



BUSHFIRE ASSESSMENT REPORT (BAR)

REZONING (SCHEDULE 1) TO ENABLE A DWELLING HOUSE (PBP, 2019, PART 4 – STRATEGIC PLANNING AND PART 7 – RESIDENTIAL INFILL DEVELOPMENT)

58 TAYLORS ROAD, BLACK HILL, NSW, 2322
(LOT 686, DP 619758)

Prepared by Perception Planning Pty Ltd on behalf of Mr. Sean Maddison



Above: Photo of the identified building envelope on Lot 686, DP 619758

25 September 2020

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Table 1 – Document Versions and Disclaimer

No:	Perception Planning Reference:	Author:	Reviewer:
Version 1	14/09/20_BAR_58 Taylors Rd_Version1	MVB	JB
Version 2	20/09/20_BAR_58 Taylors Rd, _Version2	JB	ED
Version 3	25/09/20_BAR_58 Taylors Rd, _Version3	JB	Client
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<p>Charitable Donation:</p> <p>Please note that a donation of \$10.00 will be made by Perception Planning to the of the NSW Rural Fire Service. The donation is made at the end of the financial year and is intended to assist the NSW RFS with community activities.</p>			

Table 2 – Council and RFS Summary

Question:	Response:
Has this Assessment been certified by a Bushfire Protection and Design (BPAD) Practitioner?	Yes - This Assessment has been completed by Jeffrey Bretag, who has completed the Graduate Diploma in Bushfire Protection from the University of Western Sydney and has current Bushfire Planning and Design (BPAD – Level 2) Accreditation from the Fire Protection Association (FPA).
What is the recommended level of compliance with AS3959-2018?	<p>The recommended level of compliance is that the future dwelling house is capable of being sited to achieve 29Kw/sqm or less, which would mean Bushfire Attack Level (BAL)-29 construction in accordance with AS3959-2018, as appropriate, with the exception of the construction requirements of the RFS, 2019, 'Planning for Bushfire Protection' (Clause 7.5.2 – NSW State Variations).</p> <p>No reduction requirements due to shielding are identified under AS3959 (Clause 3.5 – Reduction in Construction Requirements Due to Shielding) because neither of the building elevations are shielded from the bushfire.</p>
Can the proposed development comply with AS3959-2018 and RFS, 2019, Planning for Bushfire Protection?	Yes – Future Architectural Plans for a dwelling house will need to identify that the building needs to be constructed in accordance with the Bushfire Assessment Report (BAR) completed for that building. An additional note should be added to the Architectural Plans to ensure that consideration is provided to the RFS, 2019, 'Planning for Bushfire Protection' (Clause 7.5.2 – NSW State Variations).
Does the proposed development comply with the aims and objectives of the RFS, 2019, Planning for Bushfire Protection?	Yes – A table demonstrating that the proposal is consistent with the aims and objectives of the RFS, 2019, Planning for Bushfire Protection is provided as (ATTACHMENT 3) .
Is referral to the NSW Rural Fire Service required?	Yes – The development is not defined as residential subdivision, rural residential subdivision, or Special Fire Protection Purpose (SFPP) under the Rural Fire Act 1997 (100B) and therefore does not require a Bush Fire Safety Authority (BFSA). However, the Gateway Determination is likely to require consultation with the NSW Rural Fire Service given that the site is mapped as Bushfire Prone Land (BPL). Any consultation requirements will be prescribed by the gateway determination.
What is the Site Plan Reference?	<p>Perception Planning Pty Ltd</p> <p>Drawing No: (ATTACHMENT 6)</p> <p>Date: 14/09/2020</p>

EXECUTIVE SUMMARY

Perception Planning has been engaged by Mr. Sean Maddison (the client) to prepare a Bushfire Assessment Report (BAR) for a planning proposal (i.e. rezoning) and subsequent dwelling house at 58 Taylors Road, Black Hill, NSW, 2322 (Lot 686, DP 619758) (the site).

The development is neither defined as residential subdivision, rural residential subdivision, nor a Special Fire Protection Purpose (SFPP) under RFS, 2019, 'Planning for Bushfire Protection' (PBP). It is therefore defined as 'infill development and other development'. A Bush Fire Safety Authority (BFSa) is not required from the RFS under the Rural Fire Act 1996 (s100B).

The site is an existing vegetated property, which is a 19-minute drive or 16.1km to the south of Maitland and is located within the Cessnock Local Government Area (LGA). The site is identified as Bushfire Prone Land (BPL), being Vegetation Category 1 and 3 under the Environmental Planning & Assessment Act 1979 (s10.3) (EPA&A).

A site inspection took place on 6 August 2020. A Dial Before You Dig (DBYD) request identified that mains electricity is available in the road reserve, however water is not (**ATTACHMENT 4**). A Deposited Plan (DP) was also obtained from 'NSW Land Registry Services', which identified no restrictions relating to APZs or site access.

This BAR identifies that the predominant bushfire hazard is located to the south of the site (**FIGURE 6**). This hazard is classified as Forest and is situated on land that has an effective upslope of 0 degrees. The BAR provides a series of recommendations for the different Bushfire Protection Measures (BPM)s. In relation to Asset Protection Zones (APZs), it identifies:

Table 3– BAL Table

Direction	Vegetation	Surface Fuel (t/ha)	Overall Fuel (t/ha)	Rise (m)	Run (m)	Slope (°)	Separation(m)	BAL
Transect 1 (N)	Low Threat - Managed	-	-	-	-	-	-	BAL-LOW
Transect 2 (E)	Low Threat - Managed	-	-	-	-	-	-	BAL-LOW
Transect 3 (S)	Forest	22	36.1	25	77	-18	25	BAL-29
Transect 4 (W)	Forest	22	36.1	10	26	-21	100>	BAL-LOW

Based on the above, the future dwelling house would experience 29Kw/sqm or less in accordance with AS3959 except for the construction requirements of the PBP (Clause 7.5.2 – NSW State Variations. The removal of native flora or fauna will not be required.

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 any one building will withstand bushfire attack on every occasion.

This BAR provides the above required information to assist Council and the RFS in determining compliance in accordance with the PBP and AS 3959-2018.

TERMS & ABBREVIATIONS

APZ	Asset Protection Zone
AS3959	Australian Standard 3959
BAL	Bushfire Attack Level
BAR	Bushfire Assessment Report
BFSA	Bush Fire Safety Authority
BPAD	Bushfire Planning and Design
BPL	Bushfire Prone Land
BPM	Bushfire Protection Measures
DA	Development Application
DBYD	Dial Before You Dig
DP	Deposited Plan
DSF	Dry Sclerophyll Forest
EP&A Act	Environmental Planning and Assessment Act 1979
FDI	Fire Danger Index
FPAA	Fire Protection Association of Australia
IPA	Inner Protection Area
LEP	Local Environmental Plan
LGA	Local Government Area
NCC	National Construction Code
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection
RFS	NSW Rural Fire Service
RoW	Right of Way
SEED	Sharing and Enabling Environmental Data
SFPP	Special Fire Protection Purpose
URA	Urban Release Area
WSF	Wet Sclerophyll Forest

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1.0 INTRODUCTION

1.1 SITE PARTICULARS

Address:	58 Taylors Road, Black Hill, NSW, 2322 (the site)
Legal Description:	Lot 686, DP 619758
Total Area:	8.46ha (Approximate)
Local Government Area:	Cessnock
Fire Danger Index (FDI):	100 - Greater Hunter
Boundaries:	Land zoned RU2 – Rural Landscape is located to the north, east, south, and west of the site.
Boundary Lengths:	North – 154m, East – 474m, South – 166m and West – 442m
Current Land Use:	Vacant - Remnant Vegetation
Significant Features:	Black Hill is characterised by rural residential development. The site has direct access via Taylors Rd, which is currently an unsealed public road.
Environmental Features:	The site is not mapped as containing Biodiversity Values under the Biodiversity Conservation Act 2016 (FIGURE 4).
Archaeological Features:	A basic search of the AHIMS database identified zero sites and/or places (ATTACHMENT 1).
Climate/Fire History:	<p>The Hunter Risk Management Committee, 2009, 'Bushfire Risk Management Plan' (the Plan) states that:</p> <p><i>'Prevailing weather conditions associated with the bush fire season in the Hunter BFMC area are north-westerly winds accompanied by high daytime temperatures and low relative humidity. There are also frequently dry lightning storms in the western areas occurring during the bush fire season' (p.11).</i></p> <p>The Plan identifies several assets in the Cessnock Local Government Area. This Plan maps the land to the north of the site, Donaldson Colliery as a Fire Exclusion Zone and Seahampton to the south as a Strategic Fire Advantage Zone.</p> <p>These zones are reflective of the significant fire run that could occur from the south-west of the property.</p> <p>The Fire History Map (FIGURE 5) has not identified a recorded history of fires in proximity to the site. This does not mean that fires have not occurred in proximity, they may have just not been recorded.</p>

Fire Trails:	The Plan does not identify any fire trails that exist on the property that are on the Rural Fire Act (s.620 - Register of Certified Fire Trails).
Bushfire Prone Land Map:	<p>The site is identified as BPL, being Vegetation Category 1 and 3 (FIGURE 1).</p> <p>Category 1 is the highest risk for bushfire. It is represented as red on the BPL Map and is provided with a 100m buffer. This vegetation category has the highest combustibility and likelihood of forming fully development fires including heavy ember production. Category 1 consists of forest, woodlands, heaths, forested wetlands, and timber plantations.</p> <p>Category 3 is medium bush fire risk vegetation. It is higher in bush fire risk than Category 2 (and the excluded areas), but lower than Category 1. It is represented as dark orange on a BPL Map and is given a 30m buffer. Category 3 consists of grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands.</p>
Previous Approvals:	The existing development approvals listed in the table below have been sourced from the Cessnock Application Tracking website on 15 September 2020 .

Table 4 – Development Application History

Application	Date Lodged	Description
5/1994/80115/3	12/05/2017	S96 To Amend Quarry Floor Specifications
5/1994/80115/2	05/03/2014	S96 Application Proposing to Modify NSW Land and Environment Court Order No. 10515 of 1995 (Council Reference 5/1994/80115/2) which granted approval for the Operation and Extension the Black hill Quarry.
8/2005/929/1	14/09/2005	Development Application Site Rehabilitation **WITHDRAWN**
8/2001/487/1	30/05/2001	Development Application

No known compliance matters exist.

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 RFS, 2019, 'Planning for Bush Fire Protection' (PBP) and AS 3959-2018. Council is the final consenting authority and any 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 rezoning to enable a dwelling house to be permitted on the site (the development) at 58 Taylors Road, Black Hill, NSW, 2322 (the site). Under the Cessnock Local Environmental Plan 2011, a dwelling house 'means a building containing only one dwelling'.

