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Our Ref: 11SYDECO-0078

29 August 2011

Dear Anthony,

**TALLAWARRA LANDS PART 3A CONCEPT PLAN APPLICATION
RESPONSE TO DECCW & NOW REVIEWS**

On the 18th July 2011 Eco Logical Australia (ELA) was advised that the Department of Planning and Infrastructure had in their test of adequacy assessment been provided with submissions from the Department of Environment, Climate Change and Water (DECCW) and the NSW Office of Water (NoW) dated the 22 March and 31 March 2011 respectively.

This letter responds to the matters raised in those submissions. In responding to the submissions, reference is made to the following documents:

- Bushfire Assessment (ELA 2011a)
- Ecological Assessment (ELA 2011b) updated 7 March 2011.
- Riparian Assessment (ELA 2011c)
- Vegetation Management Plan (ELA 2011d)
- Environmental Assessment (Don Fox Planning 2011)
- Landscape Plan (Corkery Consulting 2011)
- Water Sensitive Urban Design Strategy (BMT WBM 2011)

RESPONSE TO MATTERS RAISED BY DECCW

Adequacy of Threatened Flora Survey: DECCW raised concern that a number of threatened flora species had not been surveyed for. They make particular comment on the species *Pterostylis gibbosa* and *Chorizema parviflorum*.

Response: All threatened flora species have been surveyed for and this has been documented in the updated Ecological Assessment report dated 7 March 2011 (ELA 2011b). It is noted that DECCW reviewed an earlier version of this report prior to the completion of all flora surveys and subsequent documentation.

The updated Ecological Assessment report documents that potential habitat is present for eleven threatened flora species and that each of these species was surveyed for during an appropriate season (i.e. their documented survey/flowering period, see Section 3.2.5).

In addition, the report documents that reference sites were checked prior to surveying for those species that are difficult to detect (i.e. orchids) and where this was not possible consultation with orchid experts or other surveyors of reference sites was undertaken to ensure surveys were conducted at the most appropriate time (ideally when species are detectable at a nearby reference site).

Despite all the targeted survey, only one threatened flora species, *Chorizema parviflorum* listed as an Endangered Population in Wollongong LGA, was found on the site during the target threatened flora searches. Up to 5 individuals of this species were found in a proposed environmental reserve along the western boundary of the site, south of Duck Creek (see Figure 12, Section 4.5 of ELA 2011b). Impact assessment for this species was completed on the basis that the individuals would be retained insitu in a protected environmental reserve. These areas are subject to the proposed vegetation rehabilitation as documented in the Vegetation Management Plan (ELA 2011d).

Pterostylis gibbosa was not observed despite targeted survey in suitable habitat during the appropriate survey season.

In addition to the documentation of the completion of the threatened flora survey, the updated Ecological Assessment report (7 March 2011) details the additional field survey completed including exhaustive amphibian survey, particularly targeting the Green and Golden Bell Frog, additional Anabat surveys and target stag/nest watching (see Section 3.2).

Impacts on EECs: DECCW make comment on the impact on EECs including Illawarra Lowlands Grassy Woodland (ILGW). They also request documentation of all measures to avoid or mitigate impacts and have listed a set of design change wishes. Lastly they have requested justification of impacts to EECs.

Response: Section 5 of the Ecological Assessment details the evaluation of impacts for the Tallawarra Concept Plan. It documents avoidance measures (Section 5.1) as well as an extensive list of mitigation measures and recommendations (Section 5.2). Section 5.3 onwards quantifies the impacts of the concept plan including all impacts known to the authors (such as Asset Protection Zones, utilities and open space requirements).

Significant steps were taken to avoid impacts to EECs with the final Concept Plan and it is noted that 96% of the EEC area onsite (89% of ILGW) will be retained and protected. This equates to the retention and protection of 117ha from a total of 122ha. This represents a protection ratio of 27:1 and ELA considers this to be a good environmental outcome for the site and underpins the concept plan, clearly demonstrating that the planning process was sensitive to the ecological values of the site.

Of the small impact to EECs, the majority is vegetation that is in small fragmented patches, often heavily disturbed by weed invasion or previous landuse related disturbances (clearing, grazing, and soil disturbances). Further much of this vegetation is likely to be regrowth with lower ecological value and was also assessed as having a low (or poor) resilience.

