2 September 2009

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RESPONSE TO KU-RING-GAI COUNCIL COMMENTS ON EXHIBITED CONCEPT PLAN BASED ON REVISED CONCEPT PLAN

Dear Bryan

The purpose of this letter is to provide a response to the documentation produced by Ku-ring-gai Council commenting on the redevelopment of Wahroonga Estate following the ordinary meeting of Council held on the 5th June 2009. The comments provided within this letter are based on a revised concept plan that has been produced following consideration of responses from Council as well as various State and Commonwealth Government Agencies. The ecological impacts resulting from the revised concept plan have been considerably reduced when compared to the exhibited plan as described below.

1. VEGETATION

1.1 Vegetation Mapping

The vegetation mapping of the site prepared by Ku-ring-gai Council is significantly different to the mapping prepared by Cumberland Ecology. The mapping of vegetation is a complex and partly subjective process and any vegetation community can be assessed via different criteria potentially resulting in a different community outcome. Council has mapped a large area of the site adjacent to Comenarra Parkway as Sydney Turpentine Ironbark Forest (STIF). Cumberland Ecology agrees with the south western portion of this mapping but does not consider this community to extend as far east as Council indicates because of the lack of Grey Ironbark (a key dominant species) to the east through this zone.

Council has also mapped the vegetation adjacent to Fox Valley Road as STIF where as Cumberland Ecology has mapped this area as Blue Gum High Forest. Cumberland Ecology stands by it's identification of this community because of the high proportion of *Eucalyptus saligna* (Sydney Blue Gum) throughout this area. However, it is likely that this area forms an ecotonal (transition) zone between the two closely related communities and therefore has characteristics of both

communities. Regardless of the true identity of this area of vegetation, the majority of vegetation within this region is now expected to be retained for conservation.

Cumberland Ecology acknowledges the fact that the area of *Eucalyptus grandis* (Flooded Gum) to the west of the hospital was incorrectly identified and mapped as Blue Gum High Forest. Cumberland Ecology's amended vegetation map is provided in Figure 1.

1.2 Impacts on Vegetation

The quality of the vegetation on the subject site varies, with the impacts of human intervention, weed invasion and edge effects obvious in some areas while other areas appear relatively undisturbed.

Table 1 summarises the current management and structure of the vegetation communities across the site, and highlights the site's high demand for APZs within the areas of the Critically Endangered and Endangered Ecological Communities C/EECs). This is because the EECs occur on upper slopes of shale derived or influenced soils, close to the existing developments.

Table 1 CURRENT AREAS OF VEGETATION COMMUNITIES MANAGEMENT AND STRUCTURE

Vegetation Type	Relatively undisturbed community currently on Subject Land (ha)	APZs currently on Subject Land (ha)	Scattered Trees currently on Subject Land (ha)
Blue Gum High Forest	0.87	2.48	0.22[1]
Sydney Turpentine-Ironbark Forest	0.28	0.24	1.11[1]
Blackbutt – Turpentine – Smooth-bark Apple Open Forest	24.13	-	0.82
Sydney Peppermint – Red Bloodwood Open Forest	3.79	-	-
Riparian Vegetation	3.08	-	-
Total	**32.15**	**2.72**	**2.21**

Notes: 1. This portion of the community does not meet the EPBC Act listing but does meet TSC Act listing

Table 2 shows the area of vegetation to be impacted under the preferred concept plan will be considerably reduced in comparison to the exhibited concept plan and provides a comparative breakdown of the impacts for each vegetation type under the existing and revised concept plans. A visual representation of the impacted areas under the preferred concept plan is provided in Figure 2. The area of vegetation proposed to be completely cleared will fall from 5.77 ha to 2.80 ha and the area of vegetation to be managed for bush fire hazard reduction will fall from 17.72 ha to 6.91 ha, 1.52 ha of which will be present in the E3 Conservation Zone. The reduced impacts upon the C\EECs are discussed in further detail below.

