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Tahmoor Coal Pty Ltd

Redbank Tunnel Subsidence Management Modification of Project Approval Submissions Report

December 2011

Revision 0



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Part A Introduction



1. Introduction

1.1 Overview

Tahmoor Coal Pty Ltd, wholly owned by Xstrata Coal and the operator of the Tahmoor Colliery, seeks to modify its existing underground coal mining consent for Tahmoor North, DA 67/98 (as modified), under Section 75W of the *Environmental Planning and Assessment Act 1979*.

Specifically, Tahmoor Coal seeks to:

- ▶ Modify Condition 6 and Figure 2 of development consent DA 67/98 (as modified) to permit subsidence in Area 3 as shown on Figure 2 of the development consent. Area 3 contains Redbank railway tunnel (Redbank Tunnel).
- ▶ Modify Condition 1 of development consent DA 67/98 (as modified) to allow construction of a Deviation of the Main Southern Railway (MSR) at Tahmoor. This development is required to manage the likely subsidence impacts associated with the proposed mining activities in Area 3, including the Redbank Tunnel.

An Environmental Assessment (EA) was prepared which presents the findings of work undertaken to support an application for modification of DA 67/98 (as modified), under section 75W of the EP&A Act, and to demonstrate that the Department of Planning and Infrastructure (DOP&I) Director General's Environmental Assessment Requirements had been satisfied. The Environmental Assessment was publicly exhibited for a period of 30 days between 27 September 2011 and 28 October 2001 in accordance with Section 75H(3) of the EP&A Act. During this period, submissions were invited from anyone with an interest in the Project, including members of the community and government stakeholders. These submissions have been considered and are addressed in the Submissions Report (this report).

1.2 Purpose of this Report

This Submissions Report documents and considers the submissions received on the Environmental Assessment and outlines the response to them, as required under Section 75H(6) of the EP&A Act at the time of lodgement. The Submissions Report also provides an overview of the Environmental Assessment (refer to Section 1.5), consultation activities undertaken during the preparation and public exhibition of the Environmental Assessment (refer to Chapter 2), a summary of the key non-government and government issues raised (refer to Chapter 3) as well as the response to the issues raised in these submissions (refer to Chapter 4).

1.3 Need for the Project

Tahmoor Coal, which is extracting coal from the Bulli Seam within the NSW Southern Coalfields, has previously mined 25 longwall panels to the south of the mine's current mining area, and is proposing to extend its future longwall mining in accordance with Condition 3 of DA 67/98. Proposed future longwalls include mining under Redbank Tunnel with associated subsidence in Area 3, within which Redbank Tunnel is a key feature.



DA 67/98 prohibits subsidence in Area 3. This condition was imposed as at the time of grant, as there was insufficient information at the time to accurately assess the potential subsidence impacts on the Redbank Tunnel, and therefore, to determine an appropriate method to mitigate any potential impacts.

Significant mine subsidence movements of over 1130 mm (as modelled) would likely impact the structural integrity of Redbank Tunnel, and may put at risk the safe passage of rail traffic. Engineering and technical reports have raised concerns that subsidence induced strains could exceed safe operating parameters, or that closure and upsidence may cause dislocation of bricks from the tunnel roof posing a risk to traffic and safe operation of the rail system. Therefore, a deviation of the track around the Tunnel has been determined to be the most appropriate option to maintain the safe operation of the track, while also undertaking longwall mining and subsiding Area 3. This EA therefore, assesses the potential social and environmental impacts of both proposed modifications; being the track deviation and the mining induced subsidence of Area 3.

To prevent potential subsidence impacts from affecting Area 3 in general, and the Redbank rail tunnel in particular, large areas of longwalls 27, 28, 29 and 30 would have to remain unmined or 'sterilised'. The amount of coal sterilised would be up to 4.5 million tonnes, exceeding \$700 million in value, with potential coal royalties forgone of up to \$35 million. Mining this resource would provide ongoing employment for employees in addition to income for associated businesses through the downstream multiplier effect. The modifications outlined in the Environmental Assessment are required such that mining can proceed efficiently in longwalls 27 to 30, meaning that the coal resource would not be sterilised.

The key subsidence mitigation measure provided in the Environmental Assessment of relocating the MSR would ensure that the risks of subsidence to Redbank Tunnel are appropriately eliminated. The proposed subsidence management strategy would allow controlled and predicted subsidence to occur in Area 3 from longwall mining, with significantly reduced risk of major impact to rail passengers and freight movements.

1.4 Key Features of the Project

The main components of the Deviation include:

- Construction of a 1.9 km section of dual standard gauge rail track to deviate around Redbank Tunnel on the eastern side of the existing rail tunnel.
- Construction of access tracks from 91.850 km to 93.000 km on the Down side and from 91.850 km to 93.700 km Up Side (full extent of project). The width of access road on both sides is 6.5 m from the centre line of the near track.
- Completion of Project enabling works including relocation of public utilities along the deviation route including high voltage electricity at the southern tie in, low voltage local power supply servicing a Telstra communications tower, Telstra services and rail signalling and communication services.
- Widening of Remembrance Driveway near the intersection with Stilton Road to facilitate a site entrance.
- Clearing and grubbing of vegetation.



- Establishment of construction compounds.
- Construction of internal haul roads.
- Construction of bulk earthworks and drainage systems.
- Installation of new signalling infrastructure for new tracks.
- Installation and extension of under track culverts at a number of locations, including extending culverts at Chainages 91.940 km and 93.400 km.
- Placement of excess cut material within the construction precinct and adjoining property.
- Decommissioning of the existing rail corridor between interface points for the new rail deviation.
- Filling, stabilising and sealing of the redundant Redbank Tunnel.
- Construction of various noise abatement structures as required.
- Acquisition of property to the east of the existing rail corridor.
- Tie in of the deviation at the southern end of the Project Area at chainage 93.500 and at the northern end of the Project Area at chainage 91.860.
- Revegetation of all disturbed areas.

The new section of rail track, formation, and associated infrastructure has been designed to withstand subsidence caused by mining.

1.5 Overview of Potential Impacts and Benefits of the Project

Potential construction and operational impacts would occur to the following if the Project was to proceed:

- Rail safety and performance.
- Noise and vibration.
- Traffic.
- Air quality.
- Erosion and sediment control.
- Surface water.
- Groundwater.
- Land use planning.
- Visual amenity.
- Biodiversity.
- Aboriginal heritage.
- Non-aboriginal heritage.
- Rehabilitation.



These impacts are discussed in detail in Part C of the Environmental Assessment. A summary of the key potential environmental impacts noted above and proposed measures to mitigate these impacts are provided in Table 1-1. Potential benefits that are expected to be associated with the Project are also summarised in Table 1-1

It is expected that the impacts identified in Table 1-1 would be manageable, given the commitments to environmental protection and management made by Tahmoor Coal (Statement of Commitments, Chapter 21 of the Environmental Assessment, revised version provided in Appendix A).

Table 1-1 Overview of Potential Project Impacts and Key Management Commitments

Key Issue	Identified Key Potential Impact/Benefit	Key Management Commitments
Rail safety and performance	Potential impact of the modification on the safety and performance of the rail network.	- Measures to protect embankment stability. - Tie-in of the deviation to MSR to take place only in a track possession. - Backfilling of Redbank Tunnel. - Fencing of high cuts. - It has been identified that the modification Project, if approved, would result in marginal cost reductions to ARTC by elimination of the Redbank Tunnel.
Noise and vibration	Potential construction noise and vibration impacts	- Community consultation process to manage works which may occur outside standard construction hours. - Preparation and adherence to a Construction Noise and Vibration Management Plan. - Compliance noise monitoring in line with a detailed monitoring and reporting procedure for construction activities which may impact residential receivers.
	Potential operational noise and vibration impacts.	Incorporation of a 2.4 m high noise barrier in the design adjacent to sensitive receivers (comprised of a noise wall and noise mound).
Traffic	Increase in truck movements during construction period	Traffic Management Plan to reduce impact of construction related traffic on local road network.
	Site access	Use of Lot 62 Remembrance Driveway as a new intersection to provide access to the construction site for traffic.



Key Issue	Identified Key Potential Impact/Benefit	Key Management Commitments
Air quality	Potential construction air quality impacts (dust).	• Dust control measures to apply during construction activities. • All vehicles hauling sand, dirt and other materials would be covered when travelling on public roads. • Limiting vehicle speeds on sealed and unsealed roads.
	Potential operational air quality impacts (dust and emissions).	• Covering railway verges using cobbles or similar to reduce fugitive dust emissions. • Establishing stand of trees to aid dispersion and potentially remove dust particles.
Erosion and sediment control	Ground cracking	• Appropriate remediation measures such as filling, shaping and revegetation.
	Water quality decline	• Temporary and permanent sediment and erosion control measures.
Surface water	Water quality decline	• Surface water monitoring program as part of the CEMP.
	Increase in scour	• Silt fences and sediment traps.
Groundwater	Alterations to groundwater flow pathways and groundwater dependent ecosystems	• Surface water monitoring program. • Temporary diversions to divert runoff.
Land use planning	Property acquisition	• Continued consultation with affected landholder.
	Minor visual impacts	• Preparation and implementation of a Landscape Plan.
Visual Amenities	Visual impacts during construction phase	• Avoid loss or damage to vegetation. • Minimise light spillage during any required night time works.
	Visual impacts during operation phase	• Preparation and implementation of a Landscape Plan and Rehabilitation Strategy. • Ongoing consultation with affected residents on desired screening solutions.



Key Issue	Identified Key Potential Impact/Benefit	Key Management Commitments
Biodiversity	Clearance of native vegetation, including threatened flora species and potential threatened fauna species habitat.	- Final design chosen which avoids significant impact on native vegetation. - Revegetation and rehabilitation in line with a Landscape Plan. - Fauna management included as part of the CEMP. - Retirement of biobank credits to offset impact.
Aboriginal heritage	Disturbance of aboriginal artefacts or relics	- Buffer zone of approximately 20 m near identified site at Redbank 3/A. - Ongoing consultation with Aboriginal stakeholder groups. - Valid AHIP required for any works undertaken within Aboriginal site areas.
Non aboriginal heritage	Disturbance of non Aboriginal artefacts or relics	Accidental discovery of any relics to be immediately reported to the Heritage Council in accordance with Section 146 of the NSW <i>Heritage Act</i> 1977.
Rehabilitation	Site rehabilitation	- Healthy groundcover sustained to prevent erosion and sedimentation occurring. - Replacement of any plants that die within the first 12 months of rehabilitation.

