



Bushfire Threat Assessment

For
A Proposed Residential Subdivision

at
Lot 9 DP244002 & Lot 358 DP755242
Cnr of Morisset Park Road & Chifley Road
Morisset Park

Prepared for
Postfox Pty Ltd
C/- De Witt Consulting
Po Box 850
Charlestown NSW 2290

Job Reference 24818 - November 2008



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<i>PROJECT:</i> Bushfire Threat Assessment – Cnr of Morisset Park Road & Chifley Road, Morisset Park	
<i>CLIENT:</i>	POSTFOX PTY LTD
<i>OUR REF:</i>	24818
<i>DATE:</i>	NOVEMBER 2008
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Executive Summary

This Bushfire Threat Assessment (BTA) has been produced to accompany a residential subdivision development application over land at Lot 9 DP 244002 & Lot 358 DP 755242, corner of Morisset Park Road and Chifley Road, Morisset Park.

The assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the *Planning for Bush Fire Protection, 2006* that has been released and adopted through the *Environmental Planning & Assessment Amendment (Planning for Bush Fire Protection) Regulation 2007* & the *Rural Fires Amendment Regulation 2007*.

In order to determine whether the proposed development is bushfire-prone, and if so, which setbacks and other relevant Bush Fire Protection Measures (BFPM) will be appropriate, this assessment adheres to the methodology and procedures outlined in "Planning for Bushfire Protection" (NSW Rural Fire Service, 2006) (hereafter referred to as 'PBP 2006').

The main recommendations of this report include;

- An APZ of 20m between the Forest to the south of the site and any proposed dwelling within the site.
- An APZ of 20m between the Forest to the west of the site and any proposed dwelling within the site.
- An APZ of 25m is required within proposed Lot 3 between the indicative building envelope and retained open forest vegetation to the north.
- An APZ of 20m is required between the retained open forest within proposed Lot 3 and the subdivision to the east.
- The internal road network be constructed to standards outlined in Section 7 of this report.
- Any future dwelling within the site should have due regard to the specific considerations given in the BCA, which makes specific reference to the Australian Standard (AS3959 – 1999) construction of buildings in bushfire prone areas. Refer to Section 8 of this report.
- Any proposed development be linked to the existing mains pressure water supply and that suitable hydrants be clearly marked and provided for the purposes of bushfire protection.
- The responsibility of the maintenance of the proposed APZs is to become the responsibility of the individual lot owner.

If the recommendations regarding bushfire hazard mitigation contained within this assessment are duly considered and incorporated, it is forwarded that the fire hazard present is containable to a level considered necessary to provide an adequate level of protection to life and property on the site. Any lessening of the requirements would require a Performance Based Assessment to be undertaken and would necessitate assessment and approval of such deviation by the NSW Rural Fire Service.

1 INTRODUCTION

RPS - Harper Somers O'Sullivan (RPS - HSO) has been engaged by Postfox Pty Ltd to undertake a Bushfire Threat Assessment (BTA) for a residential subdivision development over land at Lot 9 DP 244002 and Lot 358 DP 755242, corner of Morisset Park Road and Chifley Road, Morisset Park, hereafter referred to as the 'site' (Figure 1-1). Refer to Appendix A for proposed subdivision layout.

The assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the *Planning for Bush Fire Protection, 2006* that has been released and adopted through the *Environmental Planning & Assessment Amendment (Planning for Bush Fire Protection) Regulation 2007* & the *Rural Fires Amendment Regulation 2007*.

In order to determine whether the proposed development is bushfire-prone, and if so, which setbacks and other relevant Bush Fire Protection Measures (BFPM) will be appropriate, this assessment adheres to the methodology and procedures outlined in "Planning for Bushfire Protection" (NSW Rural Fire Service, 2006) (hereafter referred to as 'PBP 2006').

Due recognition has been afforded to the Bushfire Risk Management Plan produced by Lake Macquarie District Bush Fire Management Committee (2001).

1.1 Site Particulars

Locality – Corner of Morisset Park Road and Chifley Road, Morisset Park.

LGA – Lake Macquarie.

Title(s) – Lot 9 DP 244002 & Lot 358 DP 755242.

Area – Approximately 6.5 hectares.

Boundaries – Residential development occurs to the north, Morisset Park Road to the south, Chifley Road to the east and privately owned land to the west.

Current Land Use – The site has been moderately cleared for agricultural uses. Each of the lots support a single dwelling both of which appear to be in disrepair.

