



Our Ref: DOC19/782608

Your Ref: SSI 7666

Mr Glenn Snow
Director Transport Assessments
Department of Planning, Industry and Environment
GPO Box 39
Sydney NSW 2001

Attention: Mr Michael Young

Dear Mr Snow

RE: Environmental Impact Statement - Coffs Harbour Bypass (SSI 7666)

Thank you for your e-mail dated 6 September 2019 about the assessment of impacts for the Coffs Harbour Bypass project (SSI 7666) seeking comments from the Biodiversity and Conservation Division (BCD) of the Environment, Energy and Science Group in the NSW Department of Planning, Industry and Environment on the Environmental Impact Statement (EIS) for the project. I appreciate the opportunity to provide input.

The Roads and Maritime Services (RMS) is seeking approval for the proposed Coffs Harbour bypass, which lies to the immediate west of Coffs Harbour in northern NSW. Approval for the project is being sought under the State Significant Infrastructure provisions of Section 5.2 of the *Environmental Planning and Assessment Act 1979* (EP&A Act 1979).

In addition, we understand the project has been identified as a controlled action by the Commonwealth Department of the Environment and Energy. Hence our response also includes consideration of Matters of National Environmental Significance (MNES) listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) in accordance with the *EPBC Assessment Bilateral Agreement (2015)*.

We have reviewed the documents supplied, including the EIS including the *Pacific Highway Upgrade Coffs Harbour Bypass Aboriginal Cultural Heritage Assessment Report* (ACHAR) prepared for Arup Pty Ltd by Kelleher Nightingale Consulting Pty Ltd (July 2019) and the Biodiversity Assessment Report (BAR) prepared by Biosis Pty Ltd dated July 2019.

The matters considered by the BCD when assessing adequacy in accordance with relevant state-based legislation are discussed in detail in **Attachment 1** to this letter and with respect to MNES are in **Attachment 2** to this letter.

For the Aboriginal Cultural Heritage assessment, the BCD recommends the inclusion of a cultural salvage component within Section 9 'Impact Assessment and Mitigation Strategies', Section 10 'Management Outcomes' and Appendix E Salvage Excavation Methodology, and continued consultation with the Registered Aboriginal Parties, particularly for the management of potential burials that may occur within the project boundary.

For the flooding assessment, given it has been superseded and the updated documents not available for our review, we seek an opportunity to review the final assessment once it has been submitted.

For the biodiversity assessment, we have identified several issues and omissions within the Biodiversity Assessment Report (BAR). As such, we have documented our detailed requirements for additional information and amendments to the BAR to ensure that the assessment complies with the Framework for Biodiversity Assessment (FBA) in relation to:

- a. The assessment of landscape features
- b. Mapping native vegetation extent on the development site
- c. Identifying native Plant Community Types and ecological communities
- d. The survey and assessment of threatened flora and fauna species
- e. Thresholds for the assessment and offsetting of unavoidable impacts of the development
- f. The biodiversity offset strategy

The issues and omissions identified within the BAR are also relevant to the EPBC Act – MNES. We anticipate the rectification of the issues identified for the FBA assessment contained within the BAR may result in amendments to the assessment conducted for the MNES, particularly in relation to the quantum of offsets required.

Please note that we have also provided preliminary biodiversity comments to you in our letter dated 3 October 2019 that also require resolution.

We would be happy to work closely with the proponent and their consultants to help them address the matters that we have raised in this submission and our previous letter.

If you have any questions about this advice, please do not hesitate to contact Ms Nicky Owner, Senior Conservation Planning Officer, at nicky.owner@environment.nsw.gov.au or 6659 8254.

Yours sincerely

 30 October 2019

DIMITRI YOUNG
Senior Team Leader Planning, North East Branch
Biodiversity and Conservation

Enclosures:

Attachment 1: Detailed BCD Comments – Coffs Harbour Bypass (SSI 7666) – relevant NSW statutory matters

Attachment 2: Detailed BCD Comments - EPBC Act - MNES Assessment – Coffs Harbour Bypass (SSI 7666)

Attachment 1: Detailed BCD Comments – Coffs Harbour Bypass (SSI 7666) – relevant NSW statutory matters

A. Aboriginal Cultural Heritage

The Biodiversity and Conservation Division (BCD) of the Department of Planning, Industry and Environment (DPIE) has reviewed the *Pacific Highway Upgrade Coffs Harbour Bypass Aboriginal Cultural Heritage Assessment Report* (ACHAR) prepared for Arup Pty Ltd by Kelleher Nightingale Consulting Pty Ltd (July 2019), including the *Coffs Harbour Bypass Project Aboriginal Cultural Values Assessment Report v.7* prepared for Arup Pty Ltd by Walters Consultancy (July 2019) and the draft minutes of the Coffs Harbour Bypass Aboriginal Focus Group (AFG) dated 23 September 2019 and provide the following comments for consideration.

We note five specific intangible sites of Aboriginal cultural significance have been identified within the study area and its immediate surrounds. We further note the consultation and assessment undertaken to date has resulted in refinement of the design and adjustments to the construction footprint to avoid impact to one of the those culturally significant sites and reduce the area of impact to two others. The inclusion of tunnels through Roberts Hill and Shephards Lane ridgelines to minimise impacts on the Aboriginal cultural landscape and to avoid severing the pathways has alleviated many of the issues previously expressed by the Registered Aboriginal Parties (RAP)s. The RAPs in their role as local Aboriginal knowledge-holders and custodians voiced their aspirations to maintain the cultural and environmental pathway continuity.

We acknowledge the consultation and design process also resulted in the total avoidance of impact to tangible Aboriginal sites and potential archaeological deposits in some locations and in a reduction to partial impact in other areas. However, the RAP's have still expressed concerns over the limited amount of subsurface testing that was undertaken to inform any mitigation and management recommendations.