Table 2 COMPARISON OF IMPACTS ON VEGETATION TYPES BETWEEN THE EXHIBITED AND PREFERRED PLANS

Vegetation Type	Vegetation to be Retained (ha)		Vegetation to be Cleared (ha)		Additional Vegetation Managed for Bush Fire Hazard Reduction (ha)	Potential C/EEC Regenerated (ha)
	Exhibited Plan	Preferred Plan	Exhibited Plan	Preferred Plan	Preferred Plan	Preferred Plan
Blue Gum High Forest	0.17	0.42	1.64	0.51	0.54	1.15
Sydney Turpentine-Ironbark Forest	0.40	0.31	0.79	0.28	0.06	0.23
Blackbutt – Turpentine – Smooth-bark Apple Open Forest	9.67	16.85	2.97	1.48	4.71	
Sydney Peppermint – Red Bloodwood Open Forest	0.57	1.87	0.35	0.36	1.55	
Riparian Vegetation	2.78	2.79	0.03	0.17	0.04	
Total	**13.59**	**22.23**	**5.78**	**2.80**	**6.91**	**1.37**

Notes: 1.Slight differences exist in the totals of the vegetation communities on the site between the two concept plans due to mirror corrections in vegetation mapping and rounding errors.

1.2.1 Endangered Ecological Communities

i. Blue Gum High Forest

The impacts upon the Blue Gum High Forest (BGHF) have been reduced significantly through the removal of the residential development in the eastern precinct and relocating the school sports field and detention basin. Development is proposed to continue along the fringes of the C/EECs adjacent to the currently developed roadways and some impacts will continue to occur from this development, much of which is necessary to protect current development from bushfire risk using APZs. The changes made under the preferred concept plan have reduced the area of BGHF to be cleared from 1.64 ha to 0.51 ha and results in an additional 0.54 ha of APZs within this community. Only 0.02 ha of the BGHF to be cleared will occur within a good quality portion of the community, with the remainder taking place in areas that are currently disturbed. All of the 0.54 ha of additional APZs will occur within good quality BGHF.

Two large buildings currently located adjacent to the BGHF east of Fox Valley Road are proposed to be demolished and APZs in this area will be reduced to the minimum width required. As a result there is potential to establish an onsite offset of EECs through the planting of native mid-storey and ground cover species within some areas that are currently managed as APZs. Consequently, as a result of the proposed changes to the concept plan, the total area of good quality BGHF on the eastern side of the site could potentially increase by approximately 1.37 ha. This is significant because the patch of BGHF on the eastern side of Fox Valley Road is considered to be one of the larger patches of BGHF in the Sydney region and to restore a large portion of this vegetation to a good quality condition would further increase the local viability of this patch of the CEEC. As indicated above the total area of BGHF to be impacted from the development is 1.05 ha (0.51 to be cleared and 0.54 ha as APZs) indicating that more

BGHF (1.15 ha) could be re-established under the preferred concept plan than would be impacted.

Due to the removal of development from the eastern precinct the impacts of edge effects and fragmentation are not likely to be greatly increased from the sites current situation and the reduced amount of clearing and earth works required will reduce potential impacts on the BGHF through erosion, sedimentation and run-off.

West of Fox Valley Road, the impacts on BGHF from the proposed sports field and detention basin located adjacent to the school have been reduced in the preferred concept plan through the relocation of the sports field and the incorporation of the detention basin within the sports field. This adjustment has resulted in a reduced impact on the area of good quality BGHF in this location. The impacts of the preferred concept plan on BGHF are no longer considered to be significant on a regional scale as indicated in the exhibited Environmental Assessment.

ii. Sydney Turpentine-Ironbark Forest

The impact upon Sydney Turpentine-Ironbark Forest (STIF) under the preferred concept plan is also reduced as a result of the reduction in the footprint of the development, particularly due to changes resulting from removal of development in the eastern precinct. The area of this community to undergo clearing has been reduced from 0.79 ha to 0.28 ha and the area proposed for new APZs limited to 0.06 ha. A high proportion of this area of APZs, incorporated into the preferred concept plan, is necessary to offer protection to existing development. There is also potential to recreate approximately 0.23 ha of good quality STIF, by reducing the current widths of APZs in selected areas of the bushland east of Fox Valley Road.

