

EXTRACTS FOR THE OFFICE OF ENVIRONMENT AND HERITAGE

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2. RESPONSES TO ISSUES RAISED ABOUT THE AMENDED PROJECT

2.12 FAUNA

2.12.2 Squirrel Gliders and Grey-crowned Babblers

2.12.2.1 Representative Comment(s)

OEH has recommended that GRL conduct further monitoring of the Squirrel Glider and Grey-crowned Babbler populations on the Project site prior to determination. Following consideration of the Mid-Coast Council submission, DPE agrees that these studies must be extended to include the Brush-tailed Phascogale. These studies should be extended to the proposed Biodiversity Offset Area (BOA) and be provided in the RTS. The aim of these surveys is to determine the current population status of these species and whether the BOA does, or does not, currently support these species.

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Response

In response to submissions, additional surveys for the Squirrel Glider and Grey-crowned Babbler have been undertaken (**Appendix 1**). These additional surveys also included survey for the Brush-tailed Phascogale, and were undertaken in the Mine Area, proposed BOA and adjacent habitat adjacent to Waukivory Road. In summary, these surveys detected the Squirrel Glider within the Waukivory Road road reserve and northern section of McKinleys Lane. A probable observation was made within the Mine Area during spotlighting. No Squirrel Gliders were detected in the proposed BOA, but a single Sugar Glider, which has similar habitat and dietary requirements, was detected in this area.

Based on the marking of trapped animals, the minimum number alive (MNA) in the assessment area for the additional surveys is predicted to be three Squirrel Gliders (**Appendix 1**).

The majority of confirmed Squirrel Glider observations during the past (see Section 3.2.3.3 of the TBA) and current (**Appendix 1**) assessments were from the northern section of the study area, with the Squirrel Glider population appearing to be centred on the northern section of McKinleys Lane and Waukivory Road. Given the availability of suitable hollows in this area, this result is not surprising. This area, north of the proposed Administration Area, will not be directly impacted by the amended Project, with no vegetation removal to be undertaken in McKinleys Lane other than a small area to be cleared for construction of the Mine Access Road. Closure of this section of McKinleys Lane, and revegetation of the former road corridor, will increase the area and condition of available habitat.

Recent surveys (**Appendix 1**) detected three Grey-crowned Babbler groups along McKinleys Lane:

- A northern group consisting of at least four individuals, located from the intersection with Waukivory Road to approximately 720 metres south.
- A middle group consisting of at least six individuals, located in and around the two houses west of McKinleys Lane, which lie(s) within and will form part of the proposed Administration Area.

- A southern group consisting of at least four individuals, located in the southern section of McKinleys Lane, 300 to 1300 metres south of the Administration Area.
 - This group appeared to be made up of a number of immature birds that lacked the yellow eye ring, characteristic of mature individuals of this species. However, a single adult bird confirmed that these were the Grey-crowned Babbler. This, combined with the observation of a single family group only during past assessments (see Section 3.2.3 of the TBA), may indicate that the population of the Grey-crowned Babbler is expanding.

The northern and middle family groups will not be directly impacted by the removal of vegetation. The removal of vegetation in the southern section of McKinleys Lane will impact on this group. Whilst these animals may disperse and join adjacent family groups, the eventual impacts cannot be determined with any certainty. However, the closure to traffic and revegetation/restoration of the road corridor in McKinleys Lane has the potential to improve and increase the area of habitat available to the two remaining family groups. This, combined with additional plantings of key areas to increase the availability of habitat and improve dispersal capabilities (as recommended in **Appendix 1**) is aimed at securing the long-term viability of the Grey-crowned Babbler population in this area. Adaptive management of these areas would include monitoring and reporting on the Grey-crowned Babbler population and be implemented through the Biodiversity Management Plan.

The characteristic call of the Grey-crowned Babbler was heard in the proposed BOA on two separate occasions. However, targeted searches through this area could not locate these birds, with both calls appearing to come from the upper slopes of the Mograni Range. This indicates that this species occurs in the BOA and adjacent habitats.