The ACHAR provides details in Section 9 'Impact Assessment and Mitigation Strategies' and Section 10 'Management Outcomes' for the known 24 sites identified within the project boundary that will be harmed by the proposal.

Table 11 on page 54 of the ACHAR is entitled 'Aboriginal archaeological sites with no further archaeological mitigation required'. But, the Section 9.4 heading states 'No cultural /archaeological mitigation required'. The text under the heading and above the table states "No archaeological mitigation is required for the sites in Table 11. Sites may only be impacted after project approval is obtained." We consider the title of Section 9.4 to be misleading as it does not actually detail any consideration of cultural mitigation as supported by the RAPs for the sites included in Table 11.

Therefore, we support the RAPs' request for the inclusion of "grader scrapes", which is also referred to in the documentation as "cultural salvage", to provide an opportunity for community collection by the RAPs of any unearthed Aboriginal cultural objects prior to construction, as part of the mitigation and management. The opportunity for cultural salvage through grader scrapes to allow for the RAPs to undertake community collection of subsurface material exposed, should be provided in any "Cultural Area" identified by the green colour in the documentation provided, that lies within the approval boundary and where ground disturbance is proposed. The cultural salvage community collection proposed by the RAPs would need to occur as part of the initial land clearing and prior to any other project impacts.

To address this matter, we support the actioning of *Outcomes/actions #5* from the draft AFG Meeting Minutes of 23 September 2019 to include 'grader scrapes', also known as cultural salvage, as a possible mitigation measure in the ACHAR for those areas identified in consultation with the RAPs. It could be addressed by including a new 'Section 9.5 Cultural mitigation required' and an appropriate associated table. Both Section 9.2 'Mitigation through archaeological salvage excavation' and Section 9.3 'Mitigation through collection of surface artefacts' should also include an opportunity for cultural salvage following the completion of those archaeological actions, if it is triggered by RAP cultural query.

In Section 10 'Management procedures', we recommend rewording of Point 4 under Section 10.1 'Management Policy for Aboriginal Cultural Heritage' to include cultural salvage.

For the *Conservation of salvaged Aboriginal objects* detailed as Points 12 – 15 of Section 10.1 'Management Policy for Aboriginal Cultural Heritage', the BCD does not support the removal of Aboriginal objects from their area of origin without the support of the RAPs. Therefore Point 14 relating to placing Aboriginal objects in the Australian Museum or Point 15 relating to placing with Kelleher Nightingale Consulting Pty Ltd for their long-term management is not supported. BCD would prioritise a Care Agreement application received from the RAPs to the project. We would also support the reburial of the Aboriginal objects by the RAPs, at a safe location (preferably within the approved project boundary), if the RAPs express a preference for long-term management in this manner.

The BCD is aware of RAP representatives concern for currently unidentified Aboriginal burials to be present in certain landforms within the project area. We recommend that the cultural mitigation measures and management outcomes negotiated with the RAPs are included in Section 9 'Impact Assessment and Mitigation Strategies', and in Section 10 'Management Outcomes', to address the potential for this occurring, as the EIS clearly states that the project does not have approval to impact on human remains.

BCD Recommendation:

1. The ACHAR should be amended to:
 - a. Include a cultural salvage component within Section 9 'Impact Assessment and Mitigation Strategies', Section 10 'Management Outcomes' and Appendix E Salvage Excavation Methodology of the ACHAR.
 - b. Require continued consultation with the RAPs, particularly for the management of potential burials that may occur with the project boundary.

B. Flooding

The RMS held an Agency Briefing for the Coffs Harbour Bypass Project on 19-20 September 2019 in Coffs Harbour. The Flooding and Hydrology session held on 20 September was presented by the Mr Peter Borrelli of RMS.

Mr Borelli informed the audience, which included the BCDs Senior Floodplain Officer Mr Martin Rose, that additional work had been undertaken on flooding issues since the Environmental Impact Statement (EIS) for the proposed bypass was completed and that flooding work is ongoing.

As such, the Flooding and Hydrology section contained within the EIS is out of date. As a result, discussions were held between the BCD and RMS following the 20 September 2019 presentation during which the RMS proposed ongoing meetings between the relevant government agencies, where the RMS committed to providing the latest flood information and then allowing the agencies to collaborate and work through the relevant issues.

Therefore, comments are unable to be provided on the likely flooding issues associated with the Coffs Harbour Bypass at this time.

BCD Recommendation:

1. The amended Flooding and Hydrology information and assessment for the proposal should be referred to the BCD for comment once it is finalised.

C. Biodiversity Assessment – prepared in accordance with the NSW Framework for Biodiversity Assessment

The BCD has reviewed the Biodiversity Assessment Report (BAR) prepared by Biosis Pty Ltd dated July 2019, in accordance with the NSW Biodiversity Offsets Policy and its underlying Framework for Biodiversity Assessment (FBA).

We have identified several issues and omissions in the BAR, all of which are discussed in the following sections of this attachment.

Stage 1 – Biodiversity assessment

Chapter 3 - Introduction to Stage 1

Section 3.1.1.1 of the FBA allows for a draft version of Stage 1 of the BAR to be provided to the former OEH (now BCD) for consultation prior to the applicant proceeding to Stage 2.

It is unfortunate that this consultation did not occur, given the scale and complexity of the project. Early consultation is likely to have resulted in the resolution of many of the issues, omissions and inconsistencies that we have identified within the BAR.

Chapter 4 - Assessing landscape features

The BAR has not identified the presence of the regionally significant biodiversity links outlined in the Northern Rivers Regional Biodiversity Management Plan, published by the Department of Environment, Climate Change and Water and approved by the Chief Executive in 2010.