Topography – In general, the site slopes gently to the north, and north-east towards Freshwater Creek which adjoins Lake Petite and eventually Lake Macquarie.

Vegetation – The majority of the site contains a woodland canopy with a grassy, maintained understorey. Generally, native vegetation dominates and is comprised of Eucalypt Woodland community. The remnant woodland holds little understorey with varying levels of natural regeneration of Eucalypt species evident. Consequently these areas are dominated by native grass and herbs, and exotic pasture species.

Figure 1-1 shows the location of the site.

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LEGEND

 Site Boundary



TITLE:
Figure 1-1
Site Location

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SCALE: 1: 4350 at A4 Size

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DATUM: MGA Zone 56 (GDA 94) **DATE:** 14/12/2007

LAYOUT REF:

CONTOUR INTERVAL: N/A

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2 VEGETATION ASSESSMENT

In accordance with PBP (2006), an assessment of the vegetation over a distance of 140m in all directions from the site boundary was undertaken, which revealed that four vegetation communities were present, namely:

- **Open Eucalypt Forest;**
- **Modified Open Eucalypt Forest**
- **Woodland;** and
- **Cleared and Disturbed Land.**

Open Eucalypt Forest occurs within the western section of the site and the surrounding land within the 140m buffer. A linear strip of Open Eucalypt Forest also occurs south of Morriset Park Road. It is comprised of species typical to such communities in the region. The dominant tree species include *Eucalyptus haemastoma* (Scribbly Gum) and *Angophora costata* (Smooth-barked Apple). The understorey is comprised predominantly of immature canopy trees and *Allocasuarina torulosa* (Forest Oak). The shrub and groundcover layers are generally dominated by native species with some incursion by invasive weeds.

The **Modified Open Eucalypt Forest** occurs within the site. This community comprises similar species as the aforementioned community however it has been largely modified by the thinning out of the canopy layer and the total removal of the understorey and shrub layer.

The **Woodland** community occurs south of Morriset Park Road. It too comprises of canopy species as identified in the Open Eucalypt Forest, however these occur at a lower density. The shrub layer is largely absent, with a dominant grassy understorey.

The **Cleared and Disturbed Land** occurs within the site and surrounding residential areas. The vegetation therein is largely made up of lawn areas as well as planted native and introduced plants used for landscaping purposes.

According to Table A2.1 (PBP, 2006), the Open Eucalypt Forest assemblage is classifiable as “Dry Sclerophyll Forest”, the Modified Open Eucalypt Forest and Woodland is classifiable as “Woodland”. The Cleared and disturbed Land is not considered a hazard or is a predominant vegetation class / formation that can be included within an APZ.





For the purposes of this assessment the Open Eucalypt Forest is now referred to in this report as **Open Forest** and the Eucalypt Woodland (grassy understorey) is referred to in this report as **Woodland**.