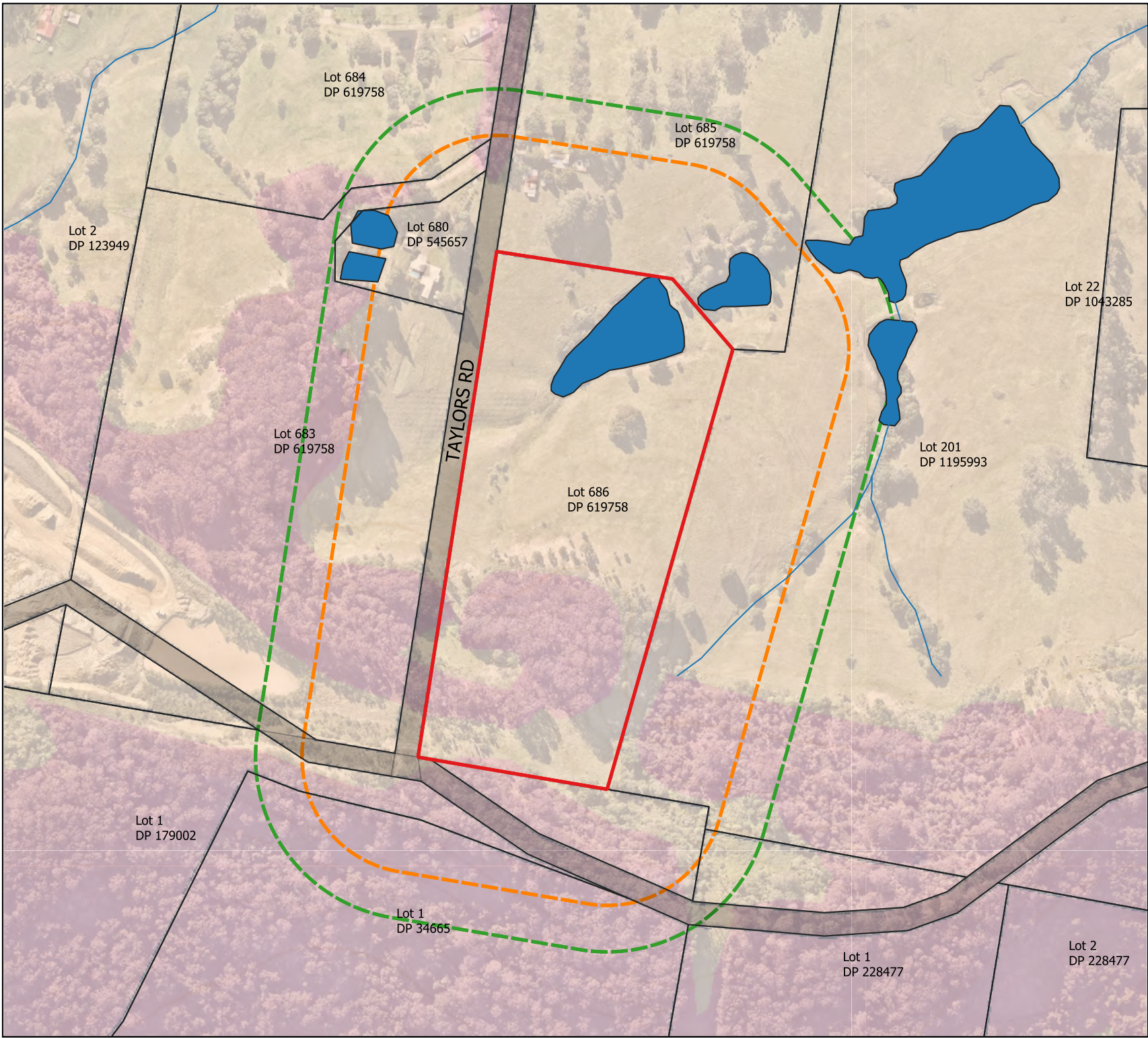
The development is defined as 'infill development and other development' under PBP and could be defined under the National Construction Code (NCC) as a single storey dwelling (Class 1a).

An illustration of the proposed siting is provided as **(FIGURE 6)**

1.4 ASSUMPTIONS OF THIS REPORT

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

1. Access to the site was provided, so photos taken during the site inspection also include public areas, such as the road reserve.
2. The BAR will be assessed by Council and is likely to be considered by the NSW RFS as a condition of the gateway determination. They will develop conditions of consent. Any construction must comply the conditions issued by Council, not this BAR.



58 Taylors Rd, Black Hill

Figure 1 - Bushfire Prone Land Map



- Site Boundary
- Cadastre
- Roads
- Waterways
- Waterbodies
- Slope Buffer - 100m
- Vege Buffer - 140m
- BPL - Category 1
- BPL - Category 3



0 75 150 m

Disclaimer: While every effort is made to ensure this map is free of errors, there is no warrant 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.






Job No: J001291

Date: 16/09/2020

58 Taylors Rd, Black Hill


Figure 2 - Site Plan Map



-  Site Boundary
-  Cadastre
-  Roads
-  Waterways
-  Waterbodies
-  Slope Buffer - 100m
-  Vege Buffer - 140m



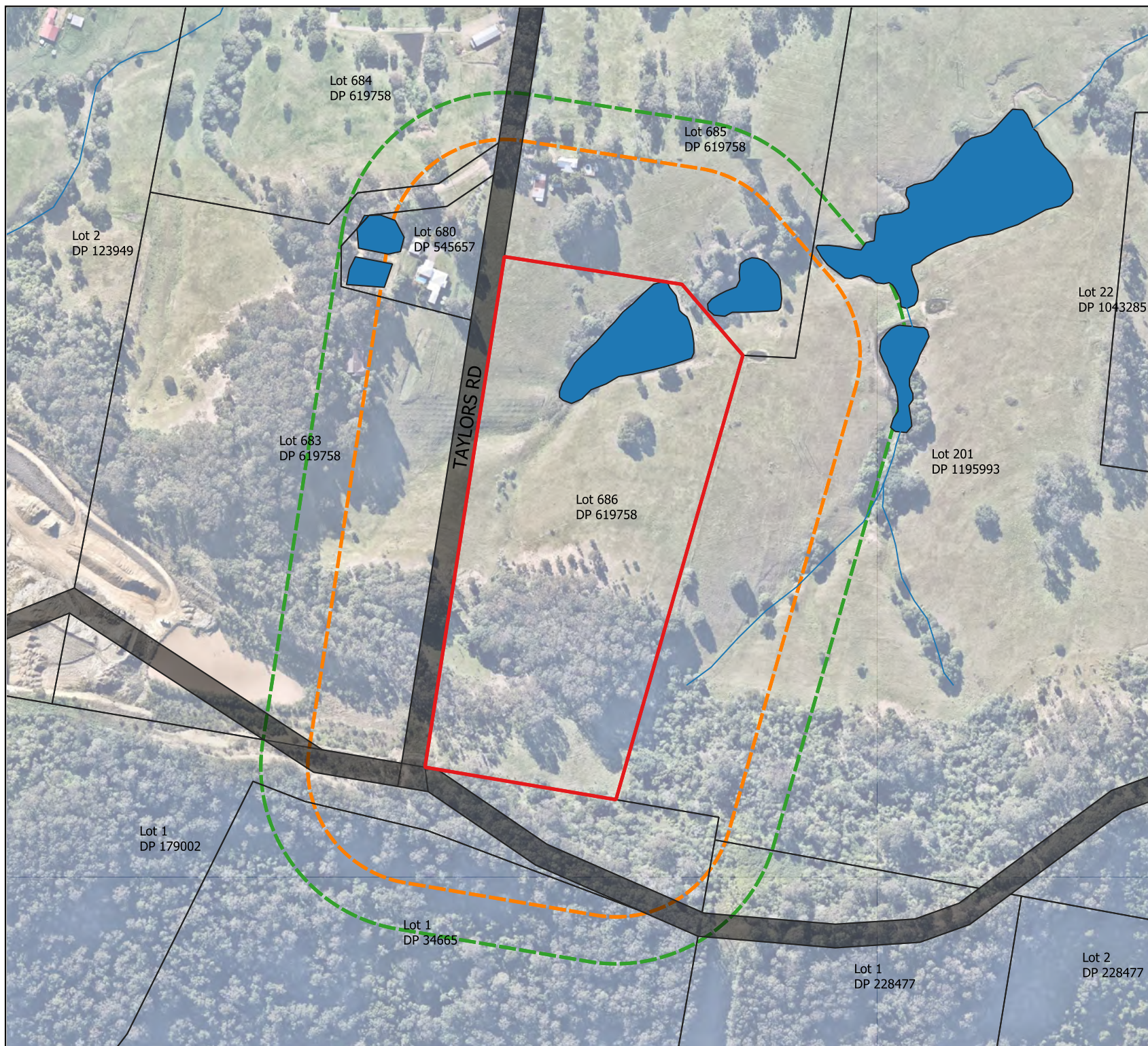
0 75 150 m

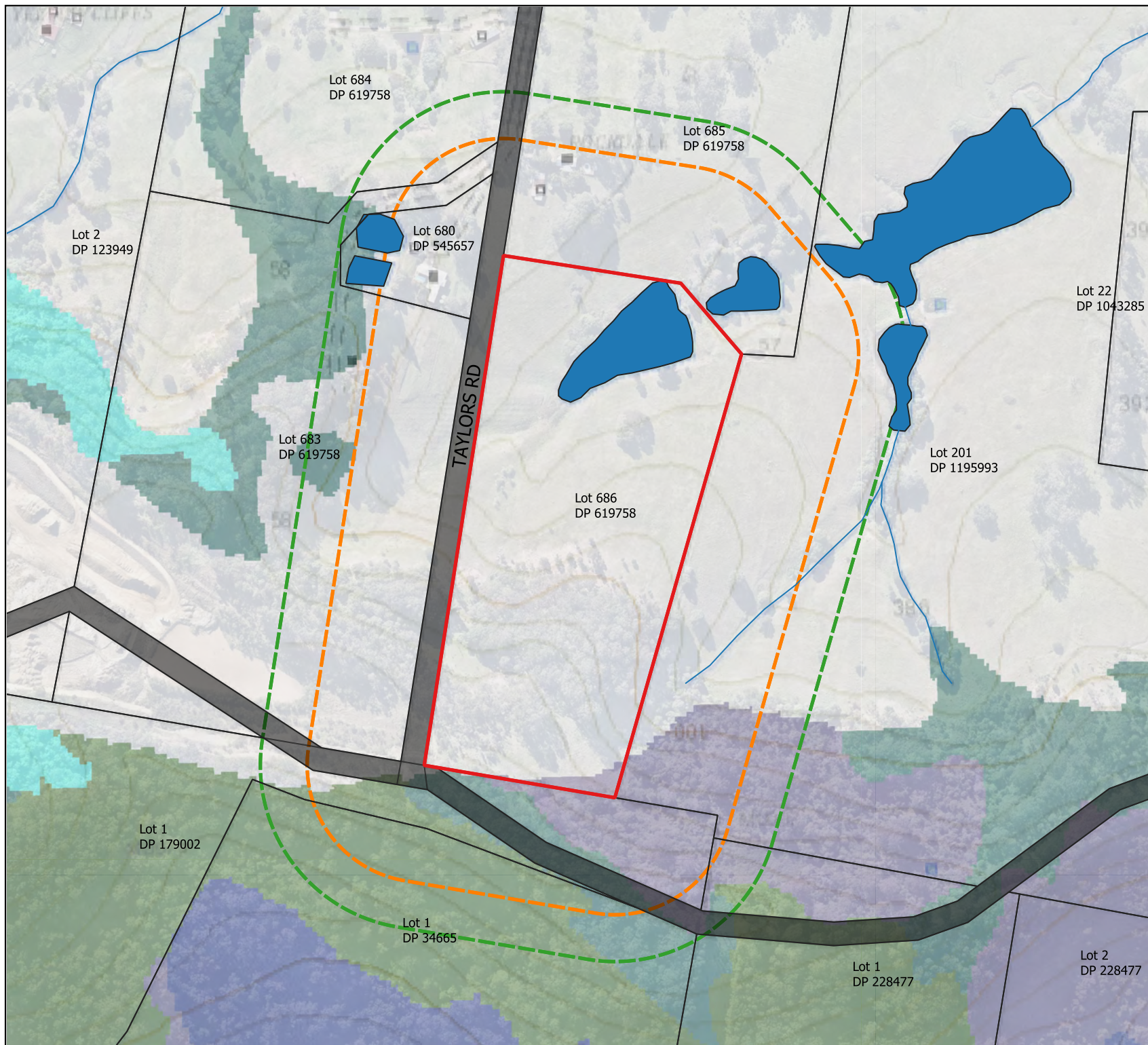
A horizontal scale bar with black and white segments, representing distances of 0, 75, and 150 meters.