The Brush-tailed Phascogale has not been recorded within the study area during past or current assessments, despite targeted surveys for this species that involved over 250 trap nights. Given this, Biosis has concluded that a viable population of this species is unlikely to be present in the study area.

2.13 FLOODING

2.13.1 General

2.13.1.1 Representative Comment(s)

The WRM study indicates the following flood impacts:

- *increases in flood level at the northern end of the proposed private haul road in the vicinity of the Waukivory Creek crossing. These increases include magnitudes of 0.5 to 1 m increase in level and up to 2 m/s increase in velocity. The increases in this area were not present on the previously approved scheme. There is also lack of clarity in the documents with mapping of boundaries appearing inconsistent with statements regarding ownership of the affected land*
- *six minor waterway crossings are proposed for the private haul road. It is stated that these will be sized to ensure transfer of water through the road however no calculations or analysis is provided.*

Prior to issuing of consent conditions confirmation of land ownership in the vicinity of the Waukivory Creek crossing is required. If this land is privately owned land demonstration of negotiation and compensation of affected owners would be required. The impact indicated by the WRM study is considered significant and OEH cannot endorse activities with significant impact on private land holders.

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Response

The private haul road bridge structure itself has been designed as a single span structure, which would better allow the free passage of water (and debris) through the watercourse compared to the adjacent existing bridge currently across Waukivory Creek. The marginally higher elevation of the new bridge across Waukivory Creek would require the construction of an embankment on the southern approach of the bridge. The height of this embankment has been minimised to reduce the impact on flooding, however it is acknowledged that there would be some residual localised impacts on flood levels and velocities.

As shown in **Figure 2.13.1** (an enlargement from SWA Appendix C (Figure 4.9)), the resultant increase in flood levels in the 1 in 100 AEP flood would be less than 1.0m. Impacts greater than 0.5m (but less than 1.0m) would be limited to areas of land owned by GRL, while impacts of greater than 0.1m and less than 0.5m would occur across an area of only 0.5ha within a property owned by Yancoal Australia Limited. The predicted impacts would not affect existing infrastructure [and would have no impact on any residential dwellings].