1.6 The Assessment and Determination Process

The Project has been assessed and will be determined under section 75W of Part 3A of the EP&A Act. Following the lodgement of this Submissions Report, the Department will, on behalf of the Minister, review the Environmental Assessment, all submissions received and the Submissions Report. Once the Department has completed its assessment, a draft assessment report will be prepared for the consideration of the Director-General. This report may include recommended Conditions of Approval for the project.

The assessment report will then be submitted to the Minister for formal determination. The Minister may then approve the Project with any appropriate Conditions imposed, or may also choose to refuse the Project.

Immediately following the Minister's determination, copies of the determination and assessment report will be published on the DOP&I's website.



2. Exhibition and Consultation

This section documents the consultation that was undertaken by Tahmoor Coal during the preparation and public exhibition of the Environmental Assessment. This section also provides details of the consultation that would be undertaken by Tahmoor Coal if project approval is granted.

2.1 Pre-exhibition Consultation

The objective of this consultation phase was to identify stakeholder and community issues to be addressed in the Environmental Assessment and to inform stakeholders about the Project. Consultation was undertaken with government agencies, members of the community and other stakeholders during the preparation of the Environmental Assessment as summarised in Table 2-1.

Table 2-1 Consultation Activities Undertaken

Tools	Consultation Activity Undertaken
Toll free information number	Tahmoor Coal already has an existing 1800 toll free line that is familiar to the local community. This phone number has been advertised in all of the Project correspondence as a contact mechanism in order to encourage community feedback and provide a method of disseminating information about the Project. The phone line would be maintained throughout project approval and construction of the rail deviation.
E-mail facility	An email facility was established at the onset of the Project to enable the community and stakeholders to provide feedback to the Project team for consideration in the EA.
Website	Information about the Redbank Tunnel Subsidence Management Project has been uploaded on the Tahmoor Coal Website: http://www.tahmoorcoal.com.au/EN/majorprojects/Pages/RedbankTunnelDeviation.aspx The information on the website includes the contact mechanisms and the community are encouraged to contact Tahmoor Coal with any concerns or queries about the Project. Regular updates would be posted on the site so the community is kept informed about the project.
Landowner meetings	Regular meetings have been held with the owner of the land on which the deviation would be built regarding design issues. These are ongoing and have been held during the design and EA phase. The purpose of these meetings was to identify local issues, such as property and stock access, drainage and amenity, for consideration in the development of the design.
Letter to adjacent property owners	Approximately 27 residential properties were identified as being in close proximity to the Project. A letter was distributed to these landowners in late November 2010. The letter described the project and invited concerned residents to either contact the Project Team to organise a face to face meeting, or attend a Community Information Day on 2 December 2010.



Tools	Consultation Activity Undertaken
Community information day #1	A Community Information Day was held on 2 December 2010 at the Tahmoor Community Centre. Landowners in close proximity to the proposed deviation were invited to attend the Information Day and were given the opportunity to ask questions and provide feedback on the Project. Eight local residents attended the information day and expressed their concerns about the Project.
Letters to key stakeholders and community organisations	On 14 December 2010 a letter was sent to 16 key stakeholders and community organisations informing them of the project and inviting them to contact the project team should they have any queries. The letter was sent to: ▶ Wollondilly Branch NSW Nationals. ▶ NSW Greens. ▶ Department of Industry and Investment NSW. ▶ Department of Environment, Climate Change and Water. ▶ Mine subsidence board. ▶ Bargo Chamber of Commerce. ▶ Picton Chamber of Commerce. ▶ NSW Police Force. ▶ NSW Fire Service. ▶ NSW Rural Fire Service. ▶ NSW Ambulance Service. ▶ Independent Transport Safety Regulator. ▶ Hilton Park Preservation Group. ▶ Macarthur National Parks Association. ▶ Rivers SOS/Nepean Action Group. ▶ Hawkesbury Nepean Catchment Management Authority.
Letters to the surrounding community	In December 2010 letters were distributed to approximately 300 residential properties in the surrounding Tahmoor area. The letter outlined the Project and encouraged local residents to contact the Project team by phone or e-mail if they had any concerns.
Meetings with adjacent property owners	Upon receipt of the initial letter, eight property owners in close proximity to the Project requested to meet with the Project team. Face to face meetings were held to provide the landowner with the opportunity to ask questions about the Project, in particular the potential impacts to their property. Meetings were held at each of the landowner's properties located on either Remembrance Driveway or Tahmoor House Court. At a number of these meetings, photos were taken of the view of the Project from the individual properties. Images of the proposed deviation were then superimposed onto these images to illustrate to the landowner the visual impact of the Project.
Newsletter	In the first week of February 2011 a newsletter was distributed to 300 houses in the Tahmoor area. The newsletter outlined the project, work completed to date and the planning application process including opportunities for community engagement. The newsletter included an invitation to the second Community Information Day.



Tools	Consultation Activity Undertaken
Advertisement	Advertisements were placed in the Wollondilly Advertiser on 9 and 16 February 2011 to invite the community to the second Community Information Day.
Community Information Day #2	The second Community Information Day was held on the 17 February at the Tahmoor Community Centre. In addition to the newsletter and advertisements, members of the community who had expressed an interest in the project were also contacted by phone and invited to attend. In total 15 local residents asked questions about the Project. Plans of the rail deviation were presented as well as concept options illustrating the potential noise attenuation measures.

2.2 Consultation during the Public Exhibition Period

The Environmental Assessment was placed on public exhibition for a period of 30 days between 27 September and 28 October 2011. The exhibition activities and consultation undertaken during the exhibition period are summarised in the following sections.

2.2.1 Exhibition Venues

The Environmental Assessment was placed on exhibition from 27 September to 28 October 2011 at the following locations:

- Tahmoor Colliery, Remembrance Driveway, Tahmoor.
- DOP&I, Information Centre, 23-33 Bridge Street Sydney.
- Wollondilly Shire Council, Frank McKay Building, 62-64 Menangle Street, Picton.
- Nature Conservation Council, Level 2, 5 Wilson Street, Newtown.

It was also available for review on the DOP&I website and the Tahmoor Coal website.

All submissions were received by the DOP&I and were provided to GHD and Tahmoor Coal. Late submissions were accepted by the DOP&I up until 14 days after the close of the exhibition period.

Chapters 3 and 4 analyse and address the issues raised in these submissions. Details of the submissions and the issues raised are included in Appendix A.

2.2.2 Advertisements

An advertisement outlining the key details of the Project and exhibition of the Environmental Assessment was placed by the DOP&I in the local Wollondilly Advertiser on 27 September 2011.



2.3 Exhibition Period Consultation

During the Environmental Assessment exhibition period, the following community consultation activities were undertaken:

- Community newsletter providing a summary of the Environmental Assessment and information about the exhibition and Community Information Day (held on 19 October, 2011). This was hand delivered to the most affected residents and mailed to others in the wider area. A copy of the newsletter distributed to residents is provided in Appendix B.
- Both the Wollondilly Councillors and Management were briefed on the Environmental Assessment during exhibition, in person by Tahmoor Coal staff.
- A community information day was held on 19 October, 2011 at Tahmoor Community Centre. There were static displays on the Project and both Tahmoor Coal and GHD staff were present to respond to any community questions on the Project.
- A small number of residents who live within immediate proximity to the Project were visited by Tahmoor Coal to discuss the Environmental Assessment.

2.4 Future Consultation

Should the Project be approved, Tahmoor Coal would continue to consult with community members, government agencies and other stakeholders during the construction phase of the Project.

Tahmoor Coal has made a commitment to keep the community and key stakeholders informed throughout the environmental assessment and construction phases of the Project.

The overall goal of the community engagement strategy is to provide the public with balanced and objective information to assist them in understanding the Project and its potential impacts, during construction and operation.

To achieve this goal, Tahmoor Coal would undertake the following communication activities:

- Regular newsletters to local residents to be distributed during peak work periods.
- Meetings with local and state organisations and authorities.
- Meetings with the landowner of the Project site.
- Community information days during construction where Project progress can be discussed and questions answered in relation to the Project.
- Maintenance of a toll free 1800 information line and e-mail address.
- Management of a contact and issues database.
- Website regularly updated with the status of the Project.



Part B Submissions



3. Consideration of Submissions

3.1 Number of Submissions Received

The Environmental Assessment was placed on exhibition from 27 September 2011 to 28 October 2011. During this period, DOP&I received a total of eight submissions. This comprised seven submissions from government departments and agencies and one submission from the community. Response to the key issues raised in these submissions forms the basis of Chapter 4.

3.2 Submission Issues

Table 3-3 includes details on each of the non-government and government submissions. This includes:

1. The government agency responsible for the submission (where appropriate).
2. The suburb where the author of the non-government submission resides and/or is a landholder (where appropriate).
3. The comments and/ or issues raised in the submission.

The names of those making submissions have only been provided for government agencies and organisations. The suburb of residence is the only detail provided for the private submission.

3.3 Analysis Process

Government agency submissions have been dealt with separately to non-government submissions. Submissions have been categorised according to the type of issues raised and listed based on the date received (earliest received has been listed first).

3.4 Government Issues

Table 3-1 categorises the issues raised in the government submissions. The response to issues provided in Chapter 4 is presented based on the order of issues from this table.

Table 3-1 Categories of Issues from Government Submissions

Type of Issue Raised	Number of Issues raised in Submission
Traffic and access	1
Heritage	3
Mine Subsidence	6
Hydrology	4
Agriculture	1
Biodiversity	1



3.5 Non-government Issues

Table 3-2 categorises the issues raised in the non-government submission.

Table 3-2 Category of Issues from Non-government Submission

Type of Issue Raised	Number of Issues raised in Submission
Noise	1
Visual amenity	2
Biodiversity	2
Agriculture	1
Construction	2

3.6 Issue Summary

A summary of each of the submissions is provided in Table 3-3.



