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Ref/Job No: 11SYDECO-0112

20 February 2012

Dear Anthony,

RE: Tallawarra Lands Concept Plan Exhibition – NOW Comments

This letter addresses the comments by the NSW Office of Water (NOW) in their letter dated 11 January 2012 in regard to the Part 3A Concept Plan for Tallawarra Lands – Major Project Number #MP09_0131.

NOW raise a number of matters in their letter, and responses to these matters are provided under the headings below. Please note that this response does not address groundwater related matters. It is understood that Coffey are engaged for this and will respond if required.

General

NOW have stated that the Riparian Assessment Report (RAR) “*should have considered the future strategic role for each waterway*” and on this basis seeks higher width stream setbacks for a number of waterways. It is agreed that strategic roles and outcomes are important for the overall riparian and ecological outcomes of a site. Riparian corridors can serve a number of ecological functions, though NOW appear to be primarily referring to the potential for riparian corridors to provide ecological connectivity in their submission. The delivery of the future strategic role for each corridor to deliver ecological connectivity was considered in the rezoning and subsequently in the Concept Plan through the RAR.

The application of the RCMS to each drainage line is discussed below. In addition, this letter provides figures which illustrate Eco Logical Australia’s application of *Riparian Corridor Management Study* (RCMS - DIPNR, 2004) categories to the site, in particular for the Duck Creek corridor (Figure 1, Figure 2), and of the native vegetation retained and areas proposed to be revegetated under the Tallawarra Lands Concept Plan (Figure 3).

Duck Creek

This drainage line was classified in the RAR as a category 1 drainage line – thus requiring a 40m core riparian zone (CRZ) + 10m vegetated buffer (VB). This outcome is shown in **Figure 1**. However, Duck Creek connects native vegetation in the west to SEPP14 wetlands and Lake Illawarra, and thus was recognised in the RAR as having the potential to provide regional connectivity. Current connectivity is reduced by historical land clearing and disturbance. The Vegetation Management Plan (VMP) thus sought to deliver a corridor with a 100m buffer from the top of bank to either side of Duck Creek. The specific boundaries for the Duck Creek corridor adopted

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had some variations to distances determined purely by 100m from top of bank, but additional areas were added to replace any portions removed so as to deliver the ecological connectivity outcome. It is noted that the proposed corridor is well above the 50m setback (40m CRZ + 10m VB) required under the RCMS methodology.

These outcomes for Duck Creek exceed the RCMS requirements and delivers strategic outcomes within and beyond the site. However, NOW requested that this 200m wide corridor be revegetated so as to recreate a fully structured vegetation community on site. The Concept Plan proposes to fully revegetate the CRZ and VB as required by the RCMS methodology whilst also providing strategic revegetation to other parts of the Duck Creek Corridor (outside the statutory 50m setback) such that the objectives of providing a regional corridor linkage along Duck Creek can be provided. At a minimum, this additional revegetation will involve reinstating a native vegetation canopy and controlling weeds within the remaining portions of the corridor but will provide for other structural layers in relevant parts. There will be a substantial financial cost associated with the delivering this future corridor, estimated at circa \$1.8 million for works along Duck Creek alone from a total estimated cost of vegetation management works for the entire site of \$3.8 million.

Our assessment demonstrated that with weed control, retention and management of existing native vegetation within this additional riparian buffer area, the Concept Plan would provide corridor and connectivity outcomes for the flora and fauna that utilise the site, achieve water quality outcomes and further enhance the prescribed RCMS requirements. The co-location of sympathetic public amenities (eg: picnic tables, walking and cycling tracks, open woodland/grassed areas for play) or vegetated stormwater detention basins are not within the CRZ or VB areas of the Duck Creek Corridor. Bushfire Asset Protection Zones are also not located within the CRZ and VB areas of the Duck Creek Corridor. They have only been proposed in areas of the wider 200m corridor (outside the CRZ and VB) that are currently cleared. The proposal in the Concept Plan for these areas is to strategically revegetate and manage them to an Open Woodland formation (native woodland canopy) which will provide for regional corridor objectives whilst also providing areas for sympathetic public amenities all whilst meeting the APZ requirements.

Barrons Gully (North Shore Creek) and Brooks Creek

Both Barrons Gully and Brooks Creek have been classified as category 2 drainage lines under the RAR. NOW have stated in their submission that they seek category 1 corridor outcomes to provide ecological connectivity of Mount Brown Reserve to the shore of Lake Illawarra. A key objective for category 1 riparian corridors is to “provide a continuous corridor width for the movement of flora and fauna” (DIPNR 2004). However, practically the delivery of continuous corridors along either Barrons Gully or Brooks Creek to Lake Illawarra would be, at best, problematic.

