

DOC17/569632
SSI 7474

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Dear Mick

Inland Rail Narrabri to North Star - EIS Public Exhibition

Thank you for your letter dated 13 November 2017 requesting comments from the Office of Environment and Heritage (OEH) on the exhibited Environmental Impact Statement (EIS) for the Narrabri to North Star Inland Rail project.

OEH understands that the proposed project has a footprint of 1,045.7 hectares. The EIS states it will result in direct impacts to 635.08 hectares of cleared/non-native vegetation and 410.62 hectares of native vegetation across nine plant community types (PCTs). The biodiversity offset credit requirement has been calculated to be a total of 18,826 ecosystem credits and 364 species credits for finger panic grass, 2,607 species credits for creeping tick-trefoil, 1,898 species credits for Belson's panic and 1,632 credits for the koala.

We have reviewed the information provided against the Secretary's Environmental Assessment Requirements (SEARs) sent to the Department of Planning and Environment (DPE) on 9 February 2016. Our detailed comments relating to the impacts on biodiversity values are provided in **Attachment A** and **Attachment B**, comments relating to flooding and hydrology are provided in **Attachment C**, and comment relating to Aboriginal cultural heritage are included in **Attachment D**.

In summary, the major issues identified by OEH with regards to impacts to biodiversity are:

1. Additional information needs to be provided by the proponent in order for OEH to determine whether impacts to biodiversity have been appropriately assessed and offset.
2. The biodiversity credit liability should be finalised prior to project determination.
3. Temporary impacts to biodiversity values must be assessed and offset appropriately.
4. Further justification of the area identified as koala habitat should be provided.
5. Site assessment of the Jones Avenue Bridge and the North Star Extension Area should be provided.
6. More timely delivery of all phases of the Biodiversity Offset Strategy is required.

OEH acknowledges that additional hydraulic and hydrological modelling will address a number of simplifications that exist in the current model. In particular, the refined model should review the tailwater effects in culverts to ensure downstream flooding is not increased by the proposed upgrades.

OEH acknowledges that the Aboriginal consultation and Aboriginal cultural heritage assessment are adequate, the proposal will result in low impact to insignificant sites and appropriate mitigation measures have been proposed. OEH recommends that a preference should be placed on community monitoring rather than excavation and artefact analysis.

At DPE's request OEH completed a review of the consistency of the draft EIS against the SEARs issued for the project and provided feedback to DPE on 13 September 2017. We note that the issues raised in our response were not addressed by the proponent in this final version of the EIS.

If you have any questions regarding this matter please contact Renee Shepherd, Senior Conservation Planning Officer on 02 6883 5355 or renee.shepherd@environment.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'P. Christie', is positioned above the printed name.

PETER CHRISTIE
Director North West
Regional Operations Division

18 December 2017

Contact officer: RENEE SHEPHERD
02 6883 5355

Narrabri to North Star Inland Rail Project – Environmental Impact Statement

OEH Detailed Comments on Biodiversity

List of acronyms used in this response:

BAR	Biodiversity Assessment Report
BBCC	BioBanking Credit Calculator
BC Act	<i>Biodiversity Conservation Act 2016</i>
BOS	Biodiversity Offset Strategy
DNG	derived native grasslands
DPE	Department of Planning and Environment
EIS	environmental impact statement
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FBA	Framework for Biodiversity Assessment
OEH	Office of Environment and Heritage
RTS	Response to Submissions
TEC	threatened ecological community
TSC Act	<i>Threatened Species Conservation Act 1995</i>

Biodiversity credits should be finalised prior to determination of the project

Recommendations:

- 1. The total biodiversity credit liability should be finalised prior to project determination and should be specified in the project approval.**
- 2. Impacts to biodiversity outside of the approved development footprint should be assessed and offset through a project modification.**
- 3. Spoil mounds should be placed in areas that conform to Section 9.4 or 9.5 of the FBA and it should be demonstrated that their placement will not impact on flood behaviour.**

Section 8.3 of the Framework for Biodiversity Assessment (FBA) highlights the requirement of a proponent to incorporate the principles of avoiding and minimising impacts to biodiversity into the entire life cycle of a project. However, OEH recommends that the development footprint is finalised prior to project determination, as discussed in recommendations 2, 4, 6 and 9 below in this response. This approach will clearly define the impacts to biodiversity values and state the ecosystem credit and species credit liability prior to project determination. These credit requirements should be captured within the project approval.