Table 3-3 Summary of Submissions and Comments

Agency/Community Suburb	Comments/Issues Raised	Relevant Section in EA	Relevant Section in Submissions Report
Community - Remembrance Driveway	Concern regarding construction noise impacts outside of normal work hours	Section 8.5 of EA and Appendix D of EA report	Section 4.10.2
	Concern regarding visual impact through loss of vegetation	Section 15.5 of EA and Appendix H of EA report	Section 4.8.2
	Concerns regarding views of the rail deviation from Stilton Lane	Section 15.5 of EA and Appendix H of EA report	Section 4.8.2
	Impacts on endangered ecological communities	Sections 16.4 and 16.5 of EA and Appendix I of EA report	Section 4.9.2
	Concern regarding impact on fauna connectivity between Myrtle and Redbank creeks	Section 16.5 of EA and Appendix I of EA report	Section 4.9.2
	Concern regarding noise impact of operation rail line	Section 8.5.3 of EA and Appendix D of EA report	Section 4.7.2
	Concern regarding potential interruption of services with relocation of infrastructure	Not outlined in EA as this is not considered an issue during construction works. See response in Submissions Report Section 4.10.2	Section 4.10.2
	Concern over construction hours	Section 2.14 of the EA	Section 4.10.2



Agency/Community Suburb	Comments/Issues Raised	Relevant Section in EA	Relevant Section in Submissions Report
NSW RTA	Requirement to upgrade the temporary access junction on Remembrance Driveway	Section 10.5 of EA and Appendix E of EA	Section 4.1.2
Heritage Council of NSW	Comment regarding an incorrect reference in the non-aboriginal heritage report	Appendix K of EA report	Section 4.2.2
	Concern regarding insufficient commitments for the management of non-aboriginal heritage implications of the Project	Section 21.1 of EA report	Section 4.2.2
	Requirement to include recommendations in the sub-consultant report within the Statement of Commitments	Section 21.1 of EA report	Section 4.2.2, Appendix A
Mine Subsidence Board	General comment on subsidence resulting from works from altering or erecting improvements	Not outlined in EA as this issue is considered applicable for the SMP. See comments in Submissions Report Section 4.3.2	Section 4.3.2
	Comments on existing improvements and acquiring of property	Not outlined in EA as this issue considered applicable for the SMP. See comments in Submissions Report, Section 4.3.2	Section 4.3.2



Agency/Community Suburb	Comments/Issues Raised	Relevant Section in EA	Relevant Section in Submissions Report
	Comments on relocated improvements and requirement for design and construction for all anticipated subsidence impacts	Not outlined in EA as this issue considered applicable for the SMP. See comments in Submissions Report, Section 4.3.2	Section 4.3.2
	Requirement for final design drawings to be submitted to the Board	Not applicable to EA. Addressed in Submissions Report, Section 4.3.2	Section 4.3.2
	Requirement for as constructed drawings to be submitted to the Board	Not applicable to EA. Addressed in Submissions Report, Section 4.3.2	Section 4.3.2
NSW Office of Water	Requirement for a Surface Water Management Plan to be developed prior to the commencement of works	Section 21.1 of EA report	Section 4.4.2
	Requirement for a Groundwater Management Plan to be developed prior to the commencement of works	Section 21.1 of EA report	Section 4.4.2
	Confirmation that appropriate licenses will be obtained to the satisfaction of NOW for all activities which intercept or extract groundwater	Section 5.4.4 of EA report	Section 4.4.2
	Requirement to obtain Controlled Activity Approvals for all activities on waterfront land prior to the commencement of these works	Section 5.4.4 of EA report	Section 4.4.2



Agency/Community Suburb	Comments/Issues Raised	Relevant Section in EA	Relevant Section in Submissions Report
Department of Primary Industries	No further comments on the EA	No reference required	Section 4.5
NSW Office of Environment and Heritage	Requirement to commit to biodiversity offsets for the proposed clearing of native vegetation	Section 16.5 of EA	Section 4.6.2
Department of Trade & Investment, Resources and Energy	The management of subsidence-related risks are practicable, provided the proposed railway deviation around the Redbank railway tunnel is completed prior to the commencement of any subsidence impacts on the Tunnel	Not outlined in EA as this issue is considered applicable for the SMP. See comments in Submissions Report Section 4.3.2	Section 4.3.2



4. Response to Submission Issues

Government Submissions

4.1 Traffic and Access

The following requirement was raised by the Roads and Traffic Authority (RTA) in response to the traffic and access component of the Environmental Assessment.

4.1.1 Issue

- 1) *There is a requirement that the temporary access is upgraded to a CHR(S)/BAL type junction treatment in accordance with AUSTROADS standards and Remembrance Driveway is restored to its existing configuration following Project completion.*

4.1.2 Response

- 1) The RTA has requested the temporary access upgraded to a CHR(S)/BAL. We note that the proposed CHR(S)/AUL(S) type intersection which is proposed in the Environmental Assessment (Chapter 10) has previously been reviewed and approved by the RTA and Wollondilly Council.

It is also considered that the proposed CHR(S)/AUL(S) type intersection provides a higher standard than the RTA proposed CHR(S)/BAL type, as it includes a paved passage for left turning vehicles to move out of the way of through traffic when turning slowing in speed and turning left. Given the traffic numbers, it is also unlikely that the RTA proposed CHR(S)/BAL type intersection would comply with the requirements of Austroads.

Based on the above, the temporary access would be upgraded to a CHR(S)/AUL(S) type intersection in accordance with Austroads, as previously proposed. Remembrance Driveway would be reinstated to the existing lane configuration at the completion of the Project works.

4.2 Heritage

The following comments were raised by the Heritage Council of NSW in response to the non-aboriginal heritage component of the Environmental Assessment.

4.2.1 Issues

- 1) *There is a comment that the process for the discovery of relics has been incorrectly referenced to be reported to the Office of Environment and Heritage. In accordance with Section 146 of the Heritage Act, the discovery of relics must be reported to the NSW Heritage Council.*
- 2) *The two Commitments regarding the non-aboriginal heritage management are not considered sufficient to manage the non-aboriginal heritage implications of the works.*



- 3) *The Heritage Branch requires that Recommendations numbers 7 and 8 from the Stedinger Report are included in the draft SoC.*

4.2.2 Response

- 1) Noted. The recommendations in the Stedinger Report (Appendix K of the Environmental Assessment), and associated references within the Environmental Assessment document (SoC reference no. 29) should read that the discovery of relics within the meaning of the *Heritage Act 1977* would be reported to the NSW Heritage Council.
- 2) Noted. The Non- Aboriginal Heritage Assessment states that the Project would impact on the stability of Redbank Tunnel and two culverts, and provides mitigation measures for these structures. Other non-aboriginal heritage items that were identified within the Project area include Tahmoor House and Myrtle Creek Bridge. Other than impact to the visual amenity of residents at Tahmoor House, the Project would not however, have any structural or other impact on either of these structures.

Mining is approved and subsidence permitted under Tahmoor House and Myrtle Creek Bridge (DA67/98 MOD) and Conditions 27 and 28 of this consent provide for subsidence management of these structures, as follows:

27. The Applicant shall not cause damage to any building or structure which is a Heritage Item without the prior approval of Council. The application for such approval shall include a detailed report assessing:

- (i) likely subsidence and the potential damage to the item arising from subsidence;*
- (ii) impacts of expected damage on the historical significance of the Item (prepared by a qualified heritage expert endorsed by Council); and*
- (iii) appropriate mitigation, management or restoration measures.*

Note: In this condition, "Heritage Item" means an item either listed in Schedule 1 of the Wollondilly Local Environmental Plan 1991 or identified in the Wollondilly Heritage Study 1993. The power for Council to issue an "approval" is established under this condition, and should not be read as establishing any requirement for the application for and grant of development consent under the Act.

28. When applying for the approval of Council under condition 27, the Applicant shall provide a copy of the application and detailed report to the owner or owners of affected buildings or structures and to the Community Consultative Committee

Further, before each longwall commences, a Subsidence Management Plan must be submitted to the Department of Resources and Energy that has been prepared in consultation with the Mine Subsidence Board. This plan would include specific measures for management of impacts to these structures. Therefore it is not considered necessary or appropriate to include mitigation measures for these non-aboriginal heritage items in this Environmental Assessment, as they are adequately protected through mechanisms required under other approvals.



Visual amenity mitigation measures are provided for Tahmoor House that involve planting of native vegetation on the noise mound built next to the rail track that would result in a softening of the visual impact over time. The residents of Tahmoor House may also experience noise impact during construction of the Project. However, development and implementation of a Construction Noise Management Plan would provide appropriate mitigation measures for potential noise impacts at Tahmoor House.

- 3) Recommendation 7 will not be included, due to the reasons noted in Point 2. Recommendation 8 is included in the revised Statement of Commitments, included in Appendix A.

4.3 Mine Subsidence

4.3.1 Issues

The following additional requirements have been requested by the Mine Subsidence Board to be applied to the proposed development application:

- 1) *General: Any proposal to alter or erect improvements within a mine subsidence district shall be approved by the Board. No claim shall be entertained or payment made under the Mine Subsidence Act in respect of damage caused by subsidence to any such improvement unless a certificate is issued under section 15B in respect of the improvement.*
- 2) *Existing Improvements: Where improvements are impacted adversely by mine subsidence, the Proponent shall ensure damage remains "safe, serviceable and any repairs remain slight, localised and readily restored". Otherwise, the Department of Planning should consider requesting the Proponent to acquire any properties which exceed this measure or alternatively, negotiate an agreement with the landowner to manage any impacts, at no cost to the Board.*
- 3) *Relocated Improvements: Where the impact of mine subsidence cannot be reasonably managed, necessitating relocation, then the decommissioning and relocated improvement shall be designed and constructed by the Proponent for all anticipated mine subsidence impacts.*
- 4) *Final Design Drawings: These shall be submitted to the Board prior to the commencement of construction, containing certification by a qualified structural engineer of compliance with condition 3 above.*
- 5) *"As Constructed" Drawings: Upon completion of construction, 'work-as-executed' certification by a qualified structural engineer shall be forwarded to the Board confirming construction was in accordance with the plan submitted.*

The following comment was raised by the Department of Trade and Investment in relation to subsidence management during operation of the Project.



