SFPP developments are schools, child care centres, hospitals, nursing homes and tourist accommodation. Under RF Act s.100B, a BFA from the NSW RFS is required for SFPP development. As such, an Integrated Development approval may be required under of the EP&A Act s.4.46.

Due to the vulnerable nature of the occupants of SFPP developments, there is more reliance on the provision of an APZ and emergency management. The intent and performance criteria within the tables in section 6.8 must be satisfied for SFPP development. **Table 3** provides the assessment of Section 6.8 of the PBP.

Table 3 – Performance Criteria Measures for SFPP

Performance Criteria	Acceptable Solutions	Comments
Asset Protection Zones		
Radiant heat levels of greater than 10kW/ m ² (calculated at 1200K) will not be experienced on any part of the building	The building is provided with an APZ in accordance with Table A1.12.1 in Appendix 1.	The proposed facility is located outside of areas that would experience heat levels greater than 10kW/m ² .
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised	APZs are located on lands with a slope less than 18 degrees.	No slopes greater than 18 degrees exist on the Subject site. Figure 4 .
APZs are managed and maintained to prevent the spread of fire to the building.	The APZ is managed in accordance with the requirements of Appendix 4.	The area comprising the APZ for this site will be developed as residential housing and associated road infrastructure. It is expected that this would be maintained in perpetuity.
The APZ is provided in perpetuity.	APZ are wholly within the boundaries of the development site; and other structures located within the APZ need to be located further than 6m from the refuge building.	The proposed development is located within a newly developed subdivision. The location of the proposed childcare centre means that any APZs would be on public roads or residential land. Given the nature of the development and the approved land use to the north of the development (residential dwellings and road infrastructure) it is considered that appropriate APZs will be provided in perpetuity.
Landscaping		
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	Landscaping is in accordance with Appendix 4.	All landscaping within the proposed development is to comply with Appendix 4 of the PBP 2019. It is especially important to note that no vegetation should be placed directly adjacent to any building.
	Fencing is constructed in accordance with section 7.6.	All fencing is to be constructed to comply with section 7.6 of the PBP 2019. It is recommended that fencing be constructed entirely from non-flammable material.

Performance Criteria	Acceptable Solutions	Comments
Construction Standards		
The proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	A construction level of BAL-19 under AS 3959 and section 7.5 of PBP is applied.	All childcare buildings are to be built to BAL-19 construction standards and are to comply with Section 7.5 of the PBP 2019 in line with the addendum to PBP 2019 released in November 2022.
Access		
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation	Vehicular access must be capable of providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire building; and	Access will be directly onto the public road that is to be delivered as part of the approved subdivision.
	Must have a minimum unobstructed width of 6m with no part of its furthest boundary more than 18m from the building and in no part of the 6m width be built upon or used for any purpose other than vehicular or pedestrian movement; and	The Subdivision, that the proposed development is located in, has provision for roads between the proposed development and the hazard vegetation to the north. These roads will enable Fire Vehicles to fight fires from outside of the proposed development adjacent to hazard vegetation. As such it is not envisaged that Emergency Vehicles would need to enter the Subject Site to fight a bushfire. If RFS vehicles did need to access the Carpark of the development it has provided a 6.5m wide carriageway that ends in a dead end. There is adequate room, when utilising the carparking spaces, to provide room for an RFS emergency vehicle to turn around (17.5m).
	Must provide reasonable pedestrian access from the vehicular access to the building; and	Access for pedestrians will be from the newly created road (as part of the approved subdivision) into the carpark of the facility.
	Must have a load bearing capacity and unobstructed height to permit the operation and passage of fire fighting vehicles; and	The public road to the west is being delivered as part of the approved subdivision. It is expected that these roads would meet the requirements.
	Must be wholly within the allotment except that a public road complying with above may serve as the vehicular access or part thereof.	Access will be via the newly created road running through the approved subdivision, located directly to the west of the proposed development.
the capacity of access roads is adequate for firefighting vehicles.	The capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges and causeways are to clearly indicate load rating.	The capacity of the carpark will be designed to ensure the surface can carry fully loaded firefighting vehicles as per the requirements of table 6.8b of the PBP 2019. Access to the Childcare facility is sufficiently provided to emergency vehicles by the subdivision road to the west and Raymond Terrace Road.

