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Our Ref: 1678
Date: 1 March 2018

KOBY DEVELOPMENT CONSULTANTS

ATTENTION: **RACHEL HODGE**

Via Email: rhodge@kobydc.com.au

Dear Rachel,

RE: PRELIMINARY ECOLOGICAL & BUSHFIRE INVESTIGATIONS
NO. 71 GAN GAN ROAD & NO. 100 OLD MAIN ROAD, ANNA BAY

At the request of Koby Development Consultants (KDC), Anderson Environment & Planning (AEP) herewith provide preliminary Ecological and Bushfire Hazard Considerations to inform the preparation of a Site Compatibility Statement for future development of a Seniors Living Development within the above properties at Anna Bay, NSW (the "site").

A Concept Plan has been generated for the site (over No. 71), and it is expected that the above development would require the removal of most of the remaining remnant (albeit disturbed) vegetation within the site. Subsequent to this, No. 100 has been added to the preliminary investigation herewith.

The Site:

The site title is Lot 21 DP 718935 (No. 71), and Lot A DP 360150 (No.100). The properties are located within the Port Stephens Council (Council) Local Government Area, in the suburb known as Anna Bay. The properties collectively are bounded by Nelson Bay Road to the north, Gan Gan Road and Old Main Road to the south, and similarly zoned RU2 large lots to the west and east, and some residential lots in the south eastern corner.

The site covers approx. 31.1ha, consisting of approximate areas of the following land uses:

- 12.4ha of disturbed & remnant native vegetation;
- 16.3ha of managed and disturbed areas associated with agricultural activities; and
- 2.4ha associated with rural residences, gardens, planted exotic trees and associated agricultural infrastructure.

AEP understands the current development plan would require the clearing of most remnant vegetation within the site. Regional Vegetation Mapping shows the site as containing a mix of Swampland communities in land below 10mASL and Coastal Sand Apple – Blackbutt Forest in in areas above 10mASL.

Ecological Component

Approach:

To gain an initial understanding of the ecological attributes of the site, the following approach has been utilised:

- Review of LCCREMS vegetation mapping for the site.
- Review of CKPoM mapping and habitat designation for the site.
- Aerial Photograph Interpretation (API).
- Conduct threatened species searches for records within the Atlas of NSW Wildlife (BC Act records) and the Commonwealth online Protected Matters Search Tool (EPBC Act records) in the locality.
- Review of any other relevant ecological information available.
- Site reconnaissance, and general check inspections to ground-truth vegetation communities identified in desktop searches and to consider potential areas for threatened species to occur.

Ecology Inventory

From the above approach, the following Preliminary Ecological Inventory information has been established for the site.