- 6) *The Department considers that the management of subsidence related risks to such features are practicable, provided the proposed railway deviation around the Redbank Rail Tunnel is completed prior to the commencement of any subsidence impacts on the Tunnel.*

4.3.2 Response

In regards to the Mine Subsidence Board requirements, the following is applied:

- 1) Noted. Chapter 7 of the Environmental Assessment provides a summary of potential subsidence impacts to Area 3 as a result of mining activities. Subsidence of land beneath Area 3 is not yet permitted without planning approval. The Subsidence Impact Assessment provides predictions of potential surface impacts as a result of mining beneath Area 3.
- 2) Noted. However, the only improvements within the Project site (other than the Redbank railway tunnel) are the ARTC radio transmitter, the Telstra mobile phone towers located above the tunnel, and the rail line, culverts and overbridge that will be located within the rail corridor. The Subsidence Management Plan legislation and approvals would require an agreed plan of management of subsidence impacts on these improvements. Therefore, acquisition of these properties would not be required.
- 3) Noted. The Project (an improvement) has been designed to withstand subsidence impacts. The Subsidence Management Plan would also outline appropriate monitoring and mitigation measures for potential subsidence impacts of longwall mining.
- 4) Noted. A full set of final design drawings in digital format would be submitted to the Board prior to the commencement of construction.
- 5) Noted. Following construction conclusion, it is anticipated a full set of as-constructed drawings in digital format, confirming construction was in accordance with the plan submitted, would be made available to affected stakeholders, including the Board.
- 6) Noted. It is considered more appropriate that this issue be managed through the Subsidence Management Plan, rather than through the Conditions of Consent. The Subsidence Management Plan provisions under the *Mining Act 1992* already define the requirements for management of subsidence impacts. In particular, it is appropriate that the Department of Trade and Investment Resources and Energy, through the Executive Director, Mineral Resources, the Director of Mine Safety Operations and the Principal Subsidence Engineer, regulate and approve with conditions, the likely subsidence impacts from mining. This is also shown in the extraction approval for Longwall 25 (clause 14.1) which states that *'The leaseholder must not cause subsidence impacts prior to the management plans for the following infrastructure being approved: i) main southern railway and associated structures and infrastructure'*. Subsidence impacts may occur to the Redbank Tunnel prior to the completion of the *proposed railway deviation*, however these would be safely and effectively mitigated, managed and monitored through an agreed and approved management plan (with ARTC and approved by Department of Trade and Investment, Resources and Energy).



4.4 Hydrology

The NSW Office of Water (NOW) identified the following recommended conditions of approval addressing the surface and groundwater components of the Environmental Assessment. It is also noted that the NOW has no objection to the Project upon review of the Environmental Assessment.

4.4.1 Issues

- 1) *The Proponent must prepare a Surface Water Management Plan to the satisfaction of the NSW Office of Water prior to commencement of activities.*
- 2) *The Proponent must prepare a Groundwater Management Plan to the satisfaction of the NSW Office of Water prior to commencement of activities.*
- 3) *The Proponent must obtain relevant licenses to the satisfaction of the NSW Office of Water under the Water Management Act 2000 for all activities which intercept or extract groundwater prior to commencement of these activities.*
- 4) *The Proponent must obtain Controlled Activity Approvals under the Water Management Act 2000 for all activities on waterfront land prior to commencement of these activities.*

4.4.2 Response

- 1) As part of the Statement of Commitments outlined in the Environmental Assessment (Chapter 21), a Surface Water Monitoring Plan would be established prior to the commencement of construction works (commitment reference no. 39). As part of the Construction Environmental Management Plan to be prepared for the Project, a Spoil and Fill Management Plan (SFMP) would also be developed. This would detail temporary and permanent sediment and erosion control measures to offset potential impacts on water quality (including surface water) during construction and operation.
- 2) A Groundwater Management Plan would be prepared as part of the Construction Environmental Management Plan, prior to the commencement of construction works. This would be prepared to the satisfaction of the NSW Office of Water.
- 3) The Environmental Assessment (section 5.4.4) acknowledges that an 'aquifer interference approval', under Section 91 of the *Water Management Act 2000*, would be required, as the Project is expected to intercept groundwater contained within the rock mass of the cutting. The relevant approvals would be sought prior to the commencement of activities which would affect groundwater.
- 4) Section 5.4.4 of the Environmental Assessment also acknowledges the requirement for a 'controlled activity approval', under the *Water Management Act 2000* as the Project would include general in-stream works, outlet structures, impacts on riparian corridors and the requirement for temporary watercourse crossings. Relevant approvals for a controlled activity would be obtained prior to the commencement of construction activities which would affect these areas.



4.5 Agriculture

The Department of Primary Industries reviewed the Environmental Assessment and have no further issues to comment from agriculture. No further response is required to this issue.

4.6 Biodiversity

The following issue was raised by the NSW Office of Environment and Heritage (OEH) in relation to biodiversity impacts of the Environmental Assessment.

4.6.1 Issue

- 1) *There is currently no mechanism presented to secure an appropriate legal mechanism or instrument to ensure perpetual conservation of the biodiversity offset area.*

4.6.2 Response

- 1) The Biodiversity assessment (summarised in Chapter 16 of the Environmental Assessment and detailed in Appendix I) addressed the loss of biodiversity through a revegetation, rehabilitation and bush regeneration strategy. This was designed to deliver a 'Maintain and Improve' adjacent to the construction impact zone thereby creating a local solution to the Projects impacts. What could not be provided was an in perpetuity conservation agreement for these works at this location. On this basis alone the OEH was not able to support the Project.

In recognition of OEH's preference for a legally binding in perpetuity conservation agreement, Project vegetation impacts would be offset by using the BioBanking Scheme as a method for delivering the desired 'Maintain and Improve' outcome. This would require the sourcing of an estimated 28 ecosystem credits comprising the following:

- ▶ 15 credits for Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin [HN528].
- ▶ 13 credits for Narrow-leaved Ironbark - Broad-leaved Ironbark - Grey Gum open forest of the edges of the Cumberland Plain, Sydney Basin [HN556].

The Biobanking approach would provide a legally binding mechanism for securing an in perpetuity conservation outcome for the native vegetation offset. While the approach is not necessarily proving the local 'Maintain and Improve' outcome specified in the Biodiversity assessment, it would provide the same 'Maintain and Improve' outcome within the region. Committing to this approach for the compensation of residual biodiversity impacts is supported by the OEH.

A new draft Statement of Commitment (SC12) is included in Appendix A to reflect this change in approach to the biodiversity impacts.

By adopting this approach it is considered that the majority of the restoration works identified in the Concept Landscape Plan as mitigation works for the Project impacts are now redundant. A revised Concept Landscape Plan is shown in Figure 1, which now restricts land management works to areas impacted by the Project.



The revised Concept Landscape Plan now identifies two areas for rehabilitation, with native vegetation consistent with the surrounding native vegetation type (Shale Hills Woodland). These are shown on Figure 1. This would be facilitated largely through the recovery of topsoil from the construction impact zone that is considered suitable for native rehabilitation (low weed content).

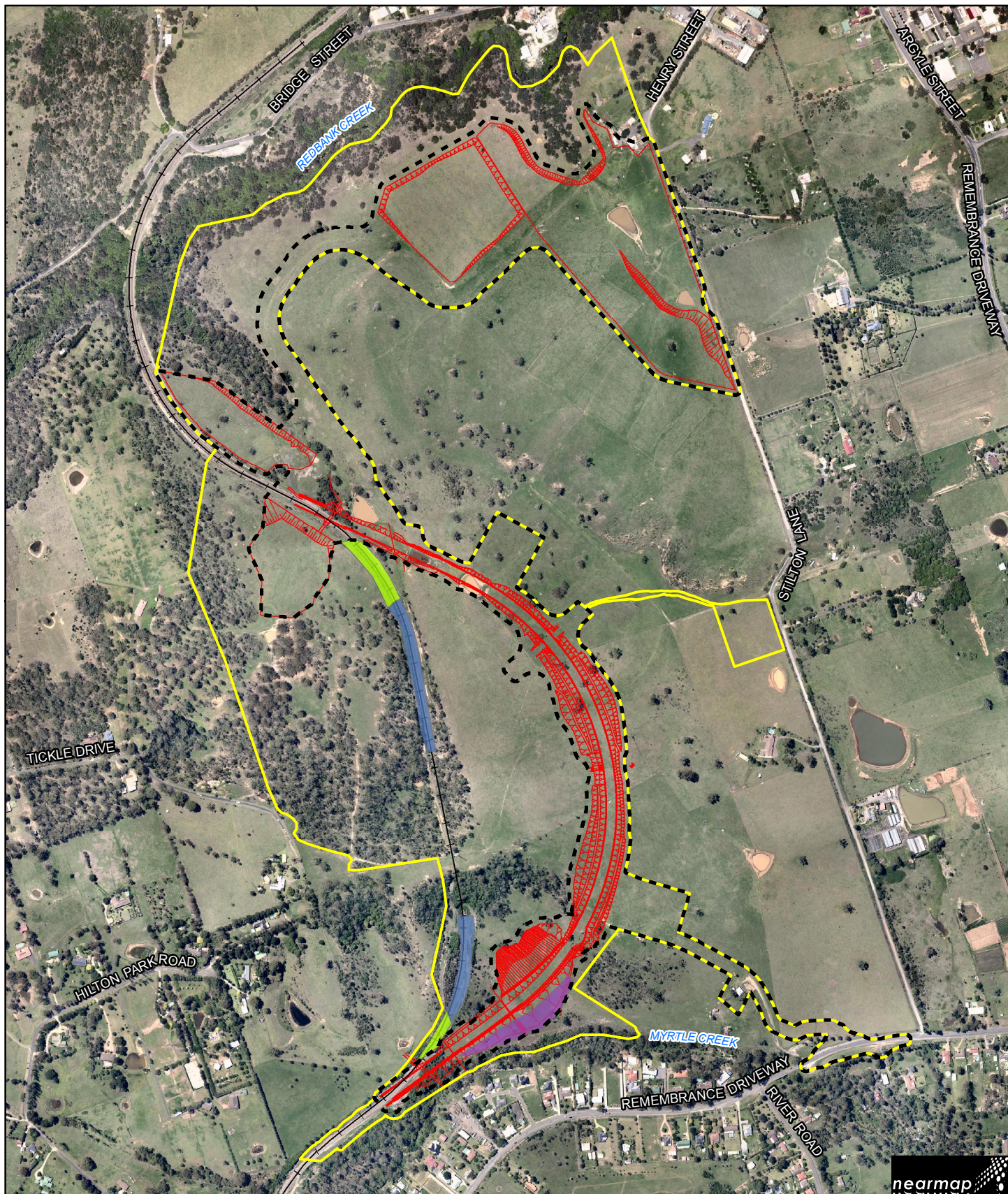
Native grasses such as Kangaroo Grass (*Themeda australis*) and Weeping Grass (*Microlaena stipoides*) along with shrubs such as Wattles (such as *Acacia falcata*) and Blackthorn (*Bursaria spinosa*) would form the bulk of the rehabilitation works. Scattered Forest Red Gum (*Eucalyptus tereticornis*) and Grey Box (*Eucalyptus moluccana*) would also be introduced to the rehabilitation area. The total area of this rehabilitation zone is estimated to be 1.13 ha, which still provides a local unsecured outcome for 0.3 ha of Cumberland Plain Woodland removed by the Project.