BCD Requirement:

1. The regional fauna corridor identified in the Northern Rivers Regional Biodiversity Management Plan must be included as a regional biodiversity link in the BAR.

All other landscape features appear to have been addressed appropriately.

Chapter 5 - Assessing native vegetation

5.1 - Mapping native vegetation extent on the development site

Of critical importance in accurately quantifying the likely impact of the proposed project on biodiversity, Sections 5.1.1.1 and 5.1.1.2 of the FBA require the extent of native vegetation within the development site to be mapped onto digital aerial photography and on the site map.

The FBA defines the 'development site' as 'an area of land that is subject to a proposed Major Project that is under the EP&A Act'.

However, the assessors refer alternatively to the 'subject site' or 'construction footprint' rather than the required 'development site'. The BAR includes the assessor's definition of the 'subject site' - *the area that will be impacted by construction of the project through native vegetation clearing, temporary soil disturbance, waterway/wetland crossings and ancillary works of facilities.*

This effectively means that only the impacts within the construction footprint have been assessed. Consideration must also be given to any anticipated impacts in immediately adjacent areas, including indirect impacts, such as edge effects including weed and pathogen incursion into newly exposed vegetated areas and watercourses, light spill and downstream water quality impacts from runoff.

BCD Requirements:

2. The area of the development site must not be restricted to the area of construction footprint, rather, it must include areas that are likely to be subject to indirect impacts.
3. The development site must be revised to extend to a distance determined in consultation with the BCD either side of the construction footprint to ensure indirect impacts are assessed and offset.
4. The extent of native vegetation within the revised development site must be displayed on aerial photography and on the site map.

5.2.1 Identifying native PCTs and ecological communities

Whilst it appears the designation of forest Plant Community Types (PCTs) has been determined appropriately, freshwater wetlands (including vegetation growing within farm dams) do not appear to have been mapped and assessed.

BCD Requirement:

5. Any areas of freshwater wetland within the development site must be mapped and assessed, and the results presented in the BAR.
6. Any freshwater wetlands identified must be assessed to determine whether they align with the freshwater wetland on coastal floodplains endangered ecological community (EEC) determination.

Furthermore, the mapping of the extent of native vegetation present across the development site is incomplete. Mapping appears to have excluded several areas of regrowth and/or weedy native vegetation, examples of which are illustrated below, as identified within the black polygons.

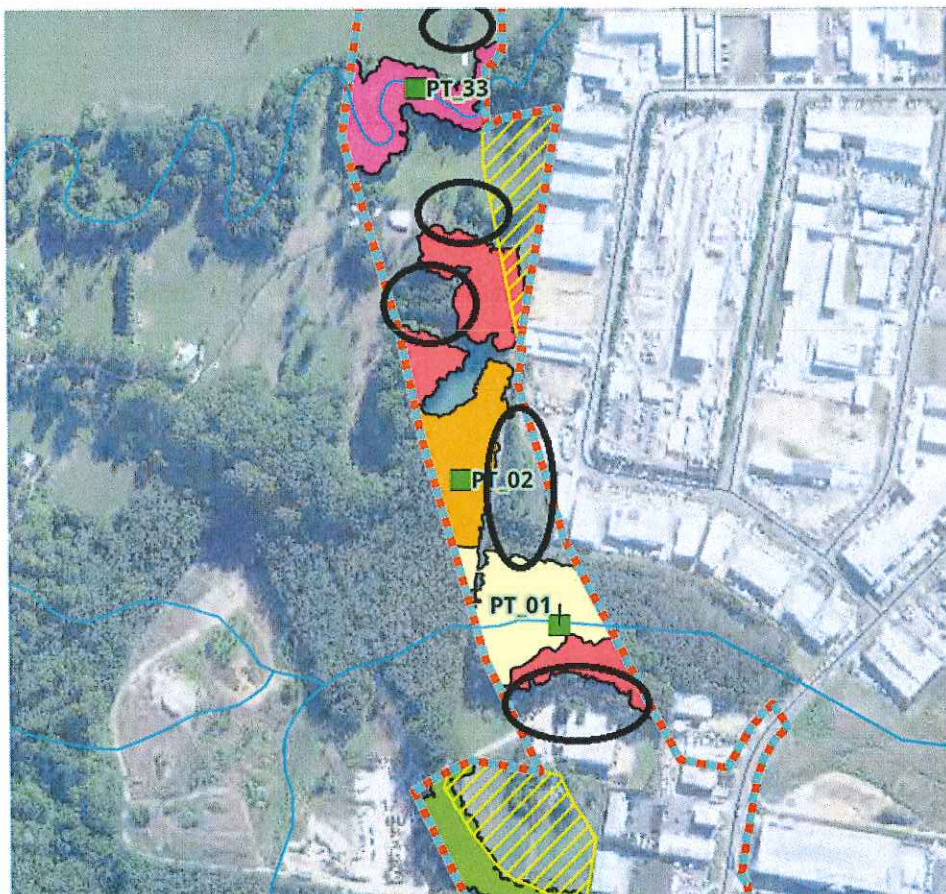


Figure 1 – example of native vegetation excluded from assessment. (Source – Figure 5.2 of BAR)

BCD Requirements:

7. All remnants of vegetation that contain native species within the revised development site, including areas that appear to be weed-infested, must be mapped and assessed in accordance with the FBA. This is to include areas adjacent to the construction footprint, for a distance determined in consultation with the BCD either side of the development (construction) footprint.
8. The mapping and assessment of PCTs is to include the allocation of the appropriate PCT.
9. The assessor must consider that any changes to the extent and types of native vegetation identified as occurring within the development site will also likely result in changes to the extent of habitat available to threatened species and must make those changes.

