Review of adequacy of the assessment of ecological and biodiversity issues undertaken for the Williamtown Quarry Project Environmental Impact Statement (SSD_6125).

Report for the *Williamtown Residents Action Group* with reference to matters of NSW and national environmental significance

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Ethical ecology AUSTRALIA

Summary

The Williamtown Quarry Project is a State Significant Development assessed pursuant to Part 4.1 of the Environmental Planning and Assessment Act 1979. Environmental Impact Statement documents were assessed for the adequacy that the impacts on ecological and biodiversity matters were undertaken for this project. The main documents studied were prepared on behalf of Williamtown Sand Syndicate Pty Ltd form Appendix 8: 'Ecological Assessment' (Umwelt Australia Pty Ltd, 2015) and Appendix A of Appendix 8 'Ecological Constraints and Opportunities Report' (RPS Group, 2011) of the EIS.

There are significant deficiencies in the ecological assessment for this project, including:

- Impacts on key species which may be significant have not been adequately assessed in the report;
- Key information regarding the Koala usage within the study area are missing;
- Poor assessment of impact on groundwater dependent ecosystems;
- Absence of an offset proposal.

The absence of an offset land package or any calculations consistent with the NSW offset policy, in order to demonstrate which ecosystem and species credits are able to be retired, mean that significant residual impacts are outstanding.

In this regard the Director-General's Requirements remain unmet. Given the deficencies in the assessment documents regarding impacts on biodiversity matters, it would be reasonable to say that the DGR regarding a '*detailed assessment of the potential impacts of development*' has also not been met.

The development application should be rejected or returned to the proponent for the provision of further information.

Background

Following delaration as a State Significant Project for the Department of Planning and Environment and the issuing of Director-General's Requirements (DGRs) on the 14 October 2015, an Environmental Impact Statement (EIS) for the Williamtown Quarry Project was submitted to the DPE in November 2015.

As this is a State Significant Development, the EIS for the development must meet the form and content requirements in Clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000.*

The land within the mining lease (study area) covers some 176 ha, north of Cabbage Tree Road, while the area of proposed extraction covers some 54 ha. The proposal borders small residential landholdings, Tilligerry State Conservation Area and Hunter water Corporatin (HWC) land.

Figure 1. Extent of mining lease and proposed disturbance area

The DGRs state in relation to specific biodiversity matters which must be included in the EIS are:

- measures taken to avoid, reduce or mitigate impacts on biodiversity;
- accurate estimates of proposed vegetation clearing;
- a detailed assessment of potential impacts of the development on any: terrestrial or aquatic threatened species or populations and their habitats, endangered ecological communities and groundwater dependent ecosystems; migratory bird species listed under CAMBA, JAMBA and/or ROKAMBA; and regionally significant remnant vegetation, or vegetation corridors;

- a comprehensive offset strategy to ensure the development maintains or improves the terrestrial and aquatic biodiversity values of the region in the medium to long term

This assessment will outline the adequacy of the EIS documents in question in terms of:

- Adherence to relevant guidelines;
- Adherence to the conditions as outlined in the DGRs.

Adequacy of impact assessent

Adequacy of survey effort

Biodiversity surveys undertaken for this EIS combine results from two survey periods (2011 and 2013-2015). For the most part, surveys covering the description of the vegtation communities and threatened species have been undertaken according to OEH Survey Guidelines (DEC 2004), however, one species has not received adequate investigation to warrant a fair assessment of presence or absence on the site.

Koala

Surveys were undertaken to inform the RPS surveys (2011) and the Umwelt (2015) reports. RPS did '8 man-hours' over two nights spotlight survey across the study. Whether areas of Koala habitat were targted is not clear from the decriptions of the surey effort, though RPS (2011) identifed one indivdual onsite during spotlight surveys.

Koala scat surveys were not used in the RPS surveys (2011) though RPS states that, "… scats consistent with Koala were identified under Koala feed trees *Eucalypytus robustus* and *E. parramattensis ssp decadens* across the site. While intensive scat searches were not undertaken across the entire site it is predicted that Koalas move throughout the site but foccus on particular areas of vegetation in terms of foraging preference …"

Umwlet (2015) supplemented this survey effort with 10 SAT survye sites (designed to survey for Koala scats), searching under 300 trees for scats in total. The locations of the SAT survyes are described in the report. However, Umwelt do not detail the results of this survey. This is critical to understanding current activity levels in the study area and would assist in developing suitable mitigation measures as well as providing better information as to the expected impact of the project.

When presenting the results of the field surveys, Umwelt have used the public data available on the BioNet webpage for their desktop analysis (Figure 3.1 in Appendix 8), showing 10 locations for Koalas across the study area including six from within the development footprint (Figure 2).