A significant proportion of the length of Barrons Gully is outside of the Tallawarra Lands, and outside the subject lands the waterway flows into a drain and passes underneath a sports field. In our assessment, this constraint decreased the strategic potential of this waterway to “provide a continuous corridor width for the movement of flora and fauna.” Thus, the RAR classified this waterway as category 2.

Brooks Creek does have some patchy native vegetation along it, but a continuous corridor cannot be delivered in this instance because the drainage line flows off the Tallawarra Lands site and through/past the Tallawarra Power Station. Again, in our assessment, this constraint decreased the strategic potential of this waterway to deliver category 1 objectives.

The Concept Plan recognises the need for connectivity of Mount Brown Reserve to the shore of Lake Illawarra and proposes to meet this through the planting of woodland vegetation along the ridgeline of the Northshore Precinct to the foreshore of the Lake. This proposed native planting also has visual amenity values and is outlined in the Landscape Plan for the site (Corkery 2011). We assume that as it was not referenced in the RAR and as NOW was unable to visit the site, this corridor was not considered in the NOW submission to DoPI.

Yallah Creek

Yallah Creek is currently a disturbed and realigned channel and much of the waterway on the site, particularly the lower portion is in the form of a “V” ditch drain (parts are concrete lined). The current alignment is completely different to its former alignment which ran West to East. This extensive modification to alignment, form and even substrate was during the time of the former Tallawarra coal fired power station where the area of the creek was used as an ash pond.

The NOW seeks this creek be categorised as a Category 2 watercourse. The Concept Plan proposed to rehabilitate this waterway to meet Category 3 waterway (stability and aquatic habitat) objectives whilst also providing significant additional habitat and connectivity through the adjoining retained lands.

Extensive revegetation and bush regeneration is proposed to the west of Yallah Creek (a tributary of Duck Creek) which will provide a large consolidated area of native vegetation. This approach delivers a larger area of native vegetation (which is also Illawarra Lowlands Grassy Woodland EEC) and further improves the strategic ecological connectivity of the Duck Creek corridor and also provides for a corridor along Yallah Creek. Our assessment recognises the strategic connectivity values of the surrounding vegetation, however also recognises Yallah Creeks current condition as a drain. Aquatic and water quality outcomes will be achieved through the re-aligning and naturalising the contours and function of the waterway, not through additional revegetation buffers to the east.

The RARs approach of addressing significant in-stream aquatic and channel restoration works in addition to the conservation, management and protection of additional areas to the west of the Creek with significant ecological values beyond the required 20m buffers, achieves much stronger strategic ecological outcomes than the placement of a category 2 classification sought by NOW.

A 10m revegetated zone along the eastern bank of Yallah Creek is proposed by the RAR in order to ensure efforts in restoring the creek line are not impacted by adjacent development.

Removal of Kikuyu

NOW have commented on the proposal to leave Kikuyu in place along Yallah Creek and in the Creek in the Central Precinct (waterway 4). The VMP identifies the retention of the Kikuyu ground cover in the first 5 years of managing the site as it will provide significant filtering and act as an effective soil erosion control measure (bed and bank stability) during a period when the site is being developed and tree and shrub stratum are not yet established (i.e. in currently cleared areas). The Kikuyu is also generally located in areas of modified substrates or areas of extensive past disturbance, where native species may struggle to recolonise. A long term management strategy to remove the Kikuyu could be considered in these locations in consultation with Wollongong City Council during development assessment or on transfer of lands.

Wollingurry Creek

NOW seeks a category 2 width along reach 1b of this drainage line, and revegetation of the riparian corridor. No on-site development is proposed in proximity to Wollingurry Creek. With regards to the ecological outcomes, the noxious weed control works proposed through the Zone 2 area identified in the VMP, which is many times larger than the riparian corridor sought by NOW, will improve ecological values over a much larger area than the revegetation sought by NOW which would only target a small proportion of this precinct.

The ecological strategic importance of ensuring weed vectors on site are removed in order to effectively implement the ecological restoration works proposed via the VMP need to be considered in this context. Wollingurry Creek and the grasslands that surround reach 1b also provide valuable foraging habitat for migratory, wetland wading and other important bird species. The resilience of these habitat resources will be

enhanced with long term weed control over a broader area rather than just with revegetation with trees along the waterway.

