

SMITH CONSULTING

Bushfire Consultants

BUSHFIRE ATTACK LEVEL REPORT

**Lot 3 (No 415) Mundaring Weir Road, Piesse Brook
(City of Kalamunda)**



**Report completed by Ralph Smith
Smith Consulting
BPAD Accredited Practitioner
21 February 2019
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Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2009

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

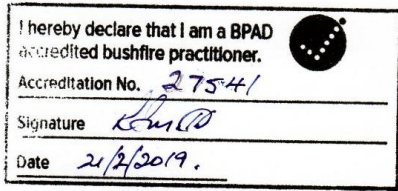
Property Details and Description of Works

Address Details	Unit no	Street no	Lot no	Street name / Plan Reference		
		415	3	Mundaring Weir Road		
Local government area	Suburb			State	Postcode	
	Piesse Brook			WA	6076	
Main BCA class of the building	Class 6			Use(s) of the building	Restaurant	
Description of the building or works	Upgrade and extend an existing facility					

Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class A - Forest	10	36	BAL - 29

BPAD Accredited Practitioner Details

Name Ralph Smith	 <p>I hereby declare that I am a BPAD accredited bushfire practitioner. Accreditation No. 27541 Signature <i>Ralph Smith</i> Date 21/2/2019.</p>
Company Details Smith Consulting	
I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2009 (Incorporating Amendments 1, 2 and 3).	

Authorised Practitioner Stamp

Reliance on the assessment and determination of the Bushfire Attack Level contained in this certificate should not extend beyond a period of 12 months from the date of issue of the certificate. If this certificate was issued more than 12 months ago, it is recommended that the validity of the determination be confirmed with the Accredited Practitioner and where required an updated certificate issued.

Introduction

This is a Bushfire Attack Level (BAL) assessment and report. It has been developed by Smith Consulting for the exclusive use of the client, Mr Matt McCormack and Sheppard Design and Drafting Services

This BAL assessment and report has been compiled using the standard methodologies required by Western Australian government departments and agencies. The report is based on the following:

- *State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7)*, December 2015
- *Guidelines for Planning in Bushfire Prone Areas*, December 2017
- *Australian Standard 3959 – Construction of buildings in bushfire-prone areas (incorporating amendments 1, 2 and 3)*, March 2009
- Standard fuel load field data collection methods and conversion to a fuel load applicable for the appropriate fire spread models.

The techniques described in the above publications have been applied in the appropriate areas and circumstances for the development of this document.

Where there was no public access the interpretation is based on photographic and satellite imagery, and a laser distance meter was used to measure distances and effective slope.

The development has been confirmed by DFES that it is not a 'high-risk land use'.

DISCLAIMER

This Bushfire Attack Level (BAL) assessment and report has been prepared in good faith. It is derived from sources believed to be reliable and accurate at the time of publication. Nevertheless, this report is distributed on the terms and understanding that the author is not responsible for results of any actions taken based on information in this publication or for any error or omission from this publication.

Smith Consulting has exercised due and customary care in the preparation of this BAL report and has not, unless specifically stated, independently verified information provided by others.

Any recommendations, opinions or findings stated in this report are based on circumstances and facts as they existed at the time Smith Consulting performed the work. Any changes in such circumstances and facts upon which this document is based may adversely affect any recommendations, opinions or findings contained in this report.

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Property Details

Location of property: Lot 3 (No 415) Mundaring Weir Road, Piesse Brook.

Property owner or representative: Matt McCormack

Property owner or representative contact details: Email: enquire@saferight.com.au
Mobile: 0408 261 537

Date of field assessment: 24 October 2018

Purpose of Assessment

This assessment has been undertaken to determine the potential Bushfire Attack Level (BAL) on the upgraded and extension to the existing restaurant and the new supporting buildings (toilets) for the open restaurant and parking areas for Lot 3 (No 415) Mundaring Weir Road, Piesse Brook. The BAL assessment and subsequent report are based on the physical evidence that was present at the time of assessment. The BAL assessment is based on the requirements contained within the Western Australian government policies and guidelines.

This BAL report has been developed to comply with the State Planning Policy 3.7. The *State Government Guidelines for Planning in Bushfire Prone Areas* version 1.3 section 5.8.3 states that *In the local planning scheme, Class 4 to 9 buildings will usually require planning approval. The planning process will apply the bushfire protection criteria to ensure that the optimal outcome is achieved for bushfire protection, such as appropriate siting of the building on the lot/s, the provision of water tanks and passing bays.* In these instances the applicant has the discretion to utilise any or all of the elements of AS 3959 in the construction of the building that they deem appropriate.

