



Your reference: SSD6878  
Our reference: DOC15/483475  
Contact: Jedda Lemmon  
Date: 27 Nov 2015

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Dear Mr Gorgioski,

**EIS PUBLIC EXHIBITION - ALBION PARK RAIL BYPASS (SSI 6878)**

Thankyou for your request for comments on the Environmental Impact Assessment (EIS) for Albion Park Bypass (SSI 6678). We have reviewed those sections of the EIS relating to:

1. Flood risk management
2. Biodiversity assessment and offsetting
3. Aboriginal Cultural Heritage

Detailed comments are provided for each in the attachments provided, with recommended conditions of approval where relevant.

With regard to flood risk, we commend Roads and Maritime Service (RMS) on its efforts in assessing the flood risk management implications of the proposal and its initiatives to involve and inform the local community however there are elements of the EIS that warrant comment. We understand that the proposed road cannot be raised due to the height limitations associated with the Illawarra regional airport. However, this should not lead to the inflated reporting of flood design standards. Best practice in engineering and floodplain risk management practice incorporates a freeboard to account for uncertainties when discussing flood standards. Without the adoption or inclusion of a freeboard to determine the design level of the carriageways, the potential design standard of the road would be reduced from the anticipated 100yr ARI to 20-50yr ARI flood event based on the modelling provided for present day conditions and even less when climate change and cumulative development impacts are taken into account. Detailed comments on flood risk management are provided in Attachment A.

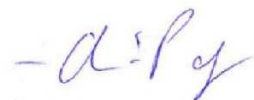
The Secretary's Environmental Assessment Requirements require that biodiversity assessment and offsets be assessed in accordance with the Framework for Biodiversity Assessment (FBA) and the NSW biodiversity assessment and offsets have been prepared with guidance from the Framework for Biodiversity Assessment, and the NSW Biodiversity Offsets Policy for Major Projects. We recognise this is the first application of this assessment framework for RMS in the region and some limitations with the assessment undertaken by NGH Environmental (October 2015) are outlined in the Attachment B. We hope these can be reviewed and amended.

OEH supports the use of anthropological research to identify the cultural heritage values within the study area. This research provided cultural and historical information on the broader cultural landscape of the region and has enriched the archaeological analysis. In general, we support the environmental

management measures proposed for Aboriginal heritage under section 10.5 in the EIS. Our detailed comments on the Aboriginal Cultural Heritage assessment are included in Appendix C.

If you have any further questions in relation to this matter, please contact Jedda Lemmon, on 42 244 176 or [jedda.lemmon@environment.nsw.gov.au](mailto:jedda.lemmon@environment.nsw.gov.au)

Yours sincerely



**CHRIS PAGE**  
**Senior Team Leader Planning, Illawarra**  
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Enclosures:

Attachment A – Flood Risk Management

Attachment B – Biodiversity Assessment and Offset Strategy

Attachment C – Aboriginal Cultural Heritage

## ATTACHMENT A: Flood Risk Management Comments

As the Albion Park Rail bypass is affected by flooding (changing flood behaviour both up and downstream), and be utilised by flood affected communities in times of flood crisis it should be considered in accordance with the NSW Government's Flood Prone Land Policy (Policy) as set out in the Floodplain Development Manual, 2005. The OEH notes that the RMS has sought and been provided technical advice on flood risk management issues associated with this proposal.

From a review conducted of EIS technical paper 3- Hydrology and Flooding (RMS, 2015), it is suggested DPE further consider and be satisfied that the following have been adequately addressed with relation to floodplain management:

- The impact of flooding on the proposed development. From the documentation available the inundation depths and durations of the road are not easily ascertained. It is suggested at key locations, the depths and duration of flooding over the road be provided for the full range of floods. This will not only assist DPE to understand the impact of flooding on the development but provide insight into the capacity of the new road to provide egress for current and future users including the local community and emergency management authorities in times of flood. Further advice regarding this issue should be sought from the SES.
- The impact of the proposed development on flood behaviour. It is evident that the bypass will increase flood affectation to a number of industrial, commercial, agricultural and residential properties as well as existing infrastructure. Whilst this occurs to a lesser extent for frequent floods, it is particularly evident for the 100 year ARI design flood event and above. This is an important consideration with context to the NSW Flood Prone Land Policy and Floodplain Development Manual and liabilities associated with adverse impacts. Where adverse impacts are identified, measures to offset these impacts should be explored for implementation as part of the project.
- The impact of the proposal on creek stability. The location and geomorphic nature of the watercourses are potentially affected by the proposal given the identified velocity changes however, there does not appear to be an adequate assessment of these impacts or how they will be managed. This may create issues regarding structural stability of crossings and bridges due to bed and/or bank erosion but may also have an adverse impacts on natural stream functions and flood behaviour. This should be further clarified in the EIS.
- The future impacts (cumulative development, climate change etc.) on the proposed design, flood behaviour and estimated flood levels. The 200 year and 500 year ARI design flood events provide a proxy indication of a 10% and 30% respective increase in rainfall intensity and thus the potential future impacts of and on the road. There is limited discussion as to how future adverse impacts of the proposal on flood behaviour will be managed.
- The impacts of blockage. This includes not only structure openings but auxiliary features such as railings and sound barriers which appear to have not been incorporated. The Illawarra has a long history of blockage affecting the hydraulic efficiency of waterway openings during floods and as such auxiliary features should be considered as they can create adverse flood impacts.

