

Billbergia Pty Ltd
C/O Grahame Edwards
URBAN Futures
20 Alfred Street, Rozelle NSW 2039

Ref No: 2539

13 May 2016

Dear Grahame,

Re: Bushfire Constraints Assessment - Caledonia

Eco Logical Australia Pty Ltd (ELA) has prepared this bushfire constraint assessment to support a planning proposal for the site known as Caledonia at Ingleburn. Urban Futures working on behalf of Billbergia Pty Ltd engaged ELA to provide the constraints assessment to guide the master planning of the proposed development. A Flora and Fauna Constraints Assessment (FFCA) has also been undertaken by ELA (dated 25 September 2015).

The subject land is identified as bush fire prone by Campbelltown Council as shown in **Figure 1**. Any future development application for subdivision of the subject land will be required to be assessed under Section 100B of the *Rural Fires Act 1997* and will require compliance with the NSW Rural Fire Service document *Planning for Bush Fire Protection 2006* (PBP). PBP outlines bushfire protection measures that new development on bushfire prone land must address including asset protection zones, access requirements, water supply, and construction.

Bushfire is an important consideration for development of the subject land and compliance with PBP is required for a development application to be supported by Campbelltown Council and the NSW Rural Fire Service. This constraints advice is provided in accordance with PBP.

This assessment includes consideration of the existing constraints on the site, and also looking at the constraints that would be present on the site in the case that development proceed in line with the proposed masterplan.

Bushfire hazard assessment

Vegetation

The predominant vegetation has been determined within the subject land and for a distance of at least 140 m on adjoining land using desktop analysis, a review of background information and data gathered during the field investigations undertaken for the FFCA.

Vegetation within the subject land predominantly consists of grassland areas with several patches of Cumberland Plain Woodland (CPW) occurring along Bensley Road (**Figure 2**). The FFCA has identified the patch of CPW on the corner of Bensley Road and Oxford Road as a high constraint with smaller disturbed patches throughout the site identified as moderate constraint (see **Figure 3**). An assumption has been made that the high constraint

vegetation will be retained, along with the larger patches of moderate constraint. This is considered the bushfire hazard, along with other areas of woodland vegetation to the east of Bensley Road and north of Oxford Road.

Slope

The slope that would most significantly influence fire behaviour was determined over a distance of 100 m within the vegetated areas. This assessment was made by analysing 2 m contour intervals. The subject land is gently sloping with slopes ranging from 0-5°. Offsite slopes vary from >0-10° with steeper areas around creeklines.

Asset protection zones (APZ)

Table A2.4 of PBP has been used to determine the width of required Asset Protection Zone (APZ) for the subject land. The APZ requirements of PBP vary across the site and are outlined in **Table 1** and are shown in **Figure 4**.

Construction standards

The building construction standard is based on the determination of the Bushfire Attack Level (BAL) in accordance with Method 1 of Australian Standard AS 3959-2009 '*Construction of buildings in bushfire-prone areas*' (Standards Australia 2009). The BAL is based on the identified vegetation type, effective slope, and APZ managed separation distance between the development and the bushfire hazard.

Using AS3959, separation distances (APZ) have also been identified for BAL-29 construction.

Table 1: Threat assessment and asset protection zones

Direction	Slope ¹	Vegetation ²	PBP required APZ ³	APZ for BAL-29 ⁴
North	Upslope	Woodland	10 m	16 m
East (subject land)	>0-5 downslope	Woodland	15 m	21 m
East	>5-10° downslope	Woodland	20 m	26 m
All other directions	Managed land			

¹ Slope most significantly influencing the fire behaviour of the site having regard to vegetation found. Slope classes are according to PBP.

² Predominant vegetation is identified, according to PBP and "Where a mix of vegetation types exist the type providing the greater hazard is said to be predominate".

³ Assessment according to PBP for SFPP.

⁴ Assessment according to AS3959.

Access and utility requirements

The provision of public roads, reticulated water supply, and utilities (electricity and gas) are to be in accordance with Section 4.3.1 of PBP but are not considered significant constraints to the development.