It must be noted that under building legislation, bushfire related construction requirements do not apply to Class 4 to 9 buildings in designated bushfire prone areas. The Building Code of Australia (BCA) only applies construction standards for Class 1, 2 or 3 buildings or Class 10a buildings or decks associated with a Class 2 or 3 building (under Part G5), and Class 1 or a Class 10a buildings or decks associated with a Class 1 building (under Part P2.3.4 and Part 3.7.4). Under building legislation, bushfire related construction requirements do not apply to Class 4 to 9 buildings in designated bushfire prone areas. This development is for industrial or commercial buildings other than Class 1, 2 or 3 buildings and therefore AS 3959 construction standards do not apply as they are not triggered through the BCA.

The only Class 1, 2 or 3 buildings or Class 10a buildings or decks associated with a Class 2 or 3 building (under Part G5), and Class 1 or a Class 10a buildings or decks associated with a Class 1 building (under Part P2.3.4 and Part 3.7.4) on the site is the house and sheds which are existing buildings. The house and sheds that are located on the development site will not be affected by this development and no changes will be made to the dwelling or sheds and are not a component of this BAL report.

The upgrade and extension to the restaurant buildings all have current building approvals and are nearing completion. The BAL report supports the planning process.

The development was referred to DFES who have been confirmed that it is not a 'high-risk land use' and therefore does not trigger a referral to DFES. Regardless of the DA not triggering referral to DFES, DFES did make some comments on the BAL report and where appropriate this BAL report has been revised to include those amendments.

Procedure

The BAL assessment involved the following process in accordance with AS 3959 (Method 1):

- Determine the area to be assessed
- Determine the relevant Fire Danger Index (FDI)
- Determine the vegetation type/s and class
- Determine the distance of the site from the classified vegetation type/s
- Determine the effective slope/s under the classified vegetation type/s
- Determine the BAL
- Determine the appropriate construction requirements.

Fire Danger Index

The methodology rates bushfire attack using a combination of vegetation type, slope and distance from the building or building envelope to the predominant vegetation. In Western Australia it assumes a Fire Danger Index (FDI) of 80.

Site Assessment

The assessment of the proposed development was undertaken on 24 October 2018 for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 (Method 1).