However the map of the results of the fauna surveys (Figure 4.4 in Appendix 8 - Figure 3 below) show the same ten locations as that already depicted in the desktop map. The results of the SAT assessments has not been indicated, indeed there is no information on the location or number of any Koalas provided by

Umwelt in Appendix 8 other than that already publically available. Whether this error is mistake or not, it is potentially misleading.

Figure 2. BioNet locations for the Koala in the study area on overlaying CKPoM habitat map.

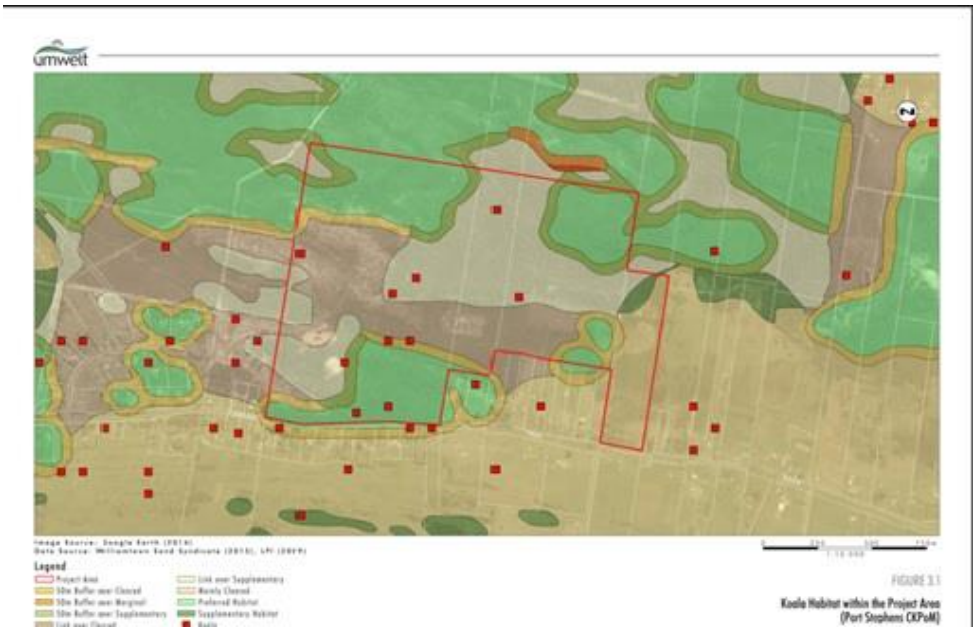


Figure 3: Map in Appendix 8 showing 'Results of fauna surveys'
(Koala locations are indicated by red squares).

Summarising this survey effort for the Koala in the EIS, spotlight surveys undertaken by RPS (2011) may have been adequate, though it is not clear whether Koala habitat was included in the transects. No SAT tests were undertaken by RPS despite the public information being available suggesting the site may be a high-use area and that it is dominated by preferred habitat.

A SAT survey was undertaken by Umwelt in 2015, though the results are not presented in the EIS. No further spotlight surveys were undertaken by Umwelt and no additional information on the distribution or habitat preferences in the study area is provided.

Adequacy of impact assessment on affected threatened species and ecosystems

In general, the assessments of significance that have been undertaken in the EIS are pursuant to Section 5A of the EP&A Act (7-Part Test). Yet there is one substantial criticism that could be applied to all tests undertaken, in that they suffered by an omission to consider the extent of removal of habitat or affected habitat in relation to the extent of that habitat within the study area. The extent of the study area varies with each entity being considered and is related to the population ecology and mobility of each species.

As a result, only one matter is identified as having a significant impact, the Koala, yet others, not identified in the EIS, warrant a re-assessment here.

Koala

Significant impact on Koala. Approximately 40% (48 ha) of preferred habitat in the project area will be removed. Umwelt state that despite the avoidance of 'high quality' habitat, that the proposal, "… *may potentially result in a significant impact on this species*". However, the substantial areas of Blackbutt-Scribbly Gum-Apple woodland on the site contains the species *E. signata, E. piperata* and *E. punctata*, species recognised as important for the foraging Koala in the Port Stephens CKPoM. The proposal will result in the removal of over 48 ha of this habitat, subjecting Koalas to substantial direct (and indirect) impact upon the local Koala population. If considered under the local government consent pathway, it is unlikely that this proposal could proceed in its current form, due to restrictions on the removal of preferred habitat (Primary and Secondary A) under the Port Stephens CKPoM.

