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Your ref: SSI-22338205

Dr Mandana Mazaheri  
Principal Planning Officer – Energy and  
Resource Assessments  
Planning and Assessment Division  
Department of Planning and Environment  
[mandana.mazaheri@planning.nsw.gov.au](mailto:mandana.mazaheri@planning.nsw.gov.au)

Dear Dr Mazaheri

**Subject: Kurri Kurri Lateral Pipeline Project (SSI-223382505) – Review of Amendment Report**

Thank you for your e-mail dated 5 October 2022 in which the Planning and Assessment (PA) of the Department of Planning and Environment (the Department) invited Biodiversity and Conservation Division (BCD) for advice in relation to the 'Kurri Kurri Lateral Pipeline Project (SSI-223382505). This project occurs in the Cessnock City, Maitland City and Newcastle City local government areas. The proponent provided access to the Biodiversity Assessment Methodology calculator (BAM-C) file on 14 October 2022.

BCD has reviewed the Amendment Report (dated 29 September 2022) by Umwelt (Australia) Pty Limited, including the Revised Biodiversity Development Assessment Report (BDAR) (dated 29 September 2022) by Umwelt (Australia) Pty Limited, for this project in relation to site constraints from biodiversity. BCD also reviewed the BAM-C file. BCD's review of the biodiversity assessment for the project identified a number of matters, of which the main issues are:

- new areas of the subject land, following design refinements, have not been fully surveyed and thus not fully assessed in the revised BDAR
- minimum survey requirements for threatened fauna have not been demonstrated to have been met
- threatened surveys for all potential threatened plants have not been demonstrated to have been adequate.

BCD's advice around biodiversity has been grouped around issues that could affect credit yields, other matters relating to the requirements of the Biodiversity Assessment Methods (BAM) or other BDAR requirements and Matters of National Environmental Significance (MNES).

BCD's advice on flooding and water quality matters for this stage of the project remains unchanged from our letter dated 13 May 2022.

BCD's recommendations are provided in **Attachment A** and detailed comments are provided in **Attachment B**. If you require any further information regarding this matter, please contact Robert Gibson, Senior Regional Biodiversity Conservation Officer, via [huntercentralcoast@environment.nsw.gov.au](mailto:huntercentralcoast@environment.nsw.gov.au) or 02 4927 3154.

Yours sincerely

A handwritten signature in black ink, appearing to read 'S. Crick', with a stylized flourish at the end.

**STEVEN CRICK**  
**Senior Team Leader Planning**  
**Hunter Central Coast Branch**  
**Biodiversity and Conservation Division**

**24 October 2022**

Enclosure: Attachments A and B

## BCD's recommendations

### Kurri Kurri Lateral Pipeline Project (SSI-223380205) – Review of Amendment Report

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#### BDAR assessment

1. BCD recommends that the new areas of the Development Footprint, following recent design refinements, are fully assessed by the Biodiversity Assessment Method 2020, including the Biodiversity Assessment Method – Calculator. Include the details of the assessment, which follows the requirements of the BAM 2020, in the Response to Submissions Report.
2. BCD recommends that the proponent outlines the minimum survey effort for all threatened fauna species considered for this assessment and compares this with the survey effort done to date for each of those species. If any species has been inadequately surveyed then their lively presence on the site will need to be further assessed to meet minimum survey requirements. This may result in the BAM-C being re-run and additional credits required to be offset.
3. BCD recommends that the proponent provides information about vegetation density in relation to areas surveyed for threatened plants. Provide a statement about whether targeted surveys at 10-metre spaced transects met BCD's survey guidelines for all threatened plant species with potential to be on the subject land.
4. BCD recommends that details are provided in the Response to Submissions Report that demonstrate how survey effort meets at least the minimum survey effort for all species considered.
5. BCD recommends that a revised version of Table 2.1 is provided that identifies the PCTs associated with the candidate threatened plant species.
6. BCD recommends the proponent provides an updated copy of Table 5.2 in the Response to Submissions Report that matches the predicted flora species with the PCTs on the Subject Land.
7. BCD recommends the accredited assessor provides the GIS shapefiles used for maps in the BDAR.
8. BCD recommends the accredited assessor provides copies of the plot field data of the vegetation quadrats used for this assessment.
9. BCD recommends that Table 5.1 'Predicted ecosystem credit species' is revised to indicate whether all species listed require further assessment.
10. BCD recommends that information about additional landscape features, as described in the SEARs, are provided in the Response to Submissions Report.
11. The construction and operational footprints for the project must be clearly defined.
12. BCD recommends that the revised BDAR includes a discussion of the older vegetation maps of native vegetation on the subject land and how they compare with the mapping for the project.