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58 Taylors Rd, Black Hill

Figure 3 - Greater Hunter Vegetation Map



- Site Boundary
- Cadastre
- Roads
- Waterways
- Waterbodies
- Slope Buffer - 100m
- Vege Buffer - 140m
- Dry Rainforest
- Hunter Macleay DSF
- Northern Hinterland WSF
- Sydney Coastal DSF



0 75 150 m

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58 Taylors Rd, Black Hill

Figure 4 - High Biodiversity Values Map



- Site Boundary
- Cadastre
- Roads
- Waterways
- Waterbodies
- Slope Buffer - 100m
- Vege Buffer - 140m
- High Bio Values



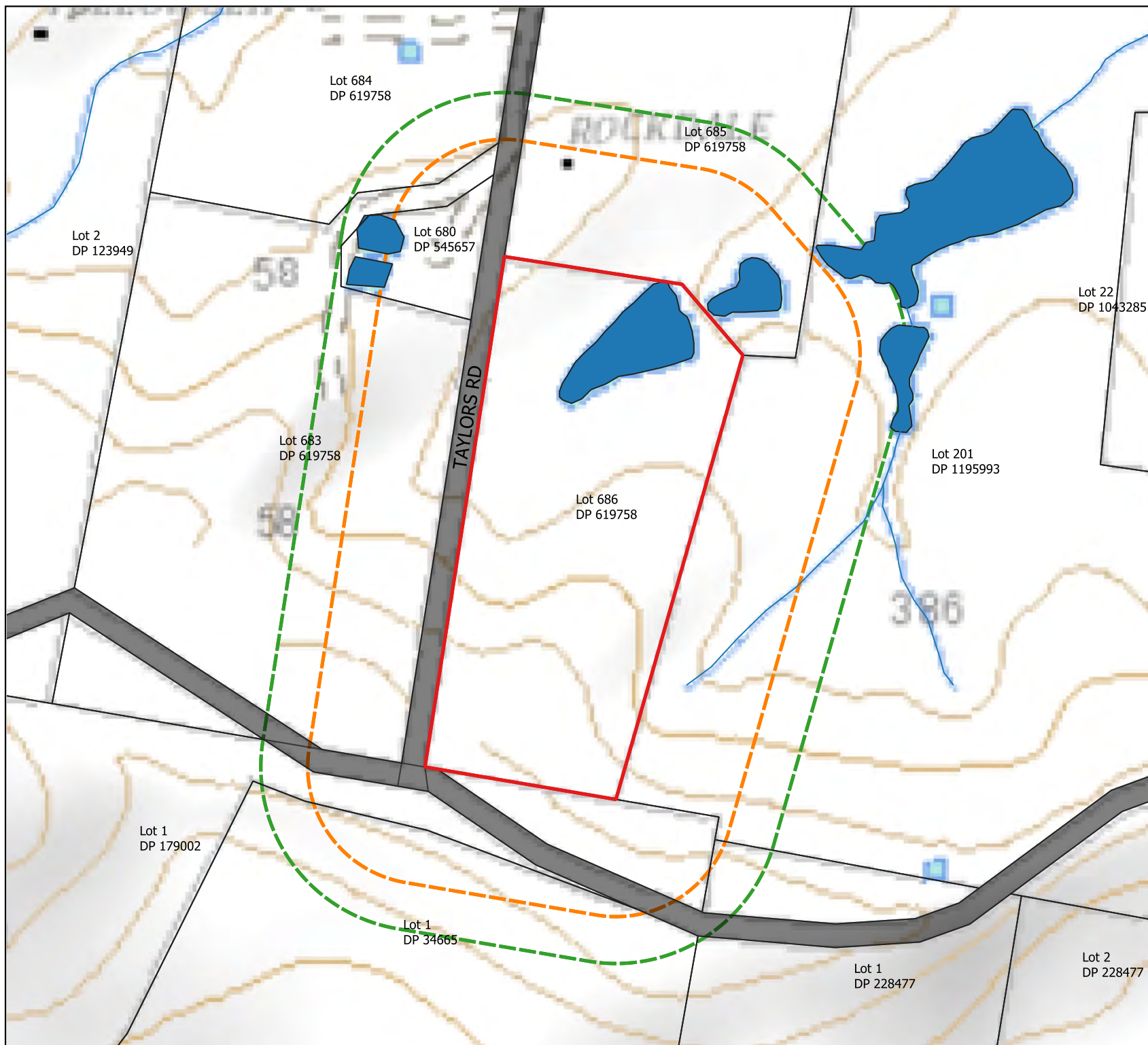
0 75 150 m

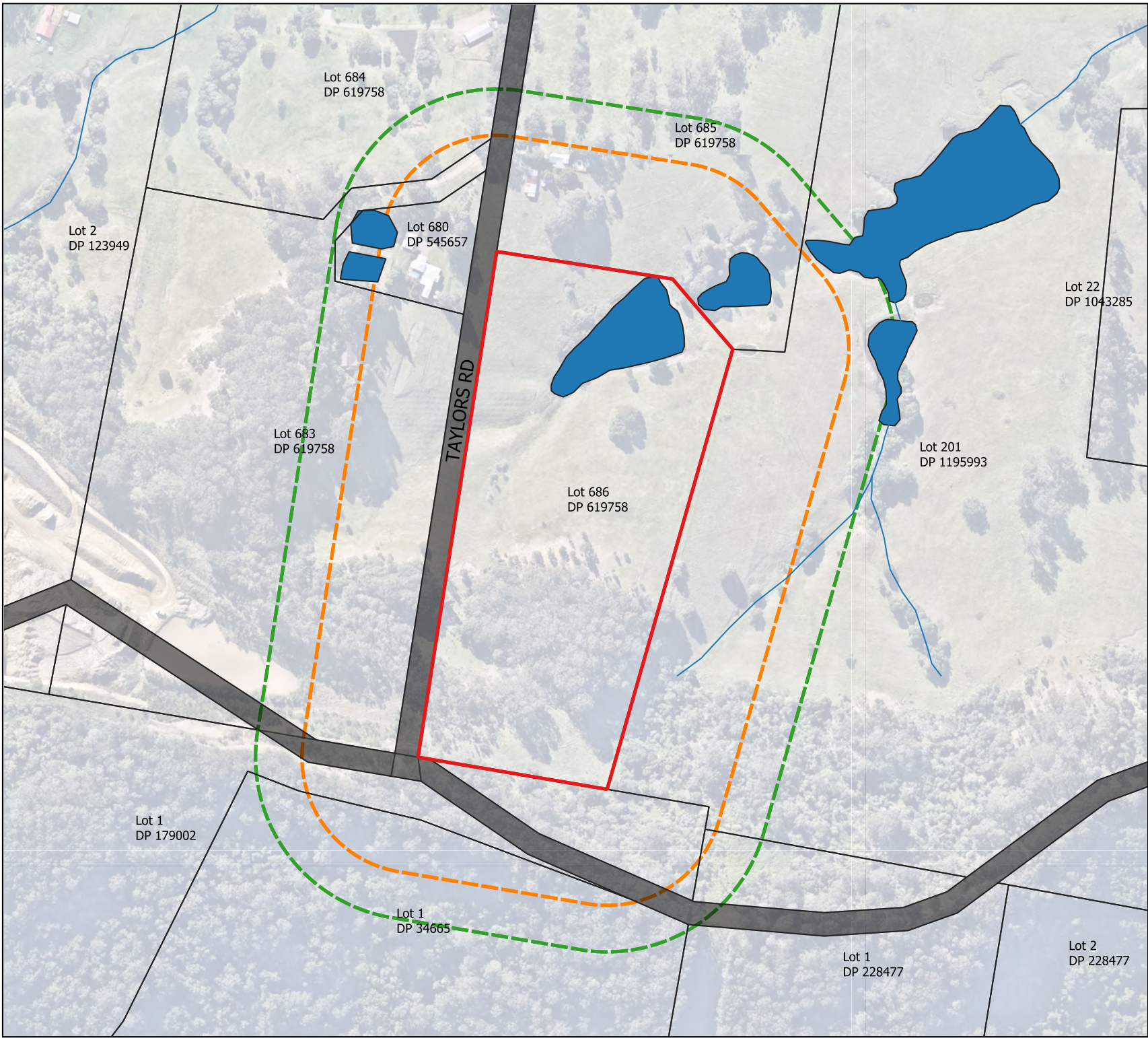
A horizontal scale bar with black and white segments, representing distances of 0, 75, and 150 meters.

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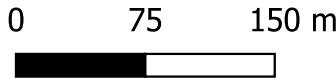


58 Taylors Rd, Black Hill

Figure 5 - Fire History Map



- Site Boundary
- Cadastre
- Roads
- Waterways
- Waterbodies
- Slope Buffer - 100m
- Vege Buffer - 140m
- Wildfire
- Prescribed Burn



Disclaimer: While every effort is made to ensure this map is free of errors, there is no warrant 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.

58 Taylors Rd, Black Hill

Figure 6 - Site Assessment Map



- Site Boundary
- Cadastre
- Roads
- Waterways
- Waterbodies
- Slope Buffer - 100m
- Vege Buffer - 140m
- Site Photos
- Slope Transects
- Contours - 1m
- Forest
- Rainforest
- Contours - 5m



0 75 150 m

A black scale bar with white markings at 0, 75, and 150 meters.

Disclaimer: While every effort is made to ensure this map is free of errors, there is no warrant 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.

