NSW GOVERNMENT
Department of Primary Industries
Office of Water

PCU029776

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Attention: Robert Byrne

Dear Mr Byrne

Concept Plan – Mixed use development – Tallawarra lands, Yallah – Environmental Assessment

Thank you for your letter seeking comment from the NSW Office of Water (Office of Water) in relation to the Environmental Assessment (EA) for the above major project proposal. I apologise for the delay in responding.

The Office of Water's comments on the EA are provided in **Attachment A.** Many of the riparian issues previously raised by the Office of Water in the Test of Adequacy (ToA) submission are still relevant.

Should you require further information in this matter, please contact Janne Grose on telephone (02) 4729 8262.

Yours sincerely

Mark Mignanelli
11 January 2012

NSW Office of Water Comments

Concept Plan - Mixed use development – Tallawarra Lands, Yallah – Environmental Assessment

Reference is made to the NSW Office of Water (Office of Water) submission of 31 March 2011 on the Test of Adequacy (ToA) Environmental Assessment (EA). The ToA submission was in relation to riparian and water licence issues and the Office of Water advised it would provide comments on groundwater and groundwater dependent ecosystems at the exhibition stage.

Riparian Land

Section 5.13 of the EA indicates the Riparian Corridor Management Study (RCMS) has been applied to the Tallawarra Lands and is documented in the Riparian Assessment Report (RAR). The application of the RCMS approach (DIPNR, 2004) to the site is consistent with DP&I's Illawarra Regional Strategy, however the RAR has reduced the stream categories / riparian corridor widths along a number of creeks and/or reaches and the concept plan is not considered to be in line with the RCMS approach.

The RAR has assessed the current condition of the watercourses on a reach by reach basis rather than assessing the future strategic role for each waterway in a catchment context. If the RCMS was based on current condition, the stream categories proposed in the RAR may well align but this is not what the RCMS is about. The RCMS assesses the future strategic purpose/value for the waterway in the catchment and considers where the remnant vegetation is and how to link this vegetation for connectivity, longevity and robustness. The RCMS, in taking a catchment context is moving away from a reach by reach approach (except in more urbanised catchments which the Tallawarra site is not). The former DIPNR assessed and categorised the watercourses on the Tallawarra site on this basis and the RAR should have considered the future strategic role for each waterway.

Of particular concern, the Vegetation Management Plan (VMP) notes the Mount Brown Reserve is a high value conservation area and the protection and improvement of Barrons Gully is a further objective of this zone yet the RAR proposes to downgrade the stream categories along Barrons Gully and Brooks Creek (see stream no. 8 and 6 in Table 2 of the RAR) which the former DIPNR identified as Category 1 watercourses to establish an environmental corridor linkage to link Lake Illawarra foreshore to remnant vegetation at Mount Brown Reserve. The RAR proposes to provide Category 2 and 3 outcomes along Brooks Creek and Category 2 outcomes along Barrons Gully. The Office of Water reiterates its recommendation to establish Category 1 outcomes along these watercourses. If Category 1 (environmental corridor) connections can't be achieved along both watercourses due to constraints, it is recommended that either Brooks Creek or Barrons Gully needs to provide a Category 1 environmental corridor connection to link Lake Illawarra to the remnant vegetation at Mount Brown Reserve. A Category 1 outcome along Brooks Creek may be the better option as this creek is located fully within the Tallawarra site and within an Environmental type landuse zone. It should be noted however that Brooks Creek is longer in length than Barrons Gully and there would be higher costs involved to rehabilitate it to a Category 1 watercourse and there may be some limitations in achieving the riparian width with development near the foreshore interface. Barrons Gully is shorter in length to rehabilitate but it is located both within and outside of the Tallawarra site and the riparian corridor may also impinge upon the proposed residential subdivision in the north-east corner of the site.

