

Briefing Note

To: DLALC
From: Umwelt
Author: Les Seddon
Date: 3 October 2019
Subject: Kariong Rezoning Request Constraints

Purpose

To provide summarised outcomes of Umwelt specialist biodiversity, bushfire and Aboriginal cultural heritage studies at Woy Woy Road Kariong, NSW.

Outcomes/Key messages

The following key outcomes have been established.

Bushfire: It is feasible that the future proposed development will be able to satisfy the aims, objectives and performance requirements of Planning for Bushfire Protection 2018.

Biodiversity: Whilst the proposal footprint will impact on threatened species habitat and endangered ecological communities, sufficient offset opportunities are likely available across the wider site to the south, via additional Stewardship Agreements on DLALC land, purchasing of credits from the market, and/or via payments to the Biodiversity Conservation Trust Fund in accordance with the Biodiversity Offsets Scheme. The proposal is also unlikely to substantially impact on connectivity and corridors.

Whilst Biodiversity Certification will satisfy the requirements of the NSW BC Act, a Commonwealth EPBC Referral is also likely to be required to support the final planning proposal.

Aboriginal Cultural Heritage: Potential presence of sites of high significance. Further Aboriginal Cultural Heritage Assessment is proposed and will be incorporated into final the final planning proposal preparation to avoid and mitigate any impacts on Aboriginal Cultural Heritage.

Recommendations

That the rezoning request considers these findings and incorporates the avoidance of established constraints.

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1.0 Preliminary Bushfire Risk Assessment Report

Umwelt has undertaken a preliminary bushfire risk assessment for the proposed rezoning request. The assessment provides DLALC with information required to plan and manage the threat of bushfire risk. The assessment included and considered the following:

- Modelling of bushfire hazard across the proposed development areas in accordance with AS3959 *Australian Standard for Building in Bushfire Prone Areas*
- Provides a summary of bushfire protection performance criteria and acceptable solutions under the *Planning for Bushfire Protection 2006* (amended 2018)
- Identified opportunities for cultural burning activities in surrounding bushland in accordance with the *NPWS Cultural Fire Management Policy*.

The mapping (refer Figure 1.1) shows that there are significant areas of the study area that are viable for residential housing, and that the creation of APZ's will be an effective measure to manage bushfire risk. The south of the study area is constrained for dwellings by bushfire risk from downslope vegetation to the south and east of the study area. It is anticipated that roads and infrastructure may be located in this area to facilitate an APZ for dwellings. The north of the site is also constrained by bushfire risk from rural residential properties the north. This conservative finding may be further refined by more detailed bushfire studies at the future individual lot level.

The assessment found that provided that the proposed development, APZ areas, access and water supply facilities within the subject development site are constructed / designed / maintained in accordance with the recommendations as described in the report, it is a considered opinion that the proposed development can satisfy the aims, objectives and performance requirements PBP 2018.

It is noted that bushfire safety compliance and mitigation (as recommended and/or purported by this report) for the subject development site comprises a package of 'measures in combination' primarily including asset protection zoning, construction standards, property roadway access & adequate water supply for firefighting purposes.

2.0 Aboriginal Cultural Heritage

Umwelt reviewed the Preliminary Archaeological Assessment (Pross 2007), conducted an updated AHIMS site search and reviewed available site cards and gave consideration to the environmental context of the proposed development footprint.

Pross (2007) completed a preliminary assessment of the broader landholding, including the project area. During the survey 11 sites were recorded within the broader landholding. These sites are not registered on AHIMS (based on the results of a search conducted in May 2019) and no map of the sites is provided in the associated report.

Figure 2.1 shows the location of the sites based on coordinates provided by Pross (2007).

The site types recorded by Pross (2007) are listed in **Table 2.1** below with information on whether they map within the project area. Based on this information, the project area contains 3 rock engravings (2 engraved circles and one engraved crescent/arc), 1 area of water pools with potential engravings (nothing that a second water hole site is recorded just outside the eastern boundary), one stone arrangement and one area with recorded fire places and a possible oven. Due to the presence of these sites, Pross (2007) recommended that additional cultural heritage assessment be undertaken.

