

Rifle Range Bushfire Assessment

Popplewell Road, Fern Bay
NSW

Ref: 97963 - 20170283

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24 May 2018

Prepared for:

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Bushfire Threat Assessment

Popplewell Road, Fern Bay NSW

Kleinfelder Job No. NCA16R39082 V3

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Please note:

This report is prepared in accordance with current accepted practice as described in the NSW Rural Fire Service Guide Planning for Bushfire Protection, 2006 – a Guide for Councils, Planners, Fire Authorities, Developers and Home Owners, AS 3959–2009 Construction of buildings in bushfire-prone areas, and the National Construction Code (NCC).

This report is not an insurance policy. Owing to the unpredictable nature of bushfires and of weather conditions at the time of a bushfire, this report cannot be taken as a warranty that the recommended bushfire mitigation measures will protect the property from damage in every possible bushfire event. Ultimately, the onus is on the land owner to accept the risks associated with development on the site in light of the identified bushfire threat.

Document Control:

Version	Date	Author	Technical Review	Peer Review
2.0	May 2017	Dan Pedersen	Dan Pedersen	
3.0	24 May 2018	Dan Pedersen	Dan Pedersen 	Bradley Deane

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EXECUTIVE SUMMARY

Report Type	Bushfire Threat Assessment
Applicant's Name	Defence Housing Australia
Applicant Contact Details	
Site Address	Popplewell Road, Fern Bay NSW
Lot No.	Lot 5
Deposited Plan No.	DP 233358
Local Government Area	Port Stephens Council
Zoning under Newcastle City Council LEP	E2 – Environmental Conservation
Fire Danger Index Area Name	Greater Hunter Region, FDI 100
Bushfire Prone Land	Yes
Source methodology/s	NSW Rural Fire Service (2006), Planning for Bushfire Protection guidelines. Australian Standard 3959–2009: Construction of Buildings in Bushfire-Prone Areas.
Site visit date	20 July 2016
Document date	24 May 2018
Document number	NCA16R39082 V3
Site plan/s attached	No
Conclusion	<p><i>This bushfire assessment provides the proponent with information regarding the assessment of the classified bushfire prone vegetation within and surrounding the subject site and the minimum performance provisions that must be addressed to comply with Chapter 4 of PBP (2006) for residential subdivisions.</i></p> <p><i>This bushfire assessment confirmed that the proposed development can achieve BAL 29 providing recommended APZ are managed. Water and access provisions are deemed suitable for the proposed development.</i></p>

1. SCOPE OF ASSESSMENT

Under the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002* (amends the *Environmental Planning and Assessment Act 1979*) local councils are required to ensure that all developments in bushfire prone lands conform to documented bushfire protection specifications.

DHA are seeking to lodge a planning proposal with Port Stephens Council to rezone the site to allow a diversity of residential uses. A master plan has been developed to demonstrate how the site would develop in accordance with best practice planning and urban design principles.

This report assesses the performance of the illustrated master plan (180510 Stockton Rifle Range Draft indicative Master Plan LR [002]). The design for the property Lot 5 (DP 233358), Popplewell Road, Fern Bay NSW, is assessed against the criteria as detailed in the NSW RFS Planning for Bushfire Protection (PBP).

This report cannot be used for any other design unless authorised and amended by the author of this report. Future detailed Development Applications (DA's) will be supported by detailed bushfire assessment.

1.1 PROJECT DESCRIPTION

The proponent has engaged Kleinfelder to conduct a bushfire threat assessment to inform the planning proposal, which involves the residential uses within an existing Australian Defence Force (ADF) land holding. The subject site was previous used by the ADF as a rifle range and training area.

In May 2017 a draft bushfire assessment was issued. This assessment supersedes the May 2017 draft, as a new layout has been designed. However, the design is within the same footprint as the 2017 design, and adheres to the same performance criteria.

The subject site location and surrounding vegetation and landscape characteristics are shown in **Figure 1**.

