Office of Environment & Heritage

Our Ref: DOC17/633491
Your Ref: SSD 8169

Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Attention: Ms Pamela Morales

Dear Ms Morales

Re: Environmental Impact Statement - State Significant Development 8169 and Modification 3 of the Major Project 09_0028 (Concept Plan) for the North Byron Parklands Cultural Events Site, Yelgun.

Thank you for your email dated 14 December 2017 about State Significant Development 8169 and Modification 3 for the North Byron Parklands Cultural Event Site (MP09_0028) seeking comments from the Office of Environment and Heritage (OEH). I appreciate the opportunity to provide input.

The OEH advises that the comments below relate to our statutory responsibilities for biodiversity (including threatened species, populations, ecological communities, or their habitats), Aboriginal and historic heritage, National Parks and Wildlife Service Estate, acid sulfate soils, flooding and estuary management.

On review of the *North Byron Parklands Cultural Events Site Environmental Impact Statement, prepared by PJEP Environmental Planning Pty Ltd and Planners North on behalf of North Byron Parklands, dated December 2017* (EIS) and appendices, we advise that no issues are evident for estuaries or flooding.

However, several issues are apparent for biodiversity, Aboriginal cultural heritage, National Parks and Wildlife Estate (Billinudgel Nature Reserve) and acid sulfate soils.

These issues are discussed in detail in **Attachment 1** to this letter.

The OEH advises that we have recommended both the provision of additional information, or revision of several technical documents supporting this proposal.

The OEH recommends that the applicant should:

1. Provide to the OEH the required Acid Sulfate Soils stratigraphic cross-sections located on pages 26-29 and the bore logs on pages 33-49 from the Technical Paper at a resolution that will enable appropriate review.

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2. Revise the Environmental Impact Statement and supporting Appendices to further assess impacts on the Billinudgel Nature Reserve and consider our recommendations 2a to 2g in Attachment 1 to this letter.

3. Revise the Biodiversity Assessment Report to accord with the Framework for Biodiversity Assessment for the development site and consider our recommendations 3a to 3i in Attachment 1 to this letter.

4. Provide in support of the Biodiversity Assessment Report, the digital shape files in accordance with the Framework for Biodiversity Assessment, and submit the BioBanking Credit Calculations to the OEH for review.

5. Revise the Koala Plan of Management to accord with the State Environmental Planning Policy 44 - Koala Habitat (SEPP 44) and '*The Directors Guidelines issued under Department of Planning Circular No. B35, dated 22 March 1995*' and consider our recommendations 5a to 5f in Attachment 1).

6. Provide the construction and operational documents to be drafted in accordance with the management actions outlined in the EIS for Aboriginal cultural heritage to the OEH for review.

Please note that the OEH has not provided comment on *Appendix M - The Assessment of Significance*, or reviewed in detail the *Likelihood Assessments for Threatened Flora and Fauna* as supplied in Appendices J, K and L as we acknowledge that changes may result due to our recommendations above. We request a further opportunity to review the EIS once our recommendations have been addressed.

If you have any further questions about this issue, Ms Rachel Binskin, Senior Conservation Planning Officer, Regional Operations, OEH, can be contacted on 6659 8247 or at rachel.binskin@environment.nsw.gov.au.

Yours sincerely

Dimitri Young 5 March 2018

DIMITRI YOUNG
Senior Team Leader Planning, North East Branch
Regional Operations

Contact officer: RACHEL BINSKIN
6659 8247

Enclosure: Attachment 1: Detailed OEH comments – SSD 8169 and MP 09_0028 Mod 3 for the North Byron Parkland, Yelgun

Attachment 1: Detailed OEH Comments – SSD 8169 and MP 09_0028 Mod 3 for the North Byron Parkland Festival Site, Yelgun

On review of the *North Byron Parklands Cultural Events Site Environmental Impact Statement, prepared by PJEP Environmental Planning Pty Ltd and Planners North on behalf of North Byron Parklands, dated December 2017* (EIS) and appendices, the Office of Environment and Heritage (OEH) provides the following comments relative to our statutory interests.

A. The proposed concept plan modification

On review of the proposed Concept Plan Modification for the MP09_0028, the OEH advises that if the issues expressed below regarding our statutory interests are addressed and the key performance indicators are established for Aboriginal cultural heritage and biodiversity, then no further comment is required.