Section 6 of the Ecological Assessment details how the concept plan meets the 'maintain and improve' test particularly given the suite of avoidance, mitigation and conservation measures proposed, along with demonstrating consistency with the LEP 2009 zoning.

The following section responds to the specific design queries raised by DECCW:

- **F6 access** – The access to the Lakeside Precinct from the Princess Highway was negotiated between ELA and the traffic consultants during the development of the concept plan. Ultimately a compromise needed to be agreed on as the location of the access is constrained by RTA setback requirement (from the F6). The current location was settled on as the minimum setback to the F6 and whilst minimizing biodiversity impacts.

- **Adjustments to precinct boundaries and reduced lot yield** – The precinct boundaries are mostly consistent with the zoning established by the 2009 LEP (Don Fox Planning 2011). The concept plan design balances precinct practicality and feasibility with other sometimes competing demands such as visual, service and utility provision. In other locations the development footprint has been reduced (e.g.: adjacent to the Duck Creek Corridor) as a result of riparian buffers and habitat corridor provision.
- **APZ location** – APZs for the concept plan are entirely contained within road easements, lot boundaries or on currently cleared land (Bushfire Assessment, ELA 2011).
- **Utility location** – Suitable utility location will be sought following concept plan approval when these matters will be addressed in detail. Current plans for WSUD show appropriate locating of such services within lot boundaries and in cleared areas (BMT WBM, 2011).
- **Path sighting** – Shared off road paths and cycleways have been suitably located in cleared areas. Some off road pedestrian only paths have been proposed and these will be sensibly located to utilise existing vegetation clearings and appropriately designed to avoid impacts to nearby remnant or rehabilitated vegetation (Corkery Consulting 2010).
- **Lakeside precinct open space management** – The management proposed for the western edge of the Lakeside precinct is congruent with the objectives of its E2 and E3 zoning (VMP, ELA 2011). This will include weed control, targeted revegetation and focus on low impact recreation rather than broader recreation objectives.

Offset Impacts: DECCW requests an offset package and that the offset areas are secured in perpetuity.

Response: The retention and protection of 117ha of EEC from a total of 122ha (loss of 4.32ha) represents a protection ratio of 27:1. Further, the retained vegetation will be actively managed and enhanced as detailed in the Vegetation Management Plan (ELA 2011d) which describes \$3.8m worth of restoration works. Such works include extensive site restoration and re-vegetation of what is generally disturbed, lower condition vegetation, of lower ecological value and is a significant component which value adds to the retention and protection. It is proposed that these works will be completed progressively across the site aligned with the development of precincts.

This retention, protection and enhancement coupled with the small loss of lower quality native vegetation, in our view, should not require offsetting. The concept plan achieves ecological offsetting outcomes on site. ELA notes that the protection ratio achieved on site is significantly larger than those typically negotiated for similar developments, which are generally between say 2:1 to 10:1.

DECCW makes comment on ensuring the conservation of the area in perpetuity. Section 8 of the Environmental Assessment (Don Fox Planning 2011) outlines the proposed development contributions for the concept plan including a conceptual land ownership plan (see Figure 37) for the conservation areas and open space. These concepts are also discussed in the VMP (ELA 2011) with detail provided for the likely ongoing vegetation management requirements following implementation of the initial restoration works. Prior to precinct development approval it is intended that adjacent environmental lands will be transferred to public ownership subject to agreement between the relevant government agencies and TRUenergy.

Statement of Commitments (SoC): DECCW has requested that the ecological commitments be clear and unambiguous in relation to flora and fauna.

Response: DECCW comments that the “draft SoC is strongly supported” but is seeking a revision of the SoC that is much more specific. The current SoC, commits to implementing the recommendations and measures of a number of the project reports in relation to flora and fauna, riparian and vegetation management matters.

Such a request can be provided should the DoP&I seek this.

RESPONSE TO MATTERS RAISED BY NOW

Riparian Setback Distances: NoW outlines concern that the proposed riparian setback distances vary to those recommended by DNR in 2006.