Chapter 6 - Assessing threatened species and populations

6.5 Steps for identifying species credits (flora)

Step 2 – Identify candidate species for further assessment - flora

Table 4.2 within the BAR documents the candidate flora species credit species for which a determination of presence within the development site is required, as per section 6.5.1.9 of the FBA.

Our review indicates that insufficient justification has been provided for excluding the following species predicted by the BioBanking Credit Calculator (BBCC):

- Needle-leaf Fern *Belvisia mucronate*
- Red-flowered King of the Fairies *Oberonia titania*

In addition, although only listed as critically endangered on the schedules of the *Biodiversity Conservation Act 2016* on 1 February 2019, given the suitability of habitat within the development site, the native guava (*Rhodomyrtus psiloides*) will also need to be considered as a candidate species in relation to the Coffs Bypass due to the effect of Clause 31 of the *Biodiversity Conservation (Savings and Transitional) Regulation 2017*, which states:

'For the purposes of the application of the former planning provisions in accordance with this Part, any change under the new Act to the listings of threatened species and ecological communities is taken to be a corresponding change to the listings under the Threatened Species Conservation Act 1995 referred to in the former planning provisions.'

BCD requirements:

10. Given the presence of suitable habitat and the known or likely occurrence of needle-leaf fern, red-flowered king of the fairies and native guava within the Coffs Coast and Escarpment IBRA subregion, these species must be considered as candidate species for the FBA.

Step 3 – Determine whether the candidate species is present - flora

BCD requirements:

11. The presence of needle-leaf fern, red-flowered king of the fairies and native guava needs to be determined in accordance with section 6.5.1.9 of the FBA either by targeted survey, assumed presence or expert report.

We also note that the list of flora recorded on site and documented in Appendix 1 of the BAR indicates that the critically endangered scrub turpentine (*Rhodamnia rubescens*) was recorded in three sampling plots across the development site (plots 17, 29 and 36).

BCD requirements:

12. Given the recording of this critically endangered species, the scrub turpentine must be assessed further to determine the extent of this species across the development site, where suitable habitat exists. This assessment can be undertaken by either assuming the species is present, undertaking a targeted survey, or by obtaining an expert report.

Threatened flora survey

The BAR states that the targeted flora survey undertaken was consistent with the NSW Guide to Surveying Threatened Plants, but this is not clearly reflected in the survey methods documented. The methodology presented in the BAR should be sufficiently descriptive to demonstrate whether the surveys satisfies the requirements of the FBA and its supporting guidelines.

We would anticipate that given the variety of flora taxa considered likely to occur, a variety of field survey techniques would have been deployed. For example, while the use of parallel field traverses would be appropriate for detecting rusty plum, they would need to be supplemented with additional methods to enable the detection of cryptic or small species, such as the brown-fairy chain orchid.

It is unclear as to whether all areas containing potential habitat for candidate flora species were sampled three times as implied by the BAR, or whether targeted surveys over the development site were undertaken in three separate survey periods.

BCD requirements:

13. The BAR must to be revised to:

- a. provide a detailed description for how the threatened plant survey guidelines were implemented.
- b. include maps used to identify areas of potential habitat at the development site for each flora species targeted from which the field survey plan was developed, as per the guidelines.
- c. provide evidence of the field survey plan.
- d. describe the field survey techniques utilised for each species targeted.
- e. specify the timing of targeted surveys.
- f. include a description of the extent, scope and timing of the surveys undertaken for each threatened flora species targeted.

Threatened flora species recorded:

In addition to the recording of scrub turpentine, as outlined in the BAR, the southern swamp orchid (*Phaius australis*) and rusty plum (*Neimeyara whitei*) were also recorded at the development site.

Despite the provision of a relevant symbol for the southern swamp orchid on Figure 9.2, the location where the orchid was recorded is not shown.

Furthermore, without knowing the date the species was observed and whether the species was identified whilst in flower, we are of the view that the recording of the southern swamp orchid is questionable. If not in flower, it is easy to confuse the southern swamp orchid with the far more common and widespread Christmas orchid (*Calanthe triplicata*).

BCD Recommendation:

14. The BAR must specify the date the southern swamp orchid was recorded and whether the specimen observed was in flower.
15. If available, a photograph of the southern swamp orchid observed in the field should also be included in the BAR.
16. If sought, the results obtained from the National Herbarium of NSW following a request for species identification should also be included.

6.5 Steps for identifying species credits (fauna)

Step 2 – Identify candidate species for further assessment - fauna

The BCD is of the view that inaccurate justification has been provided for the removal of the following animals from the list of candidate fauna species:

- Pale-headed Snake
- Rufous Bettong
- White-crowned Snake
- White-eared Monarch
- Southern Pink Underwing Moth

We are of the view that it is likely that suitable habitat is present for these species within the development site, and additionally, records exist for all the species listed above within the IBRA subregion.

BCD Requirements:

17. Accurate justification must be provided for the removal from the list of candidate fauna species of pale-headed snake, rufous bettong, white-crowned snake, white-eared monarch and southern pink underwing moth.
18. If accurate justification cannot be provided for the species in recommendation 17 above, then these fauna species credit species must be assessed as candidate species. As such, the assessor must determine whether the species are present within the development site in accordance with section 6.5.1.9 of the FBA by either assuming the species is present, by undertaking a threatened fauna survey, or by obtaining an expert report.
19. The BAR must document the timing of the relevant surveys so these can be assessed against the timing requirements specified in the Threatened Species Profiles Database.

Threatened fauna survey

Like the comments provided in relation to targeted flora surveys, the BAR simply state that fauna surveys have been undertaken in accordance with the relevant survey guidelines. The methodology presented in the BAR should be sufficiently descriptive to demonstrate whether the fauna surveys satisfy the requirements of the FBA and its supporting guidelines for each fauna species targeted.