B. Aboriginal cultural heritage

On review of Appendix O of the EIS, referred to as the '*Heritage Assessment for the SSD 8169 Permanent Cultural Event Site – North Byron Parklands Cultural Heritage Due Diligence Assessment Peer Review, Audit and Gap Analysis provided by Everick Heritage Consultants Pty Ltd, dated 26 October 2015*', we note the assessment included consultation with knowledge-holders and the assessment of Aboriginal cultural heritage for the proposal also included on-site inspection of areas already managed within the North Byron Parklands.

The OEH notes the proposal is located within a region of high cultural significance. However, providing the engagement with Aboriginal stakeholders to inform heritage management practices for the current proposal and all future changes to the project disturbance footprint continues, the OEH has no further issues for Aboriginal cultural heritage.

The OEH requests an opportunity to review the documents drafted in response to the management recommendations for Aboriginal cultural heritage listed in Section 6.8.3 (page 144) of the *North Byron Parklands Cultural Events Site Environmental Impact Statement, prepared by PJEP Environmental Planning Pty Ltd and Planners North on behalf of North Byron Parklands, dated December 2017* (EIS).

C. Acid Sulfate Soils

On review of the documents referred to within the EIS for Acid Sulfate Soils, we note key parts of that report, including the stratigraphic cross-sections located on pages 26-29 and the bore logs on pages 33-49 are unreadable due to lack of resolution in the reproduction.

The report referenced is the: '*Technical Paper M1 Acid Sulfate Soil Assessment – the Preliminary Acid Sulfate Soil Assessment Report for the North Byron Parkland Project and Concept Plan application at the North Byron Parklands site Wooyung, - An assessment of potential and actual acid sulfate soils, prepared by Matt Pocock and Nick Davison EAL Consulting Service in conjunction with the Environmental Analysis Laboratory, Southern Cross University, for: North Byron Parklands (C/- SJ Connelly CPP Pty Ltd), Dated 18 June 2010'.*

The OEH recommends that the applicant should:

1. Provide to the OEH the required Acid Sulfate Soils stratigraphic cross-sections located on pages 26-29 and the bore logs on pages 33-49 from the Technical Paper at a resolution that will enable appropriate review.

D. Billinudgel Nature Reserve

On review of the proposal relative to the Billinudgel Nature Reserve we advise that several issues have been identified relative to the reserve, from the current approval (MP09_0028) event operations and the proposal as set out below.

Human-related impacts

- An increase in unauthorised camping/activities associated with events held, and the potential for additional events and duration to increase incidents of unauthorised camping near the beach in the reserve, with associated unauthorised campfires causing higher bushfire risk, vegetation damage, littering and sanitation issues from inadequate human waste disposal.
- A substantial increase in human traffic, with people walking through the nature reserve trying to gain access to the festivals, and supplementary increases in rubbish and litter along the paths they use.
- Inadequacy of the security services contracted for the events, as they do not have the equivalent level of authority to enforce NPWS Regulations. The proposal will require the daily presence of NPWS staff to reduce impacts on the reserve.

Impacts on Wildlife

- Potential interruption to fauna migration patterns and usage of the identified wildlife corridor within the nature reserve. The should be further addressed in the proposed monitoring program.
- Increased noise and lighting impacting fauna in the reserve. The monitoring program should consider the impacts of noise and light on fauna in the reserve.
- Potential hydrological changes within the SEPP 14 Wetland with increasing development of the North Byron Parkland site. These relate to the changes in floristic composition, and impacts to sensitive wallum habitat, known to contain the wallum froglet *(Crinia tinnula)* and wallum sedge frog *(Litoria olongburensis)*. These species should be included in the monitoring plan and adaptive management strategy.
- Impacts on arboreal fauna. The reserve supports many hollow bearing trees near the development site, which may provide habitat for threatened arboreal species such as Squirrel glider *(Petaurus norfolkensis)* and Brush-tailed Phascogale (*Phascogale tapoatafa)*. These species should be included in the monitoring plan and adaptive management strategy.
- Section 6.7 of the EIS notes that the current ecological monitoring indicates that events operating under the existing approval have not resulted in any adverse impacts on the biodiversity of Billinudgel Nature Reserve. We advise, that the current monitoring within the reserve and relative to the interface shared with North Byron Parkland, and the species present remains limited to date and the statement is not justified.