As raised on numerous occasions, reporting terminology such as 'flood immunity' without consideration of uncertainty creates false design expectations. It is understood the proposed road cannot be raised due to the obstacle limitation surface associated with the Illawarra regional airport however, this should not lead to the inflated reporting of flood design standards. Best practice in engineering and floodplain risk management practice incorporates a freeboard to account for uncertainties when discussing flood standards. Without the adoption or inclusion of a freeboard to determine the design level of the carriageways, the potential design standard of the road would be reduced from the anticipated 100yr ARI to 20-50yr ARI flood event based on the modelling provided for present day conditions and even less when climate change and cumulative development impacts are taken into account. Similarly the 50yr ARI design standard nominated for Duck Creek without freeboard may also be reduced to approximately 10-20yr ARI standard for present day conditions. As a result the reporting should incorporate freeboard provisions when

referring to a flood design standard so as to not create any false expectations of road performance or design levels of “flood immunity” during times of flood.

As the functioning of the proposed road during flood events will become increasingly relied upon by emergency management authorities for evacuation, rescue, fire and medical emergency, it is considered prudent that any opportunity to increase the road height and thus improve flood immunity should be pursued during the detailed design stages. OEH remains unaware of any joint RMS meeting with key flood planning and emergency response authorities (e.g. DPE, OEH, Councils, SES, Health, Police, Ambulance, Fire etc) regarding the planning of road requirements for local communities in times of extreme flood as previously recommended. This recommendation remains in place so as to facilitate appropriate flood access strategies for existing and future communities in this part of the Illawarra Region.

OEH remains available to provide further advice to DPE and RMS on flood risk management matters for this proposal if required.

## **ATTACHMENT B: Biodiversity Assessment and Offsetting**

To comply with the Framework for Biodiversity Assessment (FBA) and Major Projects Policy we recommend the following amendments be made to the biodiversity assessment and offsetting components of the project. Some additional measures are also sought to compensate for impacts to the Croom Voluntary Conservation Agreement.

### *Fauna survey*

Regarding the two bats, Large-eared Pied Bat and Grey-headed Flying-fox, that were recorded on site and added as species credit species, more justification is required for their removal from the assessment. Currently there is no justification provided. Section 9.3 of the FBA does not provide for the opportunity to remove species found on site. However, due to the current issues with the tool, inability to add ecosystem species and knowledge of the habitat on site, OEH is prepared to evaluate such a justification during the transitional period of the FBA. This justification should form an explicit component of the BAR and include discussion, at minimum, on the following points:

- Estimated size of the local population or presence of the species in the locality (for example Wildlife Atlas and ALA records) and how the project records relate to this.
- Extent of habitat for the species in the locality (foraging and roosting).
- Amount of habitat to be lost – to justify the current comment within the BAR of “no adverse impact”.
- The overall likely impact on the species (considering biology etc).

Discussion regarding the geographic feature in the tool relating to Large-eared Pied Bat of *land north of Batemans Bay in the Bateman CMA subregion* should not be included. This relates to the Bateman CMA subregion and the current project is in the Illawarra CMA subregion where there are no geographic restrictions. Presumably this has occurred as a result of another issue with the tool. This information on species geographic restrictions for subregions is freely available on the species profiles on the OEH website. <http://www.environment.nsw.gov.au/threatenedSpeciesApp/profile.aspx?id=10157>

### *Vegetation Survey*

There are several problems with the vegetation survey component:

- Five vegetation zones have had site data duplicated or manufactured in the Biodiversity Assessment Report (BAR). The use of benchmark, or manufactured data does not comply with Section 5 of the FBA.
- Section 5.2.1.7 of the FBA requires % foliage cover scores be collected at the development site plots. This is used in the site value score. Many sites are missing % foliage cover scores on field data sheets, we now understand that this was because some sites were completed before the FBA commenced. In future, site data should be collected to fully demonstrate compliance with the FBA.
- There are some inconsistencies between site scores reported in the credit calculator, and the field survey sheets. For example some spurious scores include 100% weed cover, which is an unlikely

field situation, and in some instances not supported by the raw field survey data sheets submitted (site MR1). This should be amended in the site value scores.