BCD requirements:

20. The BAR must be revised to provide a detailed description of how the threatened fauna survey guidelines were implemented.

Although the BAR states that some effort was made to detect the common planigale within the development site using Elliott traps and camera traps, given the species is highly cryptic, trap-shy and has a broad distribution across a variety of habitat types, detection of the common planigale requires intensive survey effort, including the use of pitfall trapping. The use of pitfall trapping for

detecting small mammals is set out within the Draft Threatened Biodiversity Survey and Assessment Guidelines (dated 2004).

BCD Requirements:

21. Given pitfall traps have not been used across the development site, the assessor must establish whether the common planigale is present on site by either assuming the species is present, by conducting further surveys utilising pit fall traps or obtaining an expert report in accordance with Section 6.5.1.9 of the FBA.
22. Should the option of further surveys be pursued, the following are required:
 - a. Prior to field survey, the development site must be stratified to determine the most likely locations of planigale habitat into which pitfall lines should be established. Stratification must be determined based on the presence of ecotonal areas, on fire and logging history, type of groundcover, proximity to riparian areas, topographic position in the landscape including aspect, presence of exfoliating rocks and areas with deep leaf litter and other preferred habitat features.
 - b. The subsequent survey must be sufficiently robust to demonstrate, with a high degree of confidence that common planigales are present or absent on the development site. Therefore, surveys would require one line of five 400 mm deep pitfall buckets for each hectare of planigale habitat, with individual pitfall buckets spaced at 4m to 5m apart, with a drift fence between them composed of a material which resists the climbing of small mammals and which is buried up to 5cm into the soil. The drift fence must also extend beyond the last pitfall bucket at each end of the pitfall line to at least 5m. Pitfall traps must remain in place for a minimum of four nights.

Threatened fauna species recorded

Table 4.11 and Appendix A of the BAR identify white-bellied sea-eagle as an ecosystem credit species. However, this is an error. For the purposes of the FBA, the white-bellied sea-eagle is a dual credit species.

Given the white-bellied sea-eagle has been observed on site by both accredited assessors conducting field surveys and by BCD Senior Conservation Planning Officer, Ms Nicky Owner (also an accredited assessor), further assessment of the potential for breeding sites (i.e. the species credit components of this species dual credit status) to occur within the development site is required.

BCD Requirements:

23. It is a requirement of section Section 6.5.1.9 of the FBA that the presence of the white-bellied sea-eagle breeding locations be determined by either assuming the species is present, by conducting relevant surveys or obtaining an expert report.
24. Should the survey option be pursued, surveys should be undertaken between June and November to detect nesting sites. These are usually live large old trees within 1km of rivers, lakes, large dams or creeks, wetlands and coastlines along with a large stick nest within the tree canopy. In addition, evidence of the presence of breeding animals can include an adult with nest material, or adults observed duetting within the breeding period.
25. Due to the similarities in nest structure and use of the same nests by white-bellied sea-eagles and Wedge-tailed Eagles, where a nest is observed without a bird present, searches for prey remains/feathers below the structure should be undertaken. The differing diets of both species and distinctive adult feathers, should provide evidence of nest use, however; where prey items/feathers are absent, repeat visits to the nest until a bird is observed should be undertaken.

The recording of the green-thighed frog (*Litoria brevipalmata*) in the Kororo Nature Reserve is significant due to the lack of nearby records for this species. In addition, the vegetation types and habitat present in the reserve are generally inconsistent with other sites where the species has been confirmed.

BCD requirements:

26. The BAR must be amended to clearly state the date of survey during which the green-thighed frog was recorded.
27. If available, a photo of the green-thighed frog individual/s caught in the field must be included within the BAR.

We note that the olive whistler was recorded (by direct observation and call) at the eastern base of Red Hill. We query the recording of the olive whistler within the development site, as this species generally only occurs along riparian corridors at higher altitudes on the tableland and escarpment areas, rather than at or close to sea level or near the coast. Historically, within the Coffs Harbour local government area, this species has been recorded very rarely, and primarily within the Eastern Dorrigo escarpment area where it was last recorded in 1994.

However, because this species is an ecosystem credit species, its recording is unlikely to be a significant determinant in the calculation of ecosystem credits required, given its relatively low offset multiplier.

We have also identified several questionable fauna observations included in the list of 'Fauna species recorded within the study area' at Appendix A of the BAR. These questionable records are for the following species:

- Large toadlet (*Pseudophryne major*) was identified based on its call. However, this species is not known from the Coffs Coast and Escarpment IBRA subregion, rather, it primarily occurs in Queensland and the very far north of NSW.
- Northern toadlet (*Uperoleia borealis*) was identified based on its call. However, this species is only known from the region extending between the northern parts of the Northern Territory and Western Australia.
- Green-backed Gerygone (*Gerygone chloromata*) was identified by direct observation. However, this species only occurs in the far north of the Northern Territory and Western Australia.
- Grey Currawong (*Strepera versicolor*) was identified by observation. This species rarely occurs north of the Central Coast of NSW.

BCD Requirements:

28. Confirmation of whether the abovementioned species occur within the development site is required and the BAR amended as required.
29. Should the northern toadlet and/or the green-backed gerygone be confirmed to be present, these are highly significant range extensions, and their presence in NSW of very high importance, and the BAR should consider the impacts of the proposal on these species.

If it transpires that these are errors made by the assessors, then this would be unfortunate as it can undermine confidence in the capabilities of the assessors and the veracity of the biodiversity assessment undertaken for the Coffs Harbour Pacific Highway Bypass.

Step 5 – Prepare species polygon

We note that the BAR has determined the extent of koala polygons based on records of koalas and on the area of habitat intersected by koala movement corridors. However, not only does Section 6.5.1.17 of the FBA require polygons to include the locations of the species or areas occupied by the species, it also requires polygons to contain the specific habitat features or habitat components associated with that species on the development site.