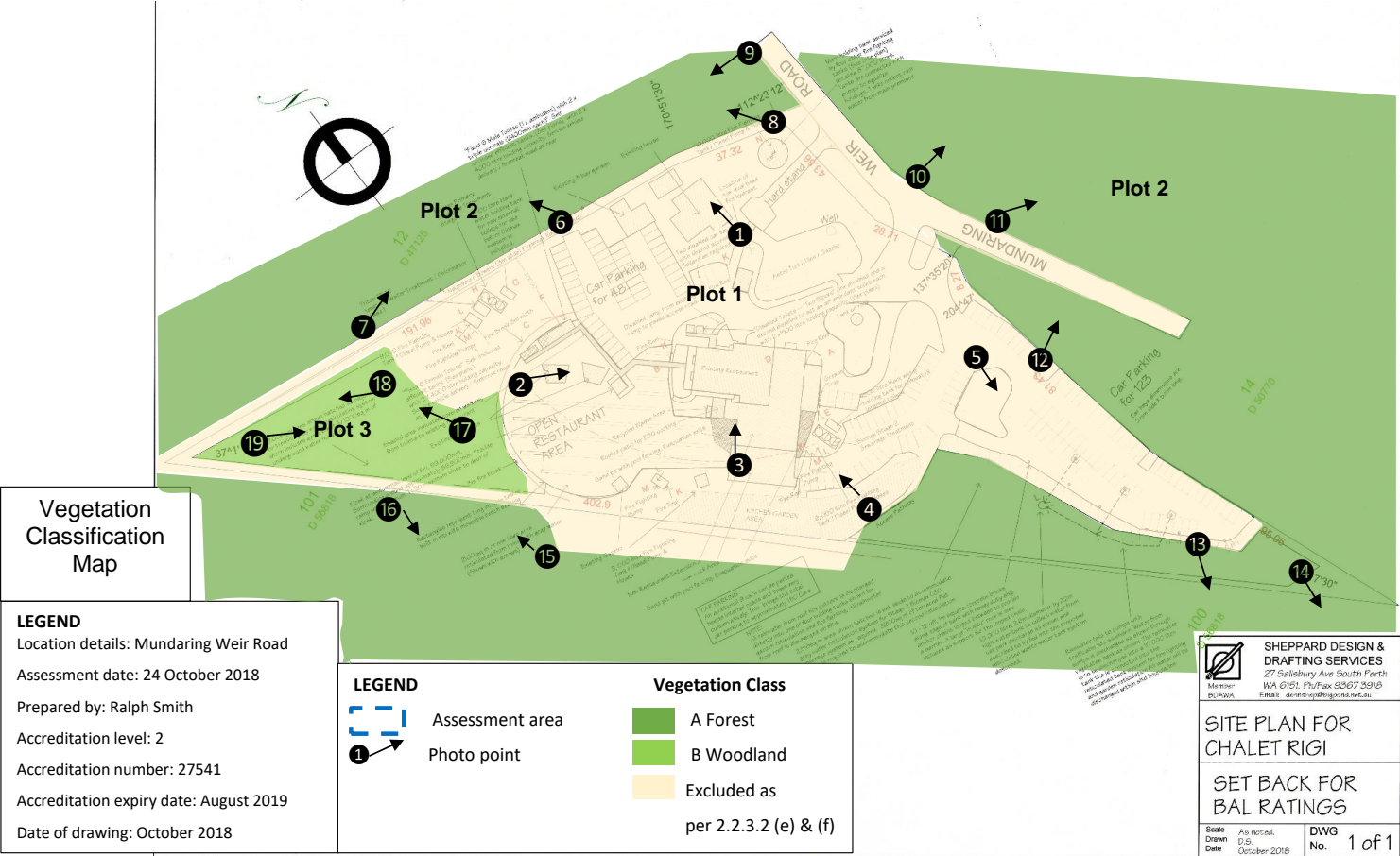


Figure 1. Vegetation classification map.

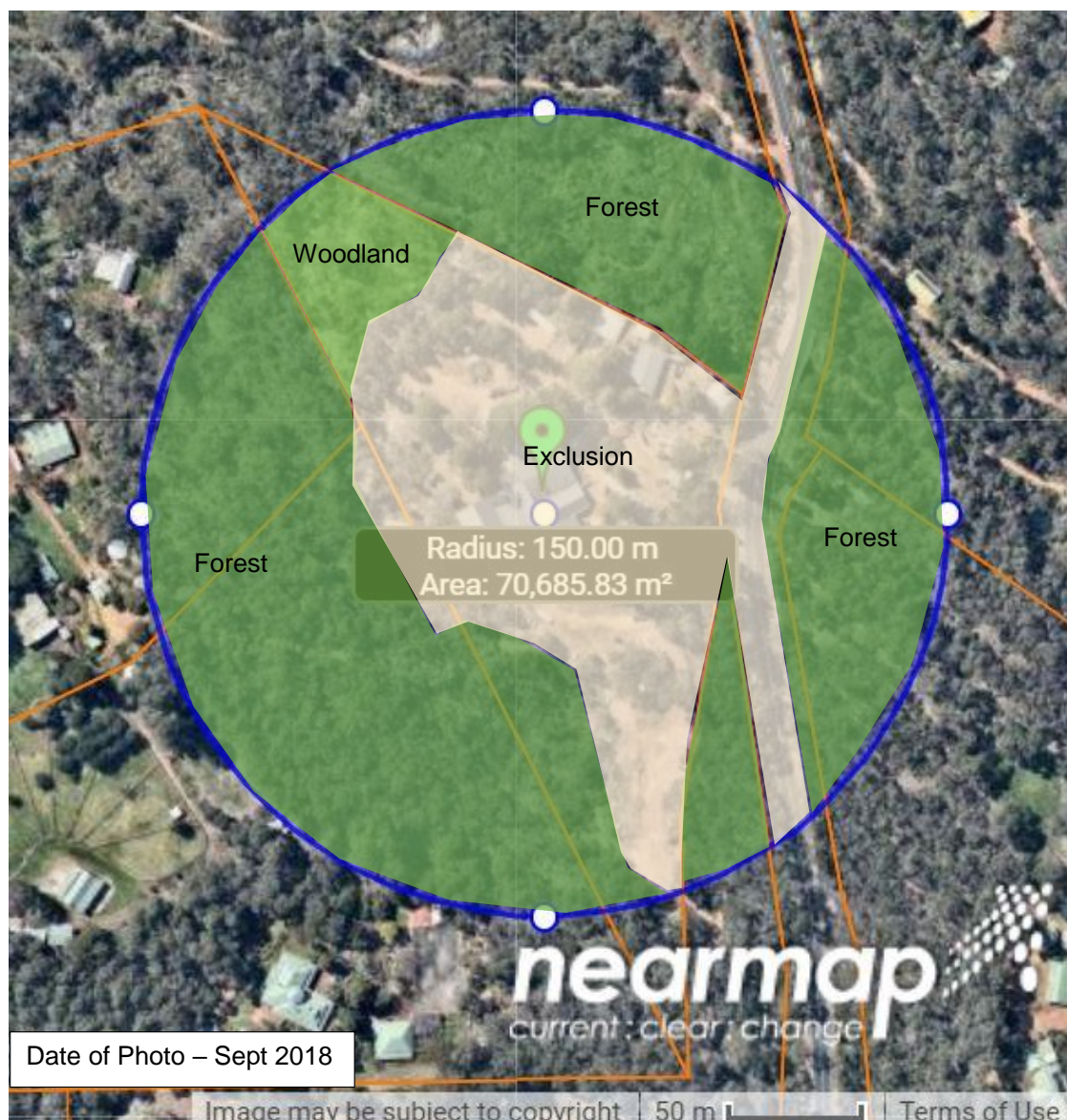


Figure 2. Vegetation classification map.