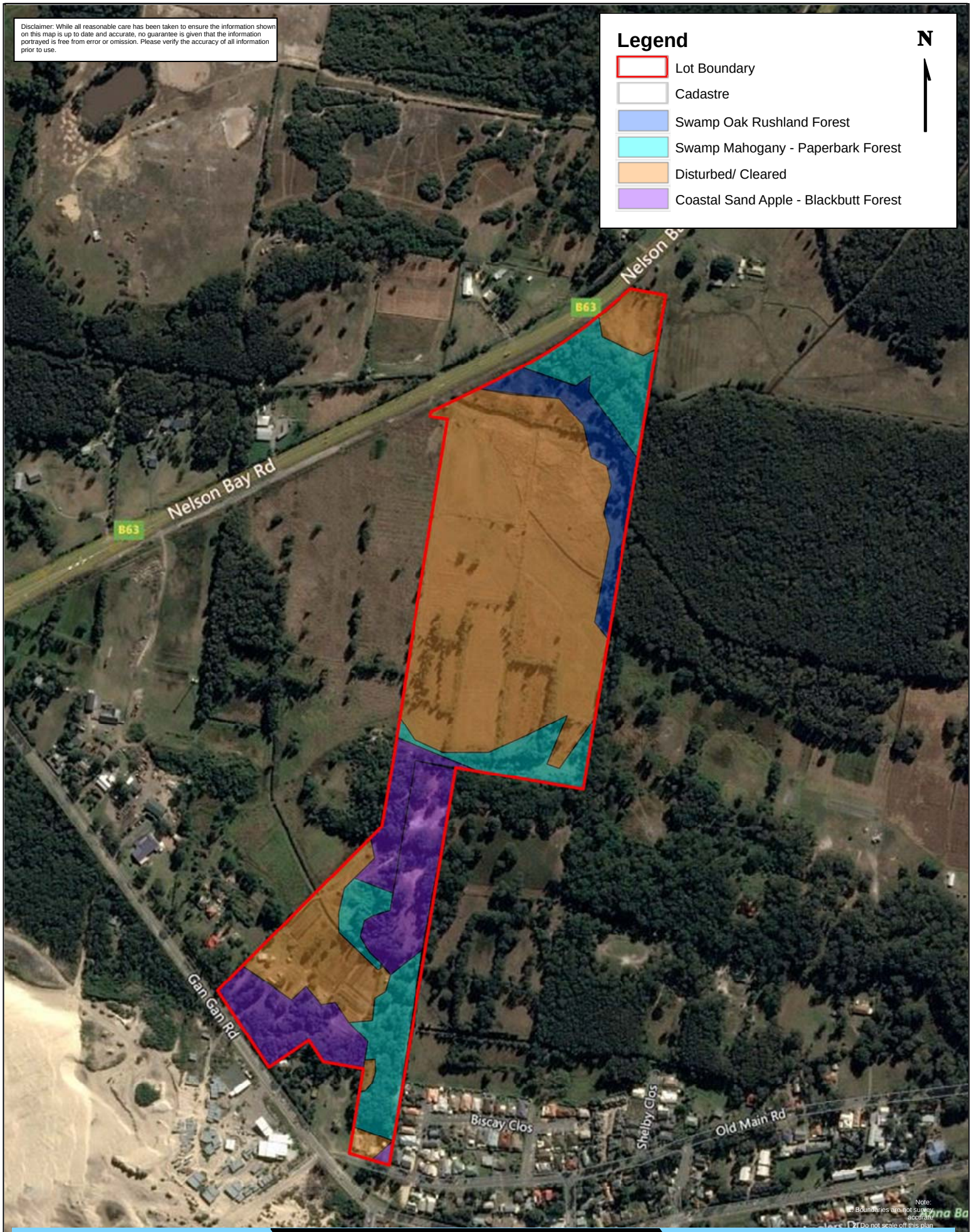
Vegetation Mapping:

A working preliminary Vegetation Map has been produced for the site. This has been achieved by adoption and subsequent updating and refinement of LCCREMS (2008) Regional Vegetation Mapping via field inspection. This plan is presented herewith as **Figure1.**

Figure 1 depicts the following derived Vegetation Map Units as occurring within the site and their approximate areas as per LCCREMS Map Unit Classification:

- MU40 – Swamp Oak Rushland Forest (SORF) – 1.8ha,
- MU37 – Swamp Mahogany - Paperbark Forest (SMPF) – 5.4ha,
- MU33 – Coastal Sand Apple – Blackbutt Forest (CSABF) – 5.2ha.

SORF and SMPBF are identified as Endangered Ecological Communities (EEC) within the BC Act 2016. The plates following depict the general current site condition.



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Title: Figure 1 - Vegetation Map

Date: March 2018

Location: Anna Bay

Client: KDC

Our Ref: 1678

Disturbed Coastal Smooth-barked Apple – Blackbutt Forest in the centre of No. 71 in lands >10mASL.

Artificial drainage line in cleared Swamp Mahogany Paperbark Forest in the south of No. 71.

Artificial drainage line in cleared Swamp Oak Rushland Forest at the northern end of No. 71.

Northern part of No. 71, with remnant Swamp Oak Rushland Forest and Swamp Mahogany Paperbark Forest in background, and cleared variants in the foreground.

Central knoll of Blackbutt Forest with No. 100

Flat southern areas of No. 100 containing Swamp Mahogany Forest

Threatened Species:

Threatened Flora:

Nine threatened plant species have been previously recorded and/or predicted to occur within the locality. It is unlikely that all of these species would have suitable habitat on the site, given its largely disturbed and managed nature.

No threatened flora was observed during recent site inspections in Dec 2017 (No. 71) or Feb 2018 (No. 100), however, seasonal and /or targeted searches were not performed. Appropriate targeted surveys would need to be undertaken for these species to clarify their status within the site.