BCD Requirement:

30. The extent of the koala species polygons must include the full extent of those PCTs that are likely to provide koala habitat, as per the Threatened Species Profiles Database.

Table 1 below identifies those PCTs confirmed by the BAR to be present within the development site, and that are we have identified as being likely to support koala habitat, including feed trees, as per the TSPD:

Table 1 – Total area of PCTs within the development site known to provide habitat for koala (as per TSPD)

PCT Number	Total area (in hectares) of PCT within the development site
692	15.4
695	10.48
1244	0.94
747	5.83
1064	3.65
1262	1.62
1285	3.03
Total	40.95

This area will likely change following inclusion of unmapped areas of native vegetation, and vegetation that exists within areas to be assessed for indirect impacts either side of the development footprint.

Stage 2 – impact assessment (biodiversity values)

The information provided within Stage 2 of the BAR will require amendment following rectification of errors and omissions in Stage 1 of the BAR. These amendments will also require updates to be made to the BioBanking Credit Calculator so that the credit requirement can be recalculated.

Chapter 8 - Avoid and minimise impacts on biodiversity values

The BCD is of the view that the project has sought to avoid and minimise impacts. The corridor selected for the construction of the bypass, and the suite of measures proposed to avoid and minimise impacts, including the construction of tunnels at Robert's Hill ridge, Shephards Lane and Gately's Road, will substantially reduce the biodiversity impacts of the construction of the Coffs Harbour Bypass, when compared to other route options originally considered, and the once proposed cut and cover tunnel construction method.

It appears that several measures and strategies to minimise the impact of the development on biodiversity values will be implemented via a comprehensive Threatened Species Management Plan.

Chapter 9 - Thresholds for the assessment and offsetting of unavoidable impacts of the development.

The BAR does not properly document whether the construction of the bypass will impact the vegetation occurring within 20 metres either side of the unnamed tributary of Newports Creek (4th order stream) or Pine Brush Creek (5th order stream), other than stating '*the project will not substantially reduce the width of vegetation in the riparian zone bordering rivers or streams 4th order or higher*'. This is required by section 9.2.3 of the FBA.

Given the proposed construction of bridges over the unnamed creek and Pine Brush Creek and the anticipated realignment of those water courses, we would anticipate more than an insubstantial impact, as indicated by the BAR.

BCD Requirement:

31. Describe, with accuracy, the anticipated impact of the project, including the construction of the proposed bridges and the realignment of the unnamed creek (tributary of Newports Creek) and Pine Brush Creek, on riparian vegetation as required by section 9.3.2 of the FBA.

Impacts on certain species and populations.

In giving further consideration to certain species and populations, the flora surveys recorded the scrub turpentine (*Rhodamnia rubescens*) at three locations within the development site. However, the species has not been identified within the BAR as being critically endangered. This species has been listed due to the observed effects of the spread of myrtle rust, which is causing the population of scrub turpentine to collapse over its entire range.

BCD requirement:

32. The BAR must document all matters stipulated at section 9.2.5.2 in relation to scrub turpentine.

Furthermore, in relation to the pale-vented bush-hen which was also recorded within the development site, given it has been previously recorded (multiple times) within the Coffs Coast and Escarpment IBRA subregion, as determined from examination of Bionet records, no further consideration is required for this species.

BCD requirement:

33. Delete the assessment prepared for the pale-vented bush-hen from the BAR.

9.3 Impacts for which the assessor is required to determine an offset requirement

BCD Requirement

34. The total number of ecosystem credits and species credits required to offset the impact of the proposed bypass will need to be recalculated following fulfilment of the above listed BCD requirements. This will necessitate significant amendments to the BAR and the re-running of the BioBanking Credit Calculator.

9.3.1 Impacts on native vegetation

While direct impacts of the construction of the proposed Coffs Harbour Bypass are considered in the BAR, a proposal to offset the indirect impacts is absent.

BCD Requirement:

35. The likely extent of indirect impacts must be quantified using the BioBanking Credit Calculator. Our preferred approach for this is by identifying the vegetation types and zones within a corridor width determined in consultation with the BCD adjacent to both sides of the alignment, then using the calculator to calculate a credit requirement based on a reduction in the future condition score of those vegetation zones also determined in consultation with the BCD.

Stage 3 – Biodiversity Offset Strategy

We have reviewed the biodiversity offset strategy and can advise it is satisfactory in meeting the credit obligations identified to date.

However, we anticipate that the biodiversity credit obligations may change following the updating of the BAR and the credit calculations, following the implementation of the requirements identified in previous sections of this submission.

We also understand that the offset strategy is an iterative document that will be updated should detailed design of the footprint result in changes to the anticipated impacts to biodiversity. In addition, it will be necessary for the strategy to be updated as more information comes to hand regarding the securing of the required ecosystem and species credits.

D. Summary of BCD Recommendations and Requirements

1. The Aboriginal Cultural Heritage Assessment Report should be amended to:
 - a. Include a cultural salvage component within Section 9 'Impact Assessment and Mitigation Strategies', Section 10 'Management Outcomes' and Appendix E Salvage Excavation Methodology of the ACHAR.
 - b. Require continued consultation with the RAPs, particularly for the management of potential burials that may occur with the project boundary.
2. The amended Flooding and Hydrology information and assessment for the proposal should be referred to the BCD for comment once it is finalised.
3. The regional fauna corridor identified in the Northern Rivers Regional Biodiversity Management Plan must be included as a regional biodiversity link in the Biodiversity Assessment Report (BAR)
4. The area of the development site must not be restricted to the area of construction footprint, rather, it must include areas that are likely to be subject to indirect impacts.
5. The development site must be revised to extend to a distance determined in consultation with the BCD either side of the construction footprint to ensure indirect impacts are assessed and offset.
6. The extent of native vegetation within the revised development site must be displayed on aerial photography and on the site map.
7. Any areas of freshwater wetland within the development site must be mapped and assessed, and the results presented in the BAR.
8. Any freshwater wetlands identified must be assessed to determine whether they align with the freshwater wetland on coastal floodplains endangered ecological community (EEC) determination.
9. All remnants of vegetation that contain native species within the revised development site, including areas that appear to be weed-infested, must be mapped and assessed in accordance with the FBA. This is to include areas adjacent to the construction footprint, for a distance determined in consultation with the BCD either side of the development (construction) footprint.
10. The mapping and assessment of PCTs is to include the allocation of the appropriate PCT.

