



Office of
Environment
& Heritage

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Mr Kane Winwood
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Transport Assessments
NSW Department of Planning and Environment
GPO Box 39
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Attention: Belinda Scott

Dear Mr Winwood

**The Northern Road Upgrade between Mersey Road, Bringelly and Glenmore Parkway,
Glenmore Park - Critical State Infrastructure Development (SSD 7127)**

I refer to your letter of 16 June 2017 inviting comments from the Office of Environment and Heritage (OEH) on the above Critical State Infrastructure Development proposal.

OEH has reviewed the Environmental Impact Statement supporting the proposal and provides the attached comments in relation to biodiversity and floodplain risk management.

If you have any queries regarding this matter, please contact Richard Bonner on 9995 6917.

Yours sincerely

S. Harrison 08/08/17

SUSAN HARRISON
Senior Team Leader Planning
Greater Sydney

Office of Environment and Heritage comments on The Northern Road Upgrade between Mersey Road, Bringelly and Glenmore Parkway, Glenmore Park - Critical State Infrastructure Development (SSD 7127)

Biodiversity

OEH has reviewed the draft Biodiversity Assessment Report (BAR) prepared in accordance with the Framework for Biodiversity Assessment (FBA) and provides the following comments and recommendations.

Credit Calculator

- Vegetation Zone 8 has been described in the BAR and entered into the Credit Calculator as Plant Community Type (PCT) 806 (HN627) '*Derived grasslands on shale hills of the Cumberland Plain (50-300m asl)*'. This derived PCT has no benchmarks or estimated percent cleared in the Catchment Management Area (CMA) available in the NSW Vegetation Information System (VIS) Classification Database or the Credit Calculator. Derived PCTs can only be used where the assessor has been unable to determine the original PCT (FBA, s. 5.2.1.11). According to Sections 3.1.2 and 3.2 of the BAR, the assessor has identified the original vegetation as PCT 850 (HN529) '*Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion*'. Information is therefore required supporting the view that PCT 850 is the likely original PCT. Following this, OEH can advise on the next steps with respect to PCT selection and benchmarks for the assessment of Vegetation Zone 8 plot data.
- Benchmarks for HN528 and HN529 should be 1 and 50 m for '*Number of Trees with Hollows*' and '*Fallen Logs*' respectively. These benchmarks should be updated manually in the Credit Calculator with a note made in a revised BAR. It should be noted these updates are based on OEH advice and do not constitute the use of '*More Appropriate Local Data*'.
- There are at least nineteen inconsistencies with plot/transect data entered in the Credit Calculator when compared to the values provided in Appendix A of the BAR (in particular values for '*Native Plant Species*'). It is recommended a copy of all raw field data sheets be provided to OEH for review and to determine whether the values in Appendix A (or the Credit Calculator) are correct.
- Plot 31 for '*Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion – Moderate/Good*' has not been entered in to the Credit Calculator. Although the respective vegetation zone already exceeds the minimum number of plot/transects required, Table 3.1, Section 3.2 and Appendix A of the BAR indicate that Plot 31 was utilised. It is recommended the Credit Calculator be corrected to include Plot 31 or reference to it be removed from the revised BAR.

PCTs

- The legend of Figure 3.1 (Vegetation survey locations) refers to HN528 as being in '*low*' condition, however, Table 3.2 and the credit calculator, HN528 is in '*Moderate/Good*' or '*Moderate/Good_Poor*' condition. There also seems to be some duplication of PCT names in the legend of Figure 3.1. It is recommended these errors be addressed in the revised BAR.
- Table 6.1 (Summary of biodiversity values assessed under the FBA) is missing the area of impact (4.68 ha) for vegetation zone 4 (PCT 849), meaning the total of 6.67 ha shown for '*Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion*' should be 11.35 ha. It is recommended this error be addressed in the revised BAR (it is understood vegetation zone 4 is later excluded (Section 8 of the BAR) from further assessment due to having a site value score of <17).

Threatened species

- Species credit species *Pultenaea pedunculata* (Matted Bush-pea) was predicted by Credit Calculator for survey but has not been included in the BAR. It is recommended this species be addressed in the revised BAR.

- It is unclear why the habitat assessment table for threatened fauna species in Appendix B does not include the number of Atlas records in the 'Number or records' column. It is recommended this information be included in the revised BAR.
- The BAR and Biodiversity Offset Strategy (BOS) refer to the Grey-headed Flying-fox as an ecosystem credit species. It is, however, both an ecosystem and species credit species. OEH understands while no impact to camps (species credits) have been identified and that therefore no species credits are required for the Grey-headed Flying-fox, it is recommended the revised BAR and BOS make this clear.