OEH notes and is supportive of the proponent's aim to reduce the amount of clearing of native vegetation through design refinements during the detailed project design phase (which is scheduled to occur post-consent), and we note that this may increase or decrease the current estimate of the biodiversity credit liability.

As a result, we recommend that any impacts to biodiversity values that occur due to post-consent design changes are addressed and offset through a project modification. As previously stated, given that avoidance and minimisation of biodiversity impacts should occur throughout the project, OEH would consider a reduction in the approved credit liability if the proponent:

- no longer requires a particular compound or ancillary infrastructure, or
- the compound/ancillary infrastructure is moved to land that conforms to Section 9.4 or 9.5 of the FBA, and
- the proponent provides appropriate plot data and assessment information for the new location.

Similarly, spoil mounds should be placed on land that conforms to Section 9.4.1.1 or 9.5.1.1 of the FBA, and their placement should not impact on flood behaviour. We recommend that this requirement is captured within a project approval condition.

Temporary impacts to biodiversity values must be assessed and offset appropriately

Recommendations:

- 4. Prior to determination the impacts on biodiversity values and the subsequent biodiversity offset requirements as a result of temporary disturbance activities must be determined using the BioBanking credit calculator. Information entered into the calculator regarding the magnitude of these impacts must be justified in accordance with the FBA.**

Section 4.4.2 of the Biodiversity Assessment Report (BAR) states that construction impacts associated with construction facilities such as laydown areas, temporary access tracks and vehicle parking areas will result in temporary impacts to biodiversity. It is further stated that these temporary impacts have not been considered in the BioBanking Credit Calculator (BBCC) as *“it is considered that these areas will regenerate following completion of the construction phase of the proposal”* (page 123).

Table 10.3 in the main report of the Environmental Impact Statement (EIS) details the permanent and temporary disturbance areas associated with the proposed project – 410.62 hectares and 72.18 hectares respectively. Included in the temporary disturbance area is an impact to 3.11 hectares of threatened ecological communities (TECs) listed under the Threatened Species Conservation Act 1995 (TSC Act) and 33.06 hectares of TECs listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

In order to conform to Section 9.3 and 10.3 of the FBA, the proponent must determine the future site value score for each vegetation zone being temporarily impacted, and the offset requirement for those impacts must be calculated using the BBCC. The proponent states in Section 4.4.2 of the BAR that native vegetation is “not expected to be fully impacted”. Section 10.3.1.3 of the BAR allows for assessment of an impact where development will *“result in partial clearing of native vegetation”*. Whilst it is unlikely that all temporary disturbance sites will have a future site value score of 0, some site attributes listed in Table 2 of the FBA, particularly those relating to groundcover, will be impacted.

As well as calculating ecosystem credits, any impacts on species credit species should also be assessed and offset accordingly.

Insufficient information has been provided to determine whether impacts to biodiversity have been appropriately assessed and offset

Recommendations:

5. **OEH should be provided with information from the 287 rapid vegetation assessments, and the high-resolution aerial photography used to inform the vegetation mapping by the RTS stage.**
6. **Justification of the vegetation mapping data layers should be provided.**

OEH is unable to provide an opinion on whether the impact on biodiversity values has been appropriately assessed and offset as we have not been provided with all of the vegetation assessment information and aerial photography to make an informed review. OEH needs to be provided with the 287 rapid vegetation assessments undertaken by the proponent (Section 2.3.4 of the BAR) and the high-resolution aerial photographs that were used to assist with the vegetation mapping (Section 2.3.2 of the BAR) in order to conduct a full review of the extent of native vegetation and the PCT identification.

The FBA requires that the extent of native vegetation in the 550-metre buffer area (Section 4.1.1.14) and within the development site (Section 5.1.1.1) must be mapped. This information has been provided to OEH by the proponent as digital shapefiles. OEH has analysed these shapefiles using ADS40 imagery and the Border Rivers Gwydir/Namoi State Vegetation Map (SVM).