2. POWERFUL OWLS

The impacts on the nesting and roosting locations of the Powerful Owls have been significantly reduced through the removal of the residential development on the eastern side of Fox Valley Road to the north of the riparian corridor. The revised smaller scale development significantly reduces disturbance in the vicinity of the nest location thereby further reducing the likelihood of impacting upon the breeding success of the owls if they continue to nest in that location.

The vegetation to the south of the riparian corridor is proposed to be managed as an asset protection zone (APZ) in an effort to reduce the potential hazard of bushfire on existing dwellings. Therefore the nest location will be separated from development by approximately 50m of undisturbed bush land and 60m of land managed as APZs. While this does not comply with DECC's recommendations of a 200m buffer around a nest, roads and development currently exist at a distance of approximately 150m to the nest. Far fewer impacts are also likely to occur on Powerful Owl prey species under the revised proposal due to the increased retention of suitable habitat.

3. IMPACTS ON ECOLOICAL CORRIDORS

The vegetation corridors across the site provide an important link for fauna movement as well as flora dispersal to Lane Cove National Park. However, a large portion of the Coups Creek corridor backs on to existing development including the aged care facility and other residential dwellings. At present these properties, including the aged care facility, are subject to significant

bushfire risk. Due to the steep slope of the land adjacent to Coups Creek large areas of vegetation are required to undergo bushfire hazard reduction management.

The Coups Creek corridor will also undergo modification due to development to occur on the western side of the creek. This development includes the upgrade of the hospital and associated infrastructure; the development of a new school; and residential dwellings – all seen as essential in the upgrade of the town centre. Minimal vegetation clearing will occur while further vegetation will undergo management for APZs to protect structures. The width of all riparian corridors and uses within buffer zones comply with the Ku-ring-gai Council Riparian Policy (2004) under both the exhibited and revised concept plan. While the width and potentially the functionality of the Coups Creek corridor will be reduced under the proposed development it is considered likely that the corridor will still maintain its value for flora and fauna.

The impacts on the corridor within the eastern precinct will be significantly reduced under the revised development. With the removal of residential development in this precinct, the bushland maintains its link with the Lane Cove National Park and the Coups Creek corridor across Fox Valley Road. The extremities of the corridor will be modified due to clearing and the creation of APZs. The largest of these modifications is proposed to occur at the southern edge of the corridor along Commenarra Parkway, the APZs at this location are necessary to protect the existing residential dwellings from bushfire risk. Under the revised concept plan the viability of the corridor in the eastern precinct is considered unlikely to change significantly.

4. CONCLUSION

The ecological impacts under the revised concept plan have been significantly reduced. Large portions of vegetation that were previously proposed to undergo modification are now proposed to be retained. The additional vegetation to be retained provides extensive areas of habitat for the threatened species Grey-headed Flying-fox, Eastern False-pipistrelle, Powerful Owl and the species they prey upon as well as other more common fauna. This vegetation also assists in the maintenance of the corridor connectivity values in the eastern portion of the site. Impacts on the C/EECs BGHF and STIF have been reduced extensively through a reduction in development footprint and relocation of certain features of the development. The reduction in footprint of the proposed development has allowed for the potential reestablishment of significant areas of the two C/EECs in the eastern precinct resulting in a considerable onsite offset. It is considered that the preferred concept plan results in a good ecological outcome for the hospital upgrade.

Yours sincerely

David Robertson

Dr David Robertson

Director

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Coordinate System: MGA Zone 56 (GDA 94)

Grid North

Council Reserve

Subject Land
Blue Gum High Forest
Disturbed Blue Gum High Forest
Sydney Turpentine Ironbark Forest
Dsisturbed Sydney Turpentine Ironbark Forest
Blackbutt Turpentine Smooth-barked Apple Open Forest - Dry Understorey
Blackbutt Turpentine Smooth-barked Apple Open Forest - Wet Understorey
Sydney Peppermint Red Bloodwood Open Forest
Riparian Vegetation
Exotic Vegetation
Scattered trees