Performance Criteria	Acceptable Solutions	Comments
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 to be provided according to the approved subdivision. Hydrants required as part of the BCA requirements for the proposed development are not to be located within the proposed parking areas.
	Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2021	Hydrants are to be provided in accordance with the relevant clauses of AS 2419.1:2021
	There is suitable access for a Category 1 fire appliances to within 4m of the static water supply where no reticulated supply is available	N/A. The development will be supplied by reticulated water.
Perimeter Roads		
Perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	There are two-way sealed roads	Due to the proposed development being part of an approved subdivision the roads constructed as part of the approved subdivision to the west, north and east will act as perimeter roads. The carpark for will be constructed to comply with the requirements of table 6.8b of the PBP 2019.
	Minimum 5.5m carriageway width kerb to kerb	It is expected that the roads installed as part of the approved subdivision will meet these requirements.
	Parking is provided outside of the carriageway width	It is expected that the roads installed as part of the approved subdivision will meet these requirements.
	Hydrants are to be located clear of parking areas	It is expected that the roads installed as part of the approved subdivision will meet these requirements.
	There are through roads, and these are linked to the internal road system at an interval of no greater than 500m;	It is expected that the roads installed as part of the approved subdivision will meet these requirements.
	Curves of roads have a minimum inner radius of 6m;	It is expected that the roads installed as part of the approved subdivision will meet these requirements.
	The maximum grade road is 15 degrees and average grade of not more than 10 degrees;	The terrain around the facility does not contain slopes over 5 degrees.
	The road crossfall does not exceed 3 degrees; and	Access is via public roads and it is expected that crossfall would not exceed 3 degrees.
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	All access to the Subject Site is to have a minimum of 4m height clearance maintained at all times.
Non-Perimeter Roads		

Performance Criteria	Acceptable Solutions	Comments
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	No non-perimeter roads proposed.
	Parking is provided outside of the carriageway width	Parking will be provided within a dedicated carpark off the public road to the west of the proposed development – delivered as part of the approved subdivision works.
	Hydrants are located clear of parking areas	It is not proposed to place any hydrants in parking areas.
	Roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m	Public roads adjacent to the development are to be provided as part of the development.
	Curves of roads have a minimum inner radius of 6m	No internal roads proposed.
	The maximum grade road is 15 degrees and average grade of not more than 10 degrees	No internal roads proposed.
	The road crossfall does not exceed 3 degrees	No internal roads proposed.
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided	All access to the Subject Site is to have a minimum of 4m height clearance maintained at all times.
Water Supplies		
An adequate water supply for firefighting purposes is installed and maintained.	Reticulated water is to be provided to the development, where available; or	The development is to be serviced by reticulated water.
	A 20,000 litres minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.	N/A development is to be serviced by a reticulated water system.
Water supplies are located at regular intervals; and the water supply is accessible and reliable for firefighting operations.	Fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2021;	Fire hydrant, spacing, design and sizing will comply with the relevant clauses of Australian Standard AS 2419.1:2021; It is recommended that a hydrant be placed on the northern section of the parking area, adjacent to the entry to the site.
	Hydrants are not located within any road carriageway	Hydrants are not to be located within any road carriageway or parking space.
	Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	The proposed development is not large enough to accommodate a perimeter road. The development will be serviced by reticulated water with street hydrants provided by the approved subdivision.