GIS shapefiles

- The GIS shapefile (CD_TNREISVegetationZonesJacobs_20170110_V03) for native vegetation cover does not include all the areas mapped as native vegetation. OEH accepts the exclusion of derived native grassland where the original PCT had a woody over-storey, however, it is unclear why other areas of native vegetation identified as being in moderate-good condition have been excluded. It is recommended justification for the exclusion of these areas in accordance with the FBA be provided, or the native vegetation cover shapefile be amended and appropriate recalculations be made to address the missing areas in the revised BAR.

Avoidance of impacts

- The BAR does not adequately detail the measures taken to avoid impacts to Cumberland Plain Woodland and River-flat Eucalypt Forest as well as areas of habitat for the *Marsdenia viridiflora* subsp. *viridiflora* endangered population, *Pultenaea parviflora*, Regent Honeyeater and Cumberland Plain Land Snail in accordance with the FBA [sections 8.3.1.3(a) or 8.3.1.3(c)]. It is recommended these matters be addressed in the revised BAR.

Biodiversity Offset Strategy

- Impacts to two entities are identified in the BAR as requiring further consideration: Cumberland Plain Woodland and Regent Honeyeater. The additional information required by the FBA (s9.2.4 and s9.2.5) has been provided and considered by OEH. In accordance with s9.2.1.1(c) of the FBA, OEH considers the loss of approximately 29.15 ha moderate/good condition Cumberland Plain Woodland (including 1.25 ha in high condition), and associated indirect impacts resulting from fragmentation, to be unacceptable without the implementation of additional offsets (above those already calculated), supplementary measures or other actions. It is recommended the BOS be updated, in consultation with OEH, to address this matter. OEH is satisfied with the number of Regent Honeyeater credits calculated and to be provided to offset impacts to this species' habitat; no additional offsets, supplementary measures or other actions are required for this species.
- Sections 3.7 and 3.9 of the BOS identifies that no credits are available to meet the respective 2,021 and 1,400 credit offset requirements for the Regent Honeyeater and *Marsdenia viridiflora* subsp. *viridiflora* - endangered population, but that land may be available (for future creation of credits) via an expression of interest on the BioBanking Public Register. OEH recommends further information be provided detailing the measures that will be taken to secure the required credits for these species. It should be noted that variation rules are not available for Critically Endangered species.
- OEH is aware that the Department of Defence will need to clear vegetation to provide vehicle access along the inside of the new fenceline in some parts of the project. OEH considers any clearing of vegetation required a consequence of the project which should be addressed in the assessment of impacts. It is unclear if this has occurred. If not, an adjustment to the calculations of offset credits will be necessary prior to the approval of the BOS.
- The BAR notes that surveys were constrained by property access. It should be noted that threatened species surveys for these areas will need to be completed (and new calculations performed, if necessary) prior to the finalisation of the BOS.

Floodplain risk management

OEH has reviewed the two Technical Working Papers: Flood Risk Assessment (Appendix K) and provides the following comments regarding the impacts of the project on existing properties and pastoral lands, residual impacts after the implementation of proposed mitigation measures and scour risk.

- Appendices C and D (of the Mulgoa to Glenmore Park Technical Paper) provide comparisons of peak flows which show increase in peak flows (5% to >100%) in affected areas in frequent events such as 2 and 10 year ARI and the 1% AEP event. It is indicated these increases are acceptable as the affected areas are limited to undeveloped pastoral lands. OEH highlights that increasing the peak flows would result in more frequent inundation to affected pastoral lands which would increase damages and flood liability on owners of these lands. Similarly, Chapter 7 of the Technical Papers also shows significant increases in level of the PMF (up to 2m) which results in significant flood risk to undeveloped pastoral lands. OEH recommends the impact of the project on flood damages and emergency management planning be assessed and consulted with land owners and relevant councils in the early stage of the planning.
- Significant increases in level of the PMF would also affect four existing dwellings resulting in over floor flooding (D1 to D4 as shown in Figure 7.27). Two of these dwellings, being D3 and D4, are not flood affected in existing conditions. The Technical Paper recommends the level of the road be lowered where it crosses Badgerys Creek to limit the impacts of the project to two of the abovementioned dwellings (D1 and D2 as shown in Figure 7.30) and limit the increase in over floor flooding to 0.2 m. OEH recommends this be investigated in more detail and considering:
 - whether the road is being and will be used as a flood evacuation route.
 - whether the road will be trafficable in flood events up to 500 year ARI.
- Table 7.1 provides summary of residual impacts of the project after the implementation of proposed mitigation measures on catchment hydrology and hydraulic. The Technical Papers adopt an approach of relying on potential increase in vegetation growth due to the increase in the runoff volume to mitigate the scour risk. OEH does not support this approach and recommends that, where there is a risk of scour, identified measures, such as planned vegetation management, be proposed and implemented. The implementation of appropriate streambank vegetation measures is essential in reducing ongoing erosion, sedimentation and impact on waterway health.

[END OF SUBMISSION]