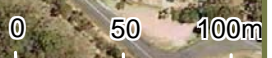
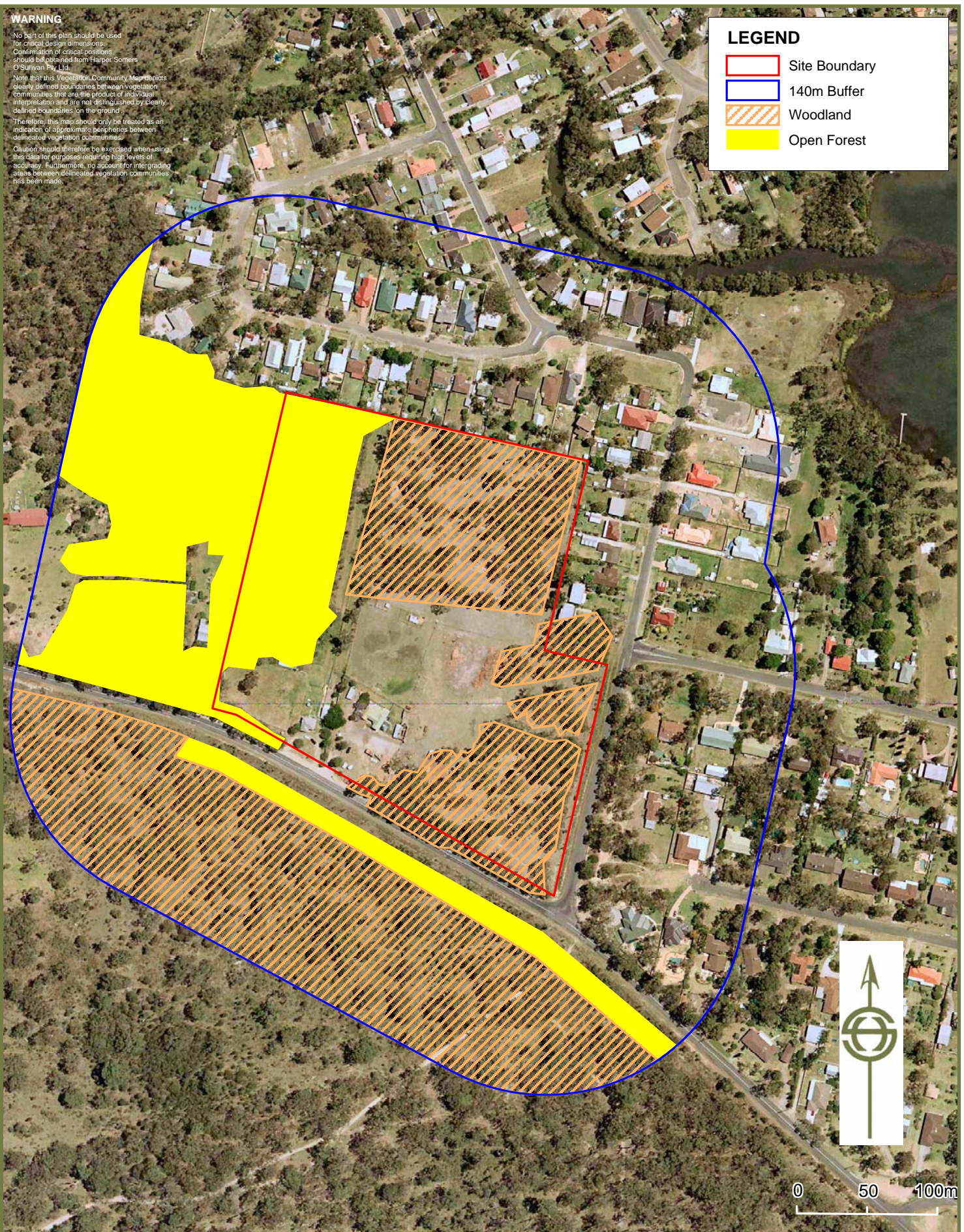
Figure 2-1 shows the distribution of vegetation types within 140m of the site boundary.

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Note that this Vegetation Community Map depicts clearly defined boundaries between Vegetation Communities that are the product of individual interpretation and are not distinguished by clearly delineated boundaries on the ground.
Therefore, this map should only be treated as an indication of approximate peripheries between delineated vegetation communities.
Caution should therefore be exercised when using this data for purposes requiring high levels of accuracy. Furthermore, no account for intergrading areas between delineated vegetation communities has been made.

LEGEND

-  Site Boundary
-  140m Buffer
-  Woodland
-  Open Forest



TITLE:
Figure 1-1
Site Location

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 LAYOUT REF: J:\JOBS\24k\24818 - Morisset Park\Drawings\MapInfo\24818.Fig 2-1 VegMapA-A4.141207.W...
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3 SLOPE ASSESSMENT





In general, the site slopes gently to the north and north-east towards Freshwater Creek which adjoins Lake Petite and eventually Lake Macquarie. The highest point on the site is in the south-western corner, at 25m AHD. In accordance with PBP (2006), an assessment of the slope over a distance of 140m in all directions from the site boundary was undertaken. The slopes leading away from the proposed building site have been evaluated to identify both the average slope and by identifying the maximum slope present. These values help determine the level of gradient which will most significantly influence the fire behaviour of the site.