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Date: 14/09/2020

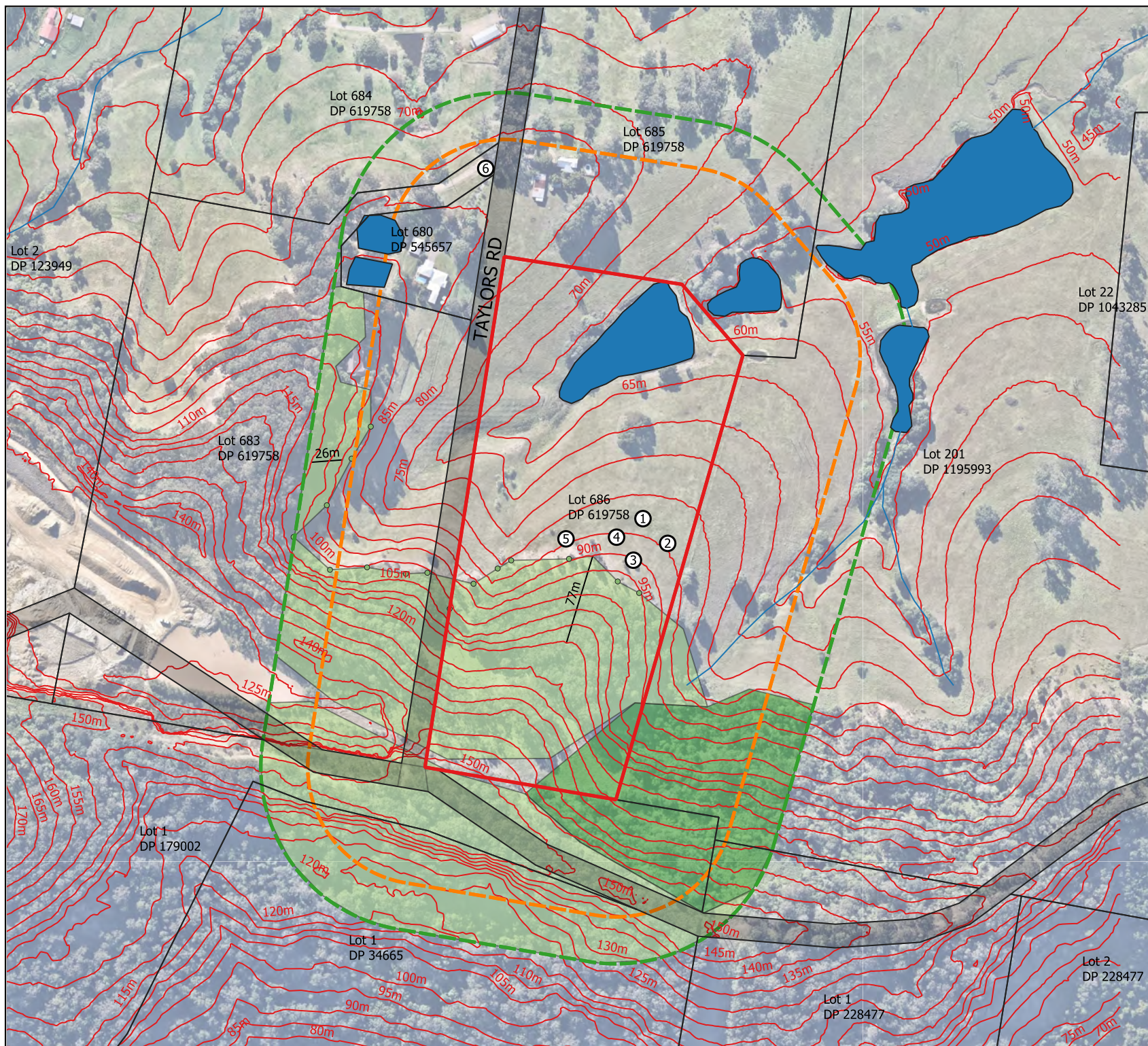


Photo 1 – Northern Perspective



Photo 2 – Eastern Perspective



Photo 3 - Southern Perspective



Photo 4 – Western Perspective



Photo 5 – Southern Perspective Vegetation – Hunter Macleay Dry Sclerophyll Forest



Photo 6 – Existing Access Road and Overhead Power Lines



2.0 ASSESSMENT

2.1 VEGETATION ASSESSMENT

The vegetation was determined by the following methods:

- Near Map to identify vegetation cover;
- Sharing and Enabling Environmental Data (SEED) Portal to identify Vegetation Classification, Fire History and Biodiversity Values Map;
- ePlanning Spatial Viewer to identify Bushfire Prone Land Map; and
- Site Inspection on 6 August 2020 to confirm vegetation formation using Keith, 2004, 'Ocean Shores to Desert Dunes'.

The predominant vegetation formation within 140m in all directions around the proposed building has been identified to be Forest with a Surface & Elevated Fuel Load of 22t/ha and a Total Fuel Load of 36.1t/ha in accordance with the RFS, 2019, Planning for Bushfire Protection.

The removal of native flora or fauna will not be required to achieve the development, including the establishment of APZs.

2.2 SLOPE ASSESSMENT

The effective slope was determined by the following methods:

- Elevation and Depth – Foundation Spatial Data (ELVIS) to identify 2m Contours; and
- Site Inspection on 6 August 2020 to confirm slope using a Nikon Rangefinder.

The effective slope of the land within 100m in all directions around the building ranges from 18 to 21 degrees upslope. The effective slope for each direction is outlined below.

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:

Table 5 – BAL Table

Direction	Vegetation	Surface Fuel (t/ha)	Overall Fuel (t/ha)	Rise (m)	Run (m)	Slope (°)	Separation(m)	BAL
Transect 1 (N)	Low Threat - Managed	-	-	-	-	-	-	BAL-LOW
Transect 2 (E)	Low Threat - Managed	-	-	-	-	-	-	BAL-LOW
Transect 3 (S)	Forest	22	36.1	25	77	-18	25	BAL-29
Transect 4 (W)	Forest	22	36.1	10	26	-21	213	BAL-LOW

The development area is setback 25m from the classified vegetation to the south and therefore is required to be constructed to BAL-29 in accordance with National Construction Code (NCC) with the exception of the construction requirements of the RFS, 2019, 'Planning for Bushfire Protection' (Part 7 – Residential Infill Development).

A description of this BAL is provided by the following table.

Table 6 – Heat flux exposure and appropriate BAL

Heat flux exposure	Description	BAL
N/A	Minimal attack from radiant heat and flame due to the distance of the building from the vegetation, although some attack by burning debris is possible. There is insufficient threat to warrant specific construction requirements.	BAL-LOW
<12.5	Attack from burning debris is significant with radiant heat (not greater than 12.5kW/m ²). Radiant heat is unlikely to threaten building elements (such as unscreened glass). Specific construction requirements for ember protection and accumulation of debris are warranted.	BAL-12.5
>12.5 ≤ 19	Attack by burning debris is significant with radiant heat flux (not greater than 19kW/m ²) threatening some building elements (such as screened glass). Specific construction requirements for embers and radiant heat are warranted.	BAL-19
>19 ≤ 29	Attack by burning debris is significant and radiant heat flux (not greater than 29 kW/m ²) threatens building integrity. Specific construction requirements for ember and higher levels of radiant heat are warranted. Some flame contact is possible.	BAL-29
>29 ≤ 40	Radiant heat flux and potential flame contact could threaten building integrity.	BAL-40
>40	Significant radiant heat and significantly higher likelihood of flame contact from the fire front will threaten building integrity and result in significant risk to residents.	BAL-FZ

2.5 SHIELDING

The RFS, 2019, PBP states that 'Where an elevation is shielded from direct radiant heat arising from a bushfire attack, then the construction requirements for that elevation can be reduced to the next lower BAL' (p. 86).

For the development, no reduction requirements due to shielding are identified under AS3959 (Clause 3.5 – Reduction in Construction Requirements Due to Shielding) because neither of the building elevations are shielded from the bushfire. The exact siting of the dwelling house within the building envelope will also be the subject of a future Bushfire Assessment Report.

2.6 STRATEGIC MATTERS

The following table lists the matters to be addressed by a Bush Fire Strategic Study under the NSW RFS, 2019, 'Planning for Bushfire Protection' in order to demonstrate that strategic consideration has been provided to the site from a bushfire perspective.

Table 7 – Strategic Matters Table (NSW RFS, 2018, p.35)

No	Issue	Detail	Assessment Considerations	Assessment
1	Bush fire landscape assessment	A bushfire landscape assessment considers the likelihood of a bush fire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.	The bush fire hazard in the surrounding area, including: <ul style="list-style-type: none"> • Vegetation • Topography • Weather 	The vegetation, topography, and weather (i.e. FDI) is discussed within this BAR (Part 2.0 – Assessment). A discussion of the potential fire behaviour in terms of Climate/Fire History is provided within this BAR (Part 1.0 – Introduction).
2			The potential fire behaviour that might be generated based on the above.	
3			Any history of bush fire in the area.	A discussion of Fire History and Potential Fire Runs is provided within this BAR (Part 1.0 – Introduction).
4			Potential fire runs into the site and intensity of such fire runs.	
5	Land use assessment	The land use assessment will identify the most appropriate locations within the masterplan area or site layout for the proposed land uses.	The risk profile of different areas of the development layout based on the above landscape study.	The highest risk comes from the identified bushfire hazard to the south in relation to the proposed building envelope. This BAR demonstrates that a future dwelling could be sited to achieve BAL-29 and the application of other Bushfire Protection Measures (BPM) can reduce this risk for people, buildings, and the environment.
6			The proposed land use zones and the resultant permitted land uses.	The planning proposal seeks to amend Schedule 1 of the Cessnock Local Environmental Plan to enable a dwelling to be permissible with development consent on the site. No change to the land-use zoning is proposed.
7			The most appropriate siting of different uses based on risk profiles	The proposed site is located on relatively flat land with the south and west aspects

			within the site (i.e. not locating development on ridge tops, SFPP development to be in lower risk areas of the site); and	having upslopes of 18-21 degrees. The siting is considered the most appropriate because it is the flattest part of the existing lot. The aspects to the north and east have low threat vegetation.
8			The impact of the siting of these uses on APZ provision.	
9	Access and egress	A study of the existing and proposed road networks both within and external to the masterplan area or site layout.	The capacity for the proposed road network to deal with evacuating residents and responding emergency services, based on the existing and proposed community profile.	Taylor's Road has the capacity to deal with evacuating residents. In this case, the proposed rezoning and proposed future dwelling addresses the needs of the inhabitants on this site and not a residential subdivision.
10			The location of key access routes and direction of travel.	The site will have direct access to Taylor Road which provides direction of travel away from the identified bushfire hazard.
11			The potential for development to be isolated in the event of a bush fire.	The development is unlikely to become isolated in the event of a bush fire as the predominant bushfire hazard and Taylors Road to the north is low threat vegetation.
12	Emergency services	An assessment of the future impact of new development on emergency service provision.	Consideration of the increase in demand for emergency services responding to a bush fire emergency (including the need for new stations/bridges); and	The development is to rezone the lot for a possible future dwelling. This should not have an impact on the demand for emergency services. It is suggested that the Cessnock NSW RFS be consulted during the public exhibition period of the planning proposal in order to understand their capacity.
13			Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency.	The proposed dwelling will have direct access to Taylors Road. The access road will pass by an existing large dam which is situated less than 200m from Taylors

				Road. The proposed dwelling will be less than 200m from this dam which will provide emergency services the ability to carry out fire suppression as well exit in safety.
14	Infrastructure	An assessment of the issues associated with infrastructure provision.	The ability of the reticulated water system to deal with a major bush fire event (particularly in terms of water pressure); and	Reticulated water is not available, and it will be necessary to have a 10,000L water tank based on the development being less than 10ha.
15			Life safety issues associated with fire and proximity to high voltage power lines, natural gas supply lines, etc.	The surrounding lots are serviced by overhead power lines however the proposal has the potential to place power lines underground.
16	Adjoining land	The impact of new development on adjoining landowners and their ability to undertake bush fire management.	<p>Consideration of the implications of a change in land use on adjoining land including:</p> <ul style="list-style-type: none"> • The ability of adjoining and nearby land to carry a bush fire; and • Consideration of increased pressure on adjoining landowners to introduce or increase BPMs through the implementation of Bush Fire Management Plans as a result of the changes in land use. 	The size and shape of the proposed lot means that the required APZs have been demonstrated to be accommodated within the existing property boundaries.

2.7 MINISTERIAL DIRECTION (4.4 – PLANNING FOR BUSFHIRE)

The Environmental Planning & Assessment Act 1979 (Section 9.1, Ministerial Direction 4.4 – Planning for Bush Fire Protection) identifies that a planning proposal must, where development is proposed, comply with the appropriate provisions.

These provisions are listed, and a response provided, within the following table.

Table 8 – Ministerial Direction Table (EP&A Act 1979, Section 9.1)

No	Provision	Response
1	<p>Provide an APZ incorporating:</p> <ul style="list-style-type: none"> An Inner Protection Area (IPA) bounded by a perimeter road or reserve, which circumstances the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property. An Outer Protection Area (OPA) managed for hazard reduction and located on the bushland side of the perimeter road. 	<p>This BAR recommends an APZ of 25m to the south of the proposed siting of the dwelling house which is within the boundaries of the site. This is to be managed as an IPA.</p> <p>A portion of this could be managed as part of a OPA in accordance with Planning for Bushfire Protection (Table A1.12.4), which could be discussed as part of the future BAR for the dwelling house.</p>
2	For infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the Rural Fires Act 1997), the APZ provisions must be complied with.	The development is for residential infill development and the APZ can be achieved within the boundaries of the site.
3	Contain provisions for adequate water supply for firefighting purposes,	This BAR identifies that reticulated water is not available and a provision of a 10,000L water tank will be a requirement of this development. This is in addition to the existing dam 200m from the proposed dwelling.
4	Minimise the perimeter of the area of land interfacing the hazard, which may be developed,	The proposed siting of the dwelling house will minimise the major threat of vegetation bush fire hazard to the south. The aspect of the front of the house will be north with the access road to the east being away from the major threat.