There are six historic records of Koalas within the development footprint, though where the consultants detected Koalas during surveys is not indicated. Umwelt have provided misleading information in that the figure which is supposed to show locations of Koalas detected in their surveys only shows the BioNet records. The number and location and age, sex or any information on Koalas detected during surveys is not provided.

Major disruption of habitat connectivity for the Koala in the locality has been addressed in the EIS by the provision of a 'habitat corrridor' through the centre of the development area on one side of the footprint. This may provide some east-west movement of animals, however, the chief disruption is to the movement of Koalas in and out of the Tilligerry SCA. This knwn important movement corridor has been idenited in the RPS report of 2011, but not in the Umwelt report.

However, the key issue for the Koala as a result of this proposal will be the consequences of the extensive removal of habitat and indirect impacts of light, noise and dust, would probably make the majority of the study area unsuitable for the Koala. The mitigation measures proposed in the EIS for this species will not eleviate ths impact as the most likely result if this development proceeds would be that Koalas may avoid the vicinity of the quarry. The issues of indirect impact have not been dealth with in the EIS.

Given these considerations, and the present state of information on the Koala in the study area the impact on the Koala with the mitigation measures included are likley to remain highly significant, making it a 'residual matter'.

Umwelt also state that using Commonwalth criteria, the impact of the proposed quarry on the local popualtion of koalas is likely to be significant. I would concurr with this assessment and expect that a referral with respect to this matter will be made.

Earps Gum

Earps Gum records collected during field surveys undertaken for this EIS indicate that 50% (284 out 586) of the local population will be removed if this proposal is given consent. Even if the specimens on the site are planted, this does diminish their localand regional significance.

The assessment of significance used for the impact on this species does not consider the impact within the study area as defined within the terms of the '7-Part Test'. Had it done so, a significant impact would have been the result.

Being a Commonwalth-listed species, it is a matter of national significance and the matter should be referred to the Minister.

Wallum Froglet

Wallum Froglet Records indicate that the proposed mine will directly affect or be in close proximity to 50% of known records (the distribution) of this species in the study. However, as before, the assessment of significance used for the impact on this species does not consider the impact within the study area as defined within the terms of the '7-Part Test'. Had it done so, a significant impact would have been the result.

Other species

In addition, as the scale of vegetation removal on the project site is large (54 out of 169 ha or about 30%) several other species may also suffer a significant reduction in habitat or be affected by indirect impacts to such an extent that it may jeopardise their survival in the study area. The most likely to suffer extensive removal of habitat include the Varied Sittella *Daphoenositta chrysoptera* and the Eastern Freetail Bat *Mormopterus norfolkensis*, both recorded within the study area.

Adequacy of assessment of groundwater dependent ecosystems

The GDE assessment in the EIS identifies five communities as being likely obligate GDEs (according to Bell and Driscoll 2006):

- Coastal Wet Cyperoid Heath (10 ha)
- Swamp Mahogany Forest (25 ha)
- Earps Gum Sedge Woodland (1 ha)
- Coastal Sand Wallum Heath (42 ha) – (Facultative or Obligate)
- Freshwater Wetland (10 ha)

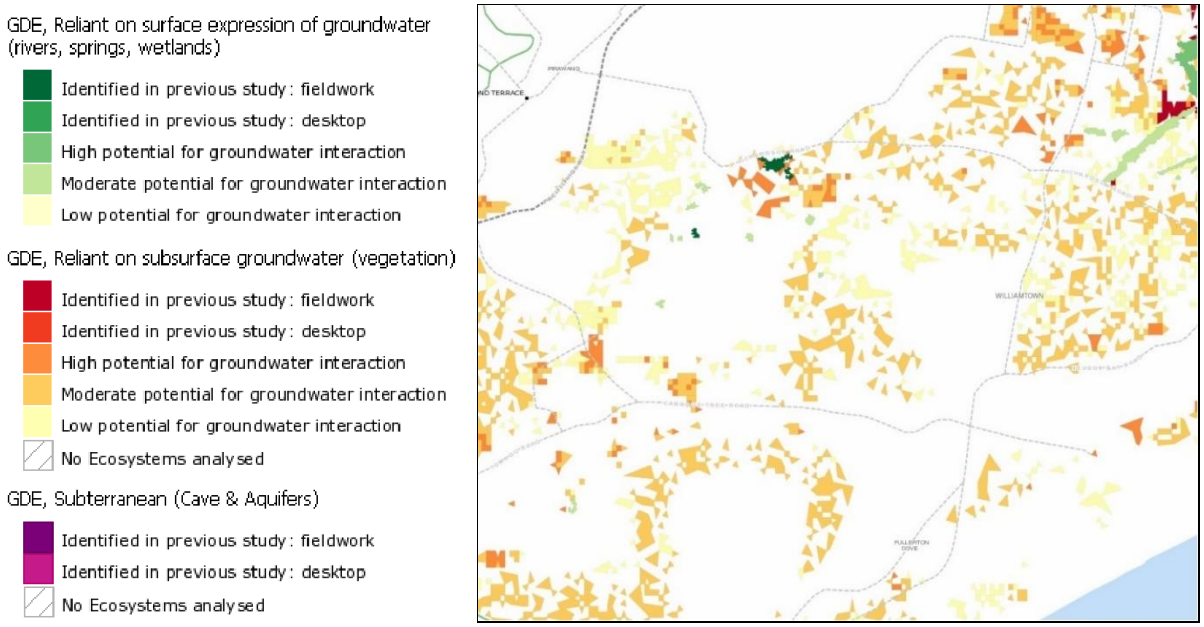
This seems to be consistent with the distribution of of high and moderate potential GDEs as shown in the search conducte using the GDE Atlas of Australia (http://www.bom.gov.au/water/groundwater/gde/map.shtml).