It is considered that some of the remnant forested areas and regenerating areas of the site may contain suitable habitat for threatened orchids, including *Diuris arenaria, Diuris praecox* and *Cryptostylis hunteriana.* Survey for these species will be required during appropriate survey periods (*Cryptosylis hunteriana* – November – February, and *Diuris arenaria* and *D. praecox* – July-September) as per the TBDC.

Threatened Fauna:

Database searches have revealed one amphibian, 17 bird and 15 mammal species have been previously recorded and/or predicted to possibly occur within the locality.

Fauna records of note within the locality (10km search parameters) include:

- ***Koala*** – 1125 records, including several within the site or adjoining forest in 2011 and 2014;
- ***Grey-headed Flying Fox*** - 20 records, including a 2006 record within the site;
- ***Powerful Owl*** – 12 records, including one 1999 record within the site;
- ***Masked Owl*** – seven records, including one 1999 record within the site;
- ***Squirrel Glider*** – 31 records, six within 2km, although none on site, the bushland within the site could represent foraging and corridor habitat.

While no threatened fauna was recorded by incidental observation during site inspection, seasonal and /or targeted searches were not performed.

Koala:

Remnant native vegetation areas within the site support vegetation which is classified as "Preferred Koala Habitat", "Preferred Koala Habitat Buffer" and "Supplementary Koala Habitat" under the Port Stephens Comprehensive Koala Plan of Management (CKPoM). In addition, remnant vegetation areas contain *Eucalyptus* species listed as "Preferred Koala Feed Tree" in SEPP44 and the CKPoM. Further, the SMPBF in the north of the site is likely to be considered as part of a Council mapped Koala habitat corridor.

An assessment under the CKPoM will be required which is likely to show that the development as proposed will result in the removal of both Preferred and Supplementary Koala Habitat as well as preferred Koala feed trees. Early engagement with Council is recommended, however, it is likely that (some) areas of Koala habitat and linkages will be required to be retained

Justification will be required for the removal of any of the above identified features. It is possible that Council is willing to accept the removal of these features in some circumstances, particularly when rehabilitation of other areas and linking / strengthening of corridors can be achieved. It is known that removal of Koala habitat has occurred in other previous development areas within the Shire.

However, the removal of this vegetation at face value is inconsistent with the primary objectives of the CKPoM performance criteria for development applications (see Appendix 4 of CKPoM). This matter is key for the proposal, and would need to be confirmed with Council early in any development application process after site field data of koala usage has been gathered.

Squirrel Glider & Micro-bats:

Assessment for Squirrel Glider and Microbats would entail:

- Targeted survey (spotlighting, *Anabat* Echolocation recording and camera trapping), particularly for roosting and nesting within the site; and
- Survey for habitat and hollows in mature trees in remnant native vegetation.

Assessment of loss of potential habitat from any identified areas of corridor habitat and utilisation and / or occupation would be required.

Forest Owls:

Although only a small amount of potential habitat would be affected, records for Masked Owl and Powerful Owl within the site would necessitate targeted seasonal survey, particularly for potential roosting / nesting activity on site or in immediate proximity in adjacent lands. Assessment of loss of potential habitat from any identified habitat utilisation may be required.

In summary, remnant bushland within the site could offer habitat and corridor for threatened fauna species, particularly Forest Owls, Microbats, Squirrel Glider and Koala, and would need to be considered further in any assessment, as well as any other species reported during fieldwork and survey.

Design Concept & Approvals Pathway:

The current proposed development concept plan (for No. 71) involves the removal of most remaining native vegetation from the site. It is assumed for the purposes of this preliminary assessment that maximum development, and hence vegetation removal, is proposed on No. 100.

The Minister for Environment has made an amendment to the BC (S&T) Regulation to declare some local government areas as Interim Designated Areas, notably including Port Stephens. Former planning provisions continue to apply within Interim Designated Areas. Applications for development consent, or modification to an approved development, under Part 4 of the EP&A Act (not including State Significant Development) will continue to be assessed under former planning provisions until the 24 November 2018.

Following initial evaluation and consideration of the ecological approvals pathways available for this project, it is apparent that the level of vegetation removal would trigger a "significant impact" under Section 5A of the EP&A Act 1979 (i.e. the 7 part test). In such circumstances, the proponent would be directed to prepare a Species Impact Statement (SIS). It is likely that this would lead to the applicant and consent authorities agreeing to 'opt in' to the Biodiversity Offsetting Scheme (essentially as per below post Nov 2018).