There appears to be areas of native vegetation that have not been captured by the proponent in their native vegetation data layers. Figure 1 in Attachment B provides an example of this – the red polygon identifies PCT27 and the green shapefile identifies non-native vegetation. The top green dot depicts a flora plot location and the bottom green dot depicts a rapid vegetation assessment location. The flora plot field data sheet confirms that the site conforms to PCT27; however, OEH do not have the rapid vegetation assessment data. Unfortunately, there are no plots in the area that has been classified as non-native vegetation to justify the delineation of the polygon boundaries. In comparison, the Border Rivers Gwydir/Namoi SVM (shown in Figure 2) indicates that all the underlying vegetation has been mapped as PCT27 rather than just a portion of it.

This inconsistent approach to mapping is also illustrated in Figure 3. The red polygon depicts PCT27, however similar overstorey vegetation appears to occur to the north of that shapefile but it has been mapped as cleared/non-native.

Figure 4 provides an example where the PCT data layer assigns the transparent pink polygon to PCT56, however this vegetation is not captured as native vegetation in the native vegetation extent data layer (solid pink polygon). The native vegetation extent data layer should align with the PCT data layer as both data sets are capturing native vegetation.

Section 2.3.2 of the BAR states that a “3 to 1” crown separation ratio was used to map areas of remnant woodland. This appears to be inconsistently applied across the development site as depicted in Figure 3. In this example, the vegetation to the north of the red polygon has not only not been mapped as woodland, it has not been mapped as derived native grasslands (DNG) or even as native vegetation. This will result in an under-estimation of the biodiversity credit liability.

Figure 5 shows an area that has been mapped as cleared/non-native (light pink transparent polygon) but the underlying ADS40 imagery appears to show an area of native vegetation through the centre of the figure. There are no flora plots or rapid vegetation assessment plots at this location to confirm the flora species that are present. When the Border Rivers Gwydir/Namoi SVM is reviewed (Figure 6) it suggests that the same area is comprised of three separate PCTs (dark blue, light blue and red polygons). Again, this under-estimation of the extent of native vegetation will result in an under-estimation of the biodiversity credit liability.

An area of vegetation mapped as PC52 (light green transparent polygon) and numerous records of creeping tick-trefoil are shown in Figure 7. However, this same area is not mapped as native vegetation in the native vegetation extent data layer (solid pink polygons). As outlined above, the native vegetation extent data layer should align with the PCT data layer.

These examples highlight the issues that appear to exist with the vegetation mapping that has been completed by the proponent, and which subsequently informs the biodiversity credit liability for the development. These issues exist along the length of the development footprint.

A review of the rapid vegetation assessment information may clarify some of these issues, highlighting the importance of having access to this information. The proponent provides some explanation of the digital aerial photograph interpretation (Section 2.3.2 of the BAR) and the vegetation mapping (Section 2.3.7). However, no detailed justification has been provided in the BAR to account for the decision-making process that has led to these mapping outcomes. This justification should be provided, otherwise the mapping of the development footprint should be revised. OEH has not completed any field verification along the development footprint.

Following review of the rapid vegetation assessment information when we receive it, we may still have outstanding issues regarding the appropriateness of the vegetation mapping and therefore the assessment of impacts on biodiversity. If the full extent of native vegetation has not been identified, the impacts on biodiversity will be under-estimated and the full biodiversity credit liability will not have been identified. This scenario may have resulted in the area of TSC Act and EPBC Act-listed TECs being underestimated.

Impacts to threatened flora species should be avoided where possible

Recommendations:

7. Impacts to threatened flora species should be avoided where possible.

Three flora species listed as endangered under the *Threatened Species Conservation Act 1995* (TSC Act) and identified as species credit species were recorded within the development footprint:

- 28 individuals of finger panic grass
- 73 individuals of Belson's panic (also listed under the EPBC Act)
- 237.41 hectares of creeping tick-trefoil

OEH notes that there is a number of locations along the development footprint where there may be the potential to avoid impacts to recorded threatened flora species. Figure 8 shows the location of a record of Belson's panic (upper yellow dot) and finger panic grass (lower yellow dot). By reducing the impact associated with the culvert at this particular location it could potentially avoid impact to these two species. Similarly, Figure 9 shows records of creeping tick-trefoil where a reduced impact footprint could avoid impacts to numerous individuals. Any avoidance, particularly to Belson's panic which the Threatened Species Profile Database states could not withstand further loss, would be a positive outcome.