13. BCD recommends that the revised BDAR includes a discussion of the older vegetation maps of native vegetation on the subject land and how they compare with the mapping for the project.
14. BCD recommends the proponent provides a new version of Figure 1.2, or a series of new maps that show the mapped extent of native vegetation for the Subject Land at no more than 1:10,000 scale so that it meets the requirements of the BAM 2020.
15. BCD recommends the proponent provides a revised version of the table 'Authors and contributors' that summarises the relevant qualifications and experience of all people who have contributed to the BDAR.
16. BCD recommends that Table 4.6 'Vegetation Condition Zones and patch sizes' is revised to include the BAM plots used in the assessment of each vegetation zone.
17. BCD recommends that edits are made to the site value scores for Q28 and Q29 in Appendix C.
18. BCD recommends all maps from the BDAR are provided as jpeg files.

## **Matters of National Environmental Significance**

19. BCD recommends that further information is provided about likely impacts on Matters of National Environmental Significance to enable BCD to undertake the Bilateral Assessment.

## BCD's detailed comments

### Kurri Kurri Lateral Pipeline Project (SSI-223380205) – Review of Amendment Report

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#### BDAR assessment – issues that can affect credit yield

##### 1. All of the development footprint requires assessment under the BDAR

The BDAR does not assess the full development footprint. Section 2.6.1 'Design Refinements' states that 11 areas of the development footprint have not been fully assessed for species-credit species. A table should be provided that gives the area of each vegetation zone within each of the new areas in the development footprint and lists the threatened species that may use such areas. This should state how much of the current survey effort meets the survey effort requirements for those new areas. Where species have not been adequately surveyed in those new areas then there are three options (as per section 5.1.2 of the Biodiversity Assessment Method 2020 (BAM 2020)):

- survey for the species in accordance with BCD survey guidelines
- assume they are present in areas of suitable habitat (as was done for the regent honeyeater and squirrel glider – as described in Section 5.2.2 of the BDAR), or
- assessment by an expert report.

In all of the above circumstances the Biodiversity Assessment Calculator (BAM-C) will need to be re-run. The assessment of these new areas will need to be provided in the Response to Submissions Report – following all the requirements of a Biodiversity Development Assessment Report (BDAR) (including submission of GIS shapefiles).

#### Recommendation 1

BCD recommends that the new areas of the Development Footprint, following recent design refinements, are fully assessed by the Biodiversity Assessment Method 2020, including the Biodiversity Assessment Method – Calculator. Include the details of the assessment, which follows the requirements of the BAM 2020, in the Response to Submissions Report.

##### 2. The adequacy of threatened fauna surveys must be demonstrated

The minimum survey effort, by survey type and total survey time per fauna species is not stated in the BDAR. Instead, Table 2.2 'Details of diurnal threatened fauna surveys completed' and Table 2.3 'Details of nocturnal threatened fauna surveys completed' provide a summary of survey effort for different groups of threatened fauna but provide no details about whether they meet the minimum survey requirements for any of the species from relevant survey guidelines or state any species-specific survey requirements from the Threatened Biodiversity Data Collection (TBDC). BCD recommends that the minimum survey effort, from relevant BCD survey guidelines and the (TBDC) in BioNet, and total survey effort per species are provided in the Response to Submissions Report.