11. The assessor must consider that any changes to the extent and types of native vegetation identified as occurring within the development site will also likely result in changes to the extent of habitat available to threatened species and must make those changes.
12. Given the presence of suitable habitat and the known or likely occurrence of needle-leaf fern, red-flowered king of the fairies and native guava within the Coffs Coast and Escarpment IBRA subregion, these species must be considered as candidate species for the FBA.
13. The presence of needle-leaf fern, red-flowered king of the fairies and native guava needs to be determined in accordance with section 6.5.1.9 of the FBA either by targeted survey, assumed presence or expert report.
14. Given the recording of this critically endangered species, the scrub turpentine must be assessed further to determine the extent of this species across the development site, where suitable habitat exists. This assessment can be undertaken by either assuming the species is present, undertaking a targeted survey, or by obtaining an expert report.
15. The BAR must to be revised to:
 - a. provide a detailed description for how the threatened plant survey guidelines were implemented.
 - b. include maps used to identify areas of potential habitat at the development site for each flora species targeted from which the field survey plan was developed, as per the guidelines.
 - c. provide evidence of the field survey plan.
 - d. describe the field survey techniques utilised for each species targeted.
 - e. specify the timing of targeted surveys.
 - f. include a description of the extent, scope and timing of the surveys undertaken for each threatened flora species targeted.
16. The BAR must specify the date the southern swamp orchid was recorded and whether the specimen observed was in flower.
17. If available, a photograph of the southern swamp orchid observed in the field should also be included in the BAR.
18. If sought, the results obtained from the National Herbarium of NSW following a request for species identification should also be included.
19. Accurate justification must be provided for the removal from the list of candidate fauna species of pale-headed snake, rufous bettong, white-crowned snake, white-eared monarch and southern pink underwing moth.
20. If accurate justification cannot be provided for the species in recommendation 17 above, then these fauna species credit species must be assessed as candidate species. As such, the assessor must determine whether the species are present within the development site in accordance with section 6.5.1.9 of the FBA by either assuming the species is present, by undertaking a threatened fauna survey, or by obtaining an expert report.
21. The BAR must document the timing of the relevant surveys so these can be assessed against the timing requirements specified in the Threatened Species Profiles Database.

22. The BAR must be revised to provide a detailed description of how the threatened fauna survey guidelines were implemented.
23. Given pitfall traps have not been used across the development site, the assessor must establish whether the common planigale is present on site by either assuming the species is present, by conducting further surveys utilising pit fall traps or obtaining an expert report in accordance with Section 6.5.1.9 of the FBA
24. Should the option of further surveys be pursued, the following are required:
 - a. Prior to field survey, the development site must be stratified to determine the most likely locations of planigale habitat into which pitfall lines should be established. Stratification must be determined based on the presence of ecotonal areas, on fire and logging history, type of groundcover, proximity to riparian areas, topographic position in the landscape including aspect, presence of exfoliating rocks and areas with deep leaf litter and other preferred habitat features.
 - b. The subsequent survey must be sufficiently robust to demonstrate, with a high degree of confidence that common planigales are present or absent on the development site. Therefore, surveys would require one line of five 400 mm deep pitfall buckets for each hectare of planigale habitat, with individual pitfall buckets spaced at 4m to 5m apart, with a drift fence between them composed of a material which resists the climbing of small mammals and which is buried up to 5cm into the soil. The drift fence must also extend beyond the last pitfall bucket at each end of the pitfall line to at least 5m. Pitfall traps must remain in place for a minimum of four nights.
25. It is a requirement of section Section 6.5.1.9 of the FBA that the presence of the white-bellied sea-eagle breeding locations be determined by either assuming the species is present, by conducting relevant surveys or obtaining an expert report.
26. Should the survey option be pursued, surveys should be undertaken between June and November to detect nesting sites. These are usually live large old trees within 1km of rivers, lakes, large dams or creeks, wetlands and coastlines along with a large stick nest within the tree canopy. In addition, evidence of the presence of breeding animals can include an adult with nest material, or adults observed duetting within the breeding period.
27. Due to the similarities in nest structure and use of the same nests by white-bellied sea-eagles and Wedge-tailed Eagles, where a nest is observed without a bird present, searches for prey remains/feathers below the structure should be undertaken. The differing diets of both species and distinctive adult feathers, should provide evidence of nest use, however; where prey items/feathers are absent, repeat visits to the nest until a bird is observed should be undertaken.
28. The BAR must be amended to clearly state the date of survey during which the green-thighed frog was recorded.
29. If available, a photo of the green-thighed frog individual/s caught in the field must be included within the BAR.
30. Confirmation of whether the abovementioned species occur within the development site is required and the BAR amended as required.
31. Should the northern toadlet and/or the green-backed gerygone be confirmed to be present, these are highly significant range extensions, and their presence in NSW of very high importance, and the BAR should consider the impacts of the proposal on these species.
32. The extent of the koala species polygons must include the full extent of those PCTs that are likely to provide koala habitat, as per the Threatened Species Profiles Database.