5	Introduce controls on the placement of combustible materials in the IPA.	The description of how the IPA will be managed can be conditioned as part of the Development Approval for the proposed dwelling house.

3.0 BUSHFIRE PROTECTION MEASURES

3.1 ASSET PROTECTION ZONES

The RFS, 2019, PBP states that the intent of these Bushfire Protection Measures is 'to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities' (p.65).

Compliance with Table 7.4a – Performance criteria and acceptable solutions for residential infill development in relation to APZs is demonstrated below.

Table 9 - Compliance with PBP for Asset Protection Zones

No	Performance Criteria	Acceptable Solution	Complies	Response
1	<ul style="list-style-type: none"> APZs are provided commensurate with the construction of the building; and A defensible space is provided onsite 	An APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1.	Yes	This BAR identifies that the APZ has been calculated in accordance with tables A1.12.2 and A1.12.3 to demonstrate that building may be capable of achieving BAL-29, which relates to not exceeding 29kW/m ² .
2	<ul style="list-style-type: none"> 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.	Yes	<p>The BAR identifies that the APZ managed as an Inner Protection Area (IPA) is in accordance with Appendix 4 of PBP.</p> <p>The requirements of Appendix 4 are repeated in the recommendations of this BAR.</p>
3	<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. 	APZs are wholly within the boundaries of the development site.	Yes	The BAR identifies that the APZ is wholly within the boundaries of the site.
4		APZs are located on lands with a slope less than 18 degrees.	Yes	The slope of lands on which APZs are located are no greater than 18 degrees.
5	Home-based childcare: The building must not be exposed to radiant heat levels exceeding 29kW/m ² (1090K).	An APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1	Not Applicable	The development is not for home-based childcare and therefore this performance criteria does not apply.

3.2 SITING AND DESIGN PRINCIPLES

The RFS, 2019, PBP does not include siting and design principles. In turn, the siting and design principles from the RFS, 2006, PBP (Section 4.3.5 – Specifications and Requirements for Bush Fire Protection Measures for Infill Development) have been discussed below.

Commentary regarding these Siting and Design principles of the development is outlined below.

Table 10 – Compliance with PBP for Siting and Design

No	Performance Criteria	Acceptable Solution	Complies	Response
1	Buildings are sited and designed to minimise the risk of bush fire attack.	Buildings are designed and sited in accordance with the siting and design principles in this section (see also Figure 4.7 (p.42)).	Able to Comply	<p>The performance of the proposed future dwelling house would be enhanced through the following siting and design principles:</p> <ol style="list-style-type: none"> 1. Not built on a ridge top or saddle; 2. Reduction in the bulk of a building (height and width) facing a bushfire hazard; 3. Simple building design with reduced numbers of re-entrant corners; 4. Provision of a simplified roofline; and 5. Avoiding raised floors and utilising concrete slabs (raft construction); 6. Reducing the number of windows facing the bushfire hazard.

3.3 ACCESS

The RFS, 2019, PBP states that the intent of these Bushfire Protection Measures is 'to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities' (p.65).

Compliance with Table 7.4a – Performance criteria and acceptable solutions for residential infill development in relation to Access is demonstrated below.

Table 9 – Compliance with PBP for Access

No	Performance Criteria	Acceptable Solutions	Complies	Response
1	Firefighting vehicles are provided with safe, all-weather access to structures and	Property access roads are two-wheel, all weather roads.	Able to Comply	The property access road will be a two-wheel, all weather road.

	hazard vegetation.			
2	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.	Able to Comply	The capacity of road surfaces and any bridges/causeways can be designed to carry fully loaded firefighting vehicles (up to 23 tonnes).
3	There is appropriate access to water supply.	Hydrants are provided in accordance with the relevant causes of AS2419.1:2005	Able to Comply	A static water and hydrant supply are required because reticulated water is not available.
4		There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	Able to Comply	A static water and hydrant supply are required because reticulated water is not available.
5	Firefighting vehicles can access the dwelling and exit the property safely.	At least one alternative property access road is provided for individual dwellings or groups of dwellings that are located more than 200 metres from a public through road.	Able to Comply	The proposed future dwelling is greater than 200m from a public road. An alternative property access road will be required that accesses Taylors Road, west of the dam.
6		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.	Not Applicable	The proposed future dwelling is more than 70m from Taylors Road and requires specific access requirements.

		In circumstances where this cannot occur, the following requirements apply:		
7		Minimum 4m carriageway width	Able to Comply	
8		In forest, woodland and health situations, rural property roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m, at the passing bay	Able to Comply	Passing bay is required as access to Taylors Road is greater than 200m
9		A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches.	Able to Comply	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches.
10		Property access must provide a suitable turning head in accordance with Appendix 3	Able to Comply	Property access must provide a suitable turning head in accordance with Appendix 3.
11		Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress.	Able to Comply	Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress.
12		The minimum distance between inner and outer curves is 6m.	Able to Comply	The minimum distance between inner and outer curves is 6m.
13		The crossfall is not more than 10 degrees.	Able to Comply	The crossfall is not more than 10 degrees.
14		Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.	Able to Comply	Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.

15		A development compromising more than three dwellings has formalised access by dedication of a road and not a right of way.	Not Applicable	Does not apply.
16		Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.	Not Applicable	Does not apply.

3.4 WATER SUPPLIES

The RFS, 2019, PBP states that the intent of these Bushfire Protection Measures is 'to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities' (p.65).

Compliance with Table 7.4a – Performance criteria and acceptable solutions for residential infill development in relation to Water Supplies is demonstrated below.

Table 10 – Compliance with PBP for Water Supplies

No	Performance Solutions	Acceptable Solutions	Complies	Response
1	An adequate water supply is provided for firefighting purposes.	Reticulated water is provided to the development, where available, and	Not Applicable	Does not apply.
2		A static water supply is provided where no reticulated water is available	Able to Comply	A static water and hydrant supply are required because reticulated water is not available.
3	<ul style="list-style-type: none"> Water supplies are located at regular intervals The water supply is accessible and reliable for 	Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005	Able to Comply	A static water and hydrant supply are required because reticulated water is not available.
4		Hydrants are not located within any road carriageway	Not Applicable	No hydrants currently exist.

5	firefighting purposes	Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	Not Applicable	Does not apply.
6	Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005	Able to Comply	A static water and hydrant supply are required because reticulated water is not available.
7	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.	Able to Comply	A static water and hydrant supply are required because reticulated water is not available.
8	A static water supply is provided for firefighting purposes in areas where reticulated water is not available.	Where no reticulated water supply is available, water for firefighting purposes is provided in accordance with Table 5.3d, being: <ul style="list-style-type: none"> Residential lots (<1000m²) are to provide 5,000L/lot Rural residential lots (1,000-10,000m²) are to provide 10,000L/lot Large rural/lifestyle lots (>10,000m²) are to provide 20,000L/lot Multi-dwelling housing (including dual occupancies) are to provide 5,000L/dwelling 	Able to Comply	A static water and hydrant supply is required because reticulated water is not available. The site is 8.46ha and therefore 10,000 litres will be required.
9		A connection for firefighting purposes is located within the IPA or non-hazard side an away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet.		A connection for firefighting purposes is located within the IPA or non-hazard side an away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet.
10		Ball valve and pipes are adequate for water flow and are metal.		Ball valve and pipes are adequate for water flow and are metal.
11		Supply pipes from tank to ball valve have the same bore size to ensure flow volume.		Supply pipes from tank to ball valve have the same bore size to ensure flow volume.

12		Underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank.	Able to Comply	Underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank.
13		A hardened ground surface is supplied within 4m.	Able to Comply	A hardened ground surface is supplied within 4m.
14		Above-ground tanks are manufactured from concrete or metal.	Able to Comply	Above-ground tanks are manufactured from concrete or metal.
15		Raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959).	Able to Comply	Raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959).
16		Unobstructed access can be provided at all times.	Able to Comply	Unobstructed access can be provided at all times.
17		Underground tanks are clearly marked.	Able to Comply	A static water tank is required. If an underground tank is built it will be clearly marked.
18		Tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters.	Not Applicable	The static water tank is required to be built on the non-hazard side.
19		All exposed water pipes external to the building are metal, including the fittings.	Able to Comply	All exposed water pipes external to the building are metal, including the fittings.
20		Where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump and are shielded against bush fire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter.	Able to Comply	Where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump and are shielded against bush fire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter.

21		Fire hose reels are constructed in accordance with AS/NZS 1221:1997 and installed in accordance with the relevant clauses of AS 2441:2005.	Able to Comply	Fire hose reels are constructed in accordance with AS/NZS 1221:1997 and installed in accordance with the relevant clauses of AS 2441:2005.
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3.5 GAS SERVICES

The RFS, 2019, PBP states that the intent of these Bushfire Protection Measures is 'to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities' (p.65).

Compliance with Table 7.4a – Performance criteria and acceptable solutions for residential infill development in relation to Gas Services is demonstrated below.

Table 11 – Compliance with PBP for Gas Services

No	Performance Solutions	Acceptable Solutions	Complies	Response
1	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 and the requirements of relevant authorities, and metal piping is used.	Able to Comply	Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used.
2		All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side.	Able to Comply	All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side.
3		Connections to and from gas cylinders are metal.	Able to Comply	Connections to and from gas cylinders are metal.
4		Polymer-sheathed flexible gas supply lines are not used.	Able to Comply	Polymer-sheathed flexible gas supply lines are not used.
5		Above-ground gas service pipes are metal, including and up to any outlets.	Able to Comply	Above-ground gas service pipes are metal, including and up to any outlets.

3.6 CONSTRUCTION STANDARDS

The NSW RFS, 2019, 'Planning for Bushfire Protection' states that:

'The NCC contains Performance Requirements and Deemed-to-Satisfy provisions relating to the construction of buildings in bush fire prone areas. In NSW, these provisions apply to Class 1, 2 and 3 buildings, Class 4 parts of a building, Class 9 buildings that are SFPP, and associated class 10a buildings and decks' (p.21).

The National Construction Code 2019 (NCC) (P2.7.5 – Buildings in bushfire prone areas) identifies that 'A Class 1 building or Class 10a building or deck associated with a Class 1 building that is constructed in a designated bushfire prone area must, to the degree necessary, be designed and constructed to reduce the risk of ignition from a bushfire, appropriate to the: a) potential for ignition caused by burning embers, radiant heat or flame generated by a bushfire; and b) intensity of the bushfire attack of the building' (p.73).

Compliance with Table 7.4a – Performance criteria and acceptable solutions for residential infill development in relation to Construction Standards is demonstrated below.