This may be done by following the format in Table 4 'Habitat Constraints Identified in the Threatened Biodiversity Data Collection', Table 15 'Summary of Survey Techniques and Effort Used at Each Site within the Study Area' and Table 16 'Targeted Searches for Conservation

Significant Fauna Species' in the 'Maxwell Project Baseline Fauna Survey Report' by Future Ecology (dated June 2019). This report forms Attachment B (pages 320 to 475 inclusive) of the BDAR for the Maxwell underground Coal Mine Project (SSD-9526).

If any threatened fauna have not been adequately surveyed then this must be rectified by one or more of the following: conducting appropriate survey, assuming presence in areas of suitable habitat, or by assessment through an Expert Report. If additional assessment of threatened fauna is required then this may also require the BAM-C to be re-run and could lead to additional credits to be offset.

### Recommendation 2

BCD recommends that the proponent outlines the minimum survey effort for all threatened fauna species considered for this assessment and compares this with the survey effort done to date for each of those species. If any species has been inadequately surveyed then their lively presence on the site will need to be further assessed to meet minimum survey requirements. This may result in the BAM-C being re-run and additional credits required to be offset.

### 3. Threatened plant surveys may be inadequate for species requiring 5-metre spaced transects

Threatened plant surveys appear to be inadequate for some of the targeted threatened plant species. Section 2.3.3 'Field Surveys' (on page 23 of the BDAR) states that 10-metre spaced transects were undertaken throughout the development footprint (not withstanding Recommendation 1, above). However, 10-metre spaced transects in dense vegetation do not meet BCD's flora survey guidelines (EES, 2020) for threatened herbs, forbs, orchids, epiphytes, climbers and aquatic herbs, where five-metre spaced transects are required. Details are therefore required of the density of the vegetation in the areas where the following species were searched for:

Herbs and forbs:

- *Asperula asthenes*
- *Monotaxis macrophylla*
- *Persicaria elatior*
- *Rutidosis heterogama*
- *Thesium australe*

Orchids, epiphytes, climbers and aquatic herbs:

- *Corybas dowlingii*
- *Cryptostylis hunteriana*
- *Cynanchum elegans*
- *Cymbidium canaliculatum*
- *Diuris pedunculata*
- *Diuris tricolor*

- *Maundia triglochinoides*
- *Prasophyllum petilum*
- *Pterostylis chaetophora*
- *Pterostylis gibbosa*
- *Zanichellia palustris*

Supporting information is therefore required of the vegetation density in areas surveyed for these plants. Areas of suitable habitat with dense vegetation for the species listed above will require additional survey, or assumed presence, or assessment by an Expert Report, the outcome of which may require the BAM-C to be rerun and could generate additional credits to be offset.

Further, the BDAR states in Section 2.3.3 'Field Surveys' that a flexible approach was used for the surveying of threatened plant species because the project site had more than 50 hectares of suitable habitat. Section 4.4 'Survey design for large areas of suitable habitat' of the 'NSW survey guide for the Biodiversity Assessment Method – Surveying Threatened Plants and their habitats' (DPIE, 2020: page 13) was cited as the reason why this flexible approach was undertaken. However, deviation from the standard parallel transect survey methodology, including changing transect spacing, may be done only after discussing the proposal with the decision maker. BCD has no record that such a discussion occurred. Further, the extent of suitable habitat for most of the candidate species, based on the areas of their associated PCTs, are less than 50 hectares so Section 4.4 of the flora survey guidelines do not apply to most of the species considered for this project

### Recommendation 3

BCD recommends that the proponent provides information about vegetation density in relation to areas surveyed for threatened plants. This should include a statement about whether targeted surveys at 10-metre spaced transects met BCD's survey guidelines for all threatened plant species with potential to be on the subject land.

## **BDAR assessment – issues that are inadequate in relation to BAM 2020 or other BDAR requirements**

The BDAR does not meet all of the requirements of the BAM 2020 (as summarised in Appendix K). In most cases this missing information is unlikely to affect the credit yield for the biodiversity assessment, however missing data raises questions of the quality of the assessment and slows down the review process.