After November 2018 (assuming no further delays to new legislation implementation), full site development would trigger the minimum under the newly implemented *Biodiversity Conservation Act* 2016 (BCA), and hence an assessment utilising the Biodiversity Assessment Method (BAM) will be required, with associated offsetting. As such, under the BCA, preliminary desktop BAM investigations have been undertaken to establish the approximate context of development impacts and conservation opportunities within the framework of the current proposed development configuration. These evaluations are presented below.

Note that development applications not involving impacts on EEC vegetation or threatened species habitat could be lodged over select areas of the site with a supportive 7 part test indicating "no significant impact" up until Nov 2018.

NSW Biodiversity Conservation Act 2016:

Recent changes to biodiversity legislation within NSW has fundamentally changed the approvals pathway for development seeking to remove native vegetation above a certain threshold (which in this instance would be 0.25 – 0.5ha; a threshold that would be exceeded). Under the Act, clearing above the threshold requires the production of a Biodiversity Development Assessment Report (BDAR) via application of the BAM.

The BDAR requires formalised assessment of biodiversity values present within the site (including vegetation plots, surveys for potentially occurring threatened species etc.), along with details of efforts made by the proponent to avoid / minimise vegetation removal and subsequently minimise impacts upon identified biodiversity (particularly threatened entities).

Residual impacts are quantified after the avoid / minimise process is applied and, subject to conditions placed upon the proposal by Council (see below), offsets in the form of biodiversity credits that require retirement / purchase are calculated based upon the vegetation type being removed and the threatened species that are likely to be impacted by the proposal.

Avoid & Minimise:

As the BDAR consent authority, Council is also bound to consider the practical application of "Avoid / Minimise / Offset", with provision of Offsets being seen as a last resort. As to how Councils will apply the concept of "Avoid / Minimise" is likely to vary considerably from LGA to LGA, but there is potential for such to be utilised to restrict full site development., particularly in regards to Koalas and mapped Koala habitat as per the CKPoM. Early engagement with Council is recommended to gain agreement on an acceptable level of impact that will be able to be offset.

Serious and Irreversible Impacts:

The concept of Serious and Irreversible Impacts (SAII) have been devised under the new legislation, and are specific to individual threatened species or ecological communities that 'meet' any of four (4) criteria including:

- recent rapid rate of decline in number;
- small population size
- very restricted distribution; or
- a threatened entity being typically unresponsive to conservation actions.

Any impacts upon a species / community listed as a 'SAII candidate species' must be assessed for significance and, if deemed to be a SAII, the decision maker (i.e. Council) are 'required to refuse to grant development consent' for any Part 4 developments.

Although no species or communities potentially or likely to occur within the site are currently listed as SAII candidate species by OEH, Councils have the ability to recommend species / communities as SAII candidates to OEH based upon the criteria listed above.

To this end, there is potential for Port Stephens Council to nominate species such as the Koala, Mahony's Toadlet and others as SAII candidates, the impacts upon which may limit the scale of development within the site if their SAII status is accepted by OEH.

Preliminary BioBanking Investigations:

The derived vegetation map units presented in **Figure 1** were adapted to Plant Community Types (PCTs) utilised by the VIS Database, and thereafter approximated plot data was generated for the community based on API and field observations.

Preliminary calculations undertaken have revealed the following approximate credit requirements as applicable to the current proposal based on the removal of the following vegetation:

- PCT 1648: disturbed *Smooth-barked Apple - Blackbutt heathy open forest of the Tomaree Peninsula* (2.0ha)
- PCT 1717: disturbed *Broad-leaved Paperbark - Swamp Mahogany - Swamp Oak - Saw Sedge swamp forest of the Central Coast and Lower North Coast* (2.5ha); and
- PCT 1727: disturbed *Swamp Oak - Sea Rush - Baumea juncea swamp forest on coastal lowlands of the Central Coast and Lower North Coast* (1.0ha).

Given the absence of detailed threatened species information at this preliminary stage, focus is placed on ecosystem credits as an indicatory surrogate to provide a broad indication of likely required ecological credits relevant to the proposed development.