We note that during the transitional implementation period the Major Projects Policy allows for a flexible approach to deal with any practical implementation issues. With this in mind, we seek that the vegetation survey data be completed in accordance with the FBA for three of the five vegetation zones missing field survey data. The zones requiring offsetting need to meet the prescribed survey requirements; SR669 Woollybutt – White Stringy Bark- Forest Redgum, and SR536 Coastal Freshwater Lagoons. We also seek that the survey requirements for Forest Redgum – Thin-Leaved Stringybark be complied with to justify its exclusion as a Threatened Ecological Community, given the extent of impact to this type.

This will require that the amended site data is used in a revision of the credit calculations. We recommend amending the BAR report to explicitly address that the acceptance of manufactured data in this instance is generally not supported, and has only been accepted by OEH for some vegetation zones in this assessment because they do not require offsetting, and the extent of impact is very limited. Completing the survey requirements for the other two outstanding zones in this instance would add additional cost for no material benefit.

#### *Landscape Score - Linear assessment module*

The approach to assessing perimeter area ratio needs to be amended to comply with the FBA. In the current BAR, patches that are not impacted have been included. For example Patch A includes several polygons which are not affected. This may have been an artefact of how these polygons were classified as 'multipart features' in GIS. We have provided technical advice on correcting this assessment on the 11<sup>th</sup> November. The amended score should be updated in the credit calculator.

#### *Impacts to Croom VCA*

The Biodiversity Assessment Report states that 0.22ha of land within the Croom Voluntary Conservation Agreement (VCA) will be impacted, constituting 1% of the VCA area. The proposed use of Croom Reserve as an offset site is not a preferred option by OEH. The land is already reserved and in an in-perpetuity agreement this means that 'additionality' will apply as described at clause 4 of the Biobanking Regulation and section 7.2, meaning there will be significant credit discounts at this site to offset existing management obligations. OEH also has further funding earmarked for this site, which may incur further discounts to credits from this site.

Whilst the direct impacts of the above are included in the offset calculations, OEH seeks that RMS provide additional funds to compensate offset the impacts of this by:

- Funding the amendments to the existing Conservation Agreement. This will involve ecological and spatial survey, preparing documentation for Ministerial approval and registering the new area on land title (expense estimated at \$20,000).
- Provide additional management funds to manage any indirect impacts arising from adjoining construction and improve the conservation area.

#### *Biodiversity Offset Strategy (BOS)*

While the Offset strategy does identify a range of potential sites for offsetting, it does not resolve the proposed offset sites or mechanisms for offsetting into these sites to the standard specified by the FBA and Major Projects Policy. We recognise that RMS are currently in negotiations with a number of landholders to resolve offset options. We request that the BOS be resolved in consultation with OEH to comply with the standard specified within the FBA and Major Projects Policy to identify:

- a. The properties that will be secured, how they will be secured and when they will be secured.
- b. Written agreement from the landholder that the land will be made available for this purpose
- c. The credits from the market that will be secured.
- d. Where credits are to be secured from the market, written agreement from the credit holder to commit these credits for this purpose.

- e. Where negotiations are not finalised, the BOS should identify remaining candidate offset sites in the priority order in which they will be secured and timeframes within which negotiations will be completed or terminated.

#### *Recommended conditions of approval*

The comments above highlight that some amendments to the Biodiversity Assessment Report and Biodiversity Offset Strategy are required. However, we highlight recommended conditions of consent to consider when these matters are resolved.

- Costs incurred by any amendments to the Croom VCA be funded by the RMS.
- Prior to the commencement of construction the RMS shall implement the approved Biodiversity Offset Strategy to fulfil the specified number and type of credits required (yet to be refined in an updated BOS).
- The development must comply with conditions relating to on site measures specified in the Biodiversity Assessment Report.
- That fencing be erected to protect areas of cultural sensitivity in the Macquarie Rivulet area, and all areas of native vegetation during the construction.

### **ATTACHMENT C Aboriginal Cultural Heritage**

#### Aboriginal Cultural Heritage detailed comments

1. OEH supports the recommendation for an Aboriginal Heritage Management Plan (AHMP) to be developed in conjunction with the Construction Environment Management Plan. OEH recommends that the AHMP is prepared in conjunction with OEH and the RAPs.
2. We support the proposed reburial of the retrieved artefact assemblage from all stages of archaeological investigation at one location. However, we recognise this is dependent on the results of the salvage excavation and the wishes of the community.
3. We support the salvage excavation of YTOF AS 4 and YTOF AS 5 and the methodology that provides flexibility regarding the total area excavated at each site.
4. We endorse the recommendation to use high visibility fencing to protect sites during construction work. However, given the cultural sensitivity of the Macquarie Rivulet area, we request that the portions of the cultural area that exists outside the construction footprint are fenced off, not just old growth eucalypt as described in management measure AH03.