Table 2.1 Description of sites associated with Kariong project area

Site name	Description	Location
WWR 1	Rock engraving (engraved circle)	Outside project area but within landholding
WWR 2	Water pools with channels (potentially with rock engravings)	Within project area
WWR3	Rock engraving (engraved circle)	Within project area
WWR 4	Stone arrangement (piled sandstone 3m x 1m x 0.75m high)	Within project area
WWR 5	Rock engraving (engraved circle)	Within project area
WWR 6	Water hole	12m east of project area
WWR 7	Fire places and oven	Within project area
WWR8	Rock engraving (engraved crescent/arc)	Within project area
WWR 9	Rock engravings (multiple engraved circles)	Outside project area but within landholding
WWR10	Basin (pecked/carved)	Outside project area but within landholding
WWR11	Rock engraving (native dog)	Outside project area and landholding
WWR12	Stone arrangements (6 stone arrangements)	Outside project area and landholding

The presence of these sites within the project area poses a substantial constraint to the project. Given the potential sensitivity of these sites and the lack of any photographs or detailed site records DLALC has revised the disturbance footprint to avoid these sites with a 20m buffer, as shown on **Figure 2.1**.

Due to the age of the assessment and changes to current best practice requirements a full Aboriginal cultural heritage assessment (ACHA) is required over the study area. During the ACHA the exact location of these sites will be accurately surveyed and appropriate management and buffers will be established. Until then there is potential for the footprint to require further revision following completion of a full Aboriginal cultural heritage assessment over the study site. There remains some potential that further sites may be identified in the current disturbance footprint.

3.0 Biodiversity

Umwelt have prepared a draft Biodiversity Certification Assessment Report (BCAR) to assess the potential biodiversity impacts of the residential subdivision in accordance with the Biodiversity Assessment Method (BAM) and the *Biodiversity Conservation Act 2016*.

The Development Footprint is approximately 6.1 ha in area and represents approximately 46 per cent of the total area of Lot 512 and 513 DP 727686. Darkinjung, during their planning process, have actively avoided direct biodiversity impacts to approximately 7.1 ha of vegetated land in Lot 512 and 513 DP 727686 which contains habitat for a range of listed flora and fauna species including, but not limited to, those occurring in the Development Footprint.

As shown in **Figure 3.1** vegetation surveys of the Development Footprint identified three Plant Community Types (PCTs) and native fauna habitats being:

- 2.67 ha of PCT1641 Dwarf Apple Scribbly Gum heathy low woodland on sandstone ranges of the Central Coast (Good Condition)
- 2.60 ha of PCT1642 Scribbly Gum – Red Bloodwood – Old Man Banksia heathy woodland of southern Central Coast (Good Condition)
- 0.72 ha of PCT 1699 Heath- leaved Banksia – Coral Fern wet heath on sandstone ranges of the lower Central Coast (Good Condition) (equivalent to *Coastal Upland Swamp in the Sydney Basin Bioregion* EEC under the BC Act and EPBC Act)

The following threatened species were recorded by Umwelt in the proposal footprint (refer **Figure 3.2**).

- Spreading Guinea Flower *Hibbertia procumbens* (Endangered – BC Act)
- *Hibbertia puberula* subsp. *puberula* (Endangered – BC Act)
- *Darwinia glaucophylla* (Vulnerable – BC Act)
- Netted Bottlebrush *Callistemon linearifolius* (Vulnerable – BC Act)

Habitat was identified, and thus presence assumed for the following threatened species:

- Southern myotis *Myotis macropus* (Vulnerable – BC Act)
- Large-eared Pied Bat *Chalinolobus dwyeri* (Vulnerable – BC Act and EPBC Act)
- Eastern pygmy possum *Cercartetus nanus* (Vulnerable – BC Act)

Figure 3.3 details the species credit polygons and individuals within the proposal footprint.

Following the application of avoidance and mitigation measures, the BAM assessment identified the following biodiversity credits required to offset the impacts of the Project:

- 75 ecosystem credits for PCT1641 Dwarf Apple Scribbly Gum heathy low woodland on sandstone ranges of the Central Coast (Good Condition)
- 70 ecosystem credits for PCT1642 Scribbly Gum – Red Bloodwood – Old Man Banksia heathy woodland of southern Central Coast (Good Condition)
- 7 ecosystem credits for PCT 1699 Heath- leaved Banksia – Coral Fern wet heath on sandstone ranges of the lower Central Coast (Good Condition)
- 6 species credits for *Callistemon linearifolius*, 9 species credits for *Darwinia glaucophylla*, 195 species credits for *Hibbertia procumbens*, 101 species credits for *Hibbertia puberula*, 195 species credits for the eastern pygmy possum, 141 species credits for the large-eared pied bat and 31 species credits for the southern myotis.