Figure 1 has been provided to show the vegetation as it influences the BAL rating on the extension to the restaurant and is at a fine scale. Figure 2 has been provided to show the vegetation out to 150 metres as required in the Guidelines. Figure 2 (September 2018) does not provide the fine level of information to that is shown in Figure 1 (30 October 2018) and is not as current as the Site Plan (Figure 1).

In the DFES response it is claimed that "...as Plot 2 & 3 surround the proposed development, it is unclear how only one separation distance has been identified." Figure 1 (page 6) and the table on page 14 show that Plot 2 and Plot 3 relates to separate vegetation types, have separate separation distances and slope. This clearly shows that there is not only one separation distance as claimed by DFES.

Slope

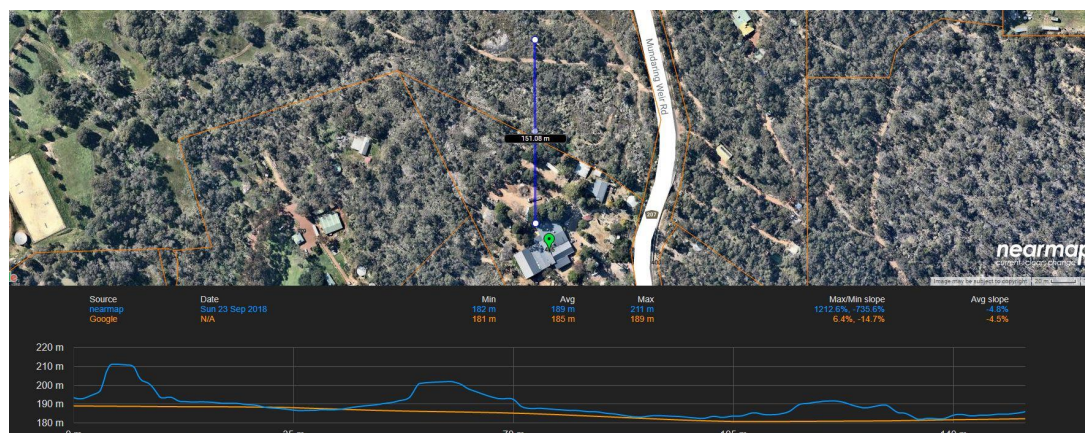


Figure 3. Slope north of the development site under the vegetation is 4.5% (3°).



Figure 4. Slope east of the development site under the vegetation is 1.5% (0.86°).

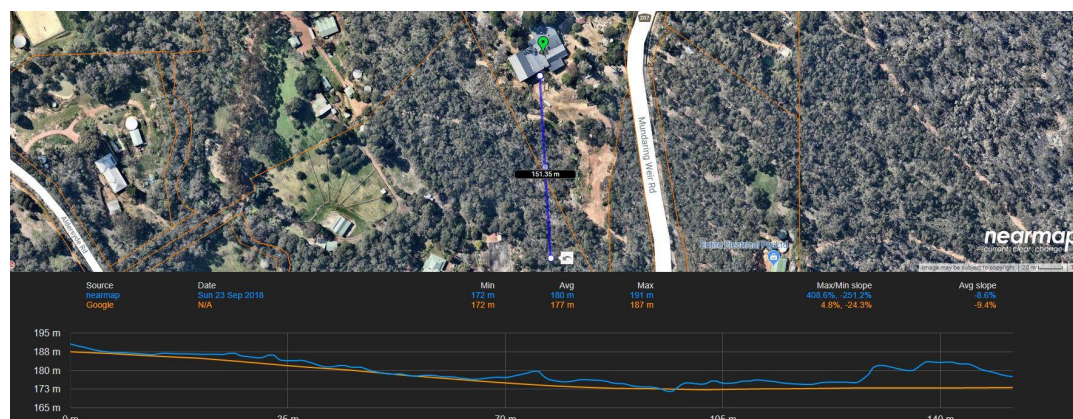


Figure 5. Slope south of the development site under the vegetation is 9.4% (5°).



Figure 6. Slope west of the development site under the vegetation is 18.3% (10°)

The orange line indicates the slope of the land under the vegetation. The slope immediately adjacent to the extension to the restaurant will be levelled and the cleared land will be developed as car parks, managed grassland and gardens and as an open restaurant.

Vegetation Classification

All vegetation within 150 metres of the proposed development as indicated on the site assessment plan was classified in accordance with the Western Australian Government criteria and Clause 2.2.3 of AS 3959 was applied. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below. AS 3959 only requires consideration of 100 metres between vegetation and the building and 50 metres for grassland.

Plot 1

Exclusion – Low threat vegetation and non-vegetated areas
Clause 2.2.3.2 (e) and (f)



Photo ID: Photo 1 Looking at the house currently on the site. This house is not influenced by the development.



Photo ID: Photo 2 Looking at the gazebo, granite and extension to the restaurant.



24/10/2018 8:37:51 AM (+8.0 hrs) Dir=E NE Lat=-31.97583 Lon=116.08936 Alt=551ft MSL WGS-84
Photo ID: Photo 3 Looking at the restaurant and future kitchen garden site which will be levelled.