Response: As outlined, the Riparian Assessment (ELA 2011) utilized a stream classification approach consistent with the RCMS (DIPNR 2004) which is considered appropriate for the proposed development and the site and has been applied widely across the region. The project team attempted on a number of occasions to meet with NoW to discuss the project methodology and assessment.

The differences between the documented riparian setbacks and those put forward by NoW are due to the completion of a detailed field inspection. Following NoW's guidelines, establishing the actual on characteristics of the sites waterways via ground truthing is critical in applying the riparian management framework.

The setback distances in previous DNR advice are based on remote desktop mapping exercises.

The stream categorisation differs as a result of on ground survey, with setback distances consistent with NoW's policies for the identified stream categories.

Maps showing the differences between the ground-truthed and desktop approach are found in Attachment 1 and those waterways specifically identified by NoW in their submission are commented on below:

- **Stream 1b** – No change in setback distance. Location of waterway and setbacks amended following ground truthing and mapping using high resolution contour data. No impact to or from development;
- **Stream 3a** – Reduction in setback distance based on ground truthed waterway categorisation. Proposed management to rehabilitate this waterway to a more functional waterway (currently, concreted channel). Extension of previous unmapped tributary and riparian buffer (3c);
- **Stream 6a, 6b, 6c & 6d** - Reduction in setback distance based on ground truthed waterway categorisation. No impact to or from development;
- **Stream 7a** - No change in setback distance. Location of waterway and setbacks amended following ground truthing and mapping using high resolution contour data. No impact to or from development;

Stream 8a & 8b - Reduction in setback distance and amended stream location based on ground truthed waterway categorisation and mapping using high resolution contour data. Adjustments have minimal impact to or from development given stream 8a is upslope of development and 8b (the section adjacent to development) is dominated by a farm dam.

Uses within Riparian Zones: NoW comments that ancillary infrastructure detention basins, APZ's and paths should not be in riparian zones. Comment is also made on Yallah Creek.

Response: Ancillary infrastructure is predominately proposed to be located entirely outside the riparian zones (Core Riparian Zone and Vegetated Buffer). The only exceptions to the above are for:

- An unnamed waterway number 4 (see Figure 2, ELA 2011) which is a category 3 waterway where two biofiltration basins are proposed alongside the waterway due to the nature of the waterway and the topography in this area; and
- Low impact recreation paths (bush style walking tracks) mostly outside the riparian zones but occasionally crossing or traversing CRZ and VB areas.

The Duck Creek corridor is discussed in more detail in the next section.

A 10m riparian zone has been proposed along Yallah Creek consistent with the assessment of waterway category (see above section).

NoW makes comment on the proposed physical restoration of Yallah Creek. Field inspection of this waterway observed that the downstream portion of this waterway was highly modified (concreted channel). Upstream

sections were also observed to be in a modified form with a farm dam and also in a degraded condition. Review of historical aerial photos revealed that significant changes to this waterway and drainage in this area have occurred. Such changes are a result of the neighbouring ash dams utilised for the former Tallawarra coal fired power station. As such, structural improvements to this waterway are considered appropriate to facilitate more natural riparian characteristics. The Riparian Assessment (ELA 2011c) recommends a riparian zone setback consistent with the observed waterway category and reconstruction of the currently modified waterway to a more natural system including geomorphic works, creation of instream habitat, riparian zone revegetation and weed control. Further detailed design of these works would be developed at subsequent development stages.

Duck Creek Corridor: Requested a 200m corridor for Duck Creek (which is over and above the riparian zone width). NoW also comments on appropriate uses within the Duck Creek corridor.

Response: As requested a 200m corridor (100m either side) has been provided along Duck Creek where available. The exceptions to this are where there is existing infrastructure and clearing.

The exceptions include the entrance to the site along Yallah Bay Road and along an existing track on the northern side of the creek near the confluence with Lake Illawarra. In these situations, a corridor of greater than 200m is provided by utilizing additional setback on the southern side of the creek.

The Riparian Assessment (ELA 2011c) outlines that the proposed composition of the corridor is comprised of the statutory riparian zone (CRZ – 40m + VB - 10m) along with an additional setback (50m or more) for the remaining corridor width (i.e. 100m or more either side of the creek). The management specification for the Duck Creek corridor includes extensive revegetation throughout the corridor (see Figures 4 and 5 of the Riparian Assessment) particularly in currently cleared areas or those lacking structural diversity.