Table 1: Preliminary Ecosystems Credits Required

BioBank Plant Community Type (PCT)	Estimated Impact Area (ha)	Credits Required for Development
PCT 1648 *Smooth-barked Apple – Blackbutt heathy open forest of the Tomaree Peninsula*	5.2	125
PCT 1717 *Broad-leaved Paperbark - Swamp Mahogany - Swamp Oak - Saw Sedge swamp forest of the Central Coast and Lower North Coast*	5.4	153
PCT 1727 *Swamp Oak - Sea Rush - Baumea juncea swamp forest on coastal lowlands of the Central Coast and Lower North Coast*	1.8	47
Total Preliminary Credits required	**12.4**	**325**

Development will need to show that all reasonable attempts have been undertaken to "Avoid and Minimise" impacts to native flora and fauna, and such measures have been included within the final design. Particular emphasis should be place on the EECs and Koala habitat and linkages in this instance. This is an area where Council can resist development within the new legislation.

Additional credits may be required to be retired based on the results of the detailed field investigations. Reasons may include: vegetation communities being closer to benchmark than currently estimated, occurrence of native ground cover species in disturbed and grazed areas, and records of threatened flora or fauna encountered during require fieldwork.

The requirement to 'retire' the estimated 325 credits can be either achieved in a variety of ways including:

- Onsite configuration responses (i.e. lessening developable area and hence lessening impact credit load);
- Establishing offsite Stewardship Site(s) (i.e. the old Biobank sites) that generate required credit types and numbers;
- Purchasing suitable on-market credits and retiring them;
- Paying into the Biodiversity Conservation Trust Fund; and/or
- Combination/s of the above.

Commonwealth EPBC Act Process:

If impacts are to occur on any listed matters of national environmental significance (MNES), then a referral to the DoE will be required under the EPBC Act.

The current layout will be affecting both listed threatened species (e.g Koala) and listed Ecological Communities (e.g. Swamp Oak Rushland Forest), and hence an approval will be required if these impacts are not avoided.

Whilst the Commonwealth recognises the NSW BAM and offsetting system as being robust, there is no all encompassing Bilateral Agreement in place. As such, there is potential for the Commonwealth to seek different offsetting arrangements to that invoked under the BAM at a state level.

Bushfire Component

As the proposed development would eventuate in subdivision for Seniors Living Development, it is classed as 'Integrated Development' under Section 91 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). In combination with Section 100B of the *Rural Fires Act 1997* (RF Act), a Bushfire Safety Authority (BSA) would be required from the NSW Rural Fire Service (RFS) to enable the development to proceed. A report addressing the required heads of consideration relevant to obtaining a BSA would need to be produced to accompany a development. Also, Seniors Living Development is a "Special Fire Protection Purpose" (SFPP) type development, so heightened requirements apply.

Bushfire Prone Land Mapping:

Examination of Rural Fire Service on-line mapping (2017) confirms that the study area is within a designated bushfire prone area. This designation would trigger the need for a Bushfire Threat Assessment (BTA) to accompany any application for development within the site.

Bushfire Threat Assessment:

The BTA would need to address the bushfire protection measures required by "*Planning for Bushfire Protection 2006"* (PBP) for "SFPP" type development and the construction requirements of the proposed development in accordance with the provisions of the Building Code of Australia – Volume 2, Edition 2010 and Australian Standard 3959-2009 (AS 3959) – "*Construction of buildings in bushfire-prone areas*".

It should be noted that Planning for Bushfire Protection 2017 is currently in draft form and may well be in effect when this proposal progresses. Aside from a minor increase in APZ required, there is little other change of note that would affect the viability of this proposal.

Appendix 3 of the PBP details the steps required to determine the level of bushfire hazard that applies to the site. Factors influencing the hazard level include:

- The formation of vegetation surrounding the site (as defined by Keith 2004);
- The distance between vegetation and the site (or proposed buildings therein);
- The effective slope for each patch of vegetation; and
- The Fire Danger Index (FDI) of the council area within which the development occurs.

These factors together provide an indication of the level of threat posed to the development from any vegetation retained within the site and surrounding vegetation in the event of a bushfire, and the required mitigation measures to be taken in the form of Asset Protection Zones (APZs) and building construction standards.