Conclusion

The subject land is capable of supporting residential development and the relevant bushfire protection measures outlined in PBP. APZ, construction, access and utility requirements are to be refined during the planning and design stages of future development in accordance with PBP.

If you have any questions in regards to this correspondence please contact me on (02) 8536 8605

Yours sincerely,

SIGNATURE HAS BEEN REMOVED

Danielle Meggos

Senior Bushfire Planner

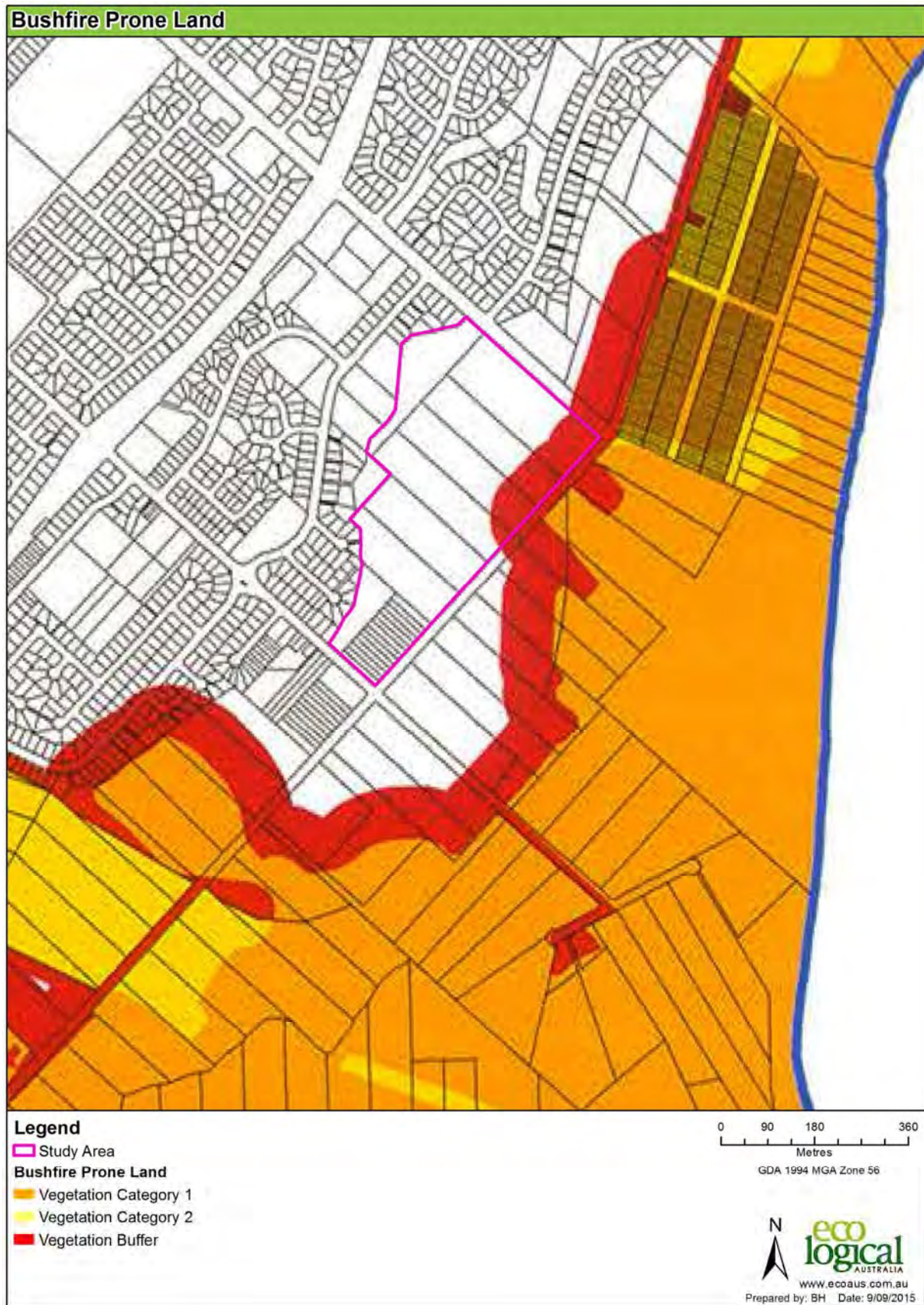


Figure 1: Campbelltown Bush Fire Prone Land Map

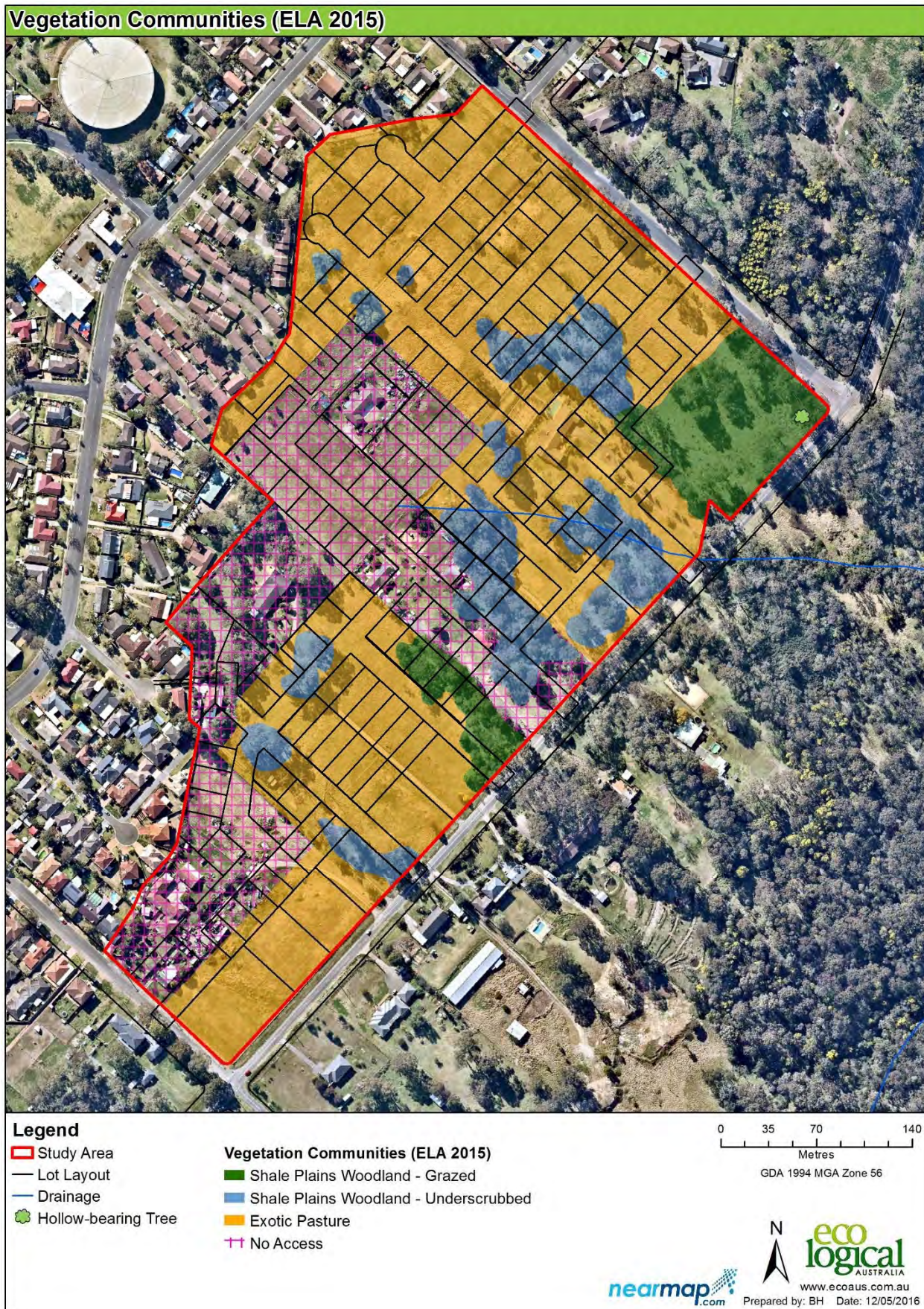