Whilst the proposal footprint will impact on threatened species habitat and endangered ecological communities biodiversity credit requirements will be met in accordance with the Biodiversity Offsets Scheme.

The Darkinjung- owned lands located at Woy Woy Road Kariong is approximately twice the size of the proposed Development Footprint (refer to **Figure 3.1**). This area is located immediately south of the Development Footprint and comprises approximately 7 ha in total. Considering that the site occurs immediately adjacent to the Development Footprint, and based on a high-level habitat suitability assessment in conjunction with previous ecological studies (Conacher Consulting 2016), the site will likely generate a portion of the required credits to offset the impacts of the project if it was to be established as a Biodiversity Stewardship site. Any residual credit requirements could be provided for via additional Stewardship Agreements on Darkinjung- owned lands, purchasing of credits from the market, and/or via payments to the Biodiversity Conservation Trust Fund.

The Development Footprint is located within an indicative corridor identified in the Central Coast Regional Plan 2036 (NSW Government 2016) as connecting the Central National Parks and State Forests. The project proposes to impact a relatively minor proportion of this area of native vegetation (approximately 300 m wide). Impacts on connectivity were identified in the Ecological Investigation Report (Conacher Consulting 2016) and was a key consideration in the design of the proposed development.

The proposed development has been designed to avoid impacts on connectivity in the local area and region and important connectivity and movement habitat is unlikely to be substantially impacted by the project. The Development Footprint has been limited to approximately half of the available land holding and positioned in the north of the land holding in an area already subject to edge effects and indirect impacts from existing surrounding development. In addition to this, the Development Footprint has been reduced in the south, to stop short of the existing residential development to the west of Woy Woy Road to retain all connectivity values that currently exists. Existing connectivity values will be fully retained and the functionality of corridors as identified in the Central Coast Regional Plan 2036 Biodiversity Corridors will be preserved through this appropriate siting of the proposed development.

The project proposes to impact a relatively minor proportion of the wider area of native vegetation within the corridor and will not result in severing any major fauna movement habitat which would result in the loss of connectivity in the wider landscape, or movement important for threatened species to maintain their life cycle.

4.0 References

Conacher Consulting Pty Ltd, (2015) Ecological Investigation Report, Lot 481 DP 1184693 & Lot 483 DP 1149939, Somersby.

Conacher Consulting (2016) Ecological Investigation Report Lot 512 DP 727686 & Lot 513 DP 727686 Woy Woy Road Kariong

NSW Government (2016) Central Coast Regional Plan 2036.

Pross, D. 2007. Preliminary Archaeological Heritage Assessment Lot 512 and Lot 513 in DP7552517, Woy Woy Road, Kariong. Report to Darkinjung Local Aboriginal Land Council.