Vegetation:

The majority of vegetation within the site is proposed to be cleared, while vegetation adjoining the site consists of:

- West – Mostly cleared and managed as grazing land;
- North – Nelson Bay Road and a small (0.85ha) patch of mostly cleared SMPF;
- East – mostly Coastal Shrubland;
- South part of northern portion – Forest; and
- South part of southern section – Gan Gan Road and Old Main Road.

A conservative approach was taken in assessing vegetation types, with all surrounding areas classified as "Forest" until more detailed floristic information is available to refute / change such.

Slope Analysis:

Examination of effective slope class for the relevant hazard areas reveals the site is relatively flat, and mostly the block lies below 10mASL. Effective slope relevant to the hazards surrounding the subject site exist for the vast majority as:

- Flat / upslope towards vegetation surrounding the site.

Finer slope classification and mapping would be required as part of any more detailed planning, design and approvals phase.

Note that the derived APZ setbacks are based upon the need to conform to Level 3 construction as per AS 3959 for a building of Class 1 or 2 under the Building Code of Australia standards.

Fire Danger Index:

The site and surrounds occur within the Greater Hunter region, with existing vegetation subsequently classified with a Fire Danger Index (FDI) of 100 as per Appendix 2 of the PBP. Although vegetation within the site would be cleared by the proposal, surrounding vegetation would need to be considered.

Asset Protection Zones:

Based on the information presented previously, the following derivation of APZs apply to the proposed development. APZs are presented herewith in **Figure 2.**

Fire Danger Index Rating = 100

Forest Vegetation surrounding the site

- Effective slope – flat / upslope
- Required Minimum APZ – 60m

Construction Standards:

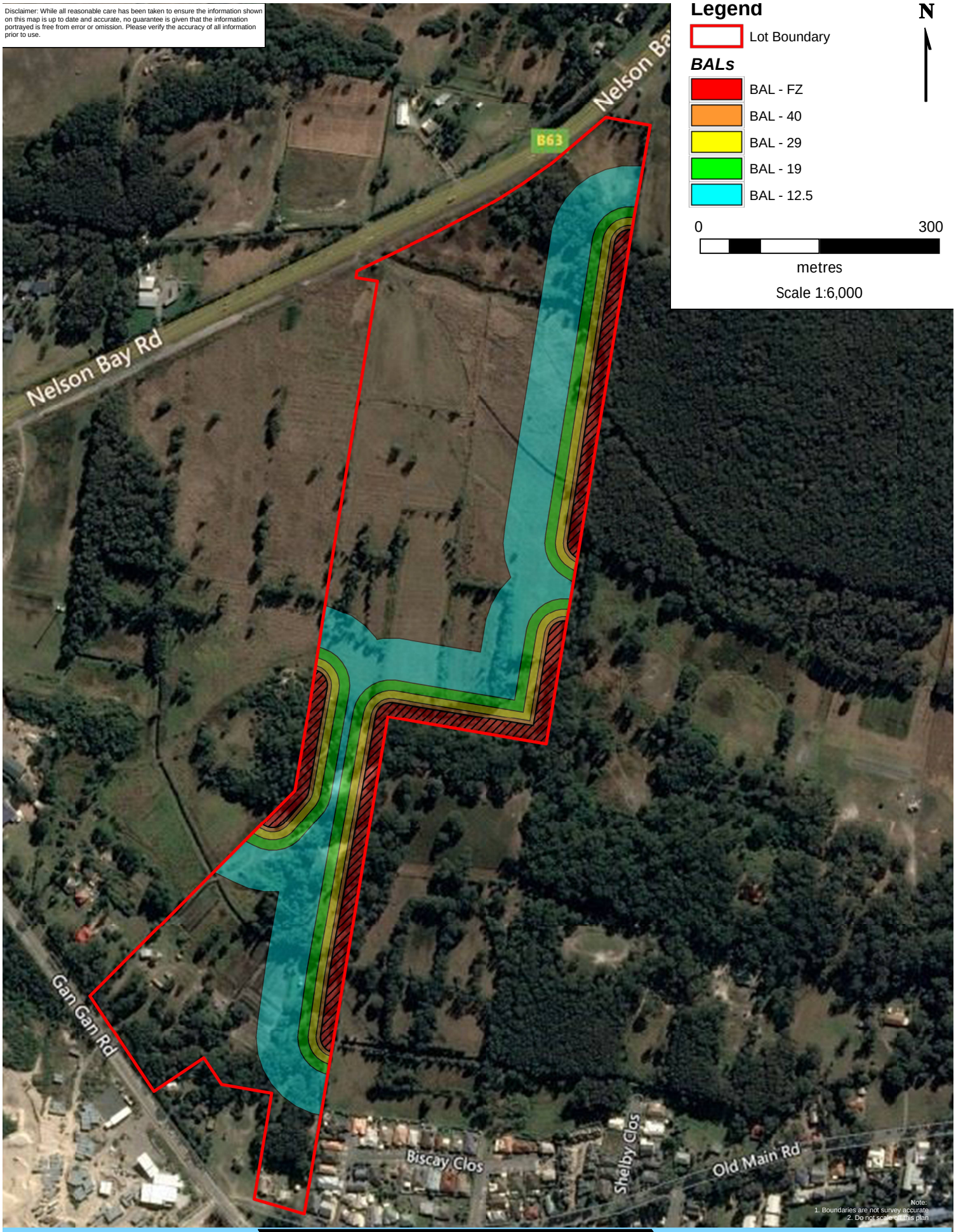
As a SPFF, focus is on physical separation from the hazard rather than heightened construction standards, hence the increase in APZ sizes. Nevertheless, BALs area shown on **Figure 2.**