24/10/2018 8:42:11 AM (+8.0 hrs) Dir=N Lat=-31.97589 Lon=116.08966 Alt=551ft MSL WGS-84
Photo ID: Photo 4 Looking at the restaurant and future kitchen garden site which will be levelled.



24/10/2018 9:55:14 AM (+8.0 hrs) Dir=SW Lat=-31.97630 Lon=116.09035 Alt=581ft MSL WGS-84
Photo ID: Photo 5 Looking at the current car park which will be enhanced.

Plot 2 Class A – Forest



24/10/2018 8:24:19 AM (+8.0 hrs) Dir=NNW Lat=-31.97559 Lon=116.09033 Alt=571ft MSL WGS-84
Photo ID: Photo 6 Looking at the forest north the lot.



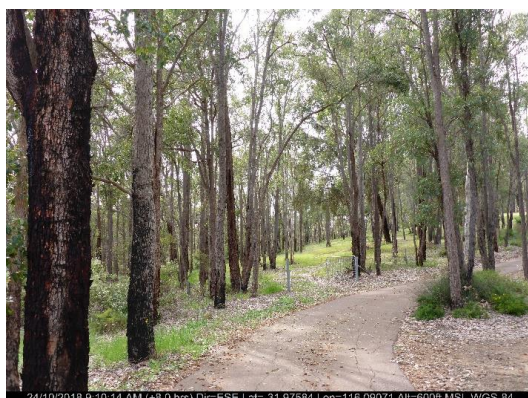
24/10/2018 8:25:33 AM (+8.0 hrs) Dir=NNE Lat=-31.97559 Lon=116.09033 Alt=564ft MSL WGS-84
Photo ID: Photo 7 Looking at the forest vegetation.



24/10/2018 9:17:44 AM (+8.0 hrs) Dir=NNW Lat=-31.97542 Lon=116.09073 Alt=591ft MSL WGS-84
Photo ID: Photo 8 Looking at the forest north of the lot and development site.



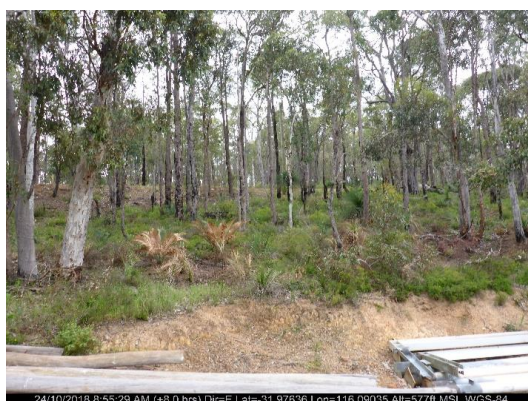
24/10/2018 8:24:13 AM (+8.0 hrs) Dir=NNE Lat=-31.97559 Lon=116.09033 Alt=577ft MSL WGS-84
Photo ID: Photo 9 Looking at the forest vegetation.



24/10/2018 9:10:44 AM (+8.0 hrs) Dir=ESE Lat=-31.97584 Lon=116.09071 Alt=600ft MSL WGS-84
Photo ID: Photo 10 Looking at the forest vegetation which is east of Mundaring Weir Road.



24/10/2018 9:08:40 AM (+8.0 hrs) Dir=ESE Lat=-31.97599 Lon=116.09055 Alt=600ft MSL WGS-84
Photo ID: Photo 11 Looking at the forest vegetation east of Mundaring Weir Road.



24/10/2018 8:55:29 AM (+8.0 hrs) Dir=E Lat=-31.97636 Lon=116.09035 Alt=577ft MSL WGS-84
Photo ID: Photo 12 Looking at the forest vegetation between the carpark and Mundaring Weir Road.



24/10/2018 8:57:21 AM (+8.0 hrs) Dir=SSW Lat=-31.977 Lon=116.09054 Alt=577ft MSL WGS-84
Photo ID: Photo 13 Looking at the forest vegetation.



Photo ID: Photo 14 Looking at the forest vegetation south of the development site on a neighbouring property.



Photo ID: Photo 15 Looking at the forest vegetation south-west of the lot.



Photo ID: Photo 16 Looking at the forest vegetation and granite rocks.

Plot 3 Class B – Woodland



Photo ID: Photo 17 Looking at the woodland vegetation and granite outcrops.



Photo ID: Photo 18 Looking at the woodland vegetation and granite outcrops.



24/10/2018 8:27:40 AM (+8.0 hrs) Dir=E Lat=-31.97559 Lon=116.09033 Alt=574ft MSL WGS-84
Photo ID: Photo 19 Looking at the woodland vegetation and granite rocks.