Figure 1 also shows two additional classes of revegetation:

- ▶ Two areas of native pasture (species composition to be determined in consultation with the landowner).
- ▶ Landscaping of the noise mound adjacent to Myrtle Creek to provide visual screening.

Detailed revegetation/landscaping plans would be prepared should the Project be approved. These plans would also include measures to stabilise the rail embankments within the construction footprint.

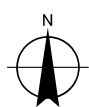
Adopting the Biobanking Scheme approach as the method for addressing the Project's impact on biodiversity has substantial implications for the draft Statement of Commitments. Commitments that relate to *Post Construction* (SC10, SC11) would be significantly altered as shown in Appendix A.



LEGEND

- | | | |
|---|--------------------------|-------------------------------------|
| Existing Rail | Study Area | Landscaping Area |
| Proposed Track Deviation and Associated Works | Construction Impact Zone | Native Grasses Rehabilitation |
| | | Shale Hills Woodland Rehabilitation |

1:10,000 (at A4)
 0 35 70 140 210 280
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: Geocentric Datum of Australia (GDA)
 Grid: Map Grid of Australia 1994, Zone 56



Tahmoor Coal
 Redbank Tunnel Subsidence Management Project
 Submissions Report

Job Number	22-15010
Revision	0
Date	22 Dec 2011

Conceptual Landscape Plan

Figure 1



Non-government Submissions

4.7 Noise

The following issue was raised by a member of the community, in relation to potential operational noise impacts of the Environmental Assessment.

4.7.1 Issue

- 1) *There is concern that the noise mound will not have the same attenuating affect as the existing Redbank Tunnel for train noise.*

4.7.2 Response

- 1) For any sensitive receiver, it is generally the rail segment located closest to the receiver which is responsible for the received noise levels, both for individual rail pass bys and the rail noise levels averaged over time. The effect of the tunnel on noise levels are shown on the noise contour maps (Figures 8-1 to 8-3 in the Environmental Assessment). The modelled contour maps for the existing scenario indicate that the tunnel tends to attenuate rail noise levels at those receivers which have their closest point along the tunnel length (receiver R34 and R42). For other receivers, the tunnel does not provide a substantial amount of noise attenuation.

The proposed rail deviation moves the rail alignment closer to a number of receivers. As the rail line is now closer, rail noise levels are expected to increase at these receivers. As a result, the design of the proposed rail deviation incorporates noise mitigation measures (in the form of a noise mound), which attenuate potential noise impacts. Modelled results indicate the designed noise mound would attenuate noise levels, in most cases, to below the existing rail noise levels.

The existing and predicted scenarios as indicated in Table 8-10 of the Environmental Assessment represent the equivalent sound pressure level over the day and night time periods (7 am – 10 pm, and 10 pm – 7 am respectively). As indicated above, the modelled existing scenario indicates the tunnel tends to attenuate noise levels at those receivers closest to the tunnel only, and for other receivers (including those along Remembrance Driveway), the tunnel does not provide a substantial amount of noise attenuation.

The modelled scenario took into consideration the estimated number of train pass-bys for the associated modelling period to ensure a representative and sufficient number of train pass bys were considered in the analysis.

The modelling process was also validated against on-site attended noise monitoring which was undertaken during train pass-bys, in order to validate the modelled results. Comparison of the actual measured noise results and the modelled results have an acceptable variance of within 2.0 dB(A), therefore the modelled results are considered to be representative of predicted noise levels during the Project operation.



4.8 Visual impact

The following issue was raised by a member of the community, in relation to visual amenity impacts of the Environmental Assessment.

4.8.1 Issues

- 1) *There is concern that views from areas along Remembrance Driveway will be affected by loss of vegetation along Myrtle Creek to accommodate the new rail behind sound barriers and revegetation will take some time to populate and screen this structure.*
- 2) *The rail deviation will scar the pristine setting, in particular the area as seen from Stilton Lane.*

4.8.2 Response

- 1) Impacts of the Project on landscape character and visual amenity have been avoided or minimised where possible through the planning and design process. Although it is recognised that any new vegetation would take some time to establish, a Landscape Plan would be prepared as part of the Statement of Commitments (Chapter 21 of the Environmental Assessment, reference SC14), which aims to integrate infrastructure (such as the noise mound), embankments, bridges and cuttings), into the surrounding environment. Early involvement of landscape architects would also enable the Project's visual and landscape impacts to be minimised during both construction and operation phases.

Screening planting would be maintained following the establishment phase to ensure continual/improved visual screening over time.

- 2) The visual assessment undertaken for the Environmental Assessment (summarised in Chapter 15, and detailed in Appendix H) assessed the potential construction and operation landscape and visual amenity impacts of the Project on residences located along Stilton Road. Landscape and visual impacts of the Project were assessed as being of greater impact during the construction phase than during the operation phase due to the proximity of some residences along Stilton Road to construction works. Impacts upon residents of Stilton Road are expected to reduce over time through the operations phase as the rail deviation is viewed as an existing part of the landscape, with the planting of vegetation and integration with infrastructure.

4.9 Biodiversity

The following issues were raised by a member of the community, in relation to biodiversity impacts of the Environmental Assessment.

4.9.1 Issues

- 1) *There was concern that while the implementation of various mitigating measures is expected to reduce such impacts, where ecological communities are already at risk, further displacement or destruction of habitat may be considered an unavoidable concomitant of the proposed construction, especially in view of environmental protection legislation, such as the Threatened Species Conservation Act 1995, Environmental Conservation & Biodiversity Act 1999, and Native Vegetation Act 2003.*
- 2) *Also of concern is that despite a proposal for provision of fauna connectivity between Redbank and Myrtle Creeks, wild life could still be cut off from Myrtle Creek which is a popular watering hole for kangaroos and wallabies.*

4.9.2 Response

- 1) The Biodiversity assessment (summarised in Chapter 16 of the Environmental Assessment and detailed in Appendix I) addresses the relevant sections of Part 3A of the EP&A Act that pertain to biodiversity impacts as part of the approvals process under the Act. The assessment also considers all relevant legislative guidelines applicable under Part 3A, including (but not limited to) the Threatened Species Conservation Act 1995 and the Environment Protection and Biodiversity Conservation Act 1999. The Native Vegetation Act 2003 does not apply to Part 3A, however the intent of this legislation (protection of native vegetation) has been addressed through the avoid and mitigate approach adopted in the assessment. This includes revegetation, rehabilitation and management of existing patches to improve vegetation cover in a manner consistent with the application of the Native Vegetation Act 2003.

Impacts have been minimised as far as possible through specific design to avoid the loss of biodiversity, including threatened ecological communities and habitat for threatened biota. Notwithstanding, a small portion of EEC would be cleared (0.5 ha in total, which is 0.05% of the overall extent of equivalent woodland and forest vegetation communities in the locality).

A mitigation strategy has been developed to address unavoidable impacts of the Project. A detailed Landscape Plan would be developed prior to construction as part of the Statement of Commitments, which would be implemented in addition to mitigation measures, to achieve an 'Improve and Maintain' outcome for regional biodiversity values. Measures include the revegetation and rehabilitation of lands within the Project. The aim of these works is to increase the extent of native vegetation cover within the locality, with a particular focus on the establishment of threatened ecological vegetation.

Further, the impacts of the Project on biodiversity would be offset through the retirement of biobank credits within the bioregion. This would provide a permanent conservation outcome.

- 2) The land bridge over the Redbank Tunnel, which currently connects Myrtle Creek with Redbank Creek would be severed by the Project, and as such, may reduce fauna habitat connectivity. The concept landscape plan aims to reduce these impacts through revegetating existing cleared lands not impacted by the Project, and rehabilitating disturbed areas resulting from construction of the Project. The primary aim of these works being to maintain connectivity function between Myrtle and Redbank Creeks through the study area.

The proposed revegetation and rehabilitation also have potential to enhance vegetation connectivity between Myrtle Creek and other vegetation patches in the study area through widening of this corridor. The provision of alternative movement pathways (such as culverts beneath the rail line) will provide movement pathways between Myrtle Creek and Redbank Creek, and would also aid the movement of ground fauna that would otherwise be prevented from moving across the gap created by the Project. Such linkage is expected to permit ongoing movement of mobile fauna that already use the study area. All other measures would enable the movement of flighted species.

4.10 Construction

The following issues were raised by a community member in relation to possible construction impact.

4.10.1 Issues

- 1) *There is concern that residents will be disadvantaged with the interruption of electrical utilities and communications while infrastructure is being relocated.*
- 2) *There is concern regarding the construction hours and potential noise and disruption this may cause if works are carried out outside typical construction hours.*

4.10.2 Response

- 1) There are three areas requiring electrical relocation as follows:
 - i. 66 kV electricity line near the tie in point of the rail track at the Tahmoor end – this transmission line would require relocation during construction works, however power is to be redistributed to other parts of the network with minimal (if any) impact on customers.
 - ii. 11 kV across the main rail cutting of the proposed deviation – this line feeds the Telstra tower on the hill above Redbank Tunnel only, therefore relocation or works to this line would not have any impact on customers.
 - iii. 11 kV line near Remembrance Driveway. Any works to this line would be undertaken in consultation with Endeavour Energy within approved times and with sufficient notice to any affected residents, as per standard Endeavour Energy procedure. It is considered that any impacts to local residents would be minimal.



- 2) The hours of construction would be 7 am to 6 pm Monday to Friday, and 8 am to 1 pm on Saturday for the duration of the Project. As the existing track would remain operational during construction works, some specific activities may need to be completed outside these hours to allow for works to occur in track possession periods when trains are not operating, in conjunction with planned RailCorp and ARTC track possessions. Where construction works would not be audible by any sensitive receivers, works may also be undertaken outside the typical construction hours following the completion of an assessment in accordance with the *Interim Construction Noise Guideline (ICNG)*. If works are to occur outside normal construction hours, and works would be audible, a noise and vibration assessment would be prepared in accordance with the ICNG, and the community would be notified.

Any intention to extend working hours outside those permitted in the consent conditions would be requested for approval a minimum seven days prior to the intended time to commence work outside these hours. Where construction works are permitted to extend outside the consent conditions, any plant, machinery or equipment that is likely to cause excessive disruption to the community would not be used.



5. Conclusion

This Submissions Report has addressed:

- ▶ The key issues and general requirements identified in the Director-General's Environmental Assessment Requirements under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act); and
- ▶ The issues raised by government agencies and members of the community in their respective submissions.