Other Bushfire Considerations:

Suitable access / egress would need to be compliant with Section 4.6 of the PBP (2006), and typically require for a perimeter road to be located between dwellings and adjacent bushfire hazards (roads can be located within the area required as APZ). Water supply standards should be readily achievable given the proximity to existing development, and emergency response times are expected to be prompt with NSW Rural Fire Brigade Anna Bay Bobs Farm station approx. 1.5km west.

Bushfire setback requirements in the form of Asset Protection Zones will be most prominent along the eastern boundary where intact vegetation sits immediately adjacent. Even allowing for inaccuracies in digital cadastral boundaries in **Figure 2**, the setback to the west is not considered to be of issue given the extent of clearing associated with grazing activities associated with most of the lands. Overall, identified setbacks may need to be incorporated into final design to achieve maximum yield from the site.

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.



AEP

Title: Figure 2 - Required BALs and APZ

Date: Feb 2018

Location: Anna Bay, NSW

Client: KDC

Our Ref: 1678

Key Summary Points:

Ecology:

- Site contains remnant EEC vegetation, threatened species habitat, and mapped Koala habitat.
- Development as proposed will affect most of these areas.
- Port Stephens LGA is an "Interim Designated Area" where the "old" legislation applies until Nov 2018. However, a 7 part test for full site development would trigger a "significant impact". Likely to end up at biodiversity offsets regardless.
- Development will trigger vegetation clearing thresholds, and the BAM will need to be applied to produce a BDAR. This will require specific ecological survey over a set seasonal period.
- The BDAR process will need to consider concepts such as "Avoid / Minimise". It is considered likely that Council will closely examine impacts on EECs, Koala habitat and koala linkages through this process, possibly resulting in sterilisation of some areas from development.
- The BDAR will probably lead to an approval that requires the provision / retiring of biodiversity credits to enable the development to proceed.
- Other matters such as consideration of the Port Stephens CKPoM and the Commonwealth EPBC Act will also be required if impacts on Koalas / Koala habitat are to occur.

It is our opinion at that this point that a viable site development approvals pathway is achievable, but that the development footprint will need to shrink back from EEC vegetation, Mapped Koala habitat and known koala corridors to be achieved.

Bushfire:

- Site occurs within a mapped Bushfire Prone Area, hence a BTA will be required.
- Seniors Living Development is classed as a SFPP, and a S100B clearance in the form of a Bushfire Safety Authority (BSA) will be required from the RFS.
- AS a SFPP, hence heightened APZs are required.

It is our opinion that the current proposed layout will need (major) reconfiguring to enable compliance with PBP. No issues have been identified that would preclude an appropriately modified design from achieving a BSA from the NSW RFS.

We trust that the information presented herewith is suitable for the purposes of the Site Compatibility Certificate process. Should you require any further details or clarification, please do not hesitate to contact the writer.

Yours faithfully,
ANDERSON ENVIRONMENT & PLANNING

CRAIG ANDERSON
DIRECTOR