The assessment of impact on GDEs asserts the groundwater impact assessment for this project saying the project will not result in any dewatering of the Tomago Beds aquifer, with excavation not proceeding below the water table. The direct impact on GDEs is said to be very small, (0.3 ha of Swamp Sclerophyll Forest).

Sand crests such as that being proposed for sand mining generally lie well above the water table, but their landscape function is to act as zones of water recharge. How this development plan will affect levels of recharge into the surrouding environemnt as wel as natural flow patterns and resultant impats on GDEs (includingThreatened Ecological Communities) has not been addressed in the EIS.

While the area of Swamp Forest that will be removed may be small, this suggets that the development plan will be encroaching into a lower lying swamp area. If this is the case, then impacts of edge effects and reduced re-charge rates on neighbouring areas of GDE have not assessed either in the 7-PartTests or the GDE assessment.

Figure 4. Map of study area and surrounds showing extent of predicted GDEs (Source GDE Atlas)



Adequacy of Offset Strategy

There is no Offset Strategy as such provided in the EIS, merely a strategy in order to obtain one. The options listed are standard approaches open to any developer. Any genuine offset strategy needs to include a package of land that could be available for offset, along with a transparent, quantifiable approach to detemine the adequacy by which impacts on biodiversity are offset, or their biodiversity credits are retired. This is generally done using the BioBanking Assessment Methdology (BBAM) or use of the new Framework of Biodiversity Assessment (FBA). Neither of these approaches has been used by the proponent.

Umwelt suggested that any offset proposal should use a 'traditional approach' using offset ratios of 2-3 :1. Adequacy of offset however must abide by the offset policy which was in place at the time of the submission of the EIS. As this was done after the introduction of the new NSW Offset Policy for Major Projetcts (October 2014), this policy should be the point of reference for this project.

The introduction of this policy and the implementation of the FBA mean specific requirements for proponents on how to conduct major project developments and to offset them is provided. As information regarding how adequate the development proposed to offset its impacts, the regulatory agency responsible for the *Threatened Species Conservation Act 1997*, OEH will not be able to make an assessment pursuant to the EP&A Act.

Under these circumstances, the consent authority (Department of Planning and Environment) should request further information concerning the offset strategy from the proponent before any decision on the consent could be made.

References

East Coast Flora Surveys (2006). Vegetation of the Tomago and Tomaree Sandbeds, Port Stephens, New South Wales. Report to Hunter water Corporation.

RPS. (2011). Ecological Constraints and Opportunities Report. 398 Cabbage Tree Road, Williamstown, NSW. Report prepared for Port Stephens Council.

Umwelt (Australia) Pty Ltd (2015). Appendix 8: Ecological Assessment. Proposed Sand Quarry, Cabbage Tree Road, Williamstown. Report prepared on behalf of the Williamstown Sand Syndicate Pty Ltd.

Appendix 1 : Results of Search of BioNet Database (10/12/2015)

Data from the BioNet Atlas of NSW Wildlife website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1Â°; ^^ rounded to 0.01Â°). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria: Public Report of all Valid Records of Threatened (listed on TSC Act 1995) ,Commonwealth listed, CAMBA listed, JAMBA listed or ROKAMBA listed Entities in selected area [North: -32.75 West: 151.76 East: 151.87 South: -32.85] returned a total of 2,308 records of 54 species.

