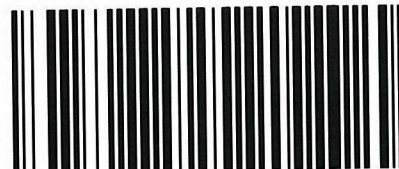




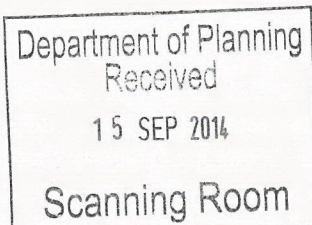
Office of  
Environment  
& Heritage



PCU55727

Your reference: SSI13\_6136  
Our reference: DOC14/130664  
Contact: Richard Bonner, 9995 6917

Mr Dominic J Crinnion  
Senior Planning Officer  
Infrastructure Projects  
NSW Department of Planning & Environment  
GPO Box 39  
SYDNEY NSW 2001



Dear Mr Crinnion

I refer to your email of 14 July 2014 advising of the exhibition of the Environmental Impact Statement (EIS) for the NorthConnex development proposal and inviting comments from the Office of Environment and Heritage (OEH).

OEH has reviewed the EIS and provides the attached comments in relation to biodiversity, Aboriginal cultural heritage and floodplain risk management.

Please contact Richard Bonner, Conservation Planning Officer, on 9995 6917 should you wish to discuss this advice.

Yours sincerely

*S. Harrison 10/09/14*

**SUSAN HARRISON**  
Senior Team Leader Planning  
Greater Sydney Region  
Regional Operations



## Office of Environment and Heritage (OEH) comments on the proposed NorthConnex development Environmental Impact Statement

### 1. Biodiversity

#### 1.1 Direct Impacts

This development will entail the clearing of at least 5.9 ha of native vegetation including 2.8 ha of the Blue Gum High Forest (BGHF) critically endangered ecological community.

To address these and other unavoidable biodiversity impacts, offsets have been calculated using the Biobanking Assessment Methodology (BBAM). To calculate ecosystem credits, OEH notes three mapped vegetation communities were merged into the '*Sydney Peppermint – Smooth-barked Apple – Red Bloodwood shrubby open forest on slopes of moist sandstone gullies, eastern Sydney Basin*' biometric vegetation type. This was done because the areas of these communities are smaller than the required minimum vegetation zone size of 0.25 ha as defined in the BBAM. While the rationale for this approach is supported, OEH considers two of the mapped communities have been incorrectly merged. Based on assemblage similarity, OEH recommends:

- Coastal Enriched Sandstone Moist Forest community be merged with Sydney Turpentine-Ironbark Forest which should then be assessed as '*Turpentine – Grey Ironbark Open Forest in the lower Blue Mountains*' biometric vegetation type.
- Coastal Enriched Sandstone Dry Forest community be merged with the '*Smooth-barked Apple – Red Bloodwood – Sydney Peppermint heathy open forest in sandstone gullies, eastern Sydney Basin*' biometric vegetation type.

OEH also notes that 0.08 ha of unconfirmed Blue Gum individuals, 0.1 ha of unconfirmed Sydney Turpentine-Ironbark Forest and 4.04 ha of unsurveyed vegetation was excluded from the BBAM assessment.

OEH recommends a re-assessment of required offsets using BBAM be undertaken following confirmation of the vegetation communities in unsurveyed areas and to address the vegetation merging issues detailed above.

As previously advised, OEH is concerned that it may be difficult to secure currently unprotected vegetation to satisfy the offset requirements for this development, particularly in relation to BGHF credits. OEH therefore recommends the proposed Biodiversity Offset Strategy be prepared and approved as part of the overall project approval.

In relation to other direct impact biodiversity issues:

- OEH notes 1,767 species credits would be required to offset the removal of 106 *Epacris purpurascens* var. *purpurascens* individuals. It is unclear if these credits are intended to be purchased or the impacts will be offset by translocation. OEH recommends a Translocation Plan be prepared should the latter be chosen.
- OEH supports the measure to prepare a Microbat Management Plan to manage any potential impacts on threatened microbats.
- OEH supports the measure to develop a Flora and Fauna Management Plan for the construction phase of the project. OEH recommends this Plan be extended (or a succeeding Plan be developed) to address management following construction. OEH considers an appropriate duration of an extended (or succeeding) plan would be until vegetation condition is restored to pre-construction condition and, if any *Epacris purpurascens* var. *purpurascens* is translocated, until this has been proven successful.