The biodiversity offset for creeping tick-trefoil must be based on the area of habitat rather than on the number of individual plants

Recommendation:

- 8. Biodiversity offset credits for creeping tick-trefoil must be retired based on the area of habitat occupied by the species rather than on an individual plant count basis, and this should be specified in the project approval.**

OEH notes that rather than assessing the project's impact on creeping tick-trefoil on an individual plant basis the proponent has assessed the impact based on the area of habitat the species occupies in the development footprint (Section 3.3.2.3 of the BAR). The offset requirement for this species credit species must therefore also be determined on a habitat area basis rather than an individual plant basis. This requirement should be captured within the approval conditions.

Further justification of the area identified as koala habitat should be provided

Recommendation:

- 9. Justification should be provided as to why a broader range of PCTs have not been included in the species polygon for the koala.**

Section 3.3.2.3 of the BAR states that 62.77 hectares of known habitat exists within the development footprint for the koala. All of PCT39 and PCT78 and the portions of PCT56 that contain poplar box have been mapped as habitat in order to generate species credit polygons.

We note that of the 14 koalas that were recorded along the development footprint, three were females with juveniles. This confirms that breeding females are residing in the area.

One koala was recorded within PCT35 (brigalow – belah woodland) but this has not been included in the species polygon. Other koalas were recorded in cleared/non-native vegetation or single trees that were not identified by species in the BAR. Another record was located in PCT56 (poplar box – belah woodland) DNG – whilst the woodland component of this PCT has been included in the species polygon where poplar box is present, none of the DNG zone of this PCT has been included in the species polygon.

Using a crown separation ratio of 3 to 1 to define woodland for this project means that open to sparse woodland has been classified as DNG and therefore the potential koala habitat for PCT56 may have been under-estimated. Similarly, without access to the rapid vegetation assessment information we are unable to determine whether all areas of poplar box have been identified along the development footprint.

The development footprint occurs in a highly fragmented landscape. It is increasingly accepted that koalas are sheltering in a range of species in north-west NSW like belah and white cypress pine. Given the limited distribution of woodland along the development footprint any impact on woodland communities will have a greater importance to koala populations in this area. We note that PCT35, PCT71, PCT135 and PCT413 are all associated with the koala in the threatened species profile database but they have not been included in the species polygon.

As a result of these factors, OEH is concerned that the area of habitat defined in the BAR may be an under-representation of the habitat that is being used by koalas in this particular landscape. Given the highly fragmented nature of the landscape, the presence of breeding females, and the fact that koalas were recorded along the development footprint in PCTs that do not contain listed primary or secondary feed trees, we request that the proponent justifies why a broader approach has not been taken to identifying habitat in this area.

Site assessment of the Jones Avenue Bridge and the North Star Extension Area should be provided

Recommendation:

- 10. Include figures of the two additional impact areas (Jones Avenue Bridge and North Star Extension Area) in the RTS. Include details of site-based flora assessments to support the statement that impacts will be confined to exotic grasslands.**

Section 3.4 of the BAR states that two additional impact areas were added to the development footprint after the field surveys for the BAR were completed. Minimal details and no figures were included in Section 3.4 to clearly depict the location or nature of these additional areas. The main report of the EIS (Section 10.2.1) states that the Jones Avenue Bridge area has been mapped as cleared/non-native vegetation "*which is consistent with its urban setting*" but no clarification has been provided regarding which vegetation mapping the statement refers to. Despite the urban setting, the BAR should include details of a site-based flora assessment that has been undertaken to provide evidence of the non-native nature of the vegetation at the site. Further details about the North Star Extension Area should be provided, including site-based information about the vegetation present.