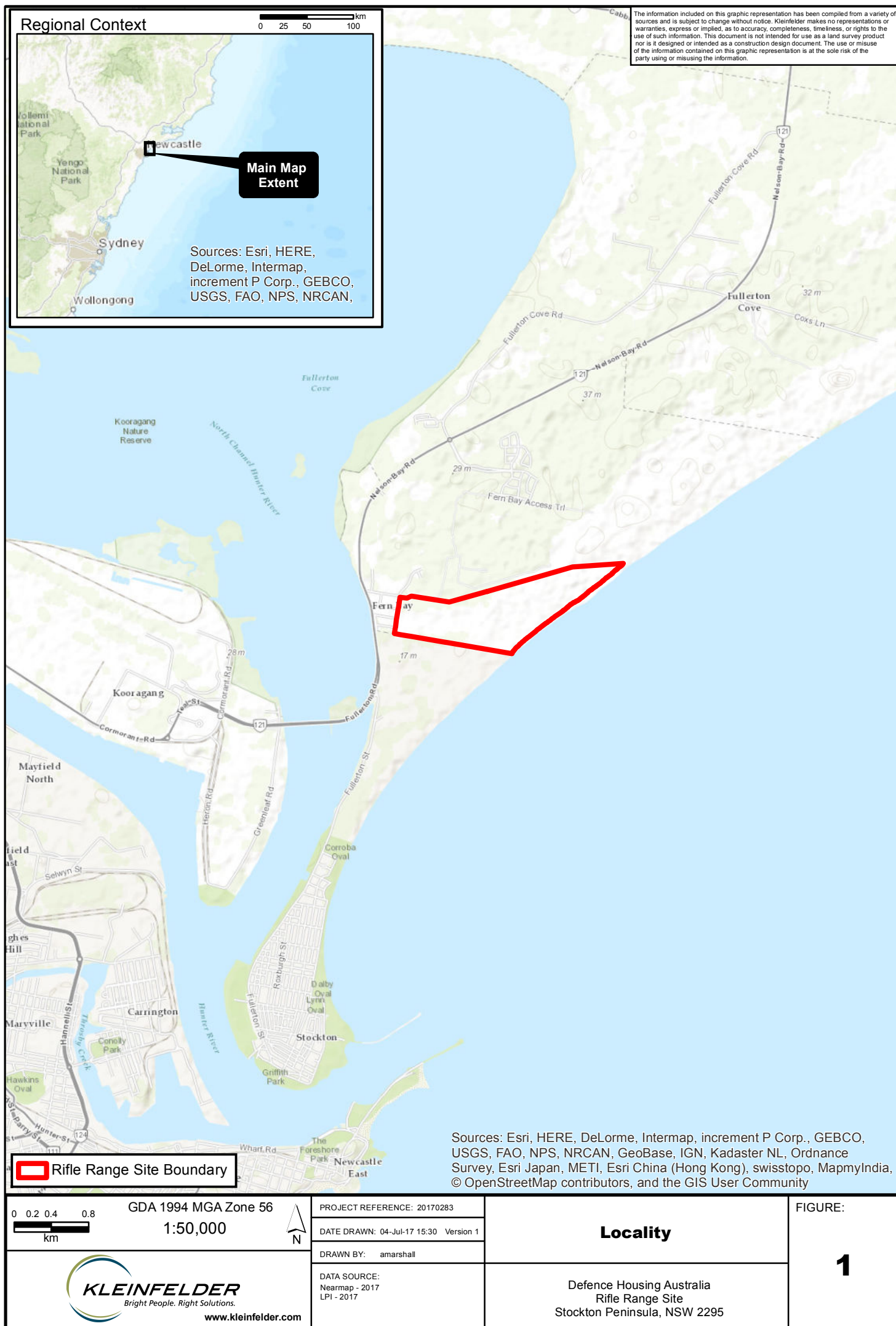
1.2 SITE ASSESSMENT METHODOLOGY

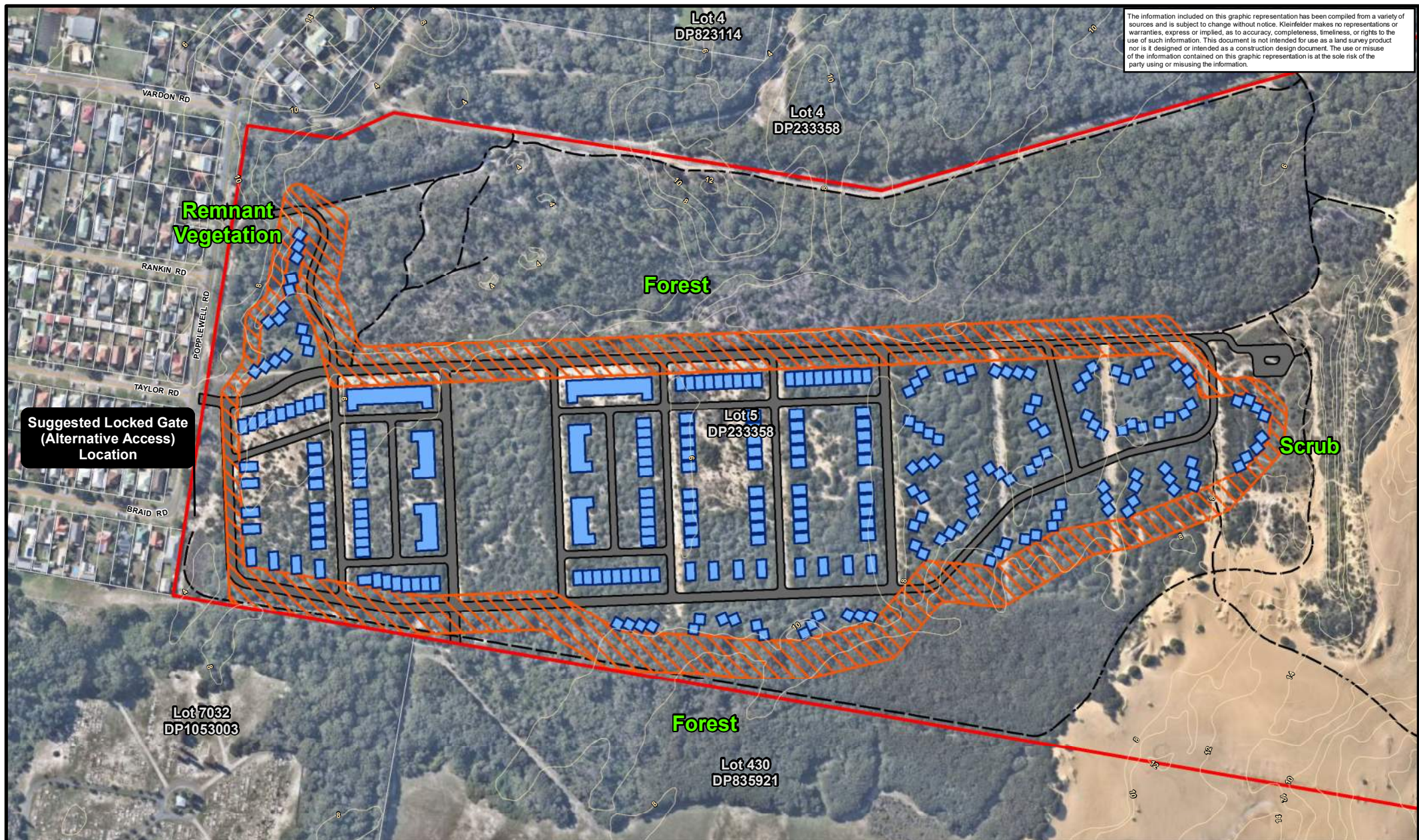
The site assessment methodology used to determine the level of bushfire attack for this development has been sourced from Appendix 2 of the NSW RFS Planning for Bushfire Protection (PBP) (2006). The assessment procedure used to determine the category of bushfire attack level (BAL) is in accordance with AS3959 - 2009.