Lake Illawarra Foreshore

NOW seeks a 50m wide vegetated riparian setback from Lake Illawarra (measured from top of shore), and open space and recreational facilities to not be located within this zone. We note this request, however it directly conflicts with Lake Illawarra Authority (LIA) advice, their recent approach to lake frontage design to the north of Tallawarra and our understanding of the Authorities desired use and management of these areas in the future.

The proposal outlined in the Concept Plan aims to ensure an adequate setback to the lake (at least 100m or more in most cases) with strategic revegetation to provide for stability and vegetative habitat connectivity whilst also providing for sympathetic open space and recreation uses where appropriate. The Concept Plan is broadly consistent with the approach of the LIA in adjoining areas of foreshore.

SEPP14 Wetlands

NOW have supported the proposed 50m buffer for SEPP14 wetlands and conservation within areas zoned for environmental conservation.

If you have any queries, please contact Mark Adams (02) 8536 8650 or marka@ecoaus.com.au.

Regards



Mark Adams

Director



Figure 1. Concept Plan with riparian RCMS buffers applied by ELA, with 100m Duck Creek buffer from top of bank.

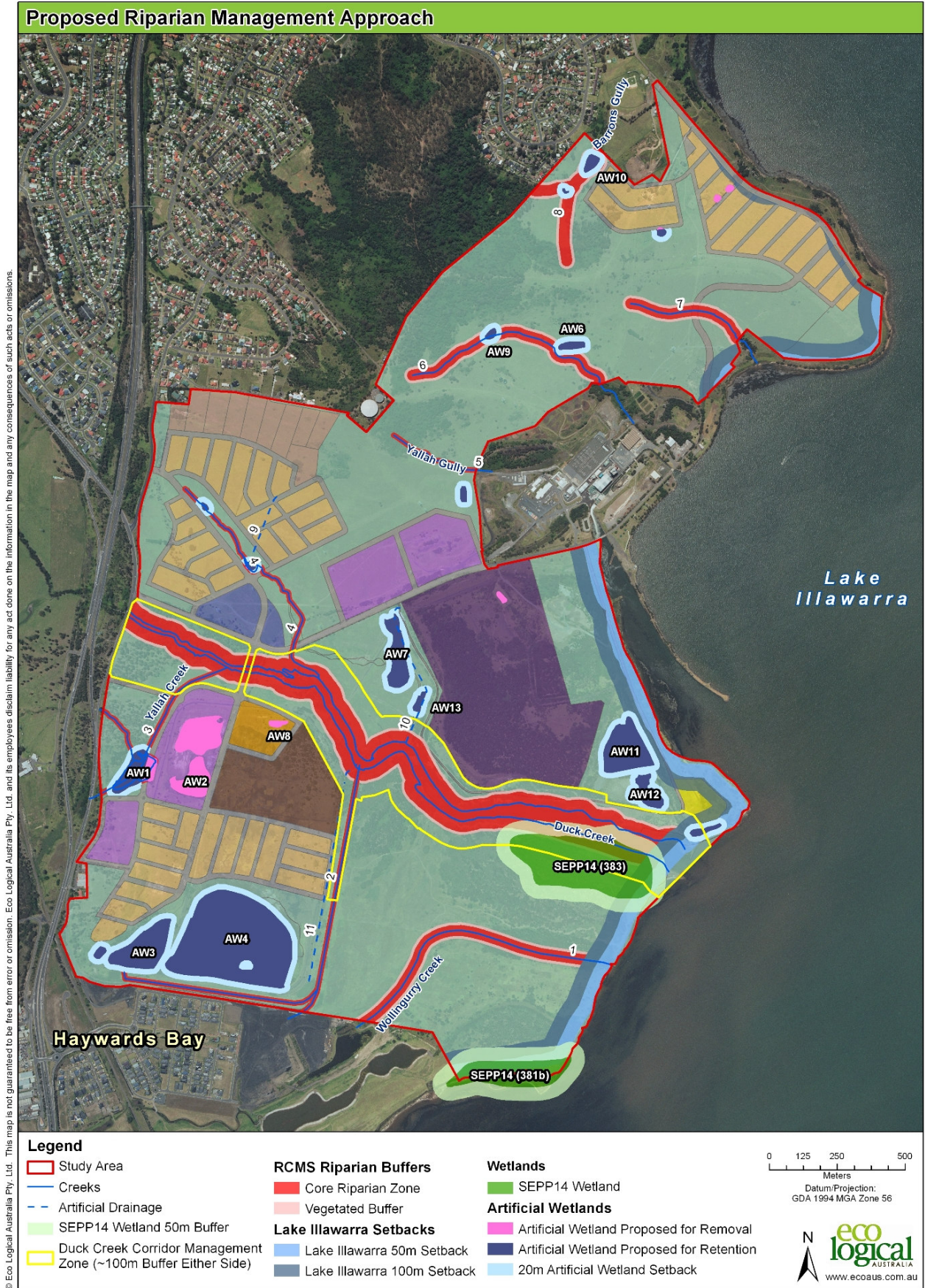


Figure 2. Concept Plan with riparian RCMS buffers applied by ELA, with Duck Creek corridor adopted and proposed for vegetation management works.