Fencing

- Two different specifications are given for the proposed "Fauna friendly fencing". The temporary koala fencing has a 250mm gap above ground level and the permanent security fencing has other a 100mm gap. The reasoning behind either design is not provided. NPWS would like this clarified i.e. which height is designed to allow which fauna access and egress. In the absence of other data, NPWS favours a 250mm gap for both fences to allow larger fauna through e.g. echidna and northern brown bandicoot.

Soils and Sediment

- Erosion and sediment control measures should be applied during all elements of construction, and risks should be managed using standard best practice control measures. These measures are expected in both construction and operational use of the development site to address impacts on both the reserve interface, and downstream impacts on hydrology or environmental flows to

the reserve. The proponent should demonstrate in more detail how it will monitor and manage the reduction of sediment, pollution and run-off entering the SEPP14 wetlands in the reserve.

- Activation during construction and operation of soil contaminants especially as chromium and manganese, as these are found in high concentrations due to past land use practices also need to be addressed relative to the SEPP14 Wetland.

The OEH recommends that the applicant should:

2. Revise the Environment Impact Statement and relevant appendices to further assess the potential impacts of the proposal on the Billinudgel Nature Reserve by:
   a. undertaking consultation with the National Park and Wildlife Service (NPWS).
   b. considering the preparation of a strategy to address impacts on the reserve both known and arising, such as security, unauthorised activities, vegetation damage and pollution. The strategy could provide for a range of agreed management priorities to address, mitigate or manage impacts on the reserve.
   c. including key monitoring performance indicators relative to Billinudgel Nature Reserve and the State Environmental Planning Policy – Coastal Wetland (No.57).
   d. ensuring the Construction Environmental Management Plan, includes specific actions to protect the reserve and its values, refer to the Guidelines on OEH website; http://www.environment.nsw.gov.au/research-and-publications/publications-search/guidelines-for-developments-adjoining-land-managed-by-the-office-of-environment-and-heritage
   e. ensuring the Stormwater Assessment and Management Plan has addressed potential changes to hydrology and includes adequately designed stormwater and water quality systems to manage the discharge of water directly into the reserve, and via creeks which drain directly into the reserve.
   f. Providing a review of the proposed ecological buffers to the reserve, in consultation with NPWS, to address mitigation of indirect impacts. These buffers should be included within the Ecological Structure Plan.
   g. amending Appendix I of the Biodiversity Assessment Report to:
      i. include an assessment of the indirect (lighting, noise, and amenity) impacts known and likely to affect the reserve and outline mitigation measures specific to the reserve and the identification of appropriate mitigation measures.
      ii. consider the species and ecological communities of concern noted by NPWS, (koala, squirrel glider, brush-tailed phascogale, wallum froglet, wallum sedge frog, SEPP14 Wetland (Swamp Sclerophyll Forest)) as part of the revised BAR.

E. Biodiversity Assessment

Within our response below we refer to the '*Framework for Biodiversity Assessment dated 2014 NSW Office of Environment and Heritage'* (FBA) and the NSW *Threatened Species Conservation Act 1995* (TSC Act) which remains the relevant statutory framework for this proposal.

On review of the *North Byron Parklands Cultural Events Site Biodiversity Assessment Report, prepare for Billinudgel Property Pty Ltd by EcoLogical Australia, dated October 2017* (BAR), the following issues have been identified.

Framework for Biodiversity Assessment (FBA)

- The accredited assessor(s) are not identified in BAR.
- The relevant Act as noted above is the TSC Act, but the content of the BAR switches references between the TSC Act and *Biodiversity Conservation Act 2016* (BC Act).

- There appears to be some confusion with defining and depicting the development site and the development footprint for the proposal.
- We highlight that the development site excludes the land identified in Figure 1 of the BAR as the '*extent of proposed expansion of the Billinudgel Nature Reserve*'. This land is subject to MP09_0028 Approval and in the process of being transferred to National Parks and Wildlife as additions to the Billinudgel Nature Reserve.

Landscape Features

As required under *Section 4.1.1.8 Rivers, Streams and Estuaries* of the FBA, all rivers and streams that occur within the development site and their riparian buffers are to be identified. We advise that the buffers are not shown in *Figure 12 – SEPP14 Wetlands and Streams* nor are they discussed in Section 5.1.3 of the BAR.