1.2.1 Integrated Development

Section 4.46 (formerly Section 91) of the EP&A Act defines integrated development – i.e. residential subdivisions. Integrated developments require a formal approval from the NSW Rural Fire Service under s100B of the *Rural Fires Act 1997*.

Section 100B of the *Rural Fires Act 1997* states that the NSW Rural Fire Service can issue a BFSA approval provided the development meets certain requirements and standards. A BFSA authorises development to the extent that it complies with standards regarding setbacks (to mitigate radiant heat), provision of water supply, emergency management and other matters considered by the Commissioner to be necessary to protect persons, property or the environment from danger that may arise from a bushfire. A BFSA requires a bushfire assessment to be prepared in accordance with Clause 44(1) of the *Rural Fires Regulation 2013*, which specifies the information requirements for consideration of a BFSA under section 100B of the RF Act.





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0 15 30 60
metres

1:4,200

GDA 1994 MGA Zone 56

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- Subject Site (Rifle Range)
- Proposed Dwellings and Existing Heritage Buildings
- Proposed Roads
- Asset Protection Zone (13 /25 / 32m Wide)
- Contours (2m)
- Lot Boundaries
- Major Roads
- Local Roads
- Tracks

PROJECT REFERENCE: 20170283

DATE DRAWN: 24/05/2018 11:23 Version 1

DRAWN BY: BDeane

DATA SOURCE:
Architectus - 2018
Nearmap - 2018
DFS1 - 2017

Rifle Range Asset Protection Zone

Defence Housing Australia
Rifle Range Bushfire Assessment
Popplewell Road, Fern Bay NSW

FIGURE:

2

2. BUSHFIRE THREAT ASSESSMENT

2.1 LOCATION AND SURROUNDING LAND USE

The subject site is positioned between Nelson Bay Road to the west, Stockton Beach to the east and the Worimi Regional Park to the north. The southern perimeter of the subject site delineates the boundary between the Port Stephens Council LGA and the Newcastle City Council LGA.

The subject site is currently zoned under the Port Stephens Council LEP (2013) as E2 – Environmental Conservation, however the proponent intends to submit a rezoning application with Port Stephens Council to rezone a proportion of the subject site as RU2 – Low Density Residential.

The surrounding land is comprised of park land, residential development and the Stockton Centre (Disability Services) to the south.

2.2 FIRE WEATHER

Port Stephens Council LGA is within the Greater Hunter Region and has an FDI value of 100 (Table 2.1, AS3959-2009).

2.3 ENVIRONMENTAL FEATURES

The northern perimeter of the subject site delineates the southern boundary of the Worimi Regional Park. The park was established in 2007 and covers an estimated area of 1567ha of land within the Worimi Conservation Lands that stretches along the coastal dune system from Fern Bay to Anna Bay.

2.4 THREATENED SPECIES

No threatened species constrain the bushfire mitigation actions proposed (Umwelt, 2016).

2.5 ABORIGINAL ARTEFACTS

No heritage or artefacts would constrain the bushfire mitigation actions proposed (Umwelt, 2016).

2.6 BUSHFIRE ASSESSMENT

2.6.1 Bushfire Hazard (Vegetation Classification)

The vegetation classification is identified in all directions from the development out to a distance of 140 metres.

The area of vegetation within the subject site located to the north and south side of the proposed development site has been mapped by Port Stephens Council in 2004 as Category 1 bushfire prone vegetation as shown on **Plate 1**.