In currently cleared areas within the additional setback (i.e. outside the statutory riparian zone but with the corridor setback (i.e. between 50 to 100m+ from the top of bank) some ancillary uses congruent with the objectives of the corridor are proposed.

These uses are confined to the northern edge of the Lakeside Precinct and restricted to a low impact recreation path and one WSUD detention basin. Further, proposed revegetation has been designed to a standard that does not provide additional fire hazard to the adjoining development This means creating a grassy woodland with a managed understorey and thereby achieving corridor objectives but also allowing consistency with an Outer Protection Area APZ specification.

Such restricted uses provide for public benefits and are appropriate given the size of the corridor (in some cases greater than 200m wide) and are confined within disturbed areas of the corridor outside the statutory CRZ and VB.

Lake Illawarra Foreshore Setback: NoW questions the width of the setback and comments on the open space utilization

Response: NoW is seeking a 50m wide vegetated setback along the foreshore but recommends consultation with the LIA. The LIA is pursuing 100m in other areas however does not seek a fully vegetated setback.

The concept plan proposes at least 50m setback from the foreshore and in most cases 100m or more is provided. It also recommends extensive revegetation in these areas (see Figure 5 ELA 2011c) much of which is currently highly degraded. The revegetation and public domain uses proposed for these areas are in keeping with the biodiversity values of the areas and are consistent with LIA plans for other parts of the foreshore, including the foreshore land owned by LIA adjoining the northern precinct. The concept plan is also consistent with DGRs which call the concept plan to “enhance public access to and along the foreshore” (DGR 7c.).

SEPP 14: NoW supports the proposed protection of the SEPP14 wetlands

Response: Noted

Zoning: NoW comments on alternative zoning for various parts of the site.

Response: The site was recently rezoned following Wollongong LEP 2009.

Concept Plan: NoW seeks open space and conservation spaces to be clearly distinguished.

Response: The Riparian Assessment (ELA 2011c) clearly distinguishes the riparian zones proposed for the site (see Figure 3). In addition the Riparian Assessment shows the management intent of retained lands (see Figure 4) as well as areas proposed for re-vegetation including riparian zones (and others) as documented in the VMP (ELA 2011d).

Water Licensing: NoW requests sufficient detail to assess any water licensing requirements.

Response: This issue is not being dealt with by ELA.