This Submissions Report thoroughly addressed each of the submissions made and demonstrates that the Project can be undertaken in a manner that results in minimal impact on the community and environment. As set out in the Submissions Report and the Environmental Assessment Report, the Project's design process has focused on mitigating the impacts of the Project through the adoption of appropriate and targeted environmental management measures during both the construction phase and after completion of the Project. These environmental management measures are detailed in the Statement of Commitments (Chapter 21 of the Environmental Assessment) and the updated version is provided in Appendix A.

The Project will result in significant economic benefits to the local and broader communities and it is respectfully submitted that the Project should be approved with appropriate conditions.



Appendix A

Statement of Commitments



Ref No.	Objective	Commitment	Timing
Biodiversity			
Construction Planning			
SC1	Minimise the potential impacts that may occur during construction phase	A Construction Environmental Management Plan (CEMP) would be developed for the Project and include, where applicable, the construction impact mitigation measures and principles listed below.	Pre-construction
SC2	Construction Staging	It is intended that areas of open water at the Project site would be progressively drained to allow relocation of native aquatic vertebrate fauna as appropriate.	Construction
SC3	Soil and surface water management	The CEMP would include specific surface water management measures, which would include as a minimum the following principles to manage surface water:	Construction
		Minimise the area of disturbance, thus minimising the volume of 'dirty' surface water runoff. The clearing and construction method would generally result in soils only being exposed immediately prior to construction, with the remainder of the Project site covered by permanent infrastructure or retained or replanted vegetation.	Construction
		Minimise handling of soils through direct replacement onto landscaped open space areas and careful selection of soil stockpile locations.	Construction
		Separation wherever possible of 'clean' and 'dirty' surface water runoff.	Construction
		Install appropriate erosion control devices (such as silt fences, hay bales or equivalent) around the disturbance footprint.	Construction
SC4	Runoff and water management practices	Runoff from disturbed and rehabilitated areas would be diverted into sediment ponds or other measures and not directly discharged into the natural system.	Construction
		Where practicable a setback is required from the base of soil stockpiles when adjoining remnant native vegetation to prevent sediment from entering waterways.	Construction
SC5	Site Management	Restrict access into adjacent remnant vegetation during construction by appropriate marking and/or fencing of the construction impact zone.	Pre-construction and Construction
SC6	Fauna Management	Fauna management would involve a two-step process: fauna pre-clearance survey and management during construction.	Construction



Ref No.	Objective	Commitment	Timing
		This would involve: ▶ An active search for birds, nests, roosts and microchiropteran bats (stag watches with Anabat II detector). Sedentary fauna detected within the area to be cleared are to be managed in accordance with a fauna management protocol that is implemented as part of the CEMP during the construction period. ▶ Identification and marking of habitat trees during pre-clearing surveys (habitat trees include: trees with a DBH > 70 cm; trees with resident fauna or associated signs of occupation; and/or any trees with hollows). ▶ Additional consideration for the retention of habitat trees (avoidance) during construction activities, where practicable.	Pre-construction and Construction
SC7	Pre-clearance surveys and CEMP	▶ The CEMP would include specific protocols for the management of any fauna detected during pre-clearing surveys or during clearing (tree hollow clearing protocol, fallen log, tree hollow compensatory measures). Appropriate actions would be documented according to type and conservation significance of the fauna in question. The OEH would be notified if roosting threatened species are detected within the construction footprint and construction may have to be modified or delayed to further reduce the risk of injury.	Pre-construction and Construction
		▶ During clearing operations, all cleared habitat trees would be retained as intact as practicable and placed on the surface of nearby revegetation and rehabilitation areas under the supervision of an ecologist. Where it is practical to separate any leaves, branches and seeds from native species, these items would be used for brush mulching in revegetation and rehabilitation works.	Construction



Ref No.	Objective	Commitment	Timing
SC8	Groundcover Clearance Protocol	The following protocols would be included in the CEMP: ▶ A pre-clearing survey for Cumberland Land Snails is to be performed and if any individuals are found, they would be relocated, along with relevant shelter substrate, to the nearest area of intact suitable habitat outside the disturbance footprint. Translocation of the species would only be performed in consultation with OEH. ▶ As part of the pre-clearing survey, large woody debris with habitat value (excluding exotic weed material) would be identified that warrants salvage and relocation. ▶ During construction, remove identified large woody debris using excavator grabs, where practicable and place within nearby areas of retained vegetation or revegetation areas.	Construction
SC9	Weed and Pest Management	The following measures would be adopted to manage environmental weeds during construction: ▶ Controlling noxious weed species in line with legislative obligations prior to the initiation of vegetation clearance works. Monitor seed bank reprisals after topsoil movements and emplacement in rehabilitation areas. ▶ The transfer of seeds from non-native species through contaminated soil and vegetative material to revegetation areas would be avoided through appropriate vegetation and topsoil management. Management would include the use of herbicides prior to clearing, sterile crop covers and use of native grasses in revegetation and rehabilitation scheme – particularly Kangaroo Grass. ▶ Stockpiles of fill or vegetation would only be placed within existing cleared areas. ▶ Incorporate control measures, such as appropriately placed silt fences in the design of the proposed works to limit the spread of weed propagules downstream of the site.	



Ref No.	Objective	Commitment	Timing
Post Construction			
SC10	Revegetation and Rehabilitation	There is potential for the rehabilitation of land reclaimed from filling redundant sections of the rail line. The following vegetation cover is proposed for these rehabilitated areas: ▸ Pasture (in consultation with the landholder). ▸ Approximately 1.1 ha of native vegetation similar to the floristics of Shale Hills Woodland.	Post-construction
SC11	Native vegetation rehabilitation	Proposed works within the 1.1 ha native vegetation rehabilitation area : ▸ Place logs recovered from clearing works parallel with the contour of the rehabilitated surface.	Post-construction
SC12	Biodiversity Offset	Secure an offsite site or sites to be managed under effective and secure long term management through the retirement of biobanking credits (where appropriate credits are available). The nature of this offset would be determined in consultation with OEH in accordance with the NSW OEH interim policy on assessing and offsetting biodiversity impacts of Part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects. The offset site or sites must contain sufficient ecosystem credits to match the development site credit profile unless varied by the Interim Policy. The composition of ecosystem credits would be defined by the Interim Policy and may comprise the following: • Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin [HN528]. • Narrow-leaved Ironbark - Broad-leaved Ironbark - Grey Gum open forest of the edges of the Cumberland Plain, Sydney Basin [HN556]. or alternative suitable vegetation types. The location of the offset site or sites would be determined by the guiding principles outlined in the Interim Policy. The offset site or sites must be secured within 12 months of the approval date of the Biodiversity Offsets Package.	Within 12 months of the approval date of the Biodiversity Offsets Package.



Ref No.	Objective	Commitment	Timing
Visual Amenity			
SC13	Minimise and/or manage adverse visual impacts of the project during the construction phase	▶ Avoid loss or damage to vegetation including the protection of trees prior to construction and/or trimming of vegetation to avoid total removal, particularly behind residences on Remembrance Driveway.	Detailed design and construction
		▶ Where site lighting is required, minimise light spillage to neighbouring properties.	Construction and Operation
		▶ Temporary hoardings, barriers, traffic management and signage would be removed when no longer required.	Construction
		▶ Materials and machinery would be stored tidily during the works.	Construction
		▶ Haul routes and roads providing access to the construction sites would be maintained free of dust and mud as far as reasonably practicable. Dust from construction sites would be minimised as much as possible.	Construction
SC14	Minimise and/or manage adverse visual impacts of the project during the operation phase	▶ Prepare Landscape plan that: - Integrates infrastructure (such as noise mitigation structures, structures, embankments/cuttings, bridges) into the surrounding environment. - Includes planting of vegetation on fill batters where practicable.	Detailed design, Construction and Operation
SC15	Screening	▶ Maintain screening planting following the establishment phase to provide continual / improved visual screening over time.	Operation
Traffic			
SC16	Manage the potential construction traffic impacts	▶ A traffic management plan would be developed to reduce the impact of construction related traffic on the local road network.	Pre-construction and Construction
SC17	Road dilapidation survey	▶ A road dilapidation survey would be undertaken prior to construction and affected roads restored post construction if required.	Construction
SC18	Management of construction vehicles	▶ Use traffic controllers on Remembrance Driveway during periods of high activity, generally during set up and at the conclusion of construction.	Construction
		▶ Minimise truck movements on the local road network between 7 – 9 am and 3 – 5 pm where possible.	



Ref No.	Objective	Commitment	Timing
Noise and Vibration			
SC19	Construction Hours	The standard hours for construction activities associated with the Project will be 7 am to 6 pm Monday to Friday and 8 am to 1 pm on Saturdays.	Construction
SC20	Correct use of tools and equipment	All construction vehicles and machinery would be fitted with appropriate noise suppression devices and maintained.	Construction
		Fixed equipment (pumps, generators, compressors) would be located as far as possible from the nearest residences.	
		Where possible, no plant or equipment would be left idling when operating in the vicinity of residential properties.	
SC21	Amend and undertake work activities to minimise noise and vibration generation	Practical and reasonable measure would be implemented to minimise the noise and vibration impacts of construction activities on local sensitive receivers.	Construction
		Work methods would be reviewed with a preference for quieter and non-vibration generating methods wherever possible. This is particularly important for any out-of-hours and night-time activities.	
SC22	Pile driving management	Pile Driving control plans would be prepared if undertaken as part of the project construction activities.	Construction
SC23	Inform all site workers of potential impacts	All site workers (including subcontractors and temporary workforce) would be informed of the potential for noise and vibration impacts upon local residents and encouraged to take practical and reasonable measures to minimise noise during the course of their activities.	Construction
SC24	Manage movement of materials	All vehicular movements to and from the site would comply with the requirements of the appropriate regulatory authority requirements for such activities.	Construction
			Construction
Aboriginal Heritage			
SC25	Minimise impacts on Aboriginal heritage	If feasible, impacts would be avoided to the identified Aboriginal sites Redbank Tunnel 3/A, 15/A and 35/A, and the associated area of potential for sub-surface deposits of research value at site 3/A.	Construction and detailed design