Class	Species Code	Scientific Name	Common Name	NSW status	Comm. status	Records
Amphibia	3137	*Crinia tinnula*	Wallum Froglet	V,P		49
Aves	0001	*Dromaius novaehollandiae*	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	E2,P		2
Aves	0216	*Oxyura australis*	Blue-billed Duck	V,P		1
Aves	0214	*Stictonetta naevosa*	Freckled Duck	V,P		1
Aves	0183	*Ephippiorhynchus asiaticus*	Black-necked Stork	E1,P		6
Aves	0977	*Ardea ibis*	Cattle Egret	P	C,J	5
Aves	0197	*Botaurus poiciloptilus*	Australasian Bittern	E1,P	E	1
Aves	0178	*Plegadis falcinellus*	Glossy Ibis	P	C	1
Aves	0218	*Circus assimilis*	Spotted Harrier	V,P		1
Aves	0226	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	P	C	72
Aves	0230	*^^Lophoictinia isura*	Square-tailed Kite	V,P,3		1
Aves	8739	*^^Pandion cristatus*	Eastern Osprey	V,P,3		1
Aves	0130	*Haematopus longirostris*	Pied Oystercatcher	E1,P		1
Aves	0161	*Calidris ferruginea*	Curlew Sandpiper	E1,P	CE,C,J,K	11
Aves	0978	*Calidris melanotos*	Pectoral Sandpiper	P	J,K	1
Aves	0168	*Gallinago hardwickii*	Latham's Snipe	P	C,J,K	3
Aves	0149	*Numenius madagascariensis*	Eastern Curlew	P	CE,C,J,K	1
Aves	0150	*Numenius phaeopus*	Whimbrel	P	C,J,K	4
Aves	0155	*Tringa brevipes*	Grey-tailed Tattler	P	C,J,K	1
Aves	0158	*Tringa nebularia*	Common Greenshank	P	C,J,K	1
Aves	0159	*Tringa stagnatilis*	Marsh Sandpiper	P	C,J,K	1
Aves	0160	*Xenus cinereus*	Terek Sandpiper	V,P	C,J,K	1
Aves	0109	*Chlidonias leucopterus*	White-winged Black Tern	P	C,J,K	2
Aves	0112	*Hydroprogne caspia*	Caspian Tern	P	C,J	1
Aves	0117	*Sternula albifrons*	Little Tern	E1,P	C,J,K	1
Aves	0260	*Glossopsitta pusilla*	Little Lorikeet	V,P		3
Aves	0309	*^^Lathamus discolor*	Swift Parrot	E1,P,3	E	3
Aves	0248	*^^Ninox strenua*	Powerful Owl	V,P,3		6
Aves	0252	*^^Tyto longimembris*	Eastern Grass Owl	V,P,3		2
Aves	0250	*^^Tyto novaehollandiae*	Masked Owl	V,P,3		3
Aves	0329	*Merops ornatus*	Rainbow Bee-eater	P	J	1
Aves	0603	*Anthochaera phrygia*	Regent Honeyeater	E4A,P	CE	1
Aves	0448	*Epthianura albifrons*	White-fronted Chat	V,P		3
Mammalia	1008	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	2
Mammalia	1017	*Phascogale tapoatafa*	Brush-tailed Phascogale	V,P		4
Mammalia	1162	*Phascolarctos cinereus*	Koala	V,P	V	1014
Mammalia	1137	*Petaurus norfolcensis*	Squirrel Glider	V,P		22
Mammalia	1175	*Potorous tridactylus*	Long-nosed Potoroo	V,P	V	1
Mammalia	1280	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	15

Mammalia	1321	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		2
Mammalia	1329	*Mormopterus norfolkensis*	Eastern Freetail-bat	V,P		6
Mammalia	1372	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		2
Mammalia	1346	*Miniopterus australis*	Little Bentwing-bat	V,P		15
Mammalia	1834	*Miniopterus schreibersii oceanensis*	Eastern Bentwing-bat	V,P		11
Mammalia	1357	*Myotis macropus*	Southern Myotis	V,P		3
Mammalia	1361	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		12
Mammalia	1455	*Pseudomys novaehollandiae*	New Holland Mouse	P	V	20
Mammalia	1543	*Arctocephalus forsteri*	New Zealand Fur-seal	V,P		1
Flora	3363	*Maundia triglochinoides*		V,P		3
Flora	14618	*Commersonia prostrata*	Dwarf Kerrawang	E1,P	E	9
Flora	4067	*Eucalyptus camfieldii*	Camfield's Stringybark	V,P	V	2
Flora	9163	*Eucalyptus parramattensis subsp. decadens*		V,P	V	968
Flora	5280	*Persicaria elatior*	Tall Knotweed	V,P	V	3
Flora	10009	*Grevillea parviflora subsp. parviflora*	Small-flower Grevillea	V,P	V	1