Handling of micro-bats should be kept to a minimum

Recommendation:

- 11. The culvert and bridge works pre-clearance survey methodology for micro-bats should be amended to state that culverts and bridges will be inspected after dusk when the bats have dispersed and entrances should be blocked off at that time. Handling of micro-bats should be avoided where possible.**
- 12. Disturbance to culverts and bridges that are micro-bat maternity sites should not occur until the end of the maternity period when the bats have dispersed.**

OEH notes that Section 4.2.1.2 of the BAR indicates that any roosting bats found in culverts or bridges will be captured at dusk and released nearby. We recommend that handling of micro-bats should be avoided where possible. This can be achieved by inspecting culverts and bridges after dusk when the bats have dispersed and entrances can be blocked off before they return.

In addition, no disturbance to maternity sites in culverts or bridges should occur. Only when the maternity period has ended and the bats have dispersed should any work commence.

More timely delivery of all phases of the Biodiversity Offset Strategy is required

Recommendation:

- 13. To ensure timely retirement of offset credits OEH recommends that Phase 2 of the BOS be finalised prior to project determination, and Phase 3 of the BOS be finalised prior to the commencement of construction activities. The biodiversity offset credits should be secured within a more timely manner.**
- 14. The proponent should place a “credits wanted” request on the BioBanking register immediately so that potentially interested parties can be engaged as soon as possible.**

Appendix L of the main report outlines Phase 1 of the Biodiversity Offset Strategy (BOS). This includes the biodiversity offset credit requirements and the preliminary offset investigations that have occurred to date. No details have been provided regarding specific offset sites. The minimum information requirements for a BOS as outlined in Table 22 of the FBA have not been met as no offset site has been identified, and no improvement in biodiversity values at the offset site or supplementary measures details have been provided.

Section 1.2 of the BOS states that prior to commencement of construction activities Phase 2 of the BOS will be prepared. Phase 2 will consist of confirmation of the biodiversity credits required, preliminary field inspection outcomes for proposed offset sites, and assessment of condition, key threats and likely management actions of the offset site. Phase 3 is proposed to be submitted for approval within 12 months of construction commencement and will detail the biodiversity credits at the offset site/s, provide the completed biodiversity credit calculator report, and include a detailed site management plan. It is proposed the offset site/s would be secured by a conservation mechanism within two years of construction activities commencing. This is potentially after the construction activities have been completed (Figure 8.1 main report).

OEH provided advice to the proponent (and DPE) on 21 June 2017 stating that ideally a BOS that meets the minimum information requirements in Table 22 of the FBA would be provided at the EIS stage, and at the latest this would be provided at the RTS stage. In our advice to DPE (dated 25 August 2017 and 13 December 2017 with regards to the EIS review and RTS review respectively) we indicated that we would support a more flexible approach to this timeframe given that the proponent is investigating the potential to secure larger strategic offset properties. We also indicated in those responses that this flexibility is provided on the understanding that BARs for future projects, like the Narrabri to North Star project, are accompanied with completed BOSs. As a result, OEH recommends that a more timely delivery of Phase 2 and 3 and the retirement of the offset obligations be considered.

Page 12 of the BOS states that making payments into an offset fund is not currently available. The proponent should be aware that the Biodiversity Conservation Fund (BCF) is currently operational.

Tables 5-13 and 5-14 of the BOS provides estimates for offset delivery costs for ecosystem credits and species credits respectively. The Offsets Payment Calculator is an interactive tool designed to determine how much a proponent must pay into the BCF to satisfy their offset obligation. We suggest the proponent familiarises themselves with this tool as the estimated costs are substantially different compared to the costs outlined in the BOS.

Table 5-4 of the BOS states that a “credits wanted” request will be prepared and submitted once the credit liability is confirmed with the assessing agencies. We recommend that a request is submitted now so that potentially interested parties can be engaged as soon as possible.

We note that the BOS refers to registering BioBanking agreements on the land-based offsets. The *Biodiversity Conservation Act 2016* (BC Act) commenced on 25 August 2017 and it is supported by the *Biodiversity Conservation (Savings and Transitional) Regulation 2017* (referred to here as “the regulation”). As outlined in the BC Act and the regulation, stewardship agreements have replaced BioBanking agreements. Credits for this project will need to be retired in accordance with the BC Act. Given that the credit obligations have been calculated under the FBA, the Chief Executive will determine the “reasonably equivalent” credit obligation that remains to be satisfied by the retirement of biodiversity credits under the BC Act.