33. Describe, with accuracy, the anticipated impact of the project, including the construction of the proposed bridges and the realignment of the unnamed creek (tributary of Newports Creek) and Pine Brush Creek, on riparian vegetation as required by section 9.3.2 of the FBA.
34. The BAR must document all matters stipulated at section 9.2.5.2 in relation to scrub turpentine.
35. Delete the assessment prepared for the pale-vented bush-hen from the BAR.
36. The total number of ecosystem credits and species credits required to offset the impact of the proposed bypass will need to be recalculated following fulfilment of the above listed BCD requirements. This will necessitate significant amendments to the BAR and the re-running of the BioBanking Credit Calculator.
37. The likely extent of indirect impacts must be quantified using the BioBanking Credit Calculator. Our preferred approach for this is by identifying the vegetation types and zones within a corridor width determined in consultation with the BCD adjacent to both sides of the alignment, then using the calculator to calculate a credit requirement based on a reduction in the future condition score of those vegetation zones also determined in consultation with the BCD.

Attachment 2: Detailed BCD Comments - EPBC Act - MNES Assessment – Coffs Harbour Bypass (SSI 7666)

Under the bilateral agreement made in accordance with the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the Biodiversity Conservation Division (BCD) of the Department of Planning, Industry and Environment (DPIE) assists the Planning and Assessments Group of DPIE in determining whether the assessment requirements for Matters of National Environmental Significance (MNES) have been addressed and verifies whether the Framework for Biodiversity Assessment (FBA) has been applied appropriately.

1. Identifying Matters of National Environmental Significance.

All threatened species listed under the EPBC Act that are known or likely to occur, including those species listed in the Australian Department of the Environment and Energy (DoEE) referral decision brief, have been identified in Appendix F of the Biodiversity Assessment Report.

The BCD considers the resources used by the assessors to derive the list of threatened species known or likely to occur on the development site to be appropriate.

2. Threatened species and communities likely to be impacted by the project

The BCD has identified several errors in the application of the FBA that are likely to affect the determination of the offset obligation for those threatened species recorded within the development site. This includes the failure to identify, map and assess all native vegetation within the development footprint, as well as vegetation occurring for a distance determined in consultation with the BCD either side of the development (construction) footprint (i.e. the parts of the development site where direct and indirect impacts are likely).

We have also identified numerous issues and omissions with respect to the carrying out of the necessary targeted surveys for the threatened species likely to occur on site.

As such, reassessment of various biodiversity values will be required, and substantial amendments to the BAR and the MNES assessment are likely to be necessary.

3. Assessment of relevant impacts

The types of direct impacts of the proposed bypass have been comprehensively addressed within the BAR.

4. Determination of the significance of the impacts.

The assessor has determined that the bypass project is likely to have a significant effect on the koala and the giant barred frog (*M. iteratus*) for which the BCD agrees.

Despite the DoEE determining that the bypass is likely to have a significant effect on the spotted-tailed quoll (as per Annexure A of the *Guidelines for preparing Assessment Documentation relevant to the Environment Protection and Biodiversity Conservation Act 1999*), the assessor has determined that the proposed bypass is unlikely to have a significant effect on the spotted-tailed quoll. The BCD agrees with the assessor's findings given the areas proposed to be affected by the bypass are unlikely to provide extensive high-quality habitat for the species, along with the proposed underpass structures that will allow for the continued movement of this species across the landscape. Despite this, because the development site does provide likely habitat for the quoll, and the quoll is an ecosystem credit species, ecosystem (PCT) offsets are required, and those offsets will include habitat for the spotted-tailed quoll.

In addition, the assessor has also determined that the bypass will not have a significant impact on the southern swamp orchid (*Phaius australis*) due to the assumption that the proposed translocation of the single specimen will be successful.

As documented in Attachment A of this submission, the BCD questions whether the specimen recorded is in fact the southern swamp orchid, given it is easy to confuse with the Christmas orchid (*Calanthe triplicata*) if the specimen was not in flower.

If the southern swamp orchid is verified to be present, and it is translocated, there is the risk that the plant will not survive the translocation process. Given the very small number of records for the species within the locality, should the translocation process be unsuccessful, this would result in a further reduction in the (already very small) total population occurring within the locality, and further risk of extinction of the plant within the IBRA subregion. As such, the BCD is of the view that the proposed translocation should be considered as a loss of this plant and that further consideration is required on whether the bypass will have a significant effect on the southern swamp orchid.

5. Avoidance and mitigation

The BCD is of the view that the project has sought to avoid and minimise impacts. The corridor selected for the construction of the bypass, and the suite of measures proposed to avoid and minimise impacts, including the construction of tunnels at Robert's Hill ridge, Shephards Lane and Gately's Road, will substantially reduce the biodiversity impacts of the construction of the Coffs Harbour Bypass, when compared to other route options originally considered, and the once proposed cut and cover tunnel construction method.

In addition, it appears that several measures and strategies to minimise the impact of the development on biodiversity values will be implemented via a comprehensive Threatened Species Management Plan. The BCD is satisfied with this approach.

6. Proposed biodiversity offsets

We have reviewed the offset strategy and can advise it is satisfactory in meeting the credit obligations identified to date.

However, the total number of ecosystem credits and species credits required to offset the impact of the proposed bypass will need to be recalculated following satisfaction of the BCD requirements outlined in Attachment A of this submission. The BCD requirements may necessitate significant amendments to the BAR and the re-running of the BioBanking Credit Calculator, along with likely amendments to the MNES assessment.

We also understand that the offset strategy is an iterative document that will be updated should detailed design of the footprint result in changes to the anticipated impacts to biodiversity. In addition, the strategy will also be updated as more information comes to hand regarding the securing of the required ecosystem and species credits.