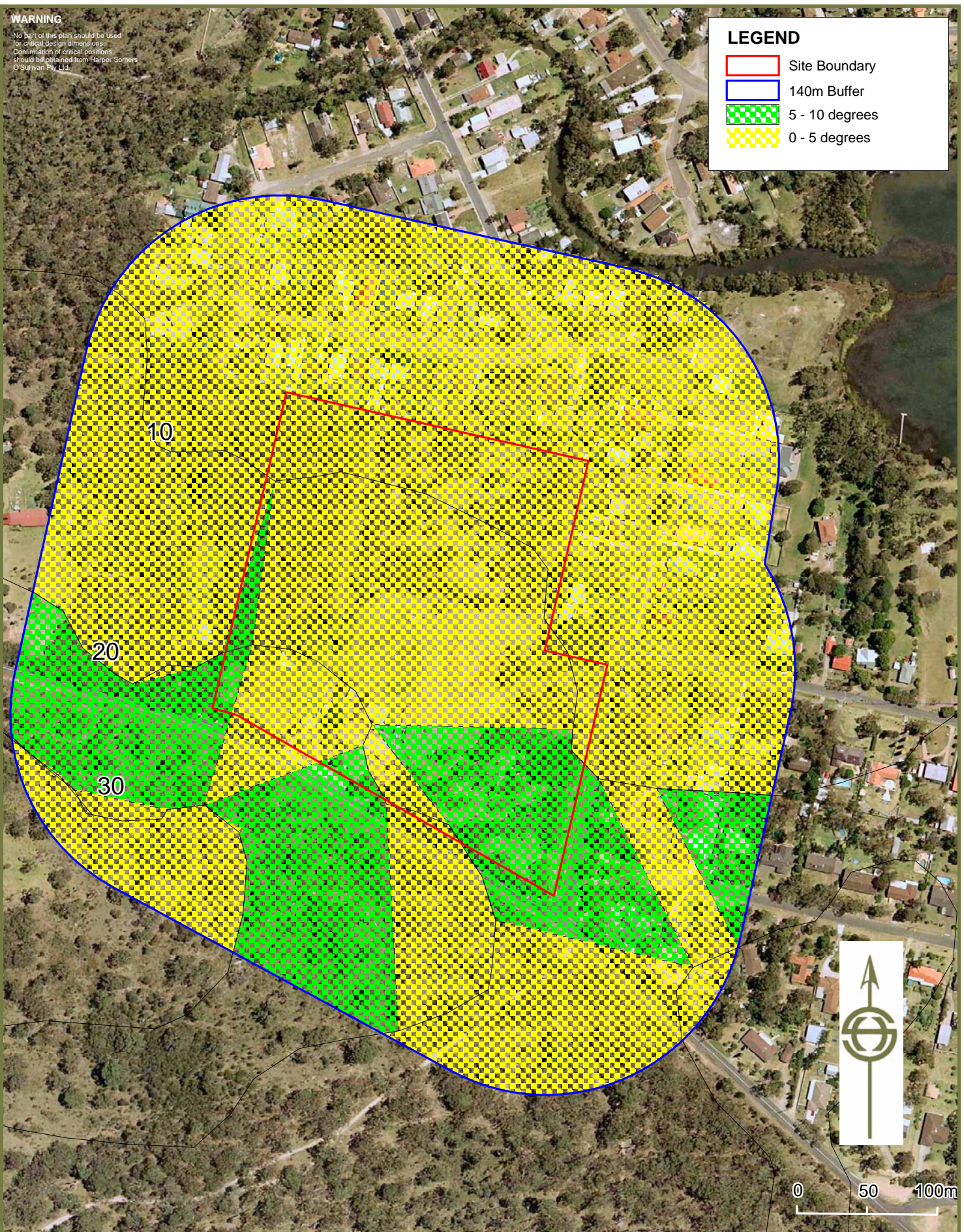
The dominant slope classes present within the site and 140m around the site boundary are illustrated in **Figure 3-1**.

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LEGEND

-  Site Boundary
-  140m Buffer
-  5 - 10 degrees
-  0 - 5 degrees



TITLE:
Figure 3-1
Slope Class Map

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LAYOUT REF: J:\JOBS\24K\24818 - Morisset Park\Drawings\MapInfo\24818.Fig 2-1 VegMapA-A4.141207.W

CONTOUR INTERVAL: N/A

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4 ASSET PROTECTION ZONES AND SETBACKS

4.1 APZs

An APZ is an area surrounding a development that is managed to reduce the bushfire hazard to an acceptable level. The required width of the APZ varies with slope and the type of hazard. An APZ can consist of both an Inner Protection Area (IPA) and an Outer Protection Area (OPA). The respective IPA and OPA widths for the required APZs are as detailed in Section 4.4 and Figure 4 -1. An APZ can include the following:

- lawns,
- discontinuous gardens,
- swimming pools,
- driveways,
- detached garages,
- open space / parkland, and
- car parking.