Performance Criteria	Acceptable Solutions	Comments
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2021.	Fire hydrant flows and pressures are to comply with the relevant clauses of AS 2419.1:2021.
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.	All above ground water service pipes external to buildings are to be made of metal, up to and including any taps associated with the facility.
Electricity Services		
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	Electrical services are to be provided via underground lines where possible.
	Where overhead, electrical transmission lines are proposed as follows: <ul style="list-style-type: none"> • 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 Guideline for Managing Vegetation Near Power Lines. 	Electrical services into the facility are to be placed underground.
Gas Services		
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	No LPG will be provided on site for filling of gas bottles and for filling of cars. If any gas is to be provided on site it will be in the form of swap and go and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used;	N/A – not proposed as part of this development.
	All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side	All fixed gas cylinders are to be shielded from hazard vegetation to the north. It is expected that gas bottles would be placed on the eastern aspect of the development.
	Connections to and from gas cylinders are metal	All gas connections are to be non-combustible and of metal construction.
	If gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any combustible material, so they do not act as a catalyst to combustion	All gas services and storage are to comply with the PBP 2019 and AS/NZS 1596:2014. All gas cylinders are to be located in an area where the safety valves are directed away from the building and no flammable material is to be kept within 2m of the cylinders.

Performance Criteria	Acceptable Solutions	Comments
	Polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used; and	Polymer-sheathed flexible gas supply lines are not to be used.
	Above-ground gas service pipes external to the building are metal, including and up to any outlets	All above ground gas pipes and fittings will be non-combustible and of metal construction.
Emergency Management		
Bush Fire Emergency Management and Evacuation Plan is prepared.	<p>Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the:</p> <ul style="list-style-type: none"> • The NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan; • NSW RFS Schools Program Guide; • Australian Standard AS 3745:2010 Planning for emergencies in facilities; and • Australian Standard AS 4083:2010 Planning for emergencies – Health care facilities (where applicable). 	Development of a Bush Fire Emergency Management and Evacuation Plan shall be a condition of consent and is to provide emergency evacuation triggers and emergency evacuation locations.
	The Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants.	Within the Bushfire Emergency Management and Evacuation Plan the early relocation of occupants is to be addressed and an appropriate plan detailed to ensure that enough time is given to evacuate children and staff in the case of a bushfire emergency.
Appropriate and adequate management arrangements are established for consultation and implementation of the Bush Fire Emergency Management and Evacuation Plan.	An Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual;	An Emergency Planning Committee is to be established which includes the families of children at the centre along with staff to develop and implement an Emergency Procedures Manual.
	Detailed plans of all emergency assembly areas including on-site and off-site arrangements as stated in AS 3745:2010 are clearly displayed, and an annually emergency evacuation is conducted.	Detailed plans of all emergency assembly areas including on-site and off-site arrangements as stated in AS 3745:2010 are to be clearly displayed, and an annual emergency evacuation is to be conducted.

5.0 Bushfire Hazard Determination

5.1 Construction Standards – AS 3959-2018

The Australian Standard 3959-2018 Construction of buildings in bushfire prone areas, details six (6) levels of construction standards that are required for buildings, depending upon the expected impact of a bushfire from adjacent areas. These Bushfire Attack Levels (BALs) are measured from the edge of the hazard and incorporate vegetation type and slopes (see above) to determine the relevant distance for each BAL rating (and associated construction standard).

The relationship between the expected impact of a bushfire and the BAL rating is provided in **Table 4**. below.