### **4. The BDAR does not demonstrate how minimum survey requirements have been met**

Section 5.3 'Threatened species surveys' does not provide the information required to demonstrate that minimum survey requirements have been met. These are summarised in the BDAR template as follows:

- a list of specific survey requirements for the species (BAM-C / TBDC), and guidelines published by the department, and how they have been addressed (referring to the methods described in Section **Error! Reference source not found.**)
- references to support survey technique/effort (including TBDC)

- reference site used and location
- factors that affected survey effort, ameliorative steps taken and evidence-based justification for survey methods if they deviate from methods recommended in survey guidelines

#### Recommendation 4

BCD recommends that details are provided in the Response to Submissions Report that demonstrate how survey effort meets at least the minimum survey effort for all species considered.

### 5. Plant community types associated with candidate threatened plant species are not clear

Table 2.1 'Candidate Threatened Flora Species Targeted and Field Survey Methods Used' does not show any correlation of targeted species to associated plant community types (PCTs) (there are no 'x' symbols shown within the table). For example, the table does not show that *Acacia bynoeana* is associated with PCTs 1592, 1600 and 1633, which occur on the subject land. BCD recommends that the table is updated to show the relationship between species and Plant Community Types.

Removal of any candidate species for further assessment based on unsuitable habitat would need to be justified. Any such justification would need to follow the process described in Section 5.2 'Assess habitat suitability for threatened species (ecosystem credit species and species credit species)' in the BAM 2020.

This BDAR uses a PCT classification for coastal vegetation communities that was changed recently. The older PCTs were also removed from the list of associated PCTs in the TBDC (see the Biodiversity Offsets Scheme Update No. 9: 30 September 2022). The mismatch between the classification of PCTs for this project in the BAM-C and in the TBDC may explain why candidate threatened species do not automatically show a related PCT. However, the associated PCTs, under the old coastal classification are required, and they show where potential suitable habitat occurs, and the area of potentially suitable habitat determines the minimum survey effort for those species.

#### Recommendation 5

BCD recommends that a revised version of Table 2.1 is provided that identifies the PCTs associated with the candidate threatened plant species.

### 6. Table 5.2 is missing the associated PCTs for threatened plant species

Table 5.2 'Predicted flora species credit species' has data missing in the column titled 'Vegetation zone ID species retained within, including PCT ID'. This table shows which plant species considered for the project are associated, or not, with the Plant Community Types (PCTs) on the Subject Land. Twenty-nine of the species in the table have 'none' written in the cell in that column. The three species with matched PCTs do so because they were found on site in those stated PCTs. However, based on the TBDC, *Cryptostylis hunteriana*, for example is associated with PCT 1568, PCT 1590, PCT1592, PCT 1600, PCT 1619 and PCT 1633. BCD recommends that the 'Vegetation zone ID species retained within, including PCT ID' column is revised with consideration of the older coastal PCT classification (as per Recommendation 6, above).



### Recommendation 6

BCD recommends the proponent provides an updated copy of Table 5.2 in the Response to Submissions Report that matches the predicted flora species with the PCTs on the Subject Land.

## **7. Copies of GIS shapefiles should be provided**

GIS shapefiles for the maps in the revised BDAR have not been provided. This makes checking details of the BDAR difficult and slows down the assessment process. Providing GIS shapefiles is a requirement under the BAM (2020, see Appendix K).

### Recommendation 7

BCD recommends the accredited assessor provides the GIS shapefiles used for maps in the BDAR.

## **8. Copies of plot field data should be provided**

The raw plot field data has not been included in the BDAR. BCD reviews the plot field data to ensure consistency between the site data (such as the matched Plant Community Type), the BDAR and the credit calculator. Providing field data sheets is a requirement under the BAM (2020, see Appendix K). The format of the field data can be discussed during the Response to Submissions stage.