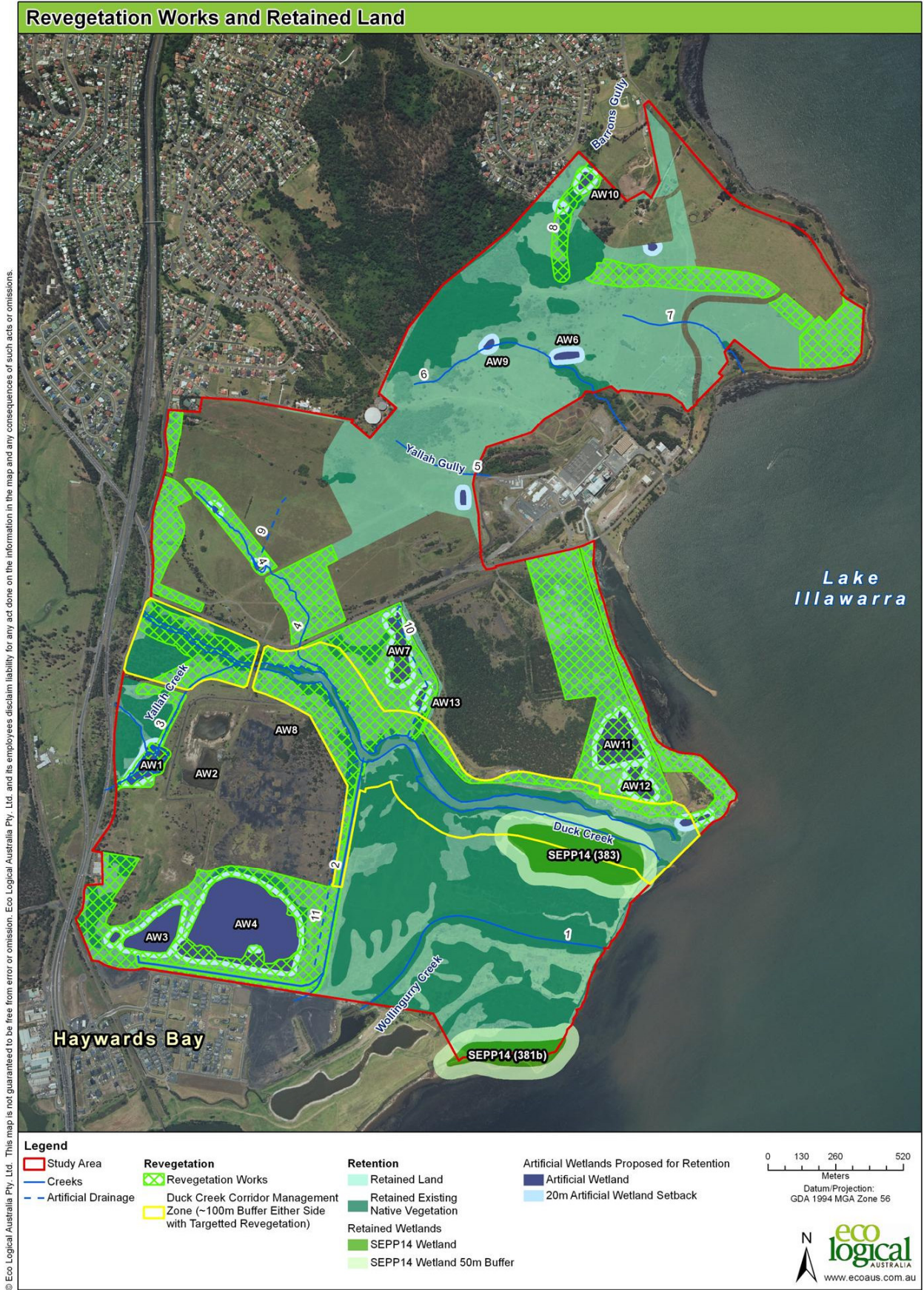


Figure 3. Native vegetation retained (dark green), revegetation proposed (green hatching), and lands to be retained (light green).