Table 12 – Compliance with PBP for Construction Standards

No	Performance Criteria	Acceptable Solution	Complies	Response
1	The proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.	BAL is determined in accordance with Tables A1.12.5 to A1.12.7	Yes	<p>This BAR identifies that the APZ has been calculated in accordance with Table A1.12.2 or A1.12.3 in Appendix 1 to demonstrate that the development is to be constructed to BAL-29.</p> <p>For the development, no reduction requirements due to shielding are identified under AS3959 (Clause 3.5 – Reduction in Construction Requirements Due to Shielding) because the building elevation is not shielded from the bushfire.</p>
2		Construction is provided in accordance with the NCC and as modified by section 7.5 (please see advice on construction in the flame zone)	Able to Comply	<p>The proposed north, east, south and west elevations of the development and the entire roof of a future dwelling house shall be constructed to comply with Sections 3 and 7 (BAL-29) of Australian Standard AS3959-2018– 'Construction of buildings in bushfire prone areas' or NASH Standard (1.7.14) – National Standard Steel Framed Construction in Bushfire Areas – 2014', except where varied to be consistent with the RFS, 2019, 'Planning for Bushfire</p>

				Protection' (Clause 7.5.2 – NSW State Variations).
3	Proposed fences and gates are designed to minimise the spread of bush fire	Fencing and gates are constructed in accordance with section 7.6	Able to Comply	Fences and gates can be constructed to be in accordance with section 7.6 (i.e. fences should be hard-wood or non-combustible in bushfire prone areas. When they are less than 6m from the dwelling house, then they should be non-combustible).
4	Proposed Class 10a buildings are designed to minimise the spread of bush fire	Class 10a buildings are constructed in accordance with section 8.2.3	Not Applicable	No class 10a buildings are proposed.
5	Home-based child-care: the proposed building can withstand bush fire attack in the form of wind, localised smoke, embers and expected levels of radiant heat.	An APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1 of this document around the entire building or structure.	Not Applicable	The development is not for home-based child-care and therefore this performance criteria does not apply.
6		The existing dwelling is required to be upgraded to improve ember protection. This is to be achieved by enclosing or covering all openings with a corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture of 2mm. Where applicable, this includes the openable portion of the windows, vents, weepholes and eaves, but does not include roof tile spaces. Weather strips, draught excluders or draught seals shall be installed at the base of side hung external doors	Not Applicable	The development is not for home-based child-care and therefore this performance criteria does not apply.

		as per AS3959. The subfloor space must be enclosed.		
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3.7 LANDSCAPING

The RFS, 2019, PBP states that the intent of these Bushfire Protection Measures is 'to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities' (p.65).

Compliance with Table 7.4a – Performance criteria and acceptable solutions for residential infill development in relation to Landscaping is demonstrated below.

Table 13 – Compliance with PBP for Landscaping

No	Performance Solutions	Acceptable Solutions	Complies	Response
1	Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind drive embers to cause ignitions.	Compliance with the NSW RFS 'Asset protection zone standards' (see Appendix 4).	Able to Comply	The BAR identifies that 25m to the north, east, south and west of the future dwelling house is to be managed as an Inner Protection Area in accordance with PBP (Appendix 4). The requirements of Appendix 4 are repeated in the recommendations of this BAR.
		A clear area of low-cut lawn or pavement is maintained adjacent to the house.	Able to Comply	A clear area of low-cut lawn or pavement is required in the future.
2		Fencing is construction in accordance with section 7.6.	Able to Comply	Fencing is to be constructed in accordance with PBP (Section 7.6).
3		Trees and shrubs are located so that: <ul style="list-style-type: none"> The branches will not overhang the roof 	Able to Comply	Trees and shrubs are located so that: <ul style="list-style-type: none"> The branches will not overhang the roof The tree canopy is not continuous Any proposed windbreak is located on the elevation

		<ul style="list-style-type: none"> • The tree canopy is not continuous • Any proposed windbreak is located on the elevation from which fires are likely to approach. 		from which fires are likely to approach.
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3.8 EMERGENCY MANAGEMENT

The RFS, 2019, PBP states that the intent of these Bushfire Protection Measures is 'to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities' (p.65).

Compliance with Table 7.4a – Performance criteria and acceptable solutions for residential infill development in relation to Landscaping is demonstrated below.

Table 14 – Compliance with PBP for Emergency Management

No	Performance Solutions	Acceptable Solutions	Complies	Response
1	Home-based child-care: a bushfire emergency and evacuation management plan is prepared.	A Bush Fire Emergency Management and Evacuation Plan is prepared by the operator consistent with the NSW RFS publication: A guide to Developing a Bush Fire Emergency and Evacuation Plan, and the AS 3745:2010	Not Applicable	The development is not for home-based child-care and therefore this performance criteria does not apply.

4.0 RECOMMENDATIONS

This BAR provides the following recommendations:

General

1. Council to refer the Planning Proposal to the NSW RFS if it is listed as a condition on the Gateway Determination.

Asset Protection Zones

2. At the commencement of building works and in perpetuity the area from the dwelling house to the north, east, south and west for a distance of 25m is to be managed as an Inner Protection Area as outlined in the NSW RFS document 'Standards for Asset Protection Zones' and the RFS, 2019, 'Planning for Bushfire Protection' (Clause 7.5.2 – NSW State Variations).

The following dot points are to guide the establishment and ongoing management of the area identified to be an IPA:

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

b. 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

c. 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 is to comply with the NSW RFS, 2019, 'Planning for Bushfire Protection' (Table 7.4a – Performance criteria and acceptable solutions for residential infill development).

Gutter Guards

5. Roofing shall be gutter less or have leafless guttering and valleys to prevent the build-up of flammable material. Any materials used to prevent the build-up of debris in the gutter shall have a flammability index of no greater than 5.

Water Supplies

6. The development is to be linked to a static water supply in accordance with NSW RFS, 2019, 'Planning for Bushfire Protection' (Table 7.4a – Performance criteria and acceptable solutions for residential infill development).

Electricity and Gas Supplies

7. New electricity and gas supplies shall be installed in accordance with the NSW RFS, 2019, 'Planning for Bushfire Protection' (Table 7.4a – Performance criteria and acceptable solutions for residential infill development).

Construction

New works shall be constructed to Sections 3 and 7 (BAL-29) of Australian Standard AS3959-2018– 'Construction of buildings in bushfire prone areas' or NASH Standard (1.7.14) – National Standard Steel Framed Construction in Bushfire Areas – 2014', except where varied to be consistent with the RFS, 2019, 'Planning for Bushfire Protection' (Clause 7.5.2 – NSW State Variations).

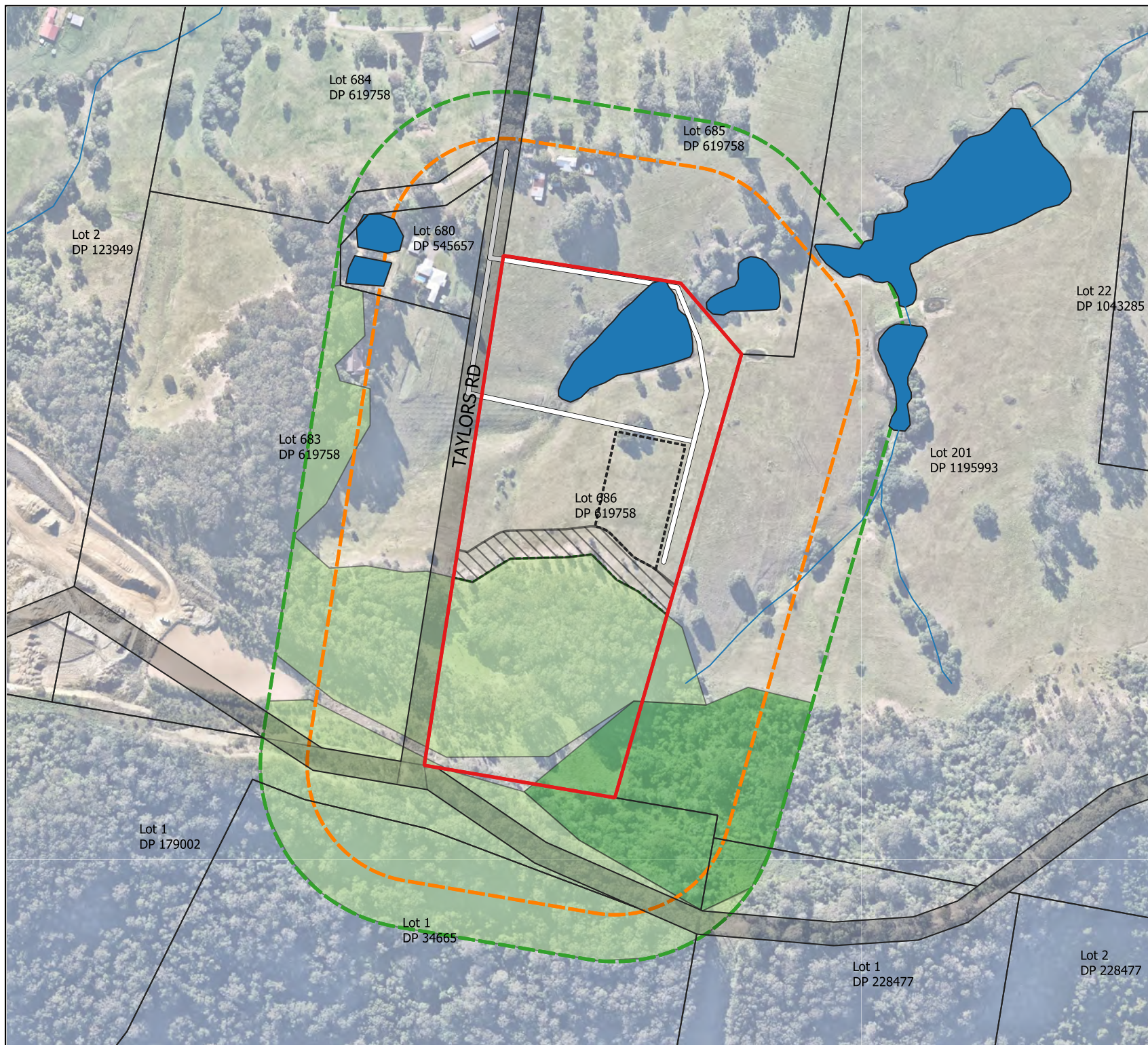
Landscaping

8. A landscape plan should be prepared that is consistent with the requirements of NSW RFS, 2019, 'Planning for Bushfire Protection' (Appendix 4 – Asset Protection Zone Requirements)

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.



58 Taylors Rd, Black Hill

Figure 7 - Bushfire Protection Measures Map



- Site Boundary
- Cadastre
- Roads
- Waterways
- Waterbodies
- Slope Buffer - 100m
- Vege Buffer - 140m
- Forest
- Rainforest
- Unmanaged Vege Line
- Property Access
- Indict Building Enve
- APZ - 24m



0 75 150 m

Disclaimer: While every effort is made to ensure this map is free of errors, there is no warrant 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.

Job No: J001291

Date: 20/09/2020

5.0 CONCLUSION

This BAR identifies that the predominant bushfire hazard is located to the south of the site (**FIGURE 6**). This hazard is classified as Forest and is situated on land that has an effective upslope or 0 degrees. The BAR provides a series of recommendations for the different Bushfire Protection Measures (BPM)s. In relation to Asset Protection Zones (APZs), it identifies:

Table 3– BAL Table

Direction	Vegetation	Surface Fuel (t/ha)	Overall Fuel (t/ha)	Rise (m)	Run (m)	Slope (°)	Separation(m)	BAL
Transect 1 (N)	Low Threat - Managed	-	-	-	-	-	-	BAL-LOW
Transect 2 (E)	Low Threat - Managed	-	-	-	-	-	-	BAL-LOW
Transect 3 (S)	Forest	22	36.1	25	77	-18	25	BAL-29
Transect 4 (W)	Forest	22	36.1	10	26	-21	100>	BAL-LOW

Based on the above, the future dwelling house is to be would experience 29Kw/sqm or less in accordance with AS3959 except for the construction requirements of the PBP (Clause 7.5.2 – NSW State Variations. The removal of native flora or fauna will not be required.