Table 4 – BAL Construction Standard

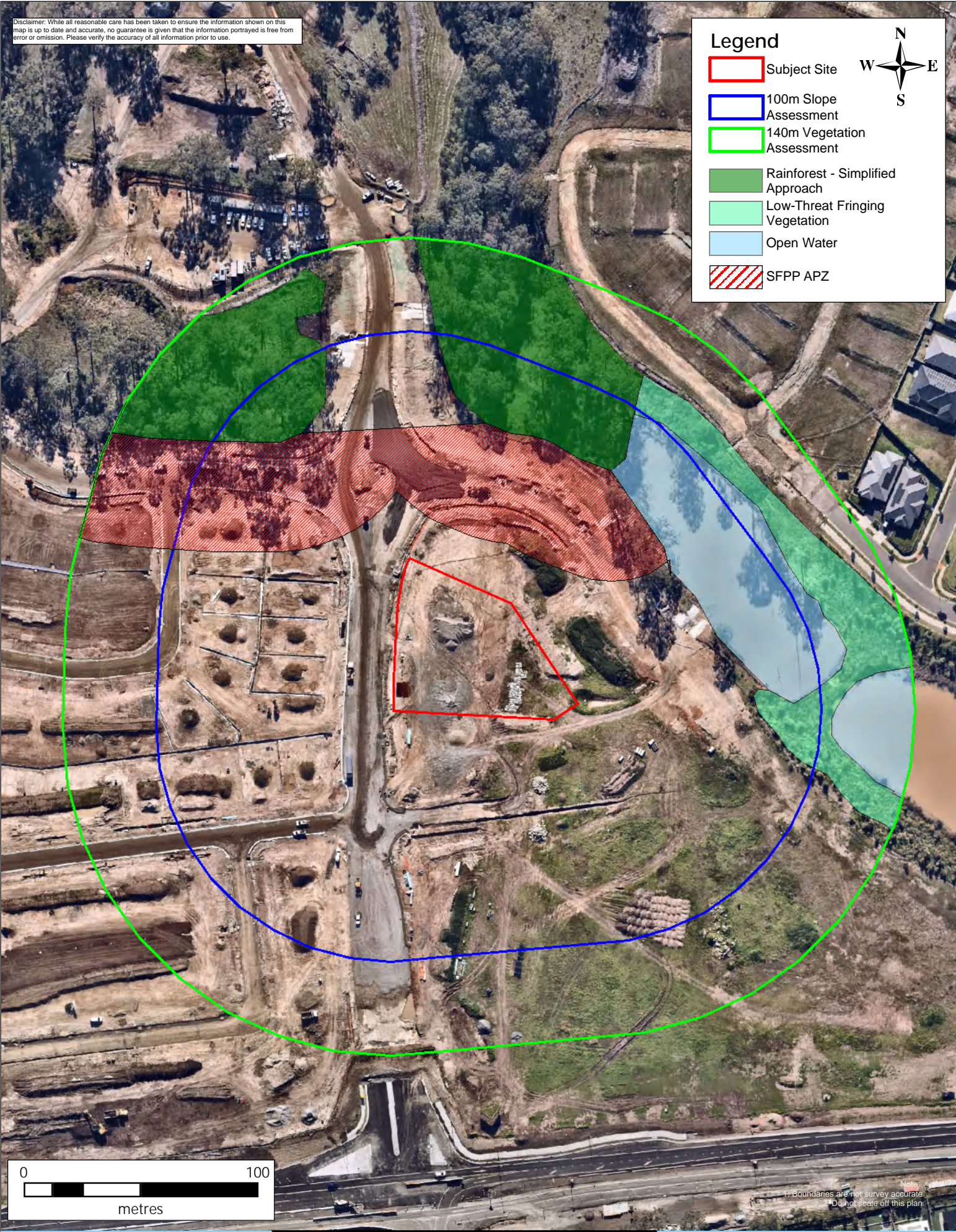
Bushfire Attack Level	Maximum radiant heat impact (kW/m ²)	Level of construction standard under AS 3959-2018
Low		No special construction requirements
12.5	≤12.5	BAL – 12.5
19	12.6 to 19.0	BAL – 19
29	19.1 to 29	BAL - 29
40	29 to 40	BAL – 40
Flame Zone	≥40	BAL – FZ (Not deemed to satisfy provisions)

As the proposed development is for a Childcare facility, per PBP 2019 addendum 2022, all structures must be built to a minimum **BAL-19** construction standard.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Legend

-  Subject Site
-  100m Slope Assessment
-  140m Vegetation Assessment
-  Rainforest - Simplified Approach
-  Low-Threat Fringing Vegetation
-  Open Water
-  SFPP APZ



0 100
metres

Note:
1. Boundaries are not survey accurate.
2. Do not scale off this plan.



Figure 5 - SFPP APZ
Date: Aug 2024
Location: Lot 205 Sophia Waters Subdivision, Chisholm
Client: HPC Planning
AEP Ref: 5138

6.0 Other Considerations

The following analysis applied to the Subject Site in reference to environmental features present.