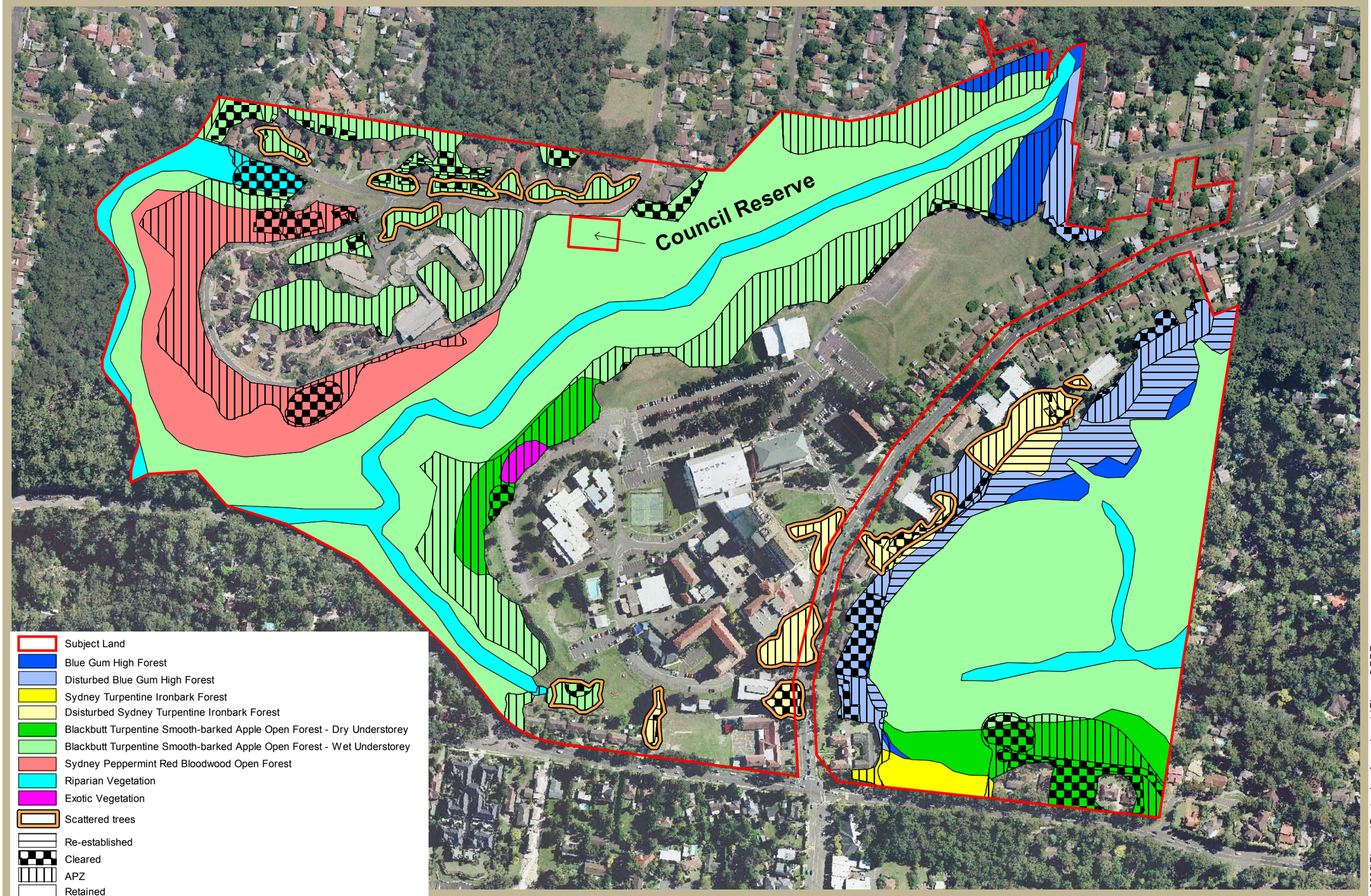
I:\...\8036\Figures\September Amendments\Figure 1.PDF

Figure 1. Vegetation Communities on the Subject Land

0 100 200m

CUMBERLAND ECOLOGY

Coordinate System: MGA Zone 56 (GDA 94)



N
Grid North

I:\...\8036\Figures\September Amendments\Figure 2.PDF

Figure 2. Impacts of the preferred development on Native Vegetation

0 100 200m

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