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 any one building will withstand bushfire attack on every occasion.

This BAR provides the above required information to assist Council and the RFS in determining compliance in accordance with the PBP and AS 3959-2018.

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Rural Fire Service, 2019, 'Planning for Bushfire Protection', viewed 14 September 2020, < <http://www.rfs.nsw.gov.au>>

Rural Fire Service, March 2019, 'Comprehensive Fuel Loads', viewed 14 September 2020, < <http://www.rfs.nsw.gov.au>>

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ATTACHMENT 1 – AHIMS RESULTS

A basic search of the AHIMS database identified zero sites and/or places.



Office of
Environment
& Heritage

AHIMS Web Services (AWS) Search Result

Purchase Order/Reference : 58 Taylors Road

Client Service ID : 502840

Erin Daniel
PO Box 61
Dungog New South Wales 2420
Attention: Erin Daniel
Email: erin@perceptionplanning.com.au

Date: 07 May 2020

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 686, DP:DP619758 with a Buffer of 0 meters, conducted by Erin Daniel on 07 May 2020.

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 the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

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

ATTACHMENT 2 – INFORMATION TO BE PROVIDED IN A BAR

The checklist below demonstrates that this BAR is in accordance with PBP (Appendix 2) (p.96).

No	General	Response
1	A statement that the site is Bush Fire Prone Land (BFPL).	Please refer to Part 1 – Introduction.
2	The location, extent and vegetation formation of any bushland on or within 140 metres of the site.	Please refer to Part 2 – Assessment.
3	The slope and aspect of the site and of any BFPL within 100 metres of the site.	Please refer to Part 2 – Assessment.
4	Any features on or adjoining the site that may mitigate the impact of a bush fire on the proposed development.	Please refer to Part 1 – Introduction.
5	A statement assessing the likely environmental impact of any proposed Bushfire Protection Measures (BPM)s.	Please refer to Part 1 – Introduction.
6	A site plan showing access, water supplies, APZs, BAL requirements and building footprint in relation to the bush fire hazards.	Please refer to Figures.
7	Calculated BAL construction levels.	Please refer to Part 2 – Assessment.

ATTACHMENT 3 – AIMS AND OBJECTIVES OF PBP

The below table demonstrates consistency with the aims and objectives of PBP.

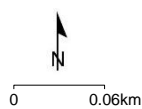
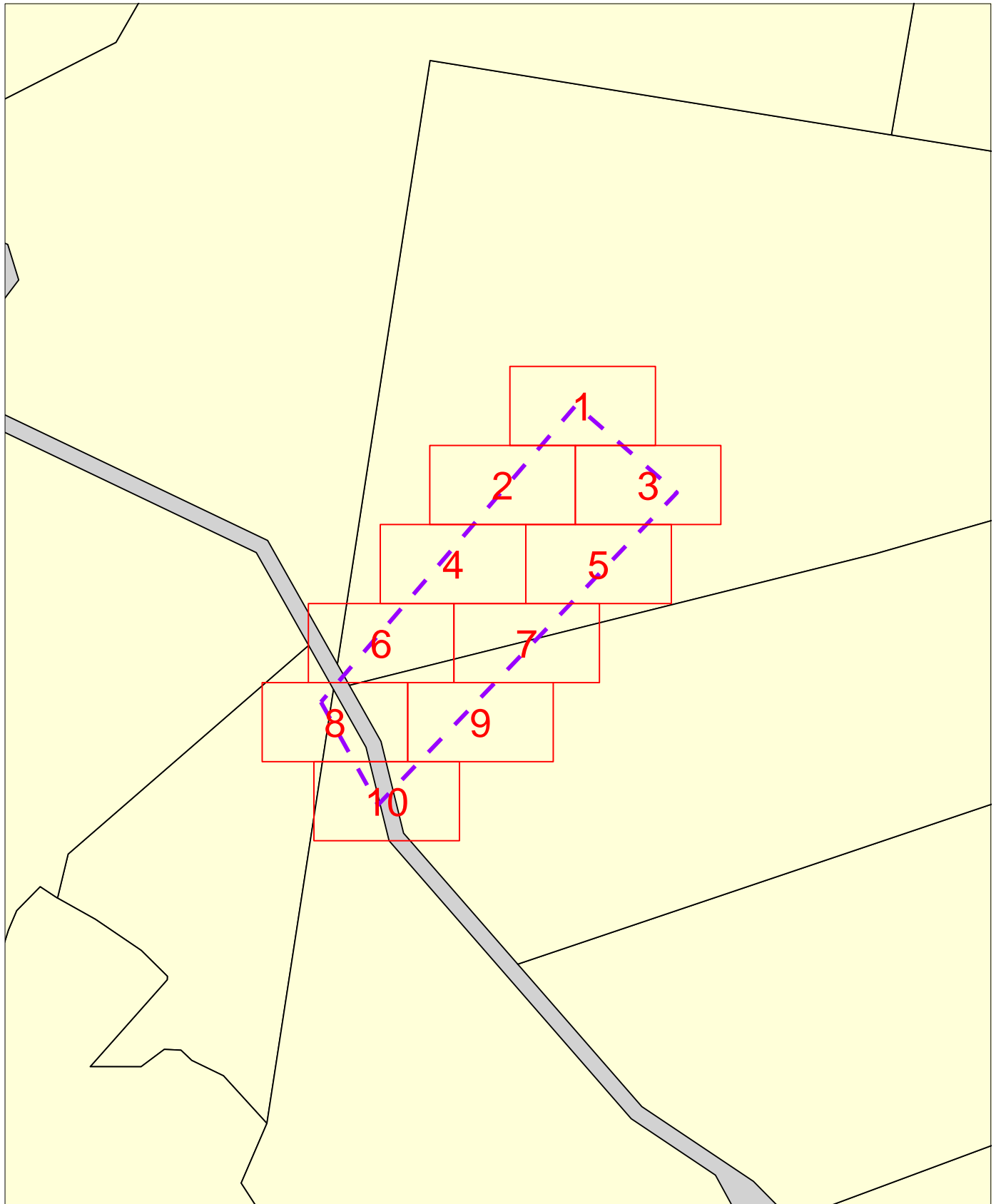
Aims and Objectives – General (p.10)		
No	Objective	Bushfire Assessment Report (BAR)
1	Afford occupants of any building adequate protection from exposure to bush fire.	Please refer to Part 4 – Recommendations.
2	Provide for defensible space to be located around buildings.	Please refer to Part 4 – Recommendations.
3	Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent the likely spread to buildings.	Please refer to Part 4 – Recommendations.
4	Ensure that safe operational access and egress for emergency service personnel and residents is available.	Please refer to Part 4 – Recommendations.
5	Provide for ongoing management and maintenance of bush fire protection measures.	Please refer to Part 4 – Recommendations.
6	Ensure utility services are adequate to meet the needs of firefighters.	Please refer to Part 4 – Recommendations.
Specific Objectives – Infill Development (p.64)		
No	Objective	Bushfire Assessment Report (BAR)
1	Provide a defensible space to enable unimpeded access for firefighting around the building.	Please refer to Part 4 – Recommendations.
2	Provide better bush fire outcomes on a redevelopment site than currently exists, commensurate with the scale of the works proposed.	Please refer to Part 4 – Recommendations.
3	Design and construct buildings commensurate with the bush fire risk.	Please refer to Part 4 – Recommendations.
4	Provide access, services and landscaping to aid firefighting operations.	Please refer to Part 4 – Recommendations.
5	Not impose an increase bush fire management and maintenance responsibly on adjoining landowners.	Please refer to Part 4 – Recommendations.
6	Increase the level of bush fire protection to existing dwellings based on the scale of the proposed work and level of bush fire risk.	Please refer to Part 4 – Recommendations.

ATTACHMENT 4 – WATER AND ELECTRICITY



Overview Map

Sequence No: 101775510
230 Wallaringa Road Wallarobba











LEGEND:



























Hunter Water Corporation DBYD Asset Legend

Electrical Assets



















-  High Voltage
-  Low Voltage
-  Electrical Pole
-  Distribution Transformer
-  Air Break Switch
-  Circuit Breaker
-  High Voltage
-  Low Voltage

Water Assets

























-  Contol Valve
-  Hydrant Control Valve
-  Reflux Valve
-  Stop/Scour Valve
-  Tee & Stop Valve
-  Hydrant
-  Cluster Box
-  End Cap
-  Flushing Tap
-  Manhole
-  Scour
-  Water Meter
-  Water Network Structure
-  Other Main
-  Trunk Main
-  Reticulation Main
-  Water Encased Mains
-  Water Prelaid Service





-  HWC Rain Gauge
-  HWC Stream Flow Gauge
-  Radio Base
-  Weather Station
-  Piezometer
-  Bore Site











RecycledWater Assets

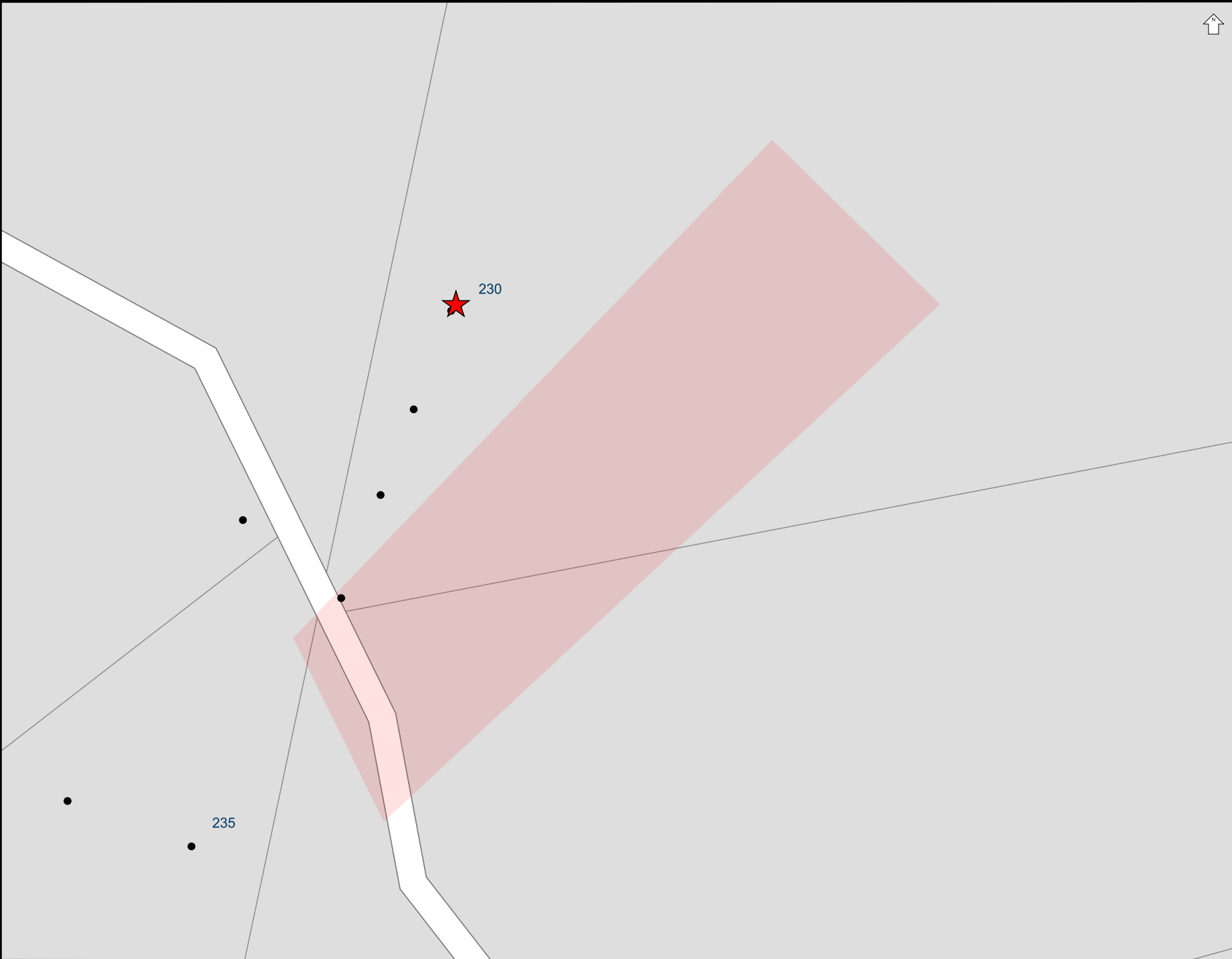
-  Air Valve
-  Reflux Valve Open
-  Stop Valve Open
-  RecycledWater Hydrant
-  Cluster Box
-  End Cap
-  Flushing Tap
-  Manhole
-  Scour
-  RecycledWater Meter
-  RecycledWater Network Structure
-  Other Main
-  Reticulation Main
-  Reticulation Main Encased/Conduit
-  Trunk Main
-  Trunk Main Encased/Conduit
-  RecycledWater Encased Mains
-  RecycledWater Prelaid Service