Figure 2: Vegetation communities

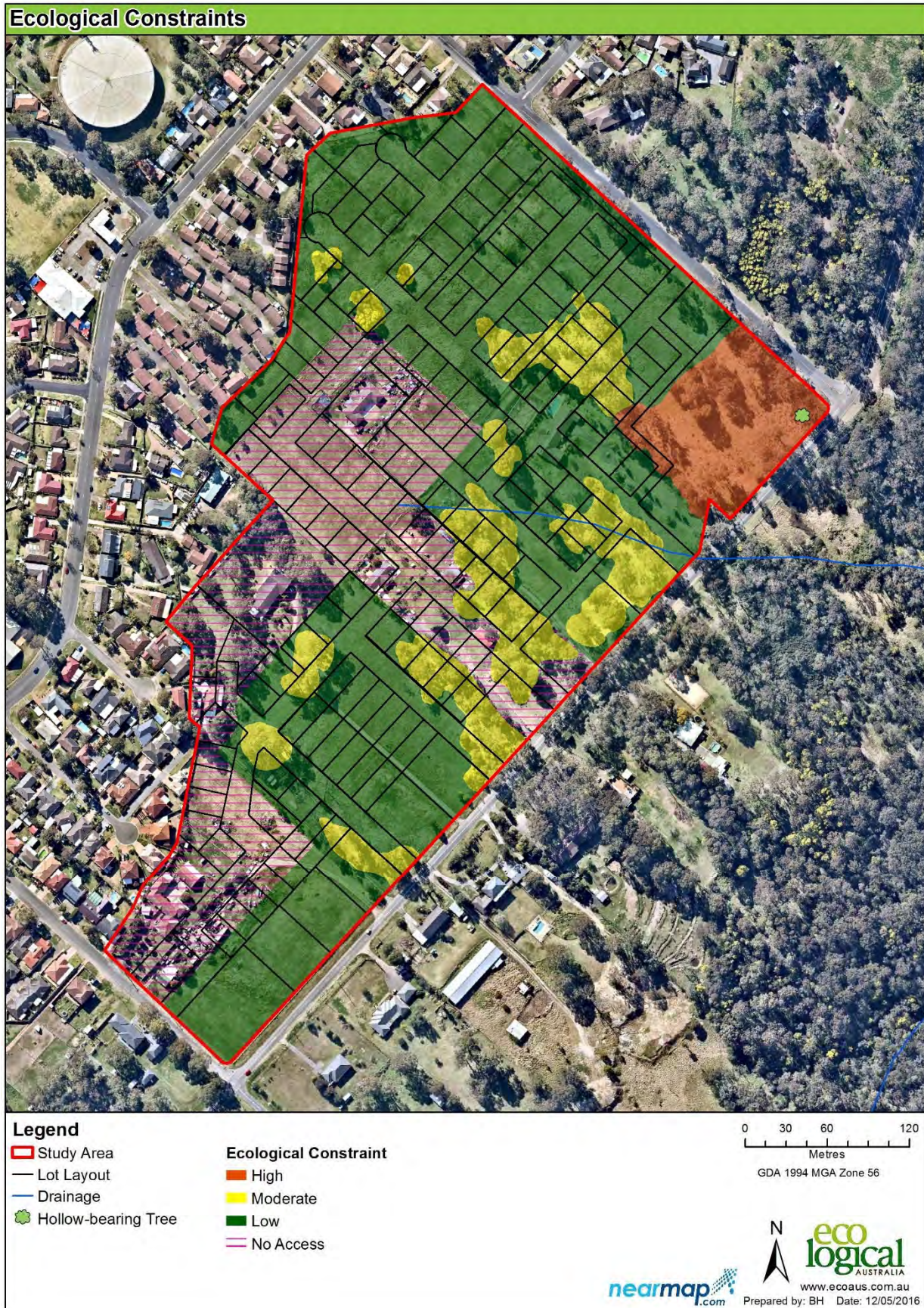


Figure 3: Ecological constraints

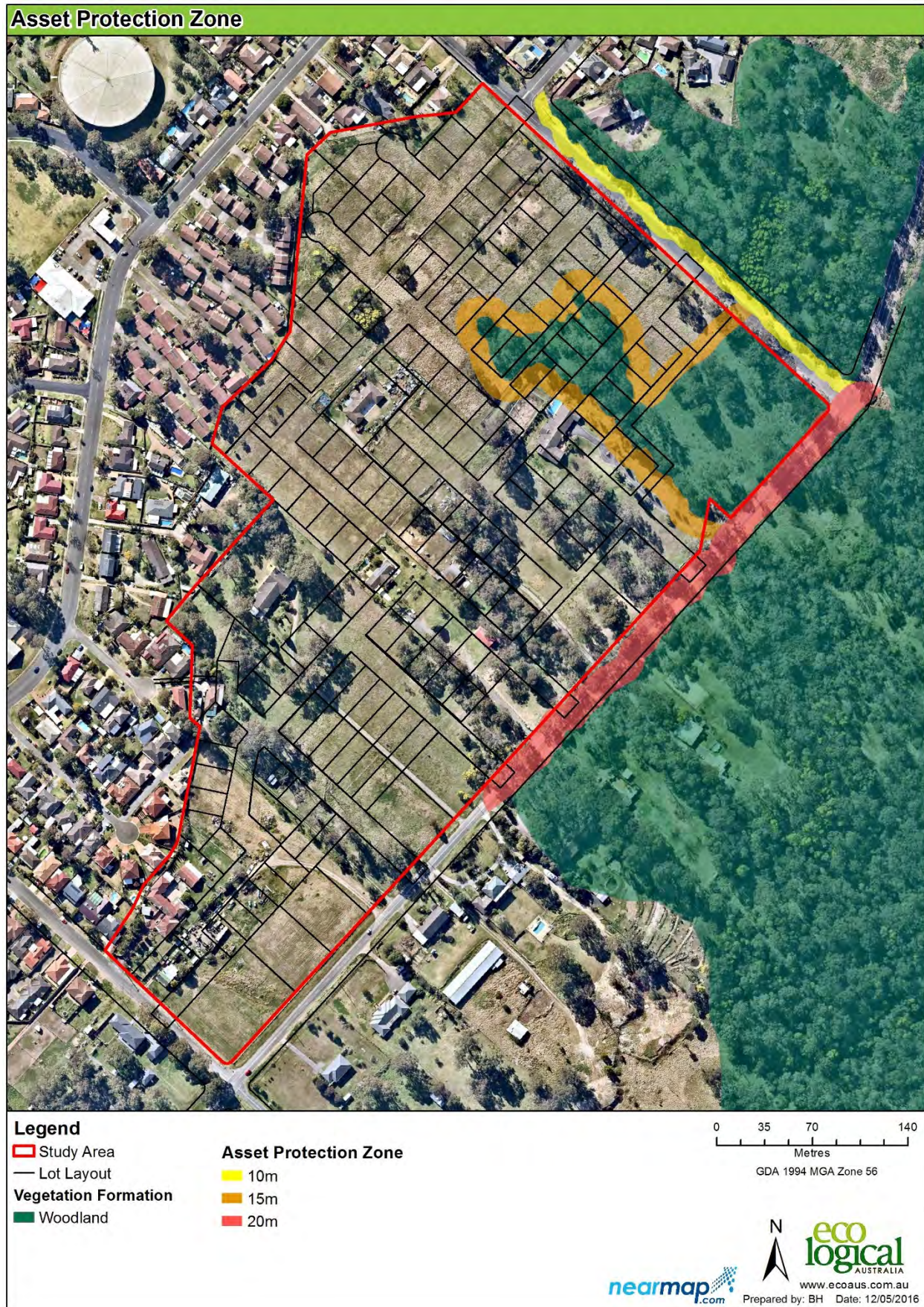


Figure 4: Asset protection zones (existing vegetation)