Notes to Accompany Vegetation Classification

1. Plot 1

Exclusion – Low threat vegetation and non-vegetated areas
 Clause 2.2.3.2 (e) and (f)

This plot comprises the house, sheds, gardens and infrastructure surrounding the upgrade and extension to an existing restaurant and development site with the managed grassed areas and enhanced parking facilities. The site is within a well established suburb, albeit on large lots, with all of the normal amenities such as roads, mains reticulated water, and other infrastructure. The land to the south-west is also owned by the entity and the exclusion of vegetation is possible as a consequence of that ownership. The Shire's firebreak and fuel load notice has been considered in the determination of the exclusion areas.

2. Plot 2

Class A – Forest (AS 3959 classification A – 03)

This plot comprises the forest surrounding the upgraded and extension to the restaurant and development site. The separation distance is based on the separation between the upgraded and extension to the restaurant and development site and not the lot boundary. The slope between the upgraded and extension to the restaurant as shown in the slope aerial photographs do not accurately reflect the changes where the slope west and south-west of the restaurant will be leveled and a kitchen garden established. As the vegetation is 36 metres from the upgrading and extension restaurant it influences the construction standard which is assessed as BAL-29.

3. Plot 3

Class B – Woodland (AS 3959 classification D – 13)

This plot is woodland vegetation north-west of the upgraded and extension to the restaurant. This plot contains significant vegetation disturbance through the natural location of the granite outcrops and rocks. The precautionary principle has been applied and the vegetation classified as a woodland (crown cover between 10 and 30%) with a scrub understorey, although the understorey is quite sparse in many areas. As the vegetation is 47 metres from the restaurant it influences the construction standard which is assessed as BAL-12.5.

Other considerations in regard to vegetation

1. The fire spread algorithms applied in AS 3959 consider fine fuels as less than 6 mm diameter for dead material, and less than 3 mm diameter for live material.

Potential Bushfire Impacts

The potential bushfire impacts to the proposed lots from each of the identified vegetation plots are identified below.

Plot	Vegetation Classification	Effective Slope	Separation distance (m)	BAL rating
1	Exclusion – Low threat vegetation and non-vegetated areas Clause 2.2.3.2 (e) & (f)	Not applicable	Not applicable	Low
2	Class A – Forest (AS 3959 classification A – 03)	10°	36	29
3	Class B – Woodland (AS 3959 classification D – 13)	4.5°	47	12.5

The neighbouring properties are all within the City of Kalamunda's requirement to have three metre wide mineral earth firebreaks. This is a requirement legally enforceable in the City's Fire Hazard Reduction Notice. This requirement has been applied when determining the BAL rating.

The predominant vegetation type on the development site upon completion, will be cleared land that is classified an exclusion as defined in AS 3959. This cleared land will be developed as an upgraded and extension to the restaurant buildings, car parks, managed grassland and gardens, and as an open restaurant. The most significant bushfire threat comes from the forest vegetation surrounding the lot on neighbouring properties.

Additionally the Building Code of Australia (BCA) only applies construction standards for Class 1, 2 or 3 buildings or Class 10a building or deck associated with a Class 2 or 3 building (under Part G5), and Class 1 or a Class 10a building or deck associated with a Class 1 building (under Part P2.3.4 and Part 3.7.4). Under building legislation, bushfire related construction requirements do not apply to Class 4 to 9 buildings in designated bushfire prone areas.

This development is for upgraded and extension to the restaurant and support facilities which comprises industrial or commercial buildings other than Class 1, 2 or 3 buildings.

This BAL report supports section 5.8.3 All other buildings Class 4 to Class 9 Buildings of the Guidelines where *In a local planning scheme, Class 4 to Class 9 buildings usually require planning approval. The planning process will apply the bushfire protection criteria to ensure that the optimal outcome is achieved for bushfire protection, such as appropriate siting of the building on the lot/s, the provision of water tanks and passing bays, and so on.*

This BAL report has been developed to comply with the State Planning Policy 3.7. The State Government *Guidelines for Planning in Bushfire Prone Areas version 1.3* section 5.8.3 states that *In the local planning scheme, Class 4 to 9 buildings will usually require planning approval. The planning process will apply the bushfire protection criteria to ensure that the optimal outcome is achieved for bushfire protection, such as appropriate siting of the building on the lot/s, the provision of water tanks and passing bays.* In these instances the applicant has the discretion to utilise any or all of the elements of AS 3959 in the construction of the building that they deem appropriate.

It must be noted that under building legislation, bushfire related construction requirements do not apply to Class 4 to 9 buildings in designated bushfire prone areas. The Building Code of Australia (BCA) only applies construction standards for Class 1, 2 or 3 buildings or Class 10a building or deck associated with a Class 2 or 3 building (under Part G5), and Class 1 or a Class 10a building or deck

associated with a Class 1 building (under Part P2.3.4 and Part 3.7.4). Under building legislation, bushfire related construction requirements do not apply to Class 4 to 9 buildings in designated bushfire prone areas. This development is for industrial or commercial buildings other than Class 1, 2 or 3 buildings and therefore AS 3959 construction standards do not apply as they are not triggered through the BCA.