Sewer Assets

-  Air Valve
-  Stop/Butterfly/Ball Valve
-  Gate Valve
-  Manhole
-  Cap
-  Dead End
-  Flushing Tank
-  H&V Bend
-  Junction Connection
-  Outfall
-  Overflow
-  Sewer/Valve Pit
-  Tangent Point
-  Sewer Meter
-  Sewer Vent
-  Sewer Network Structure
-  Other Main
-  Gravity Main
-  Pressure/Vacuum Main
-  Effluent Main
-  Outfall
-  Overflow Main
-  Rising Main
-  Sewer Encased Mains

-  StormWater Assets
-  StormWater Network Structure
-  StormWater Mains
-  Mains Abandon

- ### Land Details
-  Area of Interest
 -  Easement Non HWC
 -  Fence Line
 -  Non-HWC Easement
 -  HWC Easement
 -  Parcel
 -  Road
 -  Water Parcels
 -  Hazardous Material
 -  Map Sheet Index



Overhead wires not shown
LOOK UP & LIVE!

LEGEND

- LV Underground Cable
- HV Underground Cable
- Underground Pipe
- ★ Underground Earth or Wires
- ▲ Ground Substation
- Pole
- ⊠ Cubicle
- Pit
- Area of Interest

Critical Assets

- Contact Essential Energy
on 13 23 91
- Zone Substation
 - Underground Cable
 - Underground Fibre

Proposed Works

- Area of proposed works

Proposed assets are shown as
orange symbols

THE INFORMATION ON THIS
MAP MAY NOT BE
ACCURATE.
If details are
incorrect, please
notify
Essential Energy on
13 23 91
(or fax 1800 354 636)

ISSUE DATE: 14/09/2020

You must resubmit your
request if you have not
started work within 4 weeks
of the 'Issue Date' above

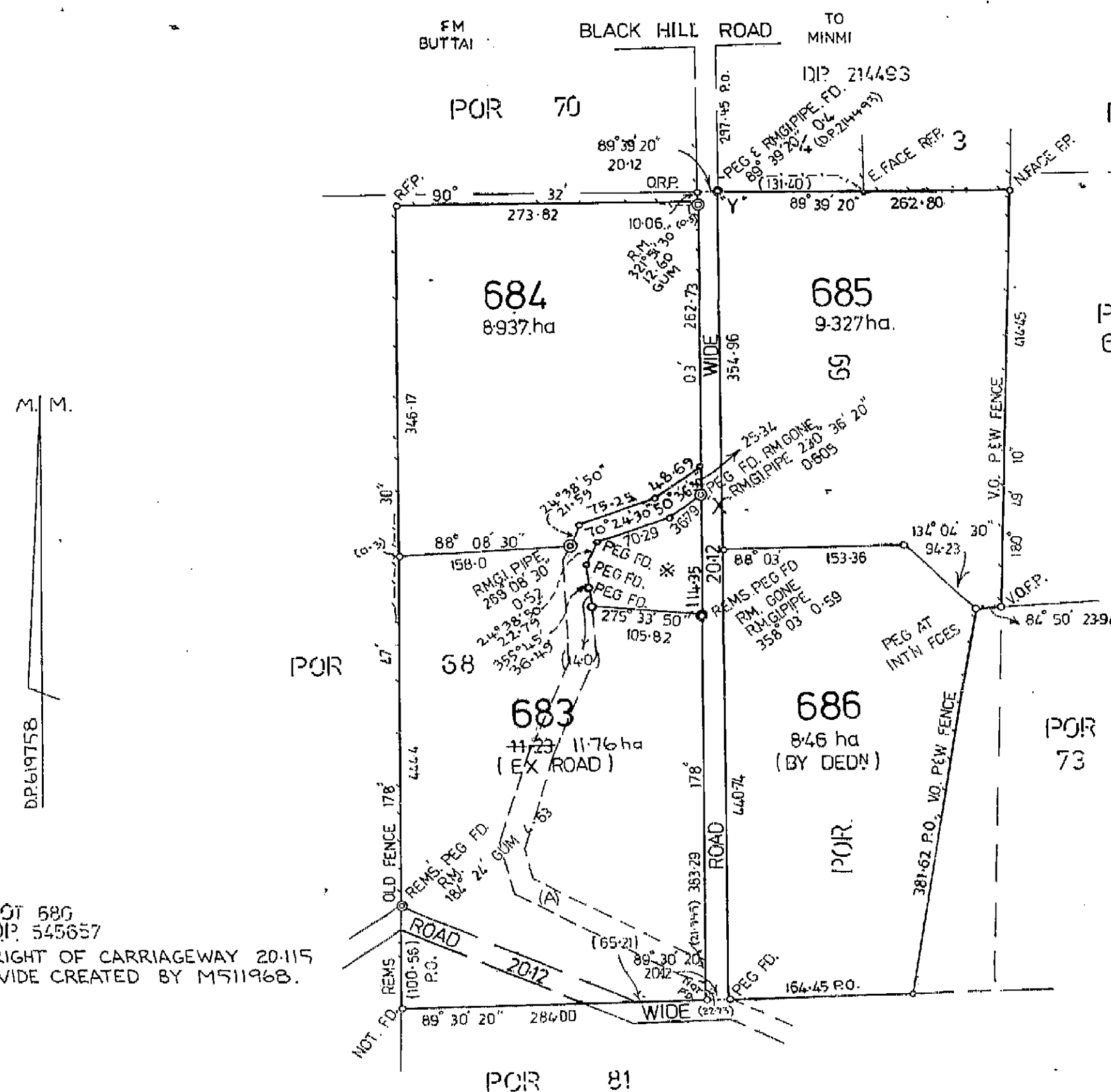
A4 SCALE: 1:3631



ATTACHMENT 5 – DEPOSITED PLAN

1st April, 1982

1 RESTRICTION AS TO USER



※ LOT 580
DP 545657
(A) RIGHT OF CARRIAGEWAY 20.115
WIDE CREATED BY M51196B.

	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	Table of mm										210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390
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	10	20	30	40	50	60	70	80	90	100	110	120	130	140
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58 Taylors Rd, Black Hill

Attachment 6 - Site Plan



- Site Boundary
- Cadastre
- Roads
- Waterways
- Waterbodies
- Indict Building Enve
- Property Access
- Unmanaged Vege Line



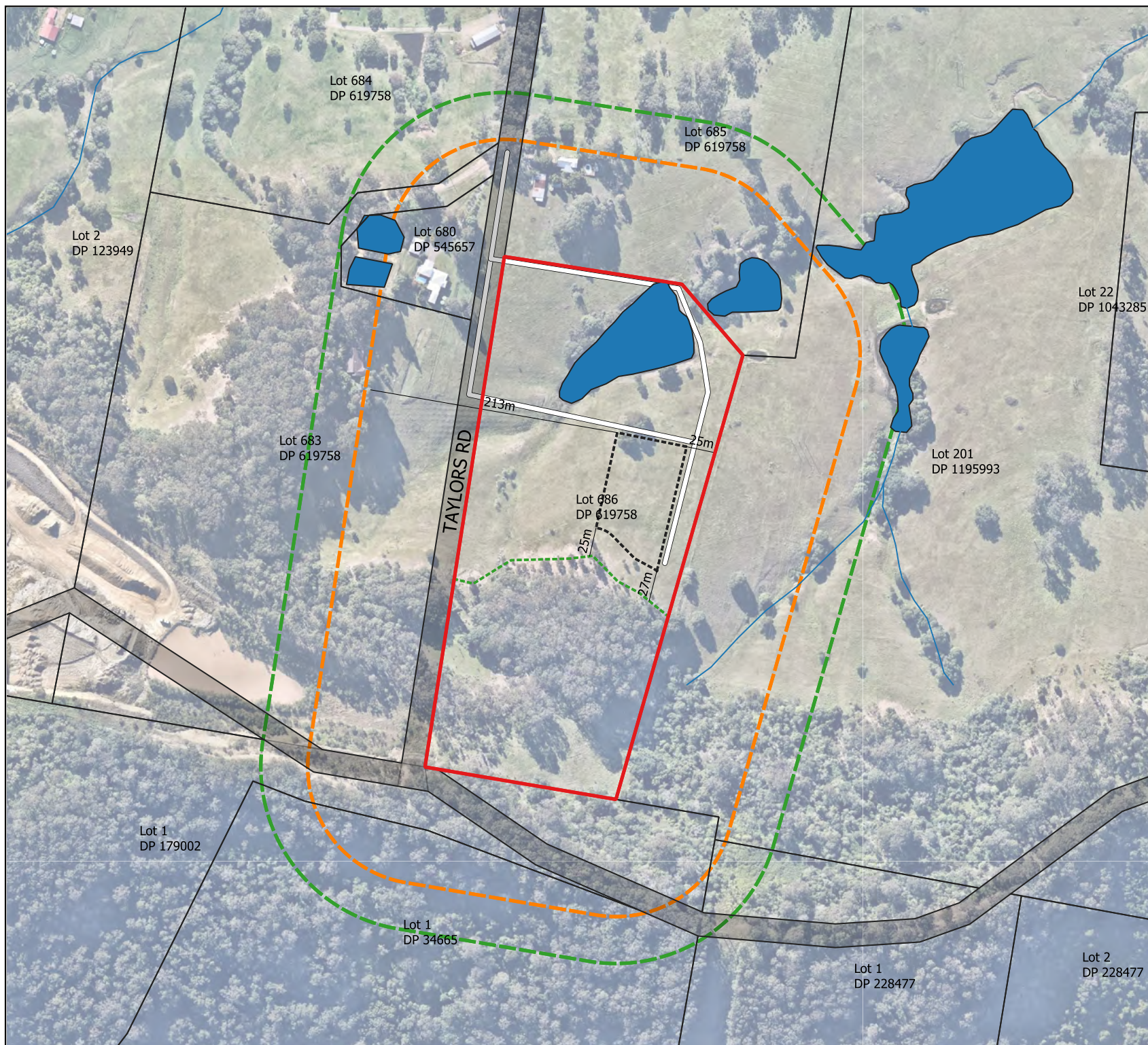
0 75 150 m

A horizontal scale bar with black and white segments, representing distances of 0, 75, and 150 meters.

Disclaimer: While every effort is made to ensure this map is free of errors, there is no warrant 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.

Job No: J001291

Date: 20/09/2020





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Email: admin@perceptionplanning.com.au