### Recommendation 8

BCD recommends the accredited assessor provides copies of the plot field data of the vegetation quadrats used for this assessment.

## **9. Table 5.1 has missing data for five species and whether they require further assessment**

Table 5.1 'Predicted ecosystem credit species' has data missing in the column titled 'Species retained for further assessment?' This field is not populated for the spotted harrier, wampoo fruit dove, rose-crowned fruit dove, superb fruit-dove, or the Australian painted snipe. BCD recommends that the table is completed a copy is provided in the Response to Submissions Report.

### Recommendation 9

BCD recommends that Table 5.1 'Predicted ecosystem credit species' is revised to indicate whether all species listed require further assessment.

## **10. Information on additional landscape features from the SEARs is required**

The Secretary's Environmental Assessment Requirements (SEARs) (on page 16) identifies additional landscape features to be described in the BDAR: Landscape health of rivers & floodplains (nutrient flow, aquatic connectivity, habitat for spawning and refuge – river benches). However, that information does not appear to have been provided in the revised BDAR. If the information has not yet been provided, then BCD recommends that it is included in the Response to Submissions Report.

### Recommendation 10

BCD recommends that information about additional landscape features, as described in the SEARs, are provided in the Response to Submissions Report.

## 11. Details are required of the construction footprint versus the operational footprint of the project

The BDAR does not clearly describe the operational footprint of the project or identify temporary features. For example, what is the planned fate of the pipe laydown yards? Access tracks? Truck turnarounds? How long will these features be used? How are temporary/ancillary works defined? Where native vegetation is cleared for temporary infrastructure, will the land be revegetated to the same PCT? This type of information is required to meet Chapters 2 and 3 of the BAM. A brief statement and a map will suffice to clarify this detail which is required by the BAM 2020.

### Recommendation 11

The construction and operational footprints for the project must be clearly defined.

## 12. A review of existing information on native vegetation is required

Section 3.2 'Native Vegetation within the Development Footprint' in the BDAR does not include a review of existing information on native vegetation on or adjacent to the assessment area. For example, the *Vegetation of the Cessnock-Kurri Region: Survey, Classification & Mapping, Cessnock LGA, New South Wales* by Bell and Driscoll (2008), or vegetation assessments on the Donaldson Coal Mine, or the Hunter Power Project. A brief discussion on how older vegetation maps that cover the subject land compares with mapping for the assessment is required. This information would meet the requirements of Appendix K of the BAM.

### Recommendation 12

BCD recommends that the revised BDAR includes a discussion of the older vegetation maps of native vegetation on the subject land and how they compare with the mapping for the project.

## 13. Additional features are required to be shown on maps

The BDAR does not fully meet the requirements of the BAM with respect to features not shown on maps. These requirements are described in Appendix K of the BAM. BCD recommends that either existing maps are revised, or new maps are produced (and shapefiles) with the following features:

- temporary / ancillary works
- important wetlands
- locations of known or potential acid sulfate soils
- prescribed impact locations
- areas not requiring BAM assessment

### Recommendation 13

BCD recommends that existing maps are revised, or new maps are prepared that show all features required by the BAM.

## 14. The mapped extent of native vegetation requires revision

Figure 1.2 'Location Map' shows the extent of native vegetation within the 500-metre-wide buffer to the project. This map is at 1:62,500 scale. This does not meet the requirement of Section 4.1 'Map native vegetation extent on the subject land' in the BAM 2020. To do so would require the provision of a map of the extent of native vegetation at no more than 1:10,000 scale.

#### Recommendation 14

BCD recommends the proponent provides a new version of Figure 1.2, or a series of new maps that show the mapped extent of native vegetation for the Subject Land at no more than 1:10,000 scale so that it meets the requirements of the BAM 2020.

### **15. Relevant qualifications and experience of those who contributed to the BDAR are required**

The table 'Authors and contributors' in the Section 'Details and experience of author/s and contributors' (page vii of the BDAR) is incomplete, it does not include the relevant qualifications and experience of those people who have contributed to the BDAR, as explained in Appendix K of the BAM 2020.