Ref No.	Objective	Commitment	Timing
		Where impacts would be avoided to the identified heritage evidence, appropriate protective measures would be implemented for those sites in close proximity to the construction works.	Pre-construction
		If impacts cannot be avoided to the identified Aboriginal sites Redbank Tunnel 3/A, 15/A and 35/A, an Aboriginal Heritage Impact Permit (AHIP) is to be gained for disturbance of this evidence, in consultation with the registered Aboriginal parties.	Pre-construction
		As a general principle, all relevant contractors and staff engaged on the Project would receive heritage awareness training prior to commencing work on-site.	Pre-construction
SC26	Consultation with Aboriginal stakeholders	Where requested by the registered Aboriginal parties, these stakeholders and a qualified archaeologist would be engaged to collect any identified surface artefacts that may be subject to impacts, and implement other measures as may be identified by the Aboriginal community in order to minimise the impacts of development on the identified heritage evidence and potential deposits at site 3/A.	Pre-construction
SC27	Approval of Aboriginal heritage management	An AHIP would be obtained for the entire impact area (where A unit soil is present) prior to the proposed works being undertaken.	Pre-construction
		Should any previously unrecorded Aboriginal sites or objects be detected prior to or during the course of development which are not covered by an AHIP, work in the immediate vicinity of those objects would need to promptly cease and the finds be reported to OEH and advice sought as to the appropriate course of action.	Construction
SC28	Management of skeletal remains	If human skeletal remains are identified, work would stop immediately and the appropriate authorities, including the Police and OEH, would be notified. If impacts cannot be avoided, an AHIP is required prior to any impacts occurring.	Construction
Non-Aboriginal Heritage			
SC29	Management of heritage structures	Protective Measures would be installed at Culverts Nos. 1 and 2.	Pre-construction
		Prior to the filling or removal of Redbank Tunnel, a photographic archival recording of the tunnel would be made in accordance with guidelines established by the Heritage Office.	Pre-construction
SC30	Management of previously undiscovered artefacts	In accordance with Section 146 of the <i>Heritage Act 1977</i> the accidental discovery of relics, other than those discussed in this report, would be reported immediately to the Heritage Council	Construction



Ref No.	Objective	Commitment	Timing
SC31	Management of heritage structures	Measures would be implemented along the Redbank Tunnel deviation to lessen the visual impact of the new rail deviation on the rural heritage landscape and, in particular, views to and from Tahmoor House. Such measures would include screens of natural vegetation in keeping with existing corridors of natural vegetation along Myrtle and Redbank Creeks and the existing railway line as well as the use of sound walls and mounds.	Post Construction
Air Quality			
SC32	Minimise dust generation and adverse air quality impacts during construction phase	Construction traffic would be controlled by designating specific routes for haulage and access. Vehicle speeds on unsealed surfaces would be limited to 40 km/hr with a further restriction of 20 km/hr when within 100 m of a site exit/entry point.	Construction
		All trucks hauling dirt, sand, soil or other loose materials to and from the construction site would be covered when travelling on public roads.	Construction
		Wheel wash units or rumble pads would be installed where required. Wash-off equipment for trucks and any equipment would be available for any vehicles leaving the site to remove excessive dirt, mud or debris from tyres and other under-surfaces. Material spillage on sealed roads would be cleaned up as soon as possible.	Construction
		All construction vehicles, mobile plant and machinery would be maintained and operated to minimise exhaust emissions.	Construction
		A line of communication would be established between the construction contractor and the local community prior to the start of construction as part of a community consultation process. All complaints lodged by nearby residents would be recorded on a complaints register, which would also document the investigation into the source of the emission giving rise to the complaint, as well as any corrective actions taken to rectify the cause of complaint.	Construction
Contamination			
SC33	Develop and implement potentially contaminated material management procedures	The CEMP for the proposed works would detail appropriate procedures for the handling, stockpiling and assessment of potentially contaminated fill and ballast materials during the works.	Pre-construction
Surface Water			



Ref No.	Objective	Commitment	Timing
SC34	Minimise water quality decline	Temporary and permanent sediment and erosion control measures to be established, in accordance with a Spoil and Fill Management Plan (SFMP) as part of the Construction Environmental Management Plan (CEMP). Both the SFMP and the CEMP would include details of the proposed control measures, where and how the measures are to be applied, as well as a response plan and monitoring.	Pre-Construction and Construction
SC35	Minimise the impact of excavation, storage and placement of material on the surface and groundwater systems during construction	Minimise area of disturbance.	Construction
		Land adjacent to waterways to remain undisturbed for as long as possible.	Construction
		Temporary catch and diversion drains to divert runoff from upslope land and reduce erosion hazard.	Construction
		Temporary diversions would outlet to stable discharge areas with additional protection as necessary.	Construction
		Progressively revegetate disturbed areas to encourage infiltration.	Construction
		Direct sediment laden runoff through a sediment trap or basin to minimise discharge of pollutants to downstream environment.	Construction
		Direct smaller volumes of sediment laden runoff to sediment filters such as straw bale filters and sediment fences.	Construction
		Locate stockpiles clear of flood prone areas, stream banks, channels and stormwater drainage areas.	Construction
		Stabilise stockpiles that are to be in place for longer than 10 days.	Construction
		Divert flows around stockpiles by bunds/diversion drains.	Construction
		Place sediment fences downstream to capture sediment and minimise sediment discharge to downstream environment.	Construction
SC36	Permanent sediment and erosion control measures	Permanent catch and diversion drains to divert runoff from upslope land and reduce erosion hazard to be installed.	Operation
		Establish permanent diversions to outlet to stable discharge areas with protection as necessary.	Operation
		Revegetate disturbed areas to encourage infiltration.	Operation



Ref No.	Objective	Commitment	Timing
		Locate permanent areas of fill emplacement clear of flood prone areas, stream banks, channels and stormwater drainage areas.	Operation
		Install scour protection to structures and embankments as necessary.	Operation
		Provide permanent diversion of flows around fill emplacement areas and quarries by bunds / diversion drains.	Operation
		Permanent areas of fill emplacement to have maximum batter slopes engineered for the purpose and stabilised by vegetation.	Operation
SC37	Emergency Response Plan and Spill Containment	Develop an Emergency Response Plan, as a component of the SFMP that would address the steps required in the event that the capacities of sediment control measure were exceeded.	Construction
		During construction, refuelling of plant and machinery would be undertaken either by fuel trucks with spill trays or within bunded areas or off-site in appropriate locations wherever possible and, where topography and track elevations allow, consideration be given to the provision of a secondary containment measure to limit the discharge of spills to waterways.	
SC38	Revegetation	- Primary revegetation would be focused on quickly minimising the likelihood of erosion of recently disturbed areas using species that provide rapid groundcover. Following this a second revegetation phase would be undertaken that provides a permanent method of surface stabilisation. - Where the first phase of the revegetation cannot be completed for practical reasons the use of mulch or a rolled erosion control product would be used.	
SC39	Surface Water Monitoring	- A surface water monitoring program would be established prior to commencement of construction. - During construction, a surface water monitoring program would be maintained at each of the previously monitored waterways as part of the CEMP. - Any seepage of water from the rock cutting would be tested prior to discharge to the environment.	Pre-construction and Construction



Ref No.	Objective	Commitment	Timing
SC40	Minimise impacts to waterways	Disturbance of waterways as a result of construction activities would require suitable protection and rehabilitation works to minimise these impacts. These could include silt fences and sediment traps.	Construction
		Rock beaching would be provided to protect and stabilise the bed and banks of watercourses from erosion and to minimise the velocity of stormwater flows.	Operation
SC41	Minimise blockage of low flows	Where practicable, diversion of flows around the work area (up to the 2 year ARI) should occur.	Construction
SC42	Reduce impact of waterway structures on hydrology	To minimise the potential impact on flood levels and to maintain low flows, the existing open waterway area at each waterway crossing would be maintained throughout construction activities where possible. In locations where it is feasible, the open waterway areas would be increased.	Construction
SC43	Appropriate design of causeways	Where required, either a bed level crossing through the invert of the waterway or a low level crossing with low flow culverts beneath to allow base flows to be conveyed, would be provided. Temporary crossings would also include a lower section for higher flows to pass with culverts extending beyond the toe of fill embankments. These crossings would be removed when not required, and the waterway rehabilitated.	Construction
SC44	Prevent pollution of creeks	Closely associated with the mitigation against water quality decline and increases in scour, the placement of fill would be completed in a manner that would not result in the pollution of Myrtle or Redbank creeks.	Construction
Greenhouse Gas Emissions			
SC45	Reduce impacts of greenhouse gases	Use Biodiesel blends (diesel that has a percentage of the fuel replaced with biodiesel) for construction vehicle use where practicable.	Construction
Subsidence			
SC46	Mitigate against subsidence	- Prevent the collapse of the Redbank Tunnel void by filling the tunnel. - Monitoring of rail track condition to be undertaken in accordance with the Subsidence Management Plan to be prepared for Longwalls 27-30. - Monitoring of Subsidence in Area 3 if required, to be undertaken in accordance with the Subsidence Management Plan to be prepared for longwalls 27-30.	Pre-construction, Construction and Operation



Ref No.	Objective	Commitment	Timing
Waste Management			
SC47	Manage waste appropriately	- Excavated material would, wherever possible, be re-used on site, although some material may require offsite disposal. - Topsoil would be reused in revegetation and rehabilitation of cleared areas. - Where practical, vegetative matter, not including weeds, would be chipped and reused on-site. Logs and tree limbs suitable for habitat and or fauna refuge would be collected during clearing and placed in a location identified as suitable.	Pre-construction, Construction
		- Any green waste containing weeds would be stockpiled separately and appropriately and would be disposed of at appropriate waste management facilities. - Demolition waste materials would be recycled and/or reused on site, or transported to an approved recycling or waste management facility, as appropriate. - Construction materials would be sourced and ordered in appropriate quantities to avoid the creation of excess waste, recycled and/or reused on site or on other projects where possible, or transported to an approved recycling facility.	
		- Suitable waste bins/receptacles would be provided throughout the work site to capture all waste streams. - Separate containers would be provided for recyclable and non-recyclable materials. These materials would be transported to an approved recycling or waste management facility, as appropriate. - Waste would be transported from the site when storage facilities are filled. The waste storage area would be kept tidy and well maintained.	



Ref No.	Objective	Commitment	Timing
		▶ Liquid waste such as chemicals, fuel and lubricants, and their containers, would be disposed of in accordance with the requirements of the <i>Waste Classification Guidelines Part 1: Classifying Waste</i> (Department of Environment, Climate Change and Water 2009). ▶ Portable toilet facilities would be installed on site and emptied periodically by an approved contractor. ▶ The use of packaging materials would be minimised and where possible packaging products would be returned.	
		▶ A regular site clean-up would be undertaken as required and general site waste would be managed in accordance with the waste reduction hierarchy of avoidance, reduce, re-use and recycle. ▶ Site spill clean-up material (spill kits) would be available for both fuels and chemicals. ▶ Suitable containment and absorbent products would be stored on site in a readily accessible location. ▶ All emergency contacts would be provided in the CEMP.	