On review of the BAR, we note that Section 5.1.4 states that the *'development site does not overlay with any SEPP 14 Wetland'* (State Environmental Planning Policy – 14 Coastal Wetland), however *Figure 4.5 Zoning Plan* in the EIS, shows the extent of the SEPP 14 wetland on the development site.

The SEPP 14 wetland is predominately located within Billinudgel Nature Reserve to the east and south of the site, and under the current MP09_0028 approval a designed wetland buffer of 30 metres (and up to 80 metres) is provided. We note that the design and management of this buffer area has been modified under the current proposal without justification in the BAR or the Ecological Structure Plan (Appendix B of the EIS).

Although no direct impacts are noted the proposal does have the potential to indirectly impact on the SEPP 14 wetland, particularly through changes to hydrological flow, runoff of sediment, nutrients and gross pollutants.

Native vegetation and Plant Community Types (PCTs)

In accordance with Section 5 of the FBA, the extent of native vegetation is to be identified over the development site. The vegetation extent and mapped PCTs appear to be limited to the development footprint. This limitation has a flow-on effect with respect to identification of threatened species, populations, ecological communities and their habitats potentially subject to impacts of this proposal. We advise, that;

- the full extent of native vegetation and habitats on the development site has not been assessed for this proposal, which does not accord with the FBA.
- biometric plot distribution over the development site appears not to have covered the full environmental variation present e.g. areas of rainforest present within the development site have been excluded.
- The allocation of PCTs and vegetation zones is to be justified in accordance with the FBA, and the BAR is expected to contain the analysis and reference of all floristic data use.
- PCTs with a similar broad condition state, under Section 5.2.2 of the FBA, are to be allocated into vegetation zones. We note that Table 10 – *Vegetation Zone size and the Number of Plots Required*, identifies PCT 755– Vegetation Zone 3 as a separate vegetation zones in a moderate-high condition with a bracketed low additional reference. We acknowledge that this aims to separate a PCT in an area that has been subject to rehabilitation works. The FBA however is clear on how vegetation zones are to be allocated, and an accurate condition assessment is to be undertaken for all PCT types present, irrespective of the level of rehabilitation.
- the Endangered Ecological Communities as listed Section 7.4, Table 12 and shown in the Figure 25 – *BC Act Endangered Ecological Communities* may be not be adequately identified for the development site as a number of PCTs associated with endangered ecological communities are currently excluded from the BAR.

Threatened Species and their habitat

Due to the issues expressed above in the identification of PCTs on the development site, we advise that the ecosystem and species credit species lists generated as part of the BioBanking Credit

Calculator (BBCC) may not be complete as they may not reflect the full range of biodiversity values present.

On review of the BAR, the following issues are identified:

- the *'associated PCTs'* assessed in *Table 13- Ecosystem Species Constraints*, has restricted the predicted species listed in Section 8.3.2 / Table 14 *Ecosystem Credit Species (ECS)*.
- The Species Credit Species (SCS) listed in Appendix J and Appendix L are derived from habitat present only within the development footprint. In many cases the justification provided on why the species is not considered for further assessment is due to the habitat not being present; this may be erroneous, as habitat is present within the development site and subject potentially to the clearing under the development footprint.
- Section 6.2 notes that the targeted survey for Hairy Joint Grass *Arthraxon hispidus* was undertaken on 6 June 2017, but we noted that winter is not an appropriate survey time for this species.
- If the BAR/BBCC are based on existing data to inform presence and absence of all the potential and candidate threatened species, then the BAR is to provide justification. We note the Table provided in Appendix L of the BAR, relies on targeted survey for threatened flora undertaken in 2009. We advise that due to the age of the data, it cannot be used without further site verification.
- The BAR has not identified known or potential habitat for any threatened flora or fauna, which may intersect with the development footprint of the proposal. Without identification of habitat or application of the species polygons in accordance with the FBA, impacts of the proposal cannot be predicted or assessed as they relate to the development footprint.

Mitigation and impact assessment

On review of the impact assessment we raise issues with the identification of potential direct, indirect and cumulative impacts of the proposal. These issues centre around the limitations of the PCT, habitat identification and identification of ecologically sensitive areas which retain high levels of biodiversity values and the impacts of changed hydrology, pollution, noise and lighting.