Legend

- Development Footprint
- Lots 512 & 513 DP 727686
- Lot Boundaries

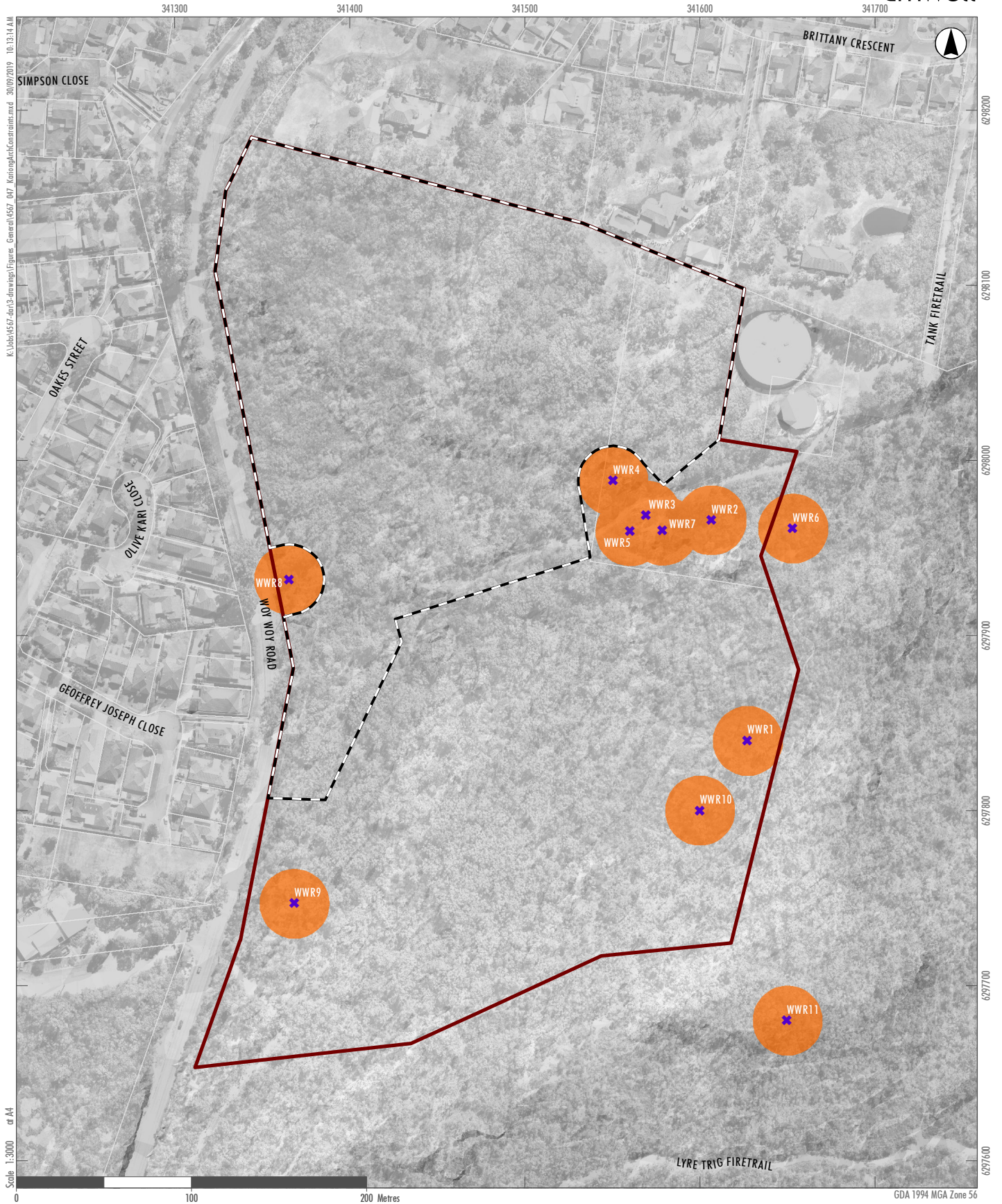
Bushfire Attack Levels (BAL)

- BAL12.5
- BAL19
- BAL29
- BAL40
- BALFZ

Image Source: Nearmap (2019); Open Street Map (2019) Data source: NSW LPI (2019)