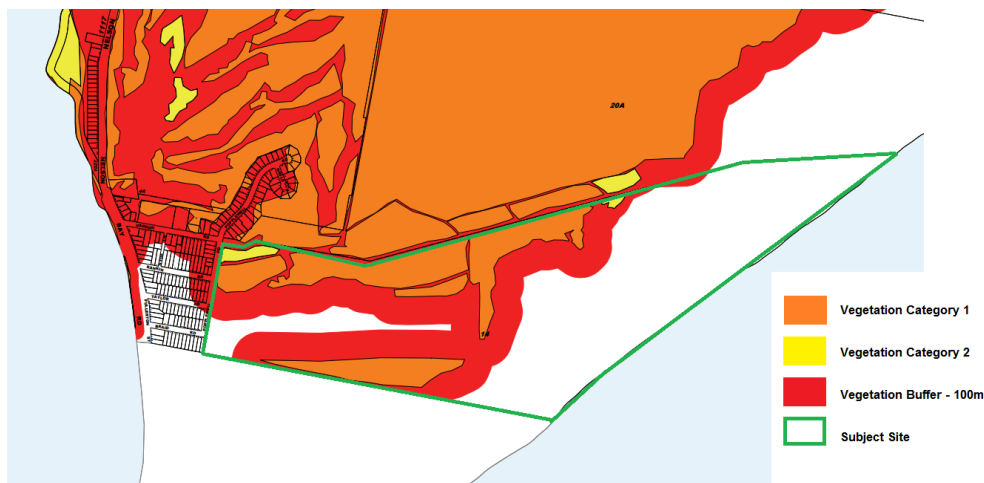


Plate 2: Port Stephens Bushfire Prone Land Map 2004.

The predominant bushfire hazard is located in the north and south section of the subject site, with some residual **scrub** retained to the east.

During the site inspection the bushfire prone vegetation was Coastal Sand Apple Blackbutt Forest and assessed as **forest**.

Scrub is the predominant vegetation to the east.

The regenerating scrublands situated within the proposed development site will be cleared for development.

Table 1 details the vegetation classification in each direction.

2.6.2 Slope Assessment

The effective slope under the classified vegetation located to the north and south of the subject site has been assessed as flat to upslope.

Slopes do not exceed 5 degrees at this location.

2.6.3 Distance to Classified Vegetation (Asset Protection Zones)

The assessment will determine the required minimum setbacks from dwelling construction to the vegetation hazard type.

The vegetation hazard are either upslope or on flat terrain from the proposed development areas. The minimum setbacks to achieve BAL29, as detailed in AS3959-2009 are:

- Forest on flat/upslope: 25m - 35m
- Forest on 0-5 degree: 32m - 43m
- Scrub: 13m - 19m

For the purpose of this BAL assessment it is assumed that all setbacks (APZ) are manage in perpetuity.

2.6.4 Determine Bushfire Attack Level (Construction Standards)

The bushfire attack level (BAL) is derived using the vegetation classification, setback distance and effective slope. The BAL rating is equivalent to the AS3959-2009 requirements for the construction of various elements of a Class 1, 2 and 3 buildings.

With a minimum setback of 25 metres to upslope forest vegetation to the north and south and 13 metres to upslope scrub vegetation to the east, BAL 29 is achievable (refer to **Figure 2**).

Table 1 details the vegetation classification for each direction from the proposed development and the calculated BAL rating.

Table 1:

Aspect	Vegetation Classification	Distance (APZ)	Slope	BAL
North	Forest	Min 25m	Flat/Upslope	BAL 29
East	Scrub	Min 13	Flat/Upslope	BAL 29
South	Forest	25-32m	Flat or 0-5 degrees	BAL 29
West	NA (Residential)	NA	NA	NA

2.6.5 Water Supply

The subject site is connected to the town reticulated water supply. This water supply will be extended throughout the proposed subdivision via a ring main system.