Table 5 – Other Site Constraints

Item	Comments
Riparian Corridors	None present within the proposed development, though there is a creekline to the north.
State Environmental Planning Policy (Resilience and Hazards) 2021	This was considered as part of the Ecological Assessment for the Subdivision in which the proposed development is located.
State Environmental Planning Policy (Biodiversity Conservation) 2021	This was considered as part of the Ecological Assessment for the Subdivision in which the proposed development is located.
Areas of geological interest	None present within the Subject Site.
Environmental protection zones or steep lands (>18°)	None present within the Subject Site.
Land slip or flood prone areas	The land or any part of the land is not identified on the Flood Planning or Land Slip Map.
National Parks estate or various other reserves	Not present within the Subject Site.
Threatened species matters	This was considered as part of the Ecological Assessment for the Subdivision in which the proposed development is located.
Aboriginal Heritage	This was considered as part of the Assessment for the Subdivision in which the proposed development is located.

7.0 Conclusion

Investigations undertaken for this Bushfire Threat Assessment have revealed that the proposed development has rainforest hazard vegetation (utilising the simplified approach) located offsite in the northwest, north and northeast. The distance and infrastructure between the hazard vegetation and proposed Childcare facility means that the required SFPP APZs are met with APZs located over residential and road infrastructure areas.

AEP understands that the development will be serviced by the existing reticulated water supply and street hydrant access. It is recommended that a fire hydrant be installed in the northern section of the Carpark, adjacent to the entry, to further mitigate for any fire threat from the northern vegetation, the hydrant is to be installed and maintained in accordance with AS 2419.1–2021.

Gas bottles are proposed to supply the gas for the kitchen and these are to be installed and maintained according to AS/NZS 1596:2014. The bottles are to have safety valves pointed away from the any structure and are to be located at least 2m away from any flammable materials.

The site is bounded by a public road directly to the west (being constructed as part of approved subdivision works), and has roads to the north and east between the proposed development and hazard vegetation; Raymond Terrace Road is located to the south outside of the subdivision. These are public roads which allow for sufficient access to the small areas of hazard vegetation located close to the site and will enable sufficient space for fire-fighting activities and access. The development consists of a carpark totalling 27 spaces with a 6.5m wide carriageway. Utilising the carpark and loading area would allow RFS emergency vehicles adequate space to turn around, providing a total width of 17.5m. It would be expected that the RFS would not need to access the proposed childcare facility and would instead use the public roads provided by the subdivision to fight any fire that would threaten the development. It is considered that the proposed access and egress arrangements are appropriate and no issues have been identified with evacuation, safe haven zones, or firefighting logistics.

All Asset Protection Zones (APZs) have been fully incorporated into the design, making note that the proposed development is located within a residential subdivision and that the distance from hazard vegetation is such that the required APZ is located only in the carpark of the proposed childcare facility.

It is considered that the proposed protection measures, principally APZs and relevant construction standards, comply with the relevant requirements of Planning for Bushfire Protection and AS-3959. When applied, these measures should provide adequate protection to life and property within the proposed development in the event of a bushfire occurring in the immediate locality. However, it can never be guaranteed that the site, residents and property therein will not at some stage be affected by a bushfire event.

8.0 References

- Australian Building Codes Board (2005). International Fire Engineering Guidelines. Edition 2005.
- Australian Building Codes Board (2022) National Construction Code Volume 2, Edition 2022.
- NSW Government (1979) Environmental Planning & Assessment Act 1979.
- NSW Government (1997) Rural Fires Act 1997.
- NSW Government, ePlanning Spatial Viewer – Bushfire Prone Land Map, accessed August 2024.
- NSW Rural Fire Service (2019). Planning for Bushfire Protection: A guide for councils, planners, fire authorities and developers. November 2019.
- NSW Rural Fire Service (2022) Planning for Bush Fire Protection: Addendum 2022
- Rural Fires Act 1997. NSW Government.
- Rural Fires Act Regulation 2013. NSW Government.
- Standards Australia (2018) AS-3959 Construction of Buildings in Bushfire-Prone Areas.

Appendix A – Site photograph



Above: Current state of construction works to the north of the proposed development. This photo shows the vegetation in the riparian area to the north that will be managed under a Vegetation Management Plan.