Wollingurry Creek (stream reach 1b) is also located within a future identified environmental reserve landuse area. Why the RAR does not support a Category 2 outcome along reach 1b only confirms there to be an error in how the RCMS methodology has been applied in the RAR.

The Office of Water has previously advised in its DGR and ToA submissions that the EA should demonstrate the proposal is consistent with the riparian setbacks provided in the former DNR submission of 19 May 2006 to Wollongong Council on the draft LEP amendment for the former Tallawarra power station site. The Office of Water reiterates if the RCMS is to be applied to the site, the riparian widths should be in accordance with the setbacks provided by the former DNR, particularly along the following watercourses (stream No: 1b; 3a; 6a; 6b, 6c, 6d, 8a and 8b) where the RAR has downgraded the stream categories. As stated in the ToA submission consideration could be given to the proposed reduction in stream category along stream 7a from a Category 2 to a Category 3 watercourse provided the other Category 1 and Category 2 outcomes can be achieved on the site.

Table 16 in the EA includes mitigation measures and under the impact/threat for riparian areas it includes a mitigation measure that vegetated riparian buffers are to be established according to the Riparian Assessment undertaken by ELA and in consultation with DECCW (page 98). This mitigation measure is also included in Table 5.2 of the Ecological Assessment (page 96). It is recommended the riparian areas are established in accordance with the Office of Water's/DNR's previous recommendations.

Section 3.2 of the RAR makes reference to "the NSW Government's move towards a policy of greater integration of riparian corridors into the urban environment and quotes from a draft Policy Statement of December 2009 which states "*a definition will be provided for riparian corridors that will identify stormwater facilities and systems, cycleways and land for passive open space are considered to be key community infrastructure even if they are located within a riparian corridor*". The Office of Water previously recommended any reference to the draft policy be removed from the EA documentation because it has not been endorsed by the NSW State Government and is not consistent with current guidelines but this has not occurred. As previously advised by the Office of Water, the locating of such uses in riparian corridors is not consistent with the Office of Water's Controlled Activity Guidelines which outline that asset protection zones (APZ) and all ancillary infrastructure such as utility easements, detention basins and water quality control structures, roads, paths/cycle ways etc. should be located outside of any riparian zone (ie the CRZ plus the VB). The Office of Water reiterates that the DP&I give similar regard to the protection and enhancement of riparian land for this project.

The Drainage Assessment (Appendix 11) states stormwater quality and quantity management infrastructure should be positioned outside the CRZ and buffer in Barrons Gully. The Office of Water supports this approach. Stormwater quality and quantity management infrastructure need to be located outside the CRZ and vegetated buffer especially along Category 1 and 2 watercourses. Such infrastructure may be considered within the CRZ of Category 3 watercourses provided Category 1 and 2 outcomes (as recommended by the Office of Water) can be achieved on the site. Biofiltration basins and biofiltration swales should be located outside riparian land, particularly Category 1 and 2 watercourses. Figure 5.11 in Appendix 11 shows a biofiltration basin (S5) is proposed within the regional corridor of Duck Creek, it is recommended the basin is located outside the corridor.

Appendix 15 also indicates the Concept Plan proposes future walkways/parkland with the alignment of the creeklines, water bodies and lake edges. As noted above it is recommended future walkways and parks are located outside the riparian land. The riparian land should be protected and where native riparian vegetation has previously been cleared from these corridors it should be rehabilitated with fully structured native vegetation endemic to the local vegetation community.

Duck Creek

Section 6.1 of the EA (see also Section 4.11 of the Ecological Assessment) notes the "*Bioregional*

Assessment of the Wollongong LGA (2003) identified the Yallah Calderwood Corridor as one of the two regionally significant corridors that provides a 'stepping stone' connection between the escarpment and the plateau lands and the coastal plain" (page 77) and "*the Duck Creek riparian corridor will be established and restored due to the important function this area plays in connectivity not only across the site but also within the context of potential regional corridor*" (page 78). The Office of Water has previously advised that "*Duck Creek operates on two levels at a regional level as an environmental corridor (as per Illawarra Regional Strategy and other local/State Government documents) and requires a width over and above the CRZ/VB riparian corridor width requirements. The Duck Creek riparian corridor is the 'local core' of this environmental corridor in the lower reaches*".