4.2 IPA

The IPA extends from the edge of the OPA to the development. The IPA aims to ensure that the presence of fuels which could contribute to a fire event / intensity, are minimized close to the development. The performance of the IPA must be such that:

- there is minimal fine fuel at ground level which could be set alight by a bushfire; and
- any vegetation in the IPA does not provide a path for the transfer of fire to the development – that is, the fuels are discontinuous.

The presence of a few shrubs or trees in the IPA is acceptable provided that they:

- do not touch or overhang any buildings;
- are well spread out and do not form a continuous canopy;
- are not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period; and
- are located far enough away from any dwelling so that they will not ignite the dwelling by direct flame contact or radiant heat emission.

Woodpiles, wooden sheds, combustible material storage areas, large areas / quantities of garden mulch, stacked flammable building materials etc. should not be permitted in the IPA.

4.3 OPA

The OPA is located adjacent to the hazard. Within the OPA any trees and shrubs should be maintained in a manner such that the vegetation is not continuous. Fine fuel loadings should be kept to a level where the fire intensity expected will not impact on adjacent developments.

4.4 Determining Appropriate Setbacks

In accordance with Table A2.4 within PBP (RFS, 2006), the appropriate width setbacks (depicted in Figure 4 - 1) have been calculated based on the topography and the vegetation present in and around the site as at 12 December 2007. These prescribed distances will be required between the proposed residential development within the site. Any lessening of these APZs would need a Performance Based Assessment to be undertaken.

To the south of the site, where Open Forest occurs upslope on a slope of 0-5°, an APZ of 20m will be required. Morisset Park Road (Fuel Free Zone) and the associated road reserve (Fuel Reduced Zone) already forms this 20m IPA. Due to the Lake Macquarie City Council setback requirements of 5m from roads or boundaries to dwellings an additional 5m will be established creating a 25m IPA.

To the west occurs forested land on a cross slope from proposed Lots 1, 2 and 3. An APZ of 20m will therefore be required from the site boundary, comprised of a 10m IPA + 10m OPA.

Within proposed Lot 3 to the north of the indicative building envelope open forest occurs on a 0-5° down slope, as such a 25m APZ will be required, comprised of 10m OPA + 15m IPA.

Given the proposed open forest retention within proposed Lot 3, an APZ is required along the eastern lot boundary. The slope is classified as cross-slope, as such an APZ of 20m will be required, comprised of 10m OPA + 10m IPA. Notably the proposed road will entail 14.5m and the balance could be established within proposed Lot 3 or alternatively within the lots to the east of lot 3. Refer to Figure 4-1 and Figure 4-2 that shows these alternate options.

Table 1 below provides a summary of the Bushfire Protection Assessment.

Table 1 – Bushfire Protection Assessment




Direction from future dwelling	Vegetation within 140m of site	Average Slope of Land	APZ currently provided	Recommended width of APZ
North	Residential development (Managed Curtilage)	Flat Land	140m	No requirements.
East	Forest Residential development	Cross-slope	140m	No Requirements

	(Managed Curtilage)			
South	Woodland & Open Forest	Upslope	20m (Morisset Park Road)	20m APZ. This APZ comprises of the road reserve of Morisset Park Road.
West	Forest (Dry Sclerophyll Forest)	Cross-slope	N/A	An APZ of 20m is required between proposed dwellings and the Open Forest to the west. This APZ is to be comprised of a 10m IPA and a 10m OPA. Note this APZ will only extend such that it provides adequate protection to the indicative building envelope within proposed Lot 3.
Eastern boundary of Proposed Lot 3	Forest	Cross-slope	14.5m internal road	An APZ 20m will be required, comprised of 10m OPA + 10m IPA. Notably the proposed road will entail 14.5m and the balance could be established within proposed Lot 3 or alternatively within the lots to the east of lot 3.
North of indicative building envelope within proposed Lot 3	Forest	0-5 ⁰ Downslope	N/A	A 25m APZ will be required, comprised of 10m OPA + 15m IPA.

Refer to Figure 4-1 and Figure 4-2 for extent of APZs.

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LEGEND

-  Site Boundary
-  IPA
-  OPA



TITLE:
Figure 4-1 - APZ's Option 1

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1\24818.Fig 4-1 APZs Option 1 A-A4.WOR




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-  Site Boundary
-  IPA
-  OPA



TITLE:
Figure 4-1 - APZ's Option 2

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1\24818.Fig 4-1 APZs Option 2 A-A4.WOR

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