OEH will soon publish further details about the approach for determining the biodiversity credits that are reasonably equivalent under the BC Act for existing obligations to retire credits under the TSC Act but is willing to discuss the options with the proponent in the interim.

ATTACHMENT B

Figure 1. Example of potential under-estimation of mapping native vegetation.



Figure 2. Comparison of the proponent's vegetation mapping with the Border Rivers Gwydir/Namoi State Vegetation Map (SVM). The maroon polygon identifies the extent of PCT27 compared to the SVM extent in the purple polygon.

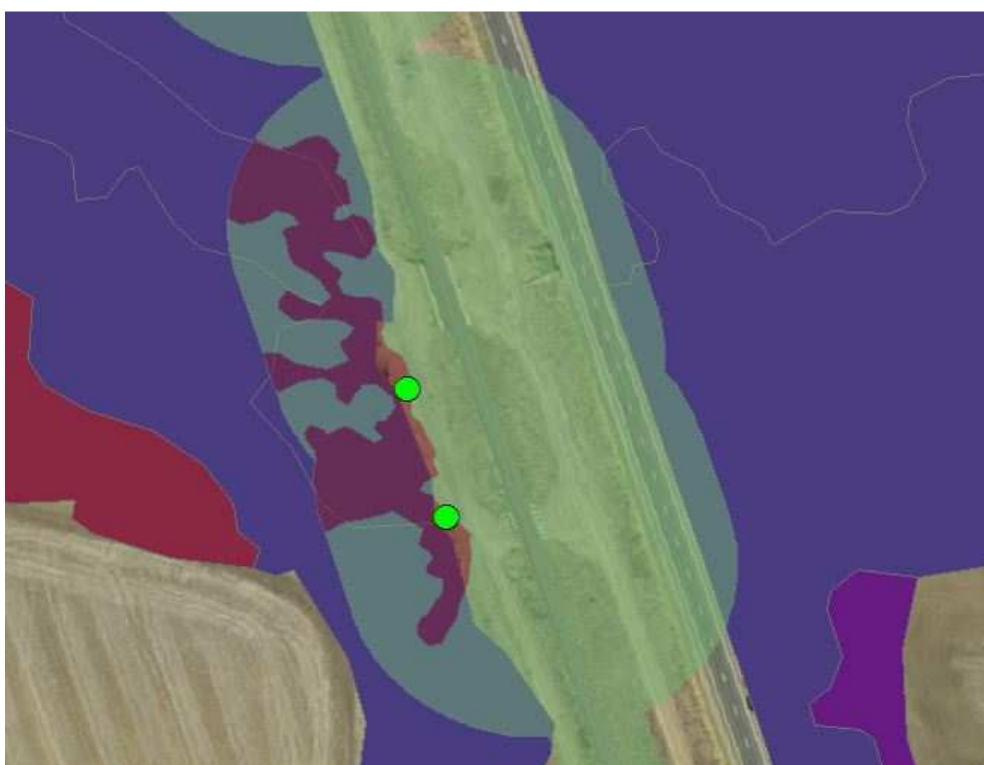


Figure 3. Example of potential inconsistent mapping of native vegetation. Trees in the lower portion of the figure are mapped as native vegetation but the trees in the upper portion have been mapped as cleared/non-native vegetation.



Figure 4. Example of PCT mapping not aligning with the native vegetation extent mapping in the buffer area.



Figure 5. The proponent's mapping classifies this area as cleared/non-native.