The house and sheds that are located on the development site will not be affected by this development and no changes will be made to the dwelling or sheds.

Determination of Bushfire Attack Level (BAL)

The determined Bushfire Attack Level (highest BAL) for the proposed lot in this development has been determined in accordance with Clause 2.2.6 of AS 3959 using the above analysis.

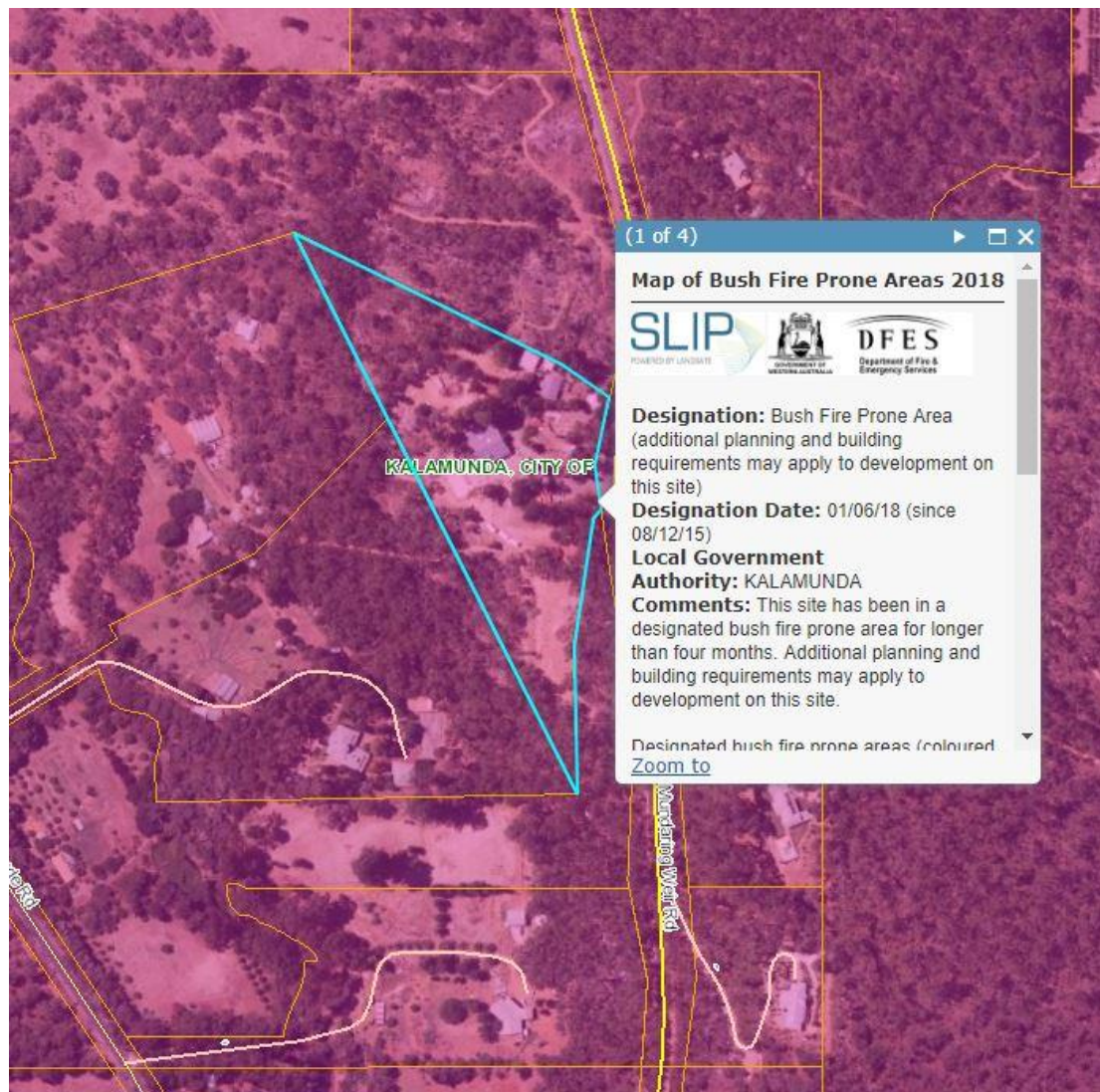
The determined Bushfire Attack Level (BAL) is **BAL-29**.

As the highest BAL rating for a portion of the building upgrade is BAL-29 means that it complies with the State's Guidelines.