## 1.2 Indirect Impacts

The EIS assesses the potential indirect biodiversity impacts arising from the development. For the majority of impacts, the assessment undertaken and the range of mitigation measures proposed appears appropriate. OEH is concerned, however, with the assessment of indirect biodiversity impacts as a result of the proposed arrangements for intercepting and discharging up to 700 ML of groundwater per annum.

OEH notes the *'discharge of treated groundwater would change the flow in downstream watercourses, including Blue Gum Creek and Darling Mills Creek, from ephemeral to perennial flow regimes'*. Groundwater regimes in other waterways will logically be impacted by reduced flows although the relative scale of these changes is unclear. In addressing hydrology and aquatic ecology impacts, the EIS and Biodiversity Technical Working Paper (BTWP) state:

- the potential impacts to aquatic fauna in the upper reaches of watercourses near the development *'are likely to be limited given the degraded condition of these environments and the lack of habitats'* (EIS p.757).
- *'higher quality environments further downstream'* could be affected by the potential for increased bank erosion, sedimentation and algal blooms which may reduce the availability of habitat for macroinvertebrates (EIS p.757).
- the increased and permanent base flow in Darling Mills and Blue Gum Creeks is *'unlikely to have a significant impact on aquatic ecology'* (EIS p. 764).
- the aquatic biodiversity impacts of increased water volume in the impacted waterways could be negative or positive depending on whether *'quality is adequately controlled and discharge rates (do) not exceed habitat requirements of aquatic taxa'* (BTWP, p.99).

A number of measures are proposed to ameliorate hydrology and aquatic ecology impacts. OEH notes these appear to be confined to the management of surface water.

OEH notes the DGRs in relation to biodiversity and is concerned the assessment of the proposed changed groundwater regimes on the biodiversity values within sensitive receiving catchments, such as the Lane Cove River and Berowra Valley National Parks, is limited and/or unclear. OEH considers the EIS provides limited assessment on the relative importance of the current groundwater regime in supporting existing downstream biodiversity values.

OEH recommends additional assessment be undertaken to clarify or more clearly detail the relationship between the existing and proposed groundwater regime and the aquatic and terrestrial biodiversity of the water catchments within the development. Additional measures to avoid, minimise and mitigate adverse indirect biodiversity impacts should be developed if necessary.

## 2. Aboriginal cultural heritage

OEH has reviewed the Aboriginal Cultural Heritage Technical Working Paper (ACHTWP) and considers the assessment sufficiently addresses the DGRs in relation to the potential impacts the development may have on any Aboriginal objects. OEH concurs with the recommendations of the ACHTWP, particularly in relation to the ongoing monitoring of the potential effects from vibration on rockshelter sites and overhangs. OEH considers that a protocol for this monitoring should be established early and consideration must be made of appropriate management and rehabilitation if negative effects from vibration are identified. OEH further recommends that impacts to ASA1 and ASA2 are avoided.

With regard to Aboriginal community consultation, the methodology for the identification of the Aboriginal representatives who provided input has not been specified. Neither has it been articulated how the consultation complies with the DGRs. OEH considers that the DGRs are somewhat unclear about what form consultation with the Aboriginal community should take, as they state that the assessment of the potential Aboriginal cultural heritage impacts must be



undertaken in accordance with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community consultation, 2005*. Additionally, the DGRs require the proponent to '*demonstrate effective community consultation with Aboriginal communities...*'. OEH recommends DPE clarify the form of Aboriginal community consultation required for this project.

### **3. Floodplain Risk Management**

OEH notes that due to the location of the development areas along a ridgeline, mainstream flooding has not been identified as a major design constraint. The EIS advises that local flooding would have limited impacts to surrounding receptors and infrastructure.

Environmental management measures proposed to address impacts associated with the development on flooding include the augmentation of existing infrastructure and the construction of new mitigation measures. Further assessment of these measures is proposed at the operational and detailed design stages.

The EIS advises that flooding from external catchments and during Probable Maximum Flood is unlikely to inundate the southern tunnel portals. No advice is provided in relation to the northern tunnel portals. OEH recommends further investigation be undertaken to ensure tunnel portals are located above the Probable Maximum Flood level.

OEH advises it is prudent to investigate the need for an emergency management plan to manage extreme local flooding in consultation with the State Emergency Service. This investigation can be undertaken at an appropriate time during development.

OEH also recommends considering the potential future impacts increased rainfall intensity due to climate change.