#### Recommendation 15

BCD recommends the proponent provides a revised version of the table 'Authors and contributors' that summarises the relevant qualifications and experience of all people who have contributed to the BDAR.

### **16. BAM plots are not identified in Table 4.6**

Table 4.6 'Vegetation Condition Zones and patch sizes' has a column for BAM plots to be named that were used in the assessment of each vegetation zone ('Plot IDs of vegetation integrity plots under in assessment'). That column, however, contains no data. Therefore, it is not compliant with Table 6 'Vegetation zones and patch sizes' in the BDAR template. BCD therefore recommends that the table is presented in the Response to Submissions Report.

#### Recommendation 16

BCD recommends that Table 4.6 'Vegetation Condition Zones and patch sizes' is revised to include the BAM plots used in the assessment of each vegetation zone.

### **17. Vegetation Integrity Data for Q28 and Q29 in Appendix C is out of alignment**

Vegetation integrity data for the function scores for plots Q28 and Q29 in Appendix C is out of alignment. This has been confirmed by comparison with the site value scores entered for both plots in the BAM calculator file, where they are in the correct location.

#### Recommendation 17

BCD recommends that edits are made to the site value scores for Q28 and Q29 in Appendix C.

### **18. Copies of all BDAR report maps as separate jpeg files are required**

Copies of all maps in the BDAR are required to be provided as separate jpeg files. This is a requirement of Appendix K of the BAM 2020. Those files are used when reviewing a BDAR and their provision will speed up the assessment process.

#### Recommendation 18

BCD recommends all maps from the BDAR are provided as jpeg files.

# Matters of National Environmental Significance

## 19. Additional information is required for the assessment of MNES

The Matters of National Environmental Significant (MNES) assessment for the project requires further information to enable BCD to undertake the Bilateral Assessment on behalf of the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). The MNES assessment is contained in Appendix C3 'Revised Biodiversity Development Assessment Report' (BDAR) by Umwelt (Australia) Pty Limited (Dated 29 September 2022). Section 8.5 of the BDAR deals specifically with MNES, but many other parts of the BDAR also apply to MNES.

In order for BCD to complete its assessment of MNES, BCD recommends that the following information is provided:

### Background and Description of Action

- The BDAR describes the action in relation to MNES. The BDAR covers impacts to all vegetation types and both NSW and Commonwealth-listed species and makes it difficult to understand the project in relation to MNES. BCD recommends that the operational and construction footprints of the project are described in relation to impacts to MNES.
- More details are required on the staging and timing of the project and its impacts on MNES. This is particularly so for any temporarily cleared areas (e.g., tracks, pipe laydown areas, the turkey nest dam, truck turnaround bays, underground boring locations etc.)

### EPBC Act Listed Threatened Species & Communities

- New maps are required that show only MNES entities – they are not clearly shown in the maps in the BDAR
- Minimum survey requirements for MNES entities must be spelt out, including any DCCEEW survey requirements, and species-specific survey requirements in the Threatened Species Data Collection. This can be done by provided a revised copy of Table 3.1 'Biodiversity Surveys and Methodology for Listed Threatened Species and Communities' from Appendix A 'Assessment of Significance' in the BDAR. Include details of the minimum survey effort by species and type of survey for each species and comparing actual survey effort, per species, to those minimum survey requirements in the revised table.

### Impact Assessment

- The BAM-C has been finalised but may need to be re-run to consider the advice in this letter.
- Further details are required of the type, timing and location proposed rehabilitation of MNES impacted by temporary clearing.

### Other Considerations

- Demonstrate how Approved Conservation Advice, Listing Advice and Threat Abatement Plans have been considered for this assessment, including proposed actions for each MNES entity. This can be shown, for example, by relating management actions of a MNES entity to its Approved Conservation Advice.

### Recommendation 19

BCD recommends that further information is provided about likely impacts on Matters of National Environmental Significance to enable BCD to undertake the Bilateral Assessment.