Section 6.5 of the EA notes the proposed management approach for Duck Creek is to provide a 100 m buffer either side of the creek with targeted revegetation (page 100). While the RAR notes the role Duck Creek corridor provides in linking Lake Illawarra with the lowland areas to the west and provision of the proposed Yallah to Calderwood regional corridor (see Section 3.1.1), the EA indicates "*targeted revegetation along the Duck Creek corridor adjacent to the development will integrate bushfire asset protection zones in line with RFS requirements (RFS 2006) and low key open space/informal recreation uses*" (see page 101). Table 17 in the EA (page 126) notes on the northern side of the creek APZs may be located within areas of open space and on the southern side of the creek, APZs will "*extend from the unmanaged vegetation closer to Duck Creek itself*". The Office of Water does not consider it is appropriate to integrate bushfire asset protection zones and recreational uses within the regional corridor and reiterates its previous recommendation that the APZ and uses are located outside this important regional corridor (i.e. outside the 100m wide corridor along either side of Duck Creek). The figure included in Section 3.5.1 of the Landscape Plan (page 45) shows "existing and proposed grass" is proposed adjacent to the riparian corridor and cross section DD (page 49) shows "informal open space and recreation" adjacent to the 50 m wide riparian corridor. Section 6 of the Environmental Management Study refers to the restoration of a 200 m wide Duck Creek corridor to ensure connectivity of habitat is maintained and enhanced. It is recommended the regional corridor is planted with the local native species at a density that occur naturally using endemic vegetation community.

The TruEnergy Report (Appendix 15) indicates a primary school and retirement village are two possible uses proposed to be located in the vicinity of the vegetated creek lines (see Section 4.1, page 30). The Concept Plan shows a primary school and retirement living are possible uses proposed on the southern side of the Duck Creek regional corridor. Consideration needs to be given to APZ requirements in locating schools and retirement living near bushfire hazards to ensure the ecological function of the regional corridor can be achieved. If the purpose of the corridor is to provide a regional environmental corridor connection rather than recreation and public open space, such development should not result in the APZ being located in the regional corridor.

Barrons Gully (North Shore Creek)

Section 3.9 of the Vegetation Management Plan (VMP) (Appendix 27, page 28) notes the Mount Brown Reserve is a high value conservation area and the protection and improvement of Barrons Gully is a further objective of this zone. Because of the conservation significance of Mount Brown reserve, the former DIPNR identified Barrons Gully as a Category 1 watercourse to provide an environmental corridor linkage from Lake Illawarra to the reserve. The RAR and VMP only propose a Category 2 outcome propose to decrease the riparian corridor width from 50 m to 30 m either side of the creek (see Table 2 in RAR, page 11 and Section 3.9.3 in VMP, page 28). The Office of Water reiterates if the RCMS is to be applied to the site, the riparian widths should be in accordance with the setbacks provided by the former DNR.

Note: if only one Category 1 (environmental corridor) connection can be established to link the

lake's foreshore to the reserve please also refer to comments above.

Brooks Creek

Due to the conservation significance of Mount Brown reserve, the former DIPNR identified Brooks Creek as a Category 1 watercourse to provide an environmental corridor linkage on the Tallawarra lands to link the Lake Illawarra foreshore to the remnant vegetation in the reserve. The RAR and VMP only propose Category 2 and Category 3 outcomes along this creek which would reduce the riparian corridor width to be established from 50 m to 10-30m along each side of the creek and the function of the riparian area (see Table 2 in RAR, stream no 6, page 9-10). The Office of Water reiterates if the RCMS is to be applied to the site, the riparian widths should be in accordance with the setbacks provided by the former DNR.