We do note that the BAR includes a range of mitigation measures to address known and potential indirect impacts of the proposal with the intent to reduce impacts to a deemed acceptable level, in Section 10 of the BAR. These mitigation measures are valuable and supported by the OEH, however the BAR should address how they will target identified ecologically sensitive areas (refer to recommendation 3e)

The BAR also remains limited in its assessment of the actual level of native vegetation clearing required for this proposal. Currently two clearing measures are provided in the BAR, one identifies about 300m^2 of vegetation clearing, while the other states 20 trees (+/- 10) will be removed for the conference centre. No information is provided on the plant community type or condition, habitat values or the potential for threatened species especially flora to occur in this area.

In addition, very little information is provided in the BAR, on potential impacts of infrastructure upgrades or construction of new facilities as listed in the EIS, including:

- electrical and communication distribution improvement works.
- expansions to the transport hub, spine road upgrades (widening and sealing).
- expansion of the sewerage management and disposal systems. This expansion of the onsite treatment and disposal systems for waste water and solids will require additional wastewater holding tanks and increases to the secondary wastewater treatment system in the north-western area of the development site. The system will involve on-site composting and use (buried in the north-western area) of solid waste, treated effluent disposal via effluent management areas, in the north-eastern corner of the development site.
- location, design, installation and maintenance of the proposed 4km security fencing along parts of the southern, western and northern boundaries of the event and camping area, to improve security at the events. The fencing which is to be a 2.1-metre-high metal palisade, with a 100mm gap appears to be located in areas of vegetation.

- location, design and construction of the artificial wetlands.
- hydrological impacts on Billinudgel Nature Reserve (SEPP 14 Wetland) with the implementation of stormwater drainage infrastructure for the development site.

On review of the BAR, and the remaining unmitigated (residual) direct impacts of the proposal, we advise that additional information is required as set out below:

- Removal of 14.8 hectares of marginal (exotic) grassland recorded as habitat for the Eastern Grass Owl. We advise, that additional information is required on this species and the habitat values of this area. Advice from a species expert should be obtained.
- The areas of the proposed conference centre and sewerage treatment systems. Figure 27 - *Location of previous threatened fauna records*, shows several threatened species recorded in both areas, including the koala, within or in the near vicinity of the development footprint. The identification of habitat present and/or species polygons is required under the FBA and to assist in determining impacts.

Monitoring

On review of Appendix G of the BAR *'North Byron Parklands: Flora and Fauna Monitoring Program and Adaptive Management Plan, prepared by Ecological Australia Pty Ltd, dated October 2017'*, we provide the following comments. In summary we acknowledge that the event impact monitoring for the North Byron Parklands has concluded that events have some temporary and minor impact on fauna and their habitat use over the development site, during the period of the event. The data to date has also indicated that once these factors cease to operate and the site returns to pre-event conditions, fauna presence and habitat values quickly return to baseline conditions.

The OEH advises that a complete review of the monitoring targets for North Byron Parkland needs to be undertaken in consultation with OEH after preparation of the revised BAR (Recommendations 3 and 4). It is agreed that a level of Event Impact Monitoring needs to occur, as well as a program of ecological assessment/data collection that will enable North Byron Parklands to report on Key Performance Indicators.

Ecological Structure Plan

On review of Figure 10 and Table 34 in Appendix C of the BAR against Section 6.7 Ecology (Figure 6.15) and Appendix B of the EIS several issues are apparent. The approved Ecological Structure/Restoration Plan is different from the Proposed Ecological Structure Plan and no explanation or justification is given on the changed land uses between the Figures provided in the BAR. Of concern are the areas transferred from habitat to managed parkland:

The OEH recommends;

3. the Biodiversity Assessment Report be revised to address:
    a. issues in the application of the FBA by:
        i. providing details of the accredited assessor(s) and their role.
        ii. reviewing the legislative references within the BAR, and ensure that they remain consistent with the *Threatened Species Conservation Act 1995*.
        iii. defining the development site in accordance with the FBA definition, as the '*area of land that is subject to a proposed Major Project that is under the Environmental Planning and Assessment Act 1979*' (EP&A Act) - we highlight that this area is shown in *Figure 1 - State Significant Development Application Area*.
        iv. defining the Development footprint and impact areas in accordance with the FBA to assist in impact assessment.

    b. the following landscape feature buffers to
        i. define and depict the riparian buffers for Yelgun Creek (Stream Order 4) and Billinudgel Creek (Stream Order 2) in accordance with Appendix 2 of the FBA.