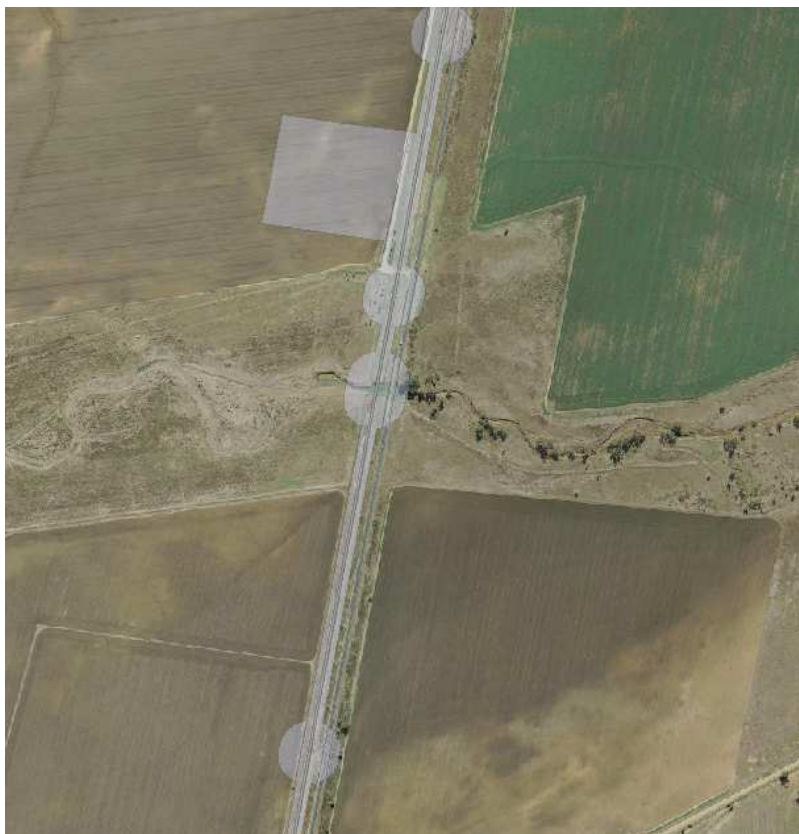


Figure 6. The same location as Figure 5, including the Border Rivers Gwydir/Namoi State Vegetation Map, indicating that three PCTs have been identified in this area (dark blue, light blue and red polygons).



Figure 7. The PCT mapping identifies the vegetation as PCT52 and numerous records of creeping tick-trefoil have been recorded, but the same vegetation is not mapped as native vegetation in the native vegetation extent data layer.



Figure 8. Belson's panic and finger panic grass recorded within the development footprint.