Note: if only one Category 1 (environmental corridor) connection can be established to link the lake's foreshore to the reserve please also refer to comments above.

Yallah Creek

Section 5.1 of Appendix 7 (page 8) shows a 2 m wide riparian setback is proposed along the right bank of Yallah Creek (stream no. 3a and 3b in the RAR) for more than 200 m along a length of this creek. The Office of Water has previously raised the 2 m setback as an issue. A road is proposed immediately adjoining the 2 m wide riparian setback.

DIPNR categorised Yallah Creek as a Category 2 watercourse with a minimum 30 m wide riparian corridor either side of the creek. Table 2 in the RAR proposes Category 2 and Category 3 outcomes along this section of creek. As the VMP states the lower portion of Yallah Creek (Reach 3a) is proposed to be re-engineered to remove the concrete banks and provide pools, riffles etc (see Section 3.4. of Appendix 27, page 22), it is recommended this reach is classified as a Category 2 watercourse rather than a Category 3 watercourse, particularly as the creek flows into the Duck Creek regional corridor and the RAR proposes a Category 2 outcome on the upstream section along Reach 3b.

The rehabilitation of the creek to mimic a more naturalised system is supported, however creek instability issues along the right bank are likely to be an issue with the proposed encroachment of development within 2m of the creek. The Office of Water still recommends Reach 3a is a Category 2 watercourse but if a Category 3 outcome is considered to be appropriate by DP&I along Reach 3a, a minimum 10 m wide riparian setback should be provided either side of the creek to assist in providing bed and bank stability.

Section 3.4.3 of the VMP (Appendix 27, page 23) notes the upper section of the creek line is stable due to kikuyu stabilising the bed and banks and proposes to maintain the ground layer as kikuyu. The VMP needs to be amended to include a long term management strategy to remove the kikuyu. The vegetation should mimic the local community and local native trees, shrubs and groundcover species should be established to maintain bed and bank stability rather than maintaining exotic and invasive kikuyu.

Central Precinct (Town Centre) drainage line

Section 3.8.3.1 of the VMP (Appendix 27, page 27) notes the removal of existing pasture grasses is not desirable as it will result in destabilisation of the creek bank and proposes to only revegetate the overstorey and midstorey of the riparian zone and maintain the ground layer as kikuyu. The VMP needs to be amended to include a long term management strategy to remove the kikuyu and establish local native plant groundcover species, shrubs and trees to maintain bed and bank stability rather than maintaining exotic and invasive kikuyu.

Wollingurry Creek

DIPNR categorised Wollingurry Creek as Category 2 watercourse. The RAR proposes a Category 3 outcome along Reach 1b which would reduce the riparian corridor width to be established from 30 m to 10 m along each side (see Table 2 in RAR, stream no 1 , page 7).

It is recommended Reach 1b remains as a Category 2 watercourse and the riparian corridor be revegetated with local native plant species, especially as the creek will be located within a future identified environmental reserve.

Lake Illawarra foreshore

The Director General's Requirements issued for the project included "*the EA shall incorporate a sufficient vegetated riparian zone along the lake*". Table 14 in the EA identifies the Concept Plan provides for a 50 m buffer to Lake Illawarra and proposes to manage this area for environmental and open space uses (page 66).

The Office of Water's DGR submission advised as a minimum, a 50 m wide vegetated riparian setback be provided and established around the lake (measured from top of shore). The ToA submission recommended the applicant consult with the Lake Illawarra Authority (LIA) to confirm the adequacy of this recommended setback width. Section 3.4 of the RAR indicates a 100 m buffer has been sought by LIA and that the concept plan provides setbacks in excess of 50 m and 100 m buffers. It is noted Figure 23 in the EA shows both the 50 m and the 100 m setback along the lake.