FIGURE 1.1

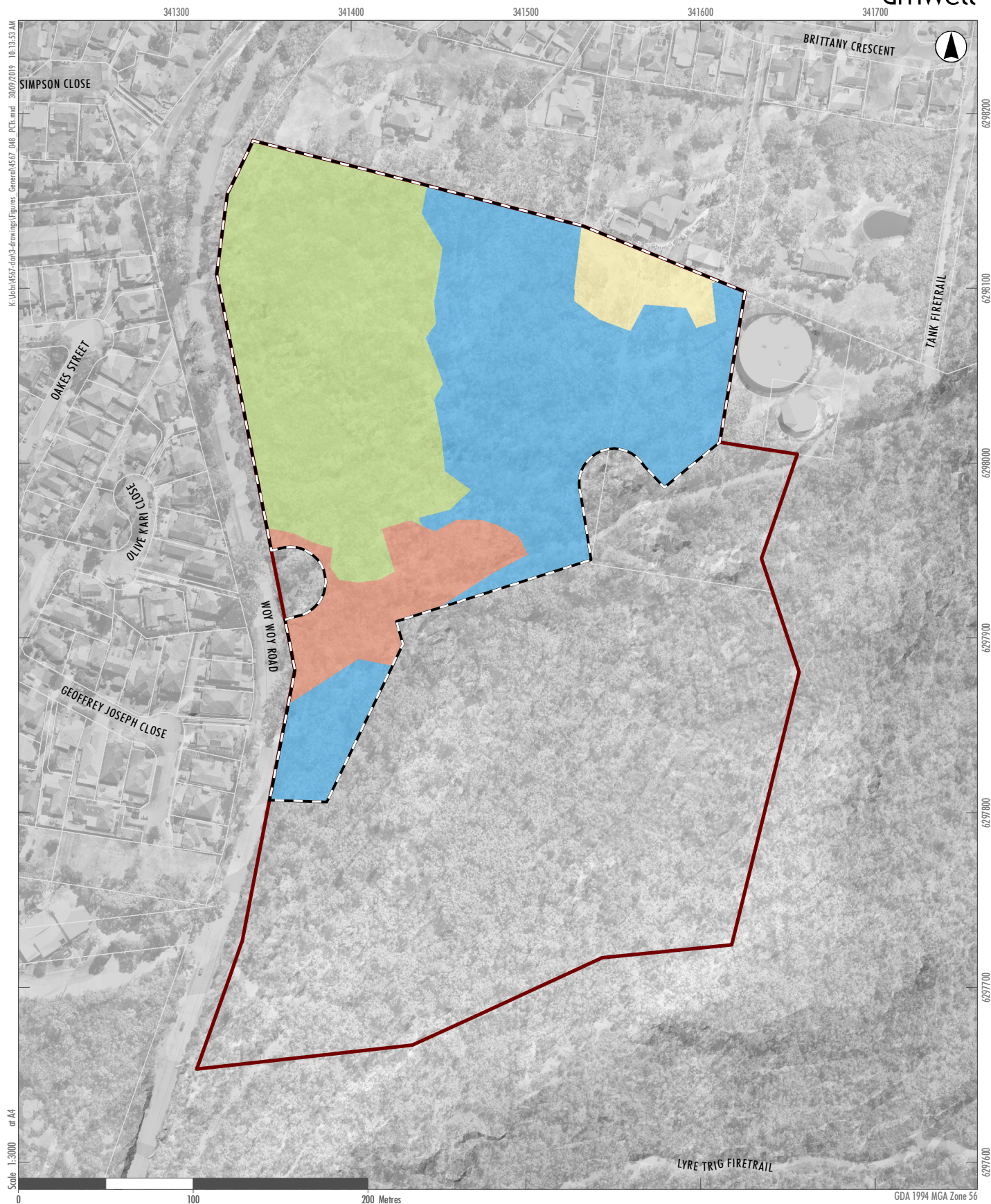
Bushfire Attack Levels



- Legend**
- Development Footprint
 - Lots 512 & 513 DP 727686
 - Lot Boundaries
 - Archaeological Sites (Pross)
 - Archaeological Site Buffers (20m)

FIGURE 2.1

Woy Woy Rd Kariong
Heritage Constraints



Legend

Development Footprint

Lots 512 & 513 DP 727686

Lot Boundaries

Plant Community Type (Umwelt 2019)

1641 - Dwarf Apple Scribbly Gum heathy low woodland on sandstone ranges of the Central Coast (Good Condition)

1642 - Scribbly Gum; Red Bloodwood; Old Man Banksia heathy woodland of southern Central Coast (Good Condition)

1699 - Heath-leaved Banksia; Coral Fern wet heath on sandstone ranges of the lower Central Coast (Good Condition)

