

Executive Summary

BACKGROUND

This *Environmental Impact Statement* (EIS) has been prepared to describe the proposed mining operations and assess the environmental impacts of the amended Rocky Hill Coal Project (the “amended Project”). The Applicant, Gloucester Resources Limited (GRL), has amended the 2013 Rocky Hill Coal Project (the “2013 Project”) and, in doing so, has been able to design a project that has a range of improved environmental outcomes. Considerable emphasis has been placed upon addressing the components of the 2013 Project that caused greatest concern in the local community, particularly with respect to visibility, hours of operation, noise, air and water.

The amended Project has been designed following an agreement between the Applicant and Yancoal Australia Limited (“Yancoal”) whereby sized run-of-mine (ROM) coal would be transported from the Rocky Hill Mine Area to the nearby Stratford Mining Complex via a private haul road where it would be processed at their coal handling and preparation plant (CHPP) before being loaded onto trains destined to the Port of Newcastle for export.

Whilst a number of components of the 2013 Project have been amended and improved, other components or commitments from the 2013 Project remain unchanged, for example, GRL’s commitments to backfilling the final void and creating a final landform with similar pre-mining landform features, both of which are best practice in the Australian coal mining industry; upgrading sections of the local road network; the Community Grants Program (including a donation of 50 cents per tonne of product coal); and the implementation of a range of other commitments which will lead to improved socio-economic outcomes for the local and wider community.

The principal coal product to be produced from the Rocky Hill Coal Mine is a high fluidity coking coal, i.e. a product used in Asian steel mills and is in high demand. Unlike thermal coal which is the primary coal product from the Hunter Valley and used for power generation, there is no substitute for coking coal in the manufacture of steel.

COMPARISON OF THE 2013 AND AMENDED PROJECTS

GRL has amended the Rocky Hill Coal Project principally through the removal of the previously proposed Weismantel Pit and associated surface infrastructure, namely the CHPP, overland conveyor, rail loop and train load-out facility. Other key differences between the two projects are set out below.

- Mining operations would occur during the daytime only in Years 1 to 3 and daytime and evening from Years 4 to 16. Night-time mining operations (i.e. after 10pm) are no longer proposed.
- The life of the mining operations would increase from 14 years to 16 years – due to the removal of night-time operations.
- The maximum ROM coal production would decrease from 2.5 million tonnes per annum (Mtpa) to 2.0Mtpa. Total ROM coal production would remain at 21 million tonnes.
- Limited processing (with a rotary breaker) is now proposed rather than full on-site processing in a CHPP.
- A new 4.4km sealed private haul road would be constructed and used by multi-combination trucks to transport sized ROM coal from the Rocky Hill Mine Area to the Stratford Mining Complex.
- The amended Project would yield a higher (95%) proportion of high fluidity coking coal.
- Due to the removal of major items of infrastructure previously proposed and the transfer of processing functions to the Stratford Mining Complex, the construction workforce would decrease from 100 to 60 persons and the operations workforce would decrease from 150 to 110 persons. The Applicant has retained its target of 75% of locally resident employees by the end of Year 3 operations.

A range of other differences are outlined in the EIS, the majority of which contribute in some way to improved environmental outcomes.

This Executive Summary introduces the Applicant, provides relevant background information about the amended Project; presents an overview to the amended Project's design and operational safeguards, as well as a brief description of the local environment and predicted impacts on the surrounding physical, biological, social and economic environment. It is accompanied by an Amended Project Overview presenting key facts and statistics about the amended Project.