Section 3.11.2 of the VMP states the management intent of the foreshore reserve is to provide opportunities for open space and recreational activities. Figures 4 and 5 in the RAR show it is proposed to "control noxious weeds and maintain open space with selective revegetation" and to undertake "open space revegetation" adjacent to the lake. The Figure on page 69 of the Landscape Plan proposes "foreshore open space with scattered planting" along parts of the lake's riparian area in the vicinity of the Northern Precinct and the Figure on page 53 proposes "foreshore open space" and "informal recreation" adjacent to the lake in the Lake Illawarra Foreshore Precinct. The Office of Water's DGR submission advised:

- the riparian zones remain, or become vegetated, with fully structured native vegetation (trees, shrubs and groundcover species).
- All uses (with the exception of environmental protection works, drainage and crossings (e.g. roads, service utilities, paths)) must be located outside the CRZ and VB.
- Open space/recreation areas and recreational facilities (including pathways etc) must not be located within the CRZ or VB.

The Office of Water's ToA submission recommended the EA be consistent with the above advice. The Office of Water recommends as a minimum the 50 m riparian setback around Lake Illawarra be fully vegetated. Any APZ requirements should be located outside the riparian setback.

SEPP 14 wetlands

The Office of Water supports the proposed provision of a 50 m wide buffer around the SEPP14 wetlands and conserving the wetland areas within a reserve zoned for environmental conservation.

Groundwater

The Office of Water acknowledges the degree of assessment that has been undertaken in relation to groundwater and groundwater dependent ecosystems at the Tallawarra site.

Section 6.9.4 of the EA (page 120) notes a short term dewatering licence will need to be considered and that consultation with the Office of Water is recommended. It also recommends that groundwater inflow and drawdown be monitored during construction. The applicant needs to be advised to contact Mr Wayne Conners on phone: (02) 8838 7531 for water licensing queries.

On 1 July 2011, the Water Sharing Plan (WSP) for *the Greater Metropolitan Region Groundwater Sources* which covers the project area commenced. Upon plan commencement, the licensing provisions of the *Water Management Act 2000* (WMA) also came into effect in the plan area. Information on the WSP can be found at the following link: http://www.water.nsw.gov.au/Water-management/Water-sharing-plans/plans_commenced/default.aspx.

Currently under the WMA, a licence is required to be held by anyone taking water from an aquifer or river system except where the water is taken under a basic landholder right or an access licence exemption. A separate water supply work approval is required for the works which take the water except where an exemption applies. Exemptions from the need to hold an access licence or work approval are specified in the *Water Management (General) Regulation 2011*.

Where Part 2 or Part 3 of the WMA has commenced a person will generally require a water access licence and water supply works approval to take water.

If a proposed water bore does not come within the definition of a water supply work under the WMA and it comes within the definition of a bore under the *Water Act 1912* a person will require a Part 5 licence to construct and use that work. For example, if a proposed monitoring bore for a groundwater source where the WMA has commenced will not take any water then it will not come within the definition of a water supply work as it is not being constructed or used for the purpose of taking water from a water source. However it will require a Part 5 licence under the *Water Act* if the work is proposed to be connected with sources of sub-surface water and it is capable of being used to obtain supplies of such water (even if it is not proposed to be used to obtain such supplies). It is intended that Part 5 licences issued for such works will be replaced under the WMA by aquifer interference approvals. However until that part of the WMA is commenced they will continue to be regulated under Part 5 of the *Water Act*.

If a proposed monitoring bore will take water, for example to enable groundwater testing, it will need a water supply work approval under the WMA. A water access licence may be required unless it complies with the exemption in clause 18(1) (g), which provides that no water access licence is needed if a person is lawfully engaged in the testing of a bore, in relation to water used for that purpose during the week following completion of the bore's construction.

The issue of whether a work requires a water access licence /work approval or a Part 5 licence depends on what is being proposed and whether or not the work will take water.

End Attachment A
11 January 2012