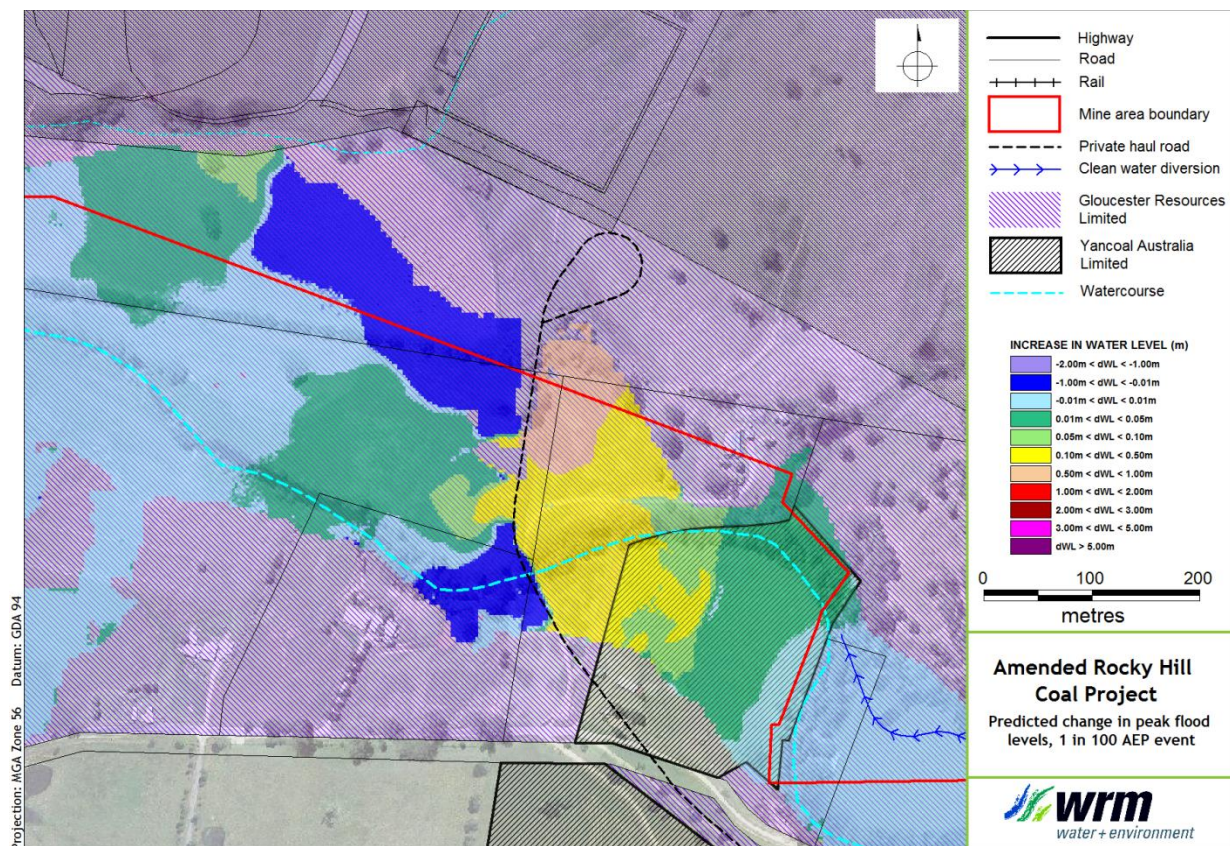


Figure 2.13.1 Predicted Change in Peak Flood Levels, 1 in 100 AEP Event near Private Haul Crossing of Waukivory Creek

Figure 2.13.2 shows the resultant increase in flood velocities in the same area. Impacts greater than 0.1m/s would be limited to areas of land owned by GRL, while impacts of greater than 0.01m/s but less than 0.1m/s would occur across an area of only 0.5ha within an adjoining property owned by Yancoal Australia Limited. The predicted impacts would not affect existing infrastructure.

During the final design of the bridge crossing of Waukivory Creek, GRL would endeavour to reduce localised impacts on flood levels and velocities as much as possible through, for example, further minor modifications of the private haul road alignment, elevation refinements and/or construction, form and methodology. Construction of the bridge crossing would remain consistent with the guidelines issued by NSW DPI Fisheries. The final design would be completed prior to the site establishment and construction stage of development with any modifications likely to result in reduced flooding impacts from those presented in the EIS or the SWA.

The design of the culverts beneath the private haul road would be undertaken as part of the overall road design and incorporated in the Water Management Plan submitted prior to the construction of the road.