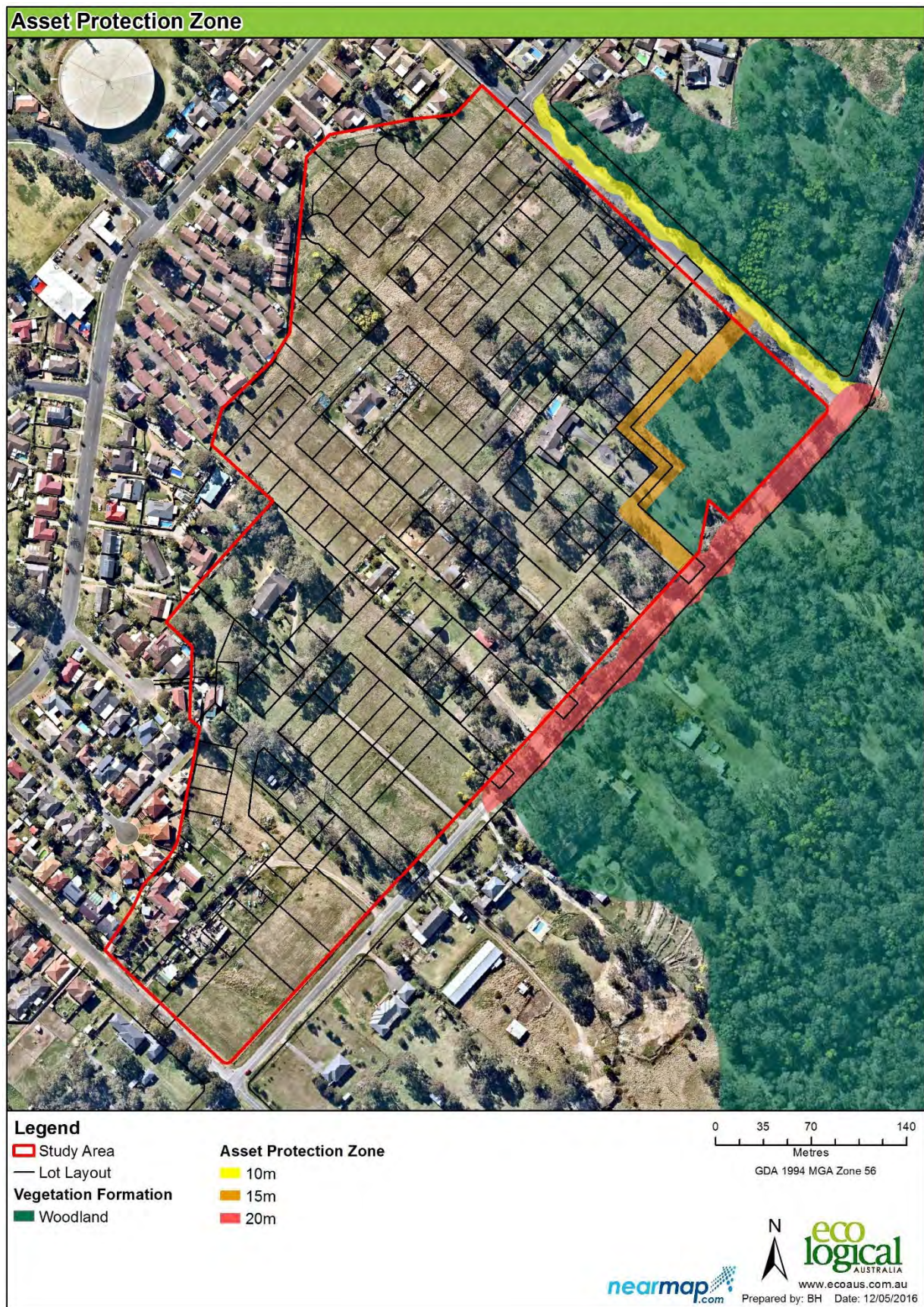
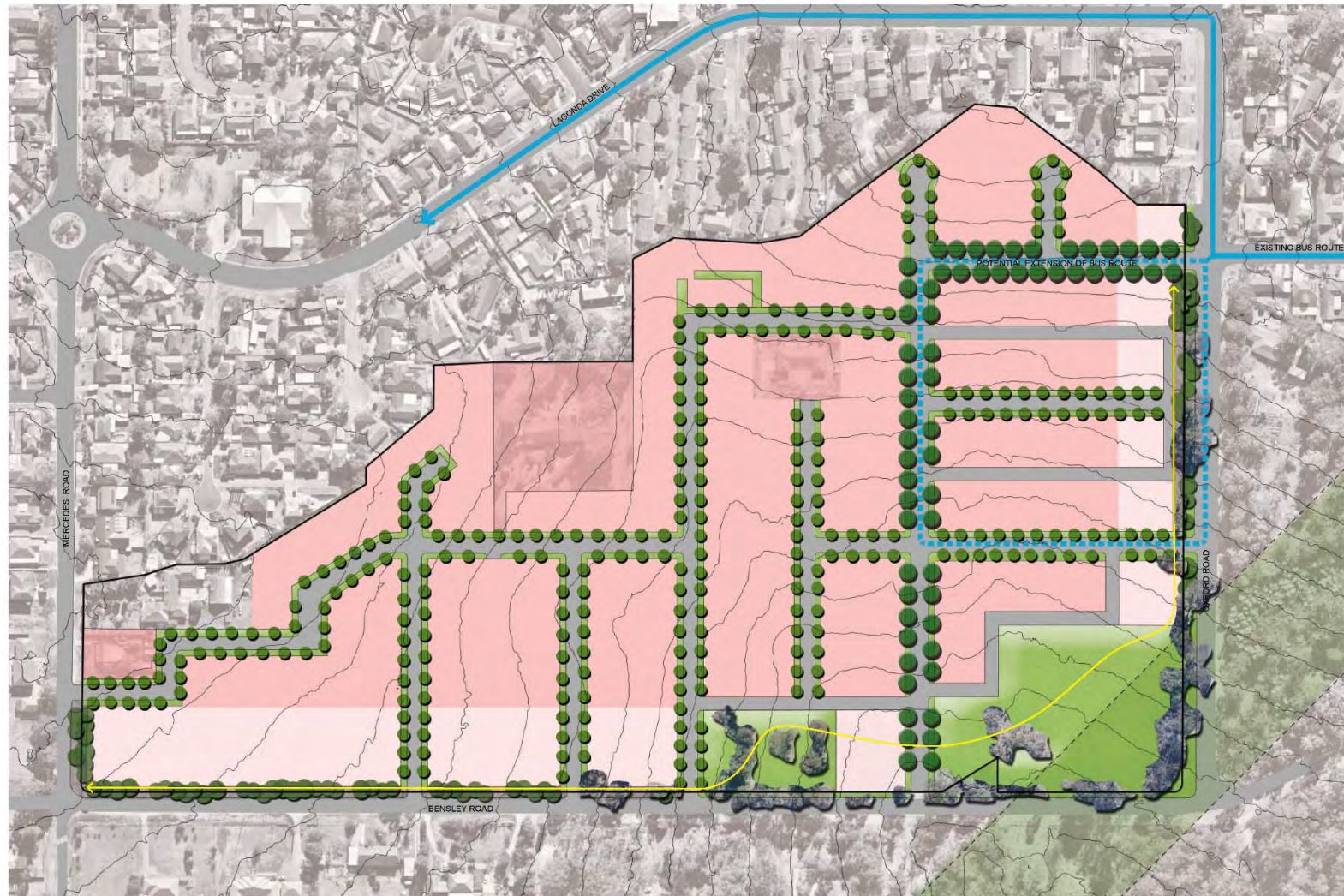


Figure 5: Asset protection zones (based on draft masterplan)



CALEDONIA - PRELIMINARY CONCEPT PLAN

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Figure 5.

Draft masterplan