ii. reapply an ecological buffer on the boundary of the SEPP 14 Wetland - this area is not to contain infrastructure or represent managed parkland. The existing requirement as set out by MP09_0028 approval is 30 to 80 metres from mapped SEPP 14 wetland - variation of this buffer will require justification within the BAR.

iii. prescribe the restoration and management of the riparian and SEPP14 wetland buffers within the Ecological Restoration Plan, and update *Figure 6.24 Proposed Ecological Structure Plan* accordingly.

c. issues with vegetation extent and plant community type identification by

i. reapplying *Section 5 Assessing Native Vegetation* of the FBA to all land within the development site.

ii. revising all PCTs and vegetation zones over the development site and map these accordingly. This should include areas of regeneration, especially those PCTs recorded as 100% complete in Appendix C of the BAR, Table 34.

iii. identifying all the endangered ecological communities present within the development site, and highlighting those present within the development footprint or immediately adjacent.

d. threatened species and their habitat in accordance with the FBA by

i. reapplying Section 6.3 of the FBA, *Steps for identifying ecosystem credit species on a development site*, and justifying the revised predicted species list in accordance with the PCTs present.

ii. reapplying Section 6.5 of the FBA, *Steps for identifying species credit species*, and providing a revised candidate species credit species list to identify known threatened species and those requiring further assessment.

iii. applying Section 6.6 of the FBA, *Undertaking a threatened species survey,* in accordance with the following guidelines found on the OEH website for those species requiring further assessment and on ground survey http://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/about-threatened-species/surveys-and-assessments/field-survey-methods

- *NSW Guide to Surveying Threatened Plants 2016 State of NSW & OEH*
- *Threatened species survey and assessment guidelines: field survey methods for fauna – Amphibians 2009 NSW Department of Environment & Climate Change.*
- *Field survey methods - Field survey methods for environmental consultants and surveyors when assessing proposed developments or other activities on sites containing threatened species.*

iv. including the field survey methodology applied to threatened species requiring further assessment in accordance with the FBA or highlighted as part of this response.

v. re-evaluating hollow bearing trees in accordance with the SEARs requirements. The existing data in the BAR identifies 44 hollow-bearing trees. The BAR states these hollow bearing tree are within 200 metres of the site boundary, however a percentage of the hollows as shown in Figure 28 *Hollow-bearing trees within 200m of the Development Site,* are recorded within the development site.

vi. assessing wildlife corridor functions across the development site, as part of Section 8, relative to the life cycle requirements of species such as the Koala.

e. ecologically sensitive areas by identifying these entities locations or landscape features within a separate Figure. This figure should show significant wildlife corridors, National Parks Estate, threatened species habitat, habitat features – hollow bearing trees, wetlands etc and endangered ecological communities. This Figure should be used to show how the mitigation measures are to be applied with the intent to ensure they remain relevant to areas identified for their ecological sensitivity.

f. direct and indirect impacts of the proposal based on the additional information acquired under Recommendations 3(a- d) above by

   i. reapplying Section 8.4 of the FBA, as it relates to recognised ecologically sensitive areas and highlight mitigation measures, include how will they be delivered, how will completion be measured, and what level of reporting is required.

   ii. Clearly outlining the residual direct impacts of the proposal, based on the development footprint.

   iii. reapplying Section 9 of the FBA to assess unavoidable impacts of the proposal and determine if an offset is required.

g. the inclusion of any offset requirements in a statement of commitments developed in consultation with OEH.

h. a complete review of the monitoring targets for North Byron Parklands in consultation with OEH after preparation of the revised BAR. Resubmission of Appendix G - North Byron Parklands: Flora and Fauna Monitoring Program and Adaptive Management Plan, will be required.

i. the ecological structure plan and ecological restoration plan revision to include the relevant amendments and additions as specified in recommendations 2, 3 and 5.

4. Provide in support of the Biodiversity Assessment Report:

   a. The digital shape files in accordance with s3.2.1.4 of the FBA, to assist in review of the data used to inform the BAR.

   b. The BioBanking Credit Calculations to support assessment. Please notify the OEH contact officer on submission.

Note: OEH has not provided comment on Appendix M - The Assessment of Significance, or reviewed in detail the Likelihood Assessments for Threatened Flora and Fauna as supplied in Appendices J, K and L as we acknowledge that changes may result due to our recommendations provide.