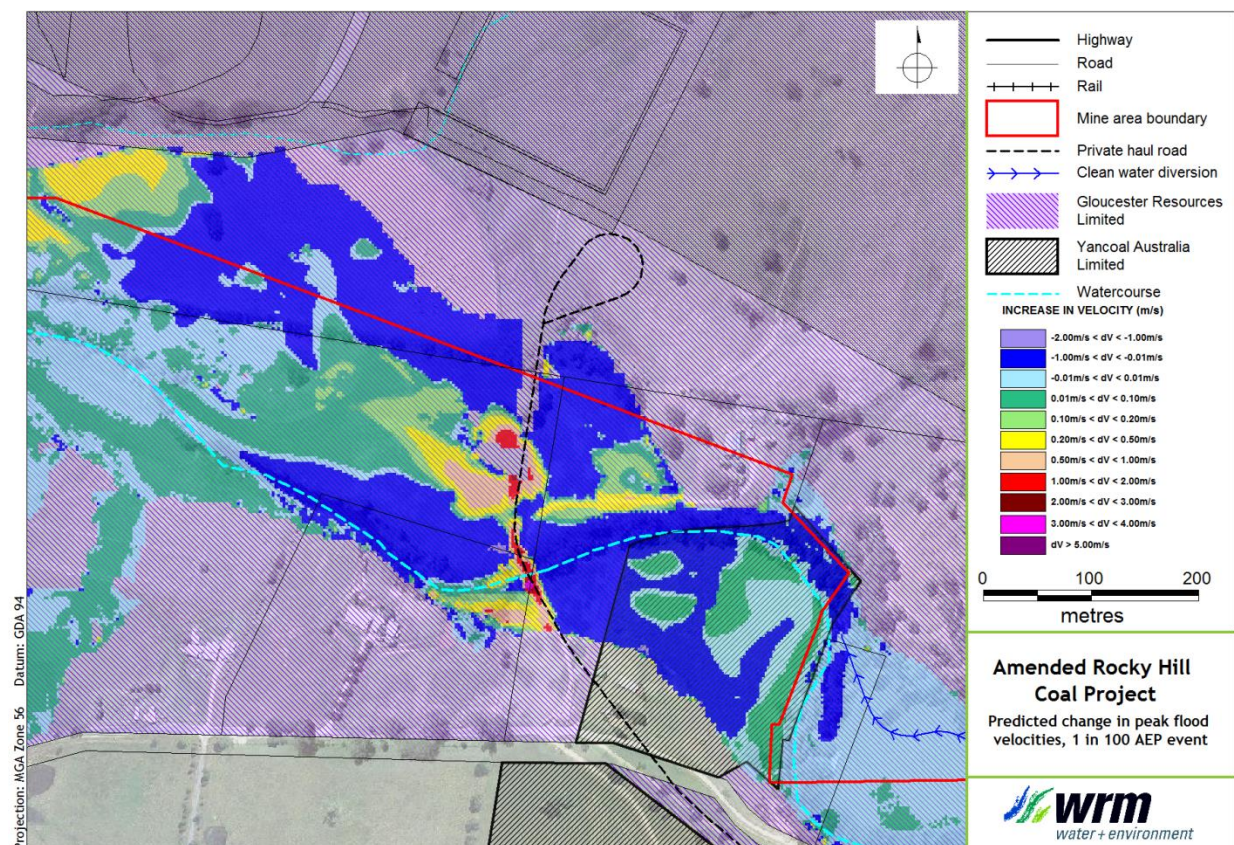


Figure 2.13.2 Predicted Change in Peak Flood Velocities, 1 in 100 AEP Event near Private Haul Crossing of Waukivory Creek

3. RESPONSE TO PROPOSED CONDITIONS OF CONSENT

3.3 OFFICE OF ENVIRONMENT AND HERITAGE

3.3.1 Flooding

3.3.1.1 Representative Comment(s)

1) Detailed design of the proposed haul road will require catchment analysis to ensure waterway crossings are sized to ensure flows are not obstructed by road embankments. Appropriate headwall and energy dissipation structures are to be incorporated in the design together with analysis of blockage. *Negotiation with affected land holders will be required if the road construction will affect flooding or erosion of private property.*

Response

GRL would accept this recommended condition. See text in 3. below.

2) Monitoring programs will be required to include monitoring for erosion within Oaky Creek and to the northern and western amenity barriers. Monitoring programs for Oaky Creek will require access to private property and this will require negotiation with affected land holders. Programs should include trigger points for action and rectification of erosion and sediment management.

Response

GRL would accept this recommended condition. The requested information would be provided in the Surface Water Management Plan.

3) Detailed design of the Waukivory Creek crossing should include update of the flood analysis to ensure final design configuration is modelled. Bank protection works will be required to be incorporated in the design to accommodate the increase in velocity in this area. Impact on private property is to be minimised *and appropriate negotiation and compensation should be carried out as part of the detailed design phase.*

Response

GRL would accept this recommended condition. However, the highlighted text appears to be inconsistent with similar text highlighted in 1. above, i.e. *Condition 3* refers to compensation whereas *Condition 1* does not.