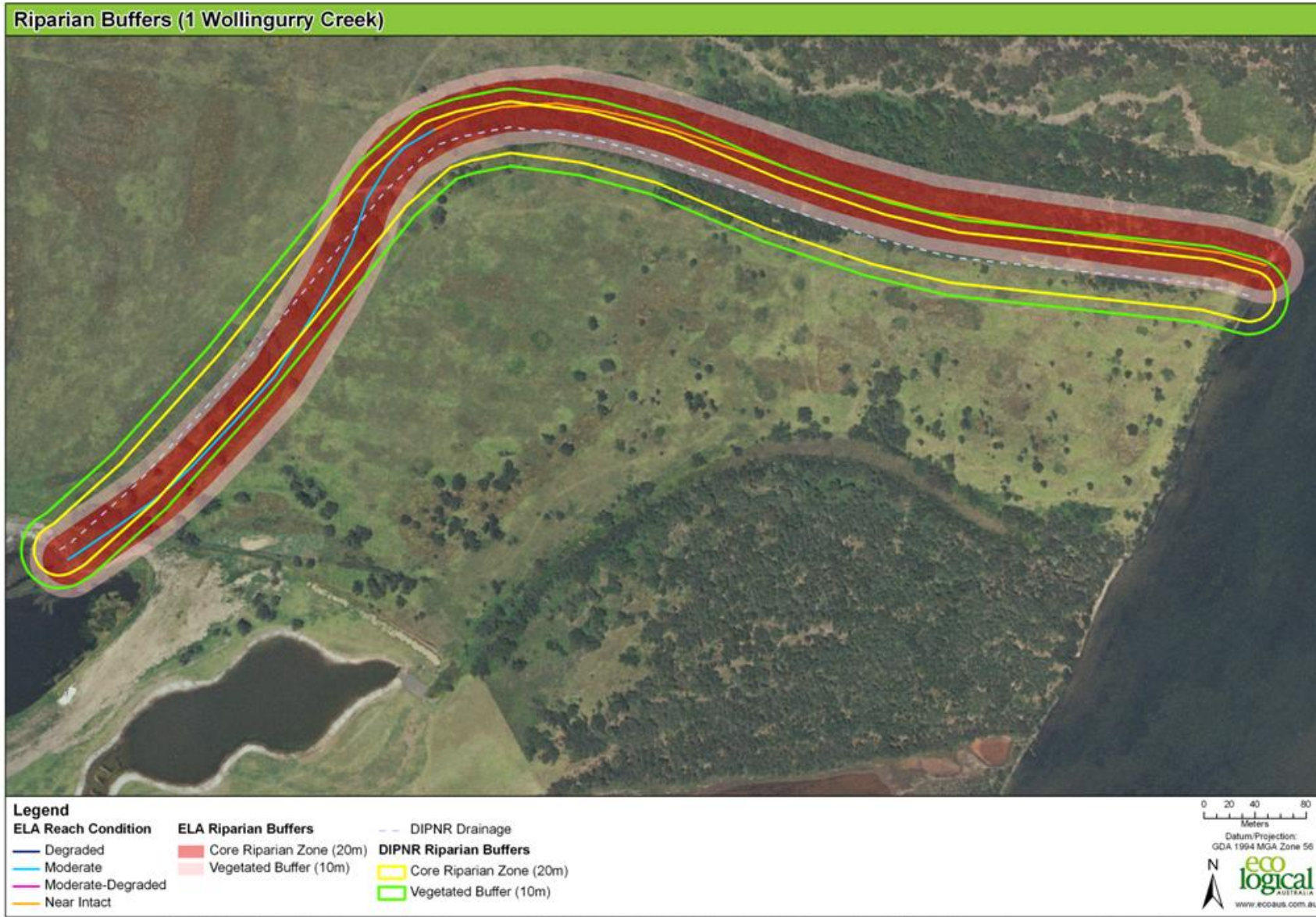
Regards



Mark Adams

Director, Planning

ATTACHMENT 1: Riparian Setback Comparison Maps



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Riparian Buffers (3 Yallah Creek)



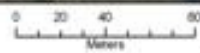
Legend

- ELA Reach Condition**
- Degraded
 - Moderate
 - Moderate-Degraded
 - Near Intact

- ELA Riparian Buffers**
- Core Riparian Zone (10m)
 - Vegetated Buffer (0m)

- DIPNR Riparian Buffers**
- Core Riparian Zone (20m)
 - Vegetated Buffer (10m)

--- DIPNR Drainage



Datum/Projection:
GDA 1984 MGA Zone 56



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Prepared by: VM Approved by: BM Date: 05/08/2011 Status: Draft

Riparian Buffers (6 Brooks Creek)



| | | |
|----------------------------|-----------------------------|-------------------------------|
| Legend | | |
| ELA Reach Condition | ELA Riparian Buffers | -- DIPNR Drainage |
| — Degraded | Core Riparian Zone (20m) | DIPNR Riparian Buffers |
| — Moderate | Vegetated Buffer (10m) | Core Riparian Zone (40m) |
| — Moderate-Degraded | | Vegetated Buffer (10m) |
| — Near Intact | | |

0 20 40 80
Meters

Datum/Projection:
GDA 1994 MGA Zone 56

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Riparian Buffers (8 North Shore Creek)



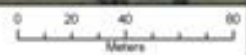
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Legend

- ELA Reach Condition**
- Degraded
 - Moderate
 - Moderate-Degraded
 - Near Intact

- ELA Riparian Buffers**
- Core Riparian Zone (20m)
 - Vegetated Buffer (10m)

- DIPNR Drainage
- DIPNR Riparian Buffers**
- Core Riparian Zone (40m)
 - Vegetated Buffer (10m)



Datum/Projection:
GDA 1994 MGA Zone 56



Prepared by: VN Approved by: BM Status: Draft Date: 05/08/2011