Appendix B

Community Information Letter

Redbank Tunnel Subsidence Management Project Newsletter

Community Update – September 2011

This is the third edition of the Redbank Tunnel Subsidence Management Project Newsletter, distributed as part of our commitment to keeping you informed throughout the project.

The Project

Tahmoor Colliery, owned by Xstrata Coal, has development consent to mine and subside an area between Tahmoor, Thirlmere and Picton. Mining operations are expected to reach Longwall 28 underneath the Redbank Tunnel through 2012/2013. There is a potential risk that that mining activity will have a subsidence effect that could cause significant impact to the Redbank Tunnel. To ensure that rail operations are not affected by any future mining activity, Tahmoor Colliery is applying for a modification to their existing development consent to relocate the rail line. The proposed rail deviation will avoid the Redbank Tunnel and will involve construction of approximately 1.8 kilometres of new track to the north/east of the existing alignment. The development application is supported by a comprehensive environmental assessment.

Public Exhibition

The Redbank Tunnel Subsidence Management Project Environmental Assessment is on public exhibition from 27th September – 28th October 2011.

The Environmental Assessment is on display at the following locations:

- **Tahmoor Colliery;** Remembrance Driveway. Tahmoor, NSW;
- **Department of Planning;** 23-33 Bridge Street; Sydney, NSW;
- **Wollondilly Shire Council;** 62-64 Menangle Street; Picton, NSW, or;
- **Nature Conservation Council;** Level 2, 5 Wilson Street; Newtown, NSW

Alternatively, you can download and view the files from our website;

<http://www.tahmoorcoal.com.au>

Community Information Day

Wednesday 19 October 2011

10 am - 8 pm

Tahmoor Community Links, Harper Close, Tahmoor

The community is invited to attend a Community Information Day where representatives from Tahmoor Colliery and relevant specialist consultants will be available to answer any questions regarding the Project or any other matters relating to Tahmoor Colliery Operations.

Contact us

It is not too late to provide feedback about the project. If you have any concerns or questions about the proposed Subsidence Management Project, please contact Ian Sheppard (Environment and Community Manager) or Belinda Clayton (Community Coordinator) at Tahmoor Colliery:

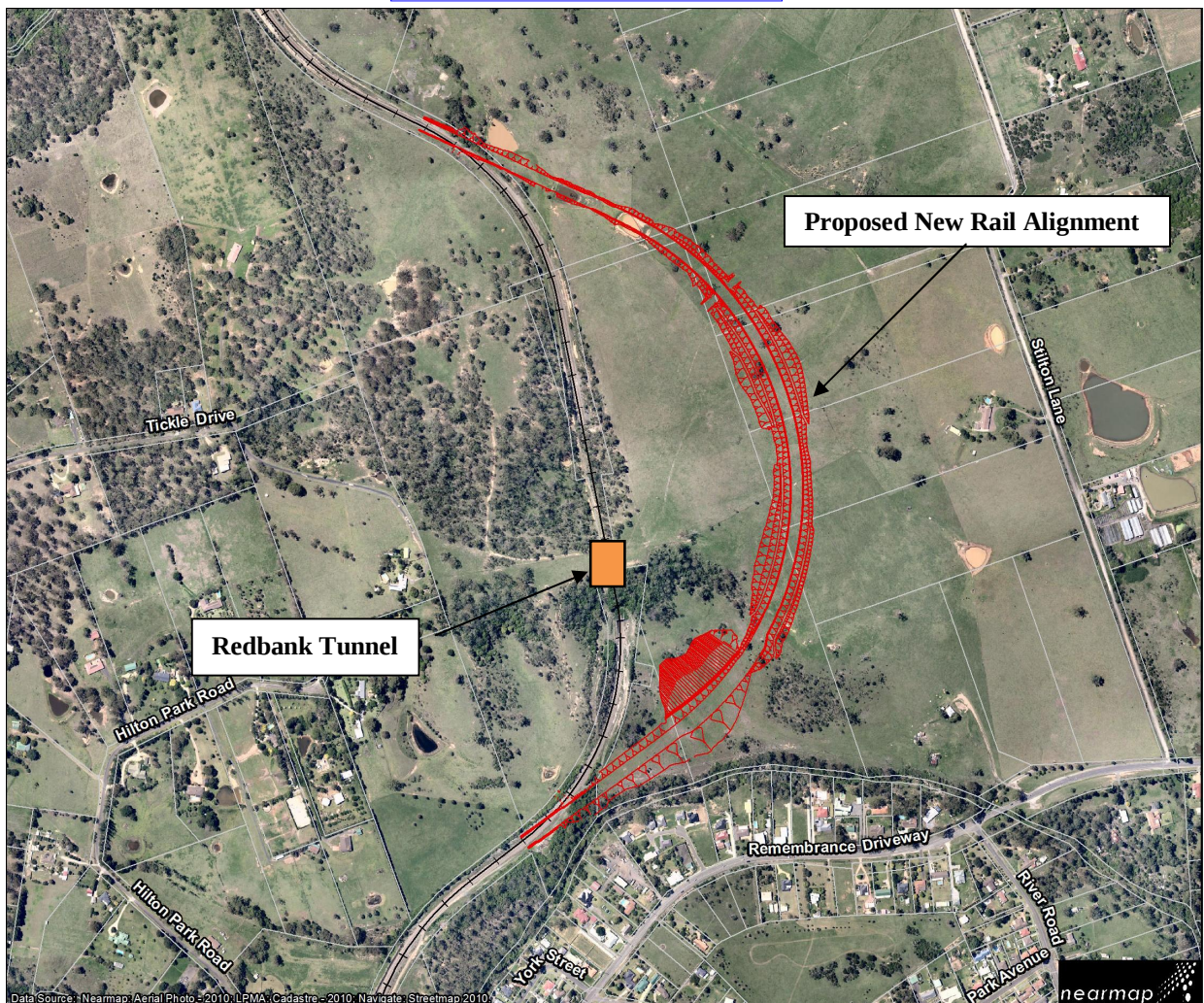
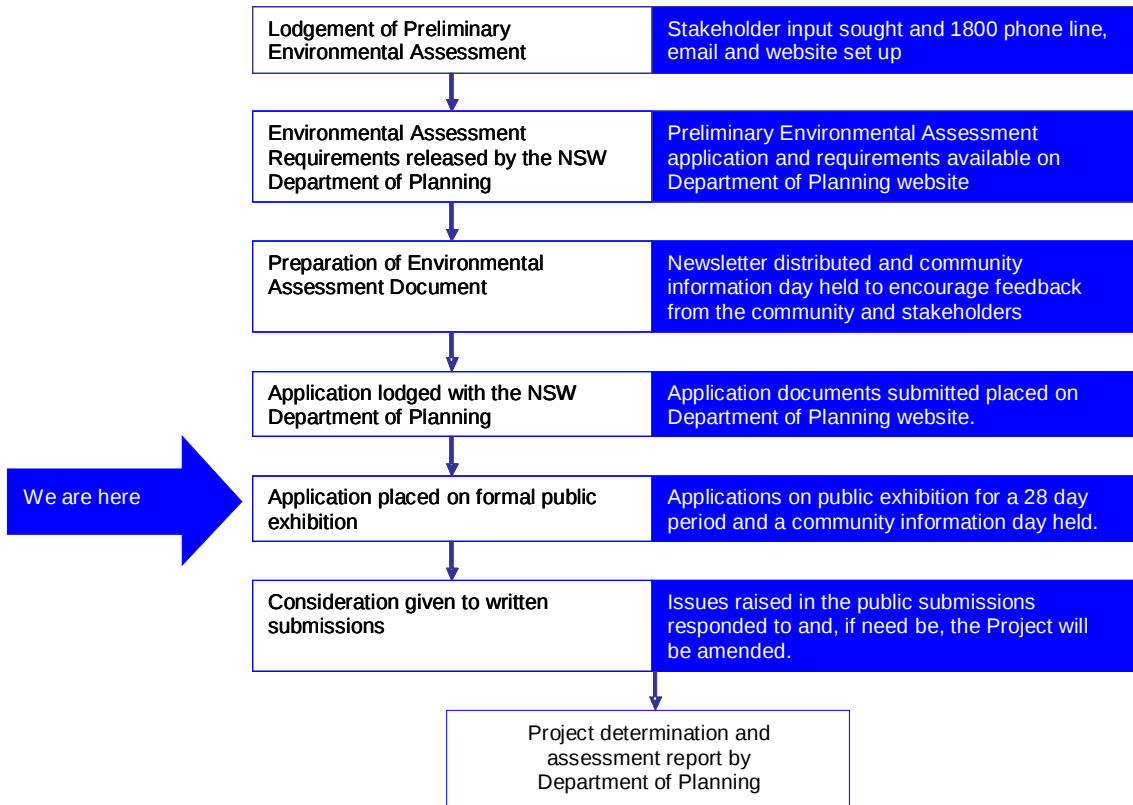
Phone: 1800 154 415

E-mail: tahmoorenquiries@xstratacoal.com.au;

The staff at Tahmoor Colliery will be happy to arrange a meeting at a suitable location to discuss any further queries or concerns.

PLANNING PROCESS

OPPORTUNITIES FOR COMMUNITY AND STAKEHOLDER ENGAGEMENT



Plan of the existing rail line and the proposed deviation



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The services undertaken by GHD in connection with preparing this Report were limited to those specifically detailed in the Report and are subject to the scope limitations set out in the Report.

The opinions, conclusions and any recommendations in this Report are based on conditions encountered and information reviewed at the date of preparation of the Report and on certain reasonable assumptions made by GHD (as set out in the Report). Changes in site conditions (or information) after preparation of the report may not be reflected in the Report and it is not part of GHD's scope to update the Report in response to such changes. GHD cannot accept liability for any of our assumptions being incorrect

GHD has prepared this Report on the basis of information provided by Government authorities, third parties and Tahmoor Coal. GHD has not independently verified or checked this information beyond the agreed scope of work and as such does not accept liability in connection with such unverified information, including errors and omissions in the Report which were caused by errors or omissions in that information.

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	L Slechta, E Shelly	S Taylor		R Morrissey		22/12/11