F. Koala Plan of Management

On review of the *'North Byron Parklands Koala Plan of Management (KPoM)'* prepared by Ecological Australia Pty Ltd, dated October 2017' and the supporting Appendix B (*North Byron Parklands SEPP 44 – Koala Monitoring Report to Billinudgel Property Trust, by Biolink, dated September 2016*), we provide the following comments.

We advise that the *Byron Coast Comprehensive Koala Plan of Management, 2015 Byron Shire Council*, the State Environmental Planning Policy 44 - Koala Habitat (SEPP 44) and '*The Directors Guidelines issued under Department of Planning Circular No.B35, dated 22 March 1995*', are referenced in order to provide legislative and regional context to the KPOM.

On review, we note:

- *Section 2.2 Koala Habitat* of the KPOM, provides only a very limited description of the koala habitat values over the subject land and the provided *Figure 1 Potential Koala Habitat*, has not included mapping over the development site.
- Sections 2.2.1/2.2.2 comments on both core and potential habitat over the development, however *Figure 2 Core Koala Habitat*, shows grid cells with '*where koala faecal pellet activity was recorded'* in 2016 by Biolink – Appendix B of the KPOM) and we also note that only high use areas are considered as part of the KPOM. The remaining field survey data and BIONET Atlas records remain absent from the assessment of core koala habitat.
- *Section 3 Conservation Outcomes* notes koala habitat enhancement over the development site, however no information is provided on how this relates to known areas of core or potential habitat.

- *Section 4 Potential Impacts and Threats*, addresses a number of threats and mitigation measures which are supported by OEH. We advise that the KPOM remains either silent or limited in addressing the following threats:
  - Fire management actions do not address fuel reduction or direct fire management for koalas or their habitat within the development site. Although we acknowledge that patron management is important in controlling unplanned and potentially life-threatening bushfires. The KPOM should address fire management relative to the long-term persistence of the koala population within the development site.
  - Pest management and the potential impacts of wild or roaming domestic dogs.
  - Wildlife corridors and local connectivity of habitat values, especially as it relates to the east-west movement and dispersal of koalas over the development site in relation to the impacts of the proposed fencing.
  - Other threats not considered under the KPOM that are associated with the proposal are noise, light and restriction of home ranges (or habitat use) and stress related factors, such as disease.

The OEH recommends;

5. Revising the Koala Plan of Management to include:
   a. an assessment of koala habitat over the development site to:
      i. identify potential and core koala habitat in accordance with the *Planning Circular No. B35* – Directors Guidelines.
      ii. provide a revised figure of koala habitat on the development site and identify habitat located within the development footprint.
      iii. Identify and map the wildlife corridors and links between habitat and known areas of koala occupation within the development site.
   b. an assessment of the following threats:
      i. Habitat loss, by identifying koala habitat within the development footprint and the level of direct impact and discuss the values of the habitat to be removed.
      ii. Fire management, with reference to the Byron Coast Comprehensive Koala Plan of Management which includes actions relevant to the development site and local area.
      iii. Wildlife corridor and local connectivity of habitat function disruption within the development site.
      iv. Pest management and the potential impacts of wild or roaming domestic dogs
      v. Noise, light and restriction of home ranges (habitat use) and stress related factors, such as increased incidence of disease.
   c. habitat restoration actions and targets represented by key performance indicators in the delivery of the KPOM. This action can be linked to the Ecological Restoration and Ecological Structure Plans of the Biodiversity Assessment Report and EIS respectively.
   d. the following suggested additions into Table 1 – Koala Monitoring Outcomes and Response.
      i. Koala parameters in addition to occurrence and level of activity to include breeding success and extensions of habitat use on the development site.
      ii. Habitat parameters in addition to condition (to benchmark of the PCT), including increased habitat extent and rehabilitation targets.
      iii. Triggers for koalas including absence, displaced / dis-orientated individuals, increase of diseased animals, vehicle strike and changes in habitat use.
      iv. Triggers for core koala habitat including eucalyptus dieback, floristic changes (decreasing eucalyptus abundance) in areas of core koala habitat.
      v. Measurable benchmarks for the triggers associated with habitat.

e. A revised Section 6 Monitoring program that addresses both event impact monitoring as well as long-term monitoring objectives for the koala on the development site, and as part of the local population.

f. Key performance Indicator(s) and a reporting structure.