Cleared/Disturbed

FIGURE 3.1

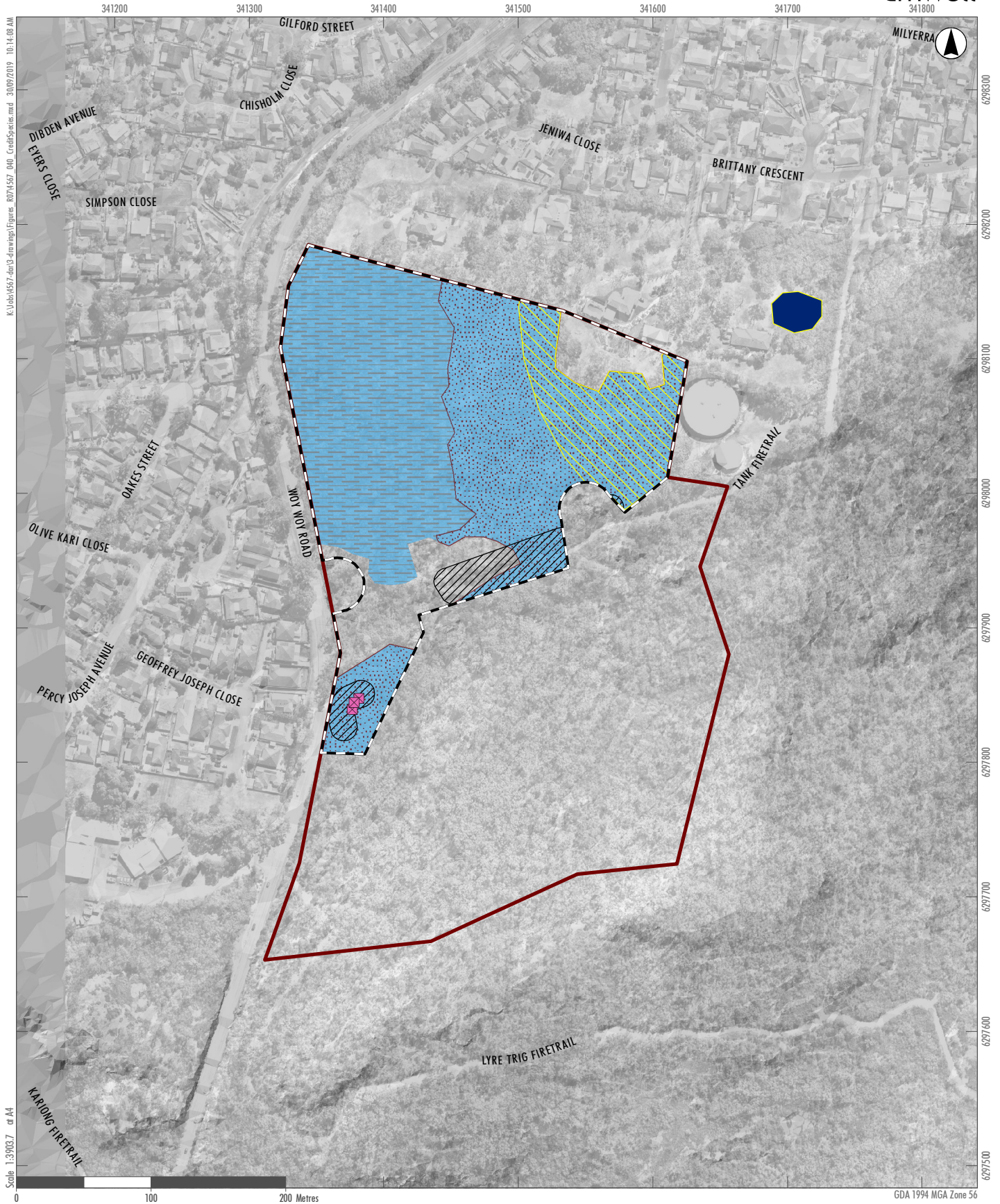
Plant Community Types
in the Development Footprint



- Legend**
- Development Footprint
 - Lots 512 & 513 DP 727686
 - Threatened Species Observations**
 - Callistemon linearifolius
 - ▲ Darwinia glaucophylla
 - Hibbertia procumbens
 - Hibbertia puberula subsp. puberula

FIGURE 3.2

Threatened Species



- Legend**
- Development Footprint
 - Lots 512 & 513 DP 727686
 - Callistemon linearifolius*
 - Southern Myotis Foraging Habitat
 - Southern Myotis Foraging Habitat Buffer
 - Large-eared Pied Bat Habitat
 - Darwinia glaucophylla* Habitat
 - Hibbertia puberula* subsp. *puberula* Habitat
 - Eastern Pygmy Possum & *Hibbertia procumbens* Habitat

Image Source: Nearmap (2019); Open Street Map (2019) Data source: NSW LPI (2019)

FIGURE 3.3
Species Credit
Species Polygons