The following water supply performance measures can be achieved in later, future designs:

- All above ground water and gas service pipes external to the building will be metal, including and up to any taps.
- All fire hydrant spacing, sizing and pressures will comply with AS 2419.1 – 2005.
- Fire hydrants will not be located within any road carriageway and provisions for parking on public roads will be met.

2.6.6 Access and Egress

2.6.6.1 Public Road & Property Access

Residential development of the site would be accessible via Popplewell Road, which is a sealed two lane public through road, suitable for evacuation and simultaneous emergency management.

All public roads and property access roads will be designed in a manner that complies with the performance criteria's outlined in Section 4.1.3 of PBP 2006.

Public roads will be a combination of perimeter roads linking with an internal road system. Main thoroughfare roads will be 8m trafficable width kerb to kerb. Internal roads will be 6.5m trafficable width kerb to kerb.

The design allows for alternate access at 2 points onto Popplewell Road. A third emergency access can be provided through a locked gate and managed access along the southern boundary. The design avoids any potential dead ends to residential areas.

All public and property access dimensions and capacity requirement can be achieved.

A fire trail access is recommended at the bushland interface between the cluster homes to the south around to the west, and in the north. These would provide some access for fire management purposes, and APZ maintenance.

3. COMPLIANCE SUMMARY

Table 2: Planning for Bush Fire Protection (2006) Compliance summary table.

3.1 APZ	
Intent:	Complies with PBP (2006): YES
This section is to provide for sufficient space for firefighting and other emergency services personnel, ensuring radiant heat levels permit operations under critical conditions of radiant heat, smoke and embers, while supporting or evacuating occupants.	<p>The proposed development site has adequate space within the subject site, such that all required setbacks (APZ) can be established and maintained in perpetuity on site.</p> <p>The master plan shows that the APZ will provide adequate separation between the residential lots and the upslope forest vegetation to the north and south, and the upslope scrub vegetation to the east.</p> <p>All additional bushfire mitigation strategies will be managed entirely within the subject site.</p>
3.2 Access	
Intent	Complies with PBP (2006): YES
This section is to provide for safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area.	<p>The existing public roads and all proposed public roads will comply the minimum performance requirements of PBP 2006 (Chapter 4.1.3(1) Public Roads).</p> <p>All property access roads will comply the minimum performance requirements of PBP 2006 (Chapter 4.1.3(2) Property Access).</p>
3.3 Services	
Intent	Complies with PBP (2006): YES
This section is to provide adequate water services for the protection of buildings during and after the passage of a bushfire, and to locate gas and electricity so as not to contribute to the risk of fire to buildings.	<p>Water:</p> <p>Water supply to proposed development will comply with Chapter 4, of PBP (2006). The reticulated water supply will use a ring main system, and all above ground water and gas service pipes external to the building are metal, including and up to any taps.</p> <p>Fire hydrant spacing, sizing and pressure will comply with AS 2419.1 – 2005. Hydrants are not located within any road carriageway, and all provisions of parking on public roads are met.</p>
	<p>Gas:</p> <p>Gas services can conform to Chapter 4 of PBP (2006). Any reticulated or bottled gas must be installed and maintained in accordance with AS 1596 and the requirements of relevant authorities.</p>

3.1 APZ

Electricity:

Electrical services can conform to Chapter 4 of PBP (2006).
Location of electricity services will not lead to ignition of surrounding grassland or the fabric of buildings or risk life from damaged electrical infrastructure.

Where practical, new electrical transmission should be underground.

4. CONCLUSION

The bushfire assessment indicate that the master plan and associated design principles located at (Lot 5 , DP 233358), Popplewell Road, Fern Bay NSW can comply with all performance criteria's outlined for integrated (residential subdivision) development in Chapter 4 of PBP (2006).

AS 3959-2009 sets out requirements for the construction of various elements of a building in order to reduce the likelihood of ignition of the building when subject to bushfire attack. The proposed development (residential subdivision) can achieve **BAL 29** (minimum construction requirement).

The proposed design provides for suitable access and water provisions for emergency management.