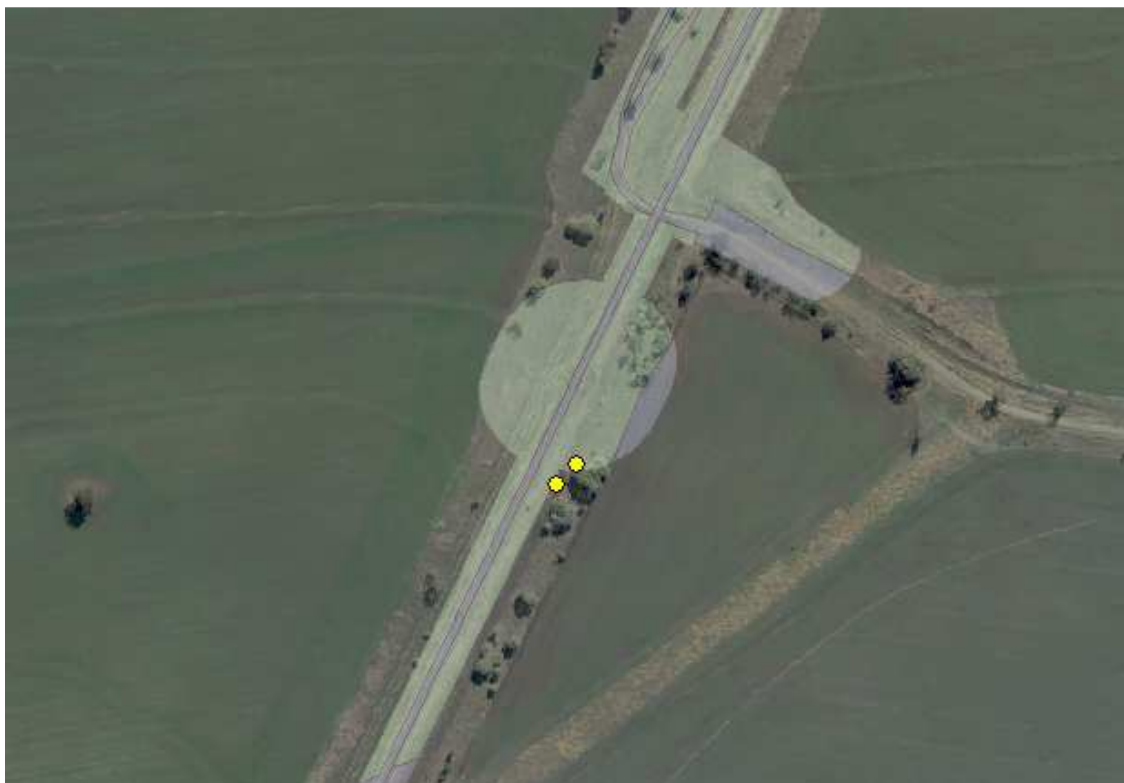


Figure 9. Population of creeping tick-trefoil in the development footprint.



OEH Detailed Comments for Flooding and Hydrology

After reviewing Technical Report 6 (Hydrology and Flooding Assessment) we recognise that the current hydrological and hydraulic analysis contains a number of simplifications that should be removed during further design and development.

Tailwater effects in culverts should be included in the modelling

Recommendation:

- 1. Additional modelling should consider both free outlet and tailwater conditions for a range of flood events up to 1% AEP (annual Exceedance Probability). It is suggested to review the tailwater effect in culverts as a sensitivity analysis in subsequent hydrological and hydraulic modelling work to be undertaken.**

Where necessary, existing culverts along the corridor would be upgraded with larger hydraulic capacity pre-cast box culverts to convey peak flow rates. The corresponding flooding modelling was undertaken to show the ponding areas for a broad range of design rainfall events. Upstream flood modelling was undertaken for a range of design flood events, including the 50, 20, 10, 5, 2 and 1% AEP events, and the Probable Maximum Flood (PMF). Furthermore, 0.5 and 0.2% peak flow rates based on a triangular hydrograph was used. Culvert hydraulics did not consider tailwater effects which most likely would occur given the low slope gradient in the vast majority of streams. Further investigation is suggested, otherwise the proposed culverts might cause larger flooding areas.

Continue liaison with Moree Plains Shire Council to assess the relative impacts of the proposed upgrade

Recommendation:

- 2. Continue liaison with Moree Plains Shire Council to fully assess the relative impacts of the proposed upgrade and future assessments on subsequent phases of design (rail embankment and hydraulic structures).**

Moree Plains Shire Council provided an existing flood model for the Gwydir and Mehi Rivers and the associated floodplains around Moree for the flood impact assessment. The model was developed as part of the current on-going *Review of Moree and Environs Flood Study/Floodplain Risk Management Study and Plan* and was in a draft form at the time of undertaking the flood assessment.

ATTACHMENT D

OEH Detailed Comments for Aboriginal Cultural Heritage

The Aboriginal consultation and Aboriginal cultural heritage (ACH) assessment are adequate

Aboriginal consultation has been conducted as per the consultation requirements for the project. OEH notes that there are no documented concerns from the Registered Aboriginal Parties (RAPs).

The assessment has gathered sufficient information that describes the Aboriginal cultural heritage within the rail corridor. No significant issues are identified with the ACH assessment method and field survey coverage.

The proposal will result in low impact to insignificant sites

Aboriginal sites recorded within the development footprint (rail easement) and outside the rail corridor are effected by an intense land-use disturbance.

The assessment concludes that the only heritage found during the field survey consists of insignificant isolated finds or small numbers of stone artefacts located in highly disturbed areas of the rail corridor and lands adjoining it.

Appropriate mitigation procedures have been proposed

OEH accepts the recommended procedures for discovery of human remains (section 11.3, page 96) and the surface collection of Aboriginal objects.

A preference should be placed on community monitoring rather than excavation and artefact analysis

Recommendation:

- 1. The Registered Aboriginal Parties participate in a monitoring program for those areas identified for archaeological excavation.**

OEH does not understand the necessity for the proposed geomorphological and archaeological excavations given the field assessment results. Equally, the proposed artefact analysis is excessive and unlikely to be informative because of the reported low significance.

OEH recommends that the Registered Aboriginal Parties participate in a monitoring program for those areas identified for archaeological excavation. The RAPs have indicated on cultural grounds the importance of the creek areas and may therefore be interested in salvaging any artefacts that are unearthed during works. This would be a proportionate mitigated response to ACH given the results of the overall survey.