Appendix 1

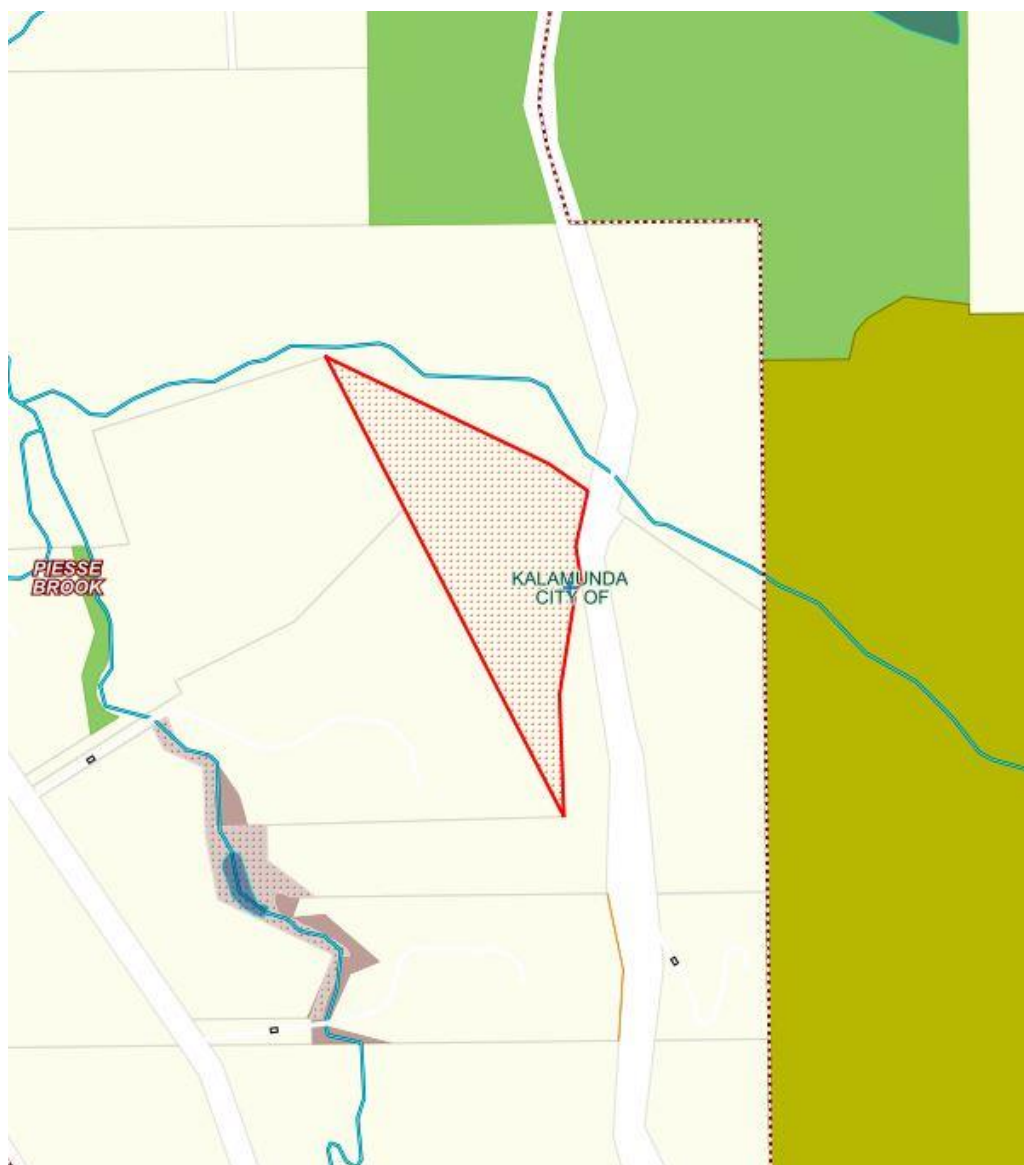
Aerial photo showing the subject site Lot 3 (No 415) Mundaring Weir Road, Piesse Brook, and surrounding lots as being primarily designated a bushfire prone area.

Source: Department of Fire and Emergency Services online map of bush fire prone areas.



Appendix 2

Plan showing the subject site Lot 3 (No 415) Mundaring Weir Road, Piesse Brook, and surrounding land use area with cadastral boundaries. Source: City of Kalamunda online mapping.



Plan showing the development and current buildings on the subject site Lot 3 (No 415) Mundaring Weir Road, Piesse Brook.



References

Department of Fire and Emergency Services (DFES), (2018). *Map of Bushfire Prone Areas 2018*. Retrieved 31 October 2018 from <http://www.dfes.wa.gov.au/regulationandcompliance/bushfireproneareas/Pages/default.aspx>

City of Kalamunda intramaps from <https://maps.kalamunda.wa.gov.au/intramaps90/default.htm>

Near Maps online mapping from <http://www.nearmaps.com.au>

Standards Australia. (2009). *Australian Standard 3959 – Construction of buildings in bushfire-prone areas (incorporating amendment numbers 1, 2 and 3)*. Standards Australia, Sydney, NSW.

Western Australian Planning Commission, (2015). *State Planning Policy 3.7 – Planning in Bushfire Prone Areas*. Western Australian Planning Commission, Perth, WA.

Western Australian Planning Commission, (December 2017). *Guidelines for Planning in Bushfire Prone Areas*. Western Australian Planning Commission, Perth, WA.