INTRODUCTION

Figure A displays the location of "the Site" for the "amended Project". The three principal components of the amended Project within the Site are:

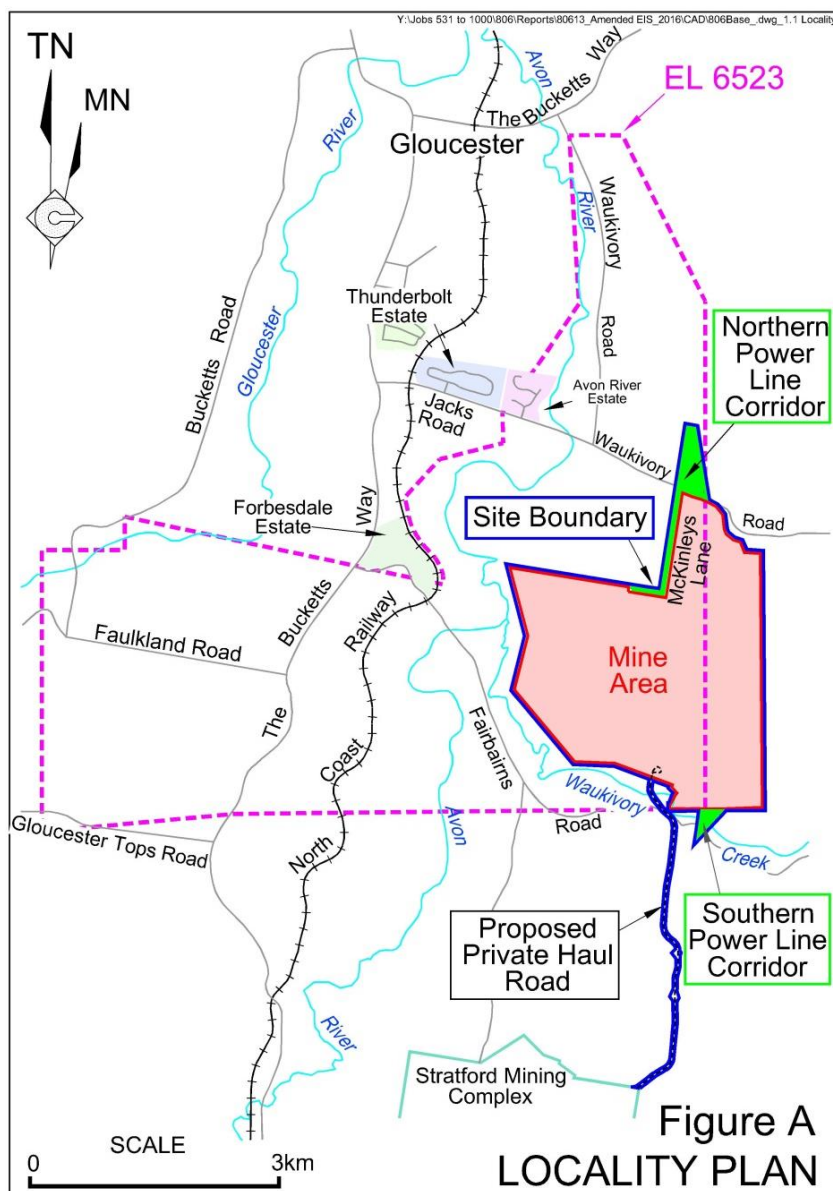
- the Mine Area;
- private haul road; and
- power line corridors.

The Mine Area is located approximately 3.5km to 7km southeast of the Gloucester urban area. The Site covers an area of approximately 832ha of which approximately 500ha would be disturbed throughout the life of the amended Project. The majority of the Site is located on freehold land currently owned by resource companies or with agreements in place with private landholders for purchase should the amended Project proceed.

The amended Project is a State significant development as defined within the *State Environmental Planning Policy (State and Regional Development) 2011* and consequently, the Minister for Planning, or the Planning Assessment Commission (under delegation), will be the determining authority.

As a State significant development, the amended Project will be assessed under Part 4, Division 4.1 of the *Environmental Planning and Assessment Act 1979*, for which an *Environmental Impact Statement (EIS)* is required to be submitted.

This EIS has been prepared to address the Director-General's Requirements (DGRs) provided in



April 2012 by the then Department of Planning and Infrastructure (now Department of Planning and Environment) as well as a series of requirements provided by relevant Government agencies and other organisations for consideration. A number of Government agencies also provided additional requirements in 2015/2016 relating to the amended Project.

The Applicant previously referred the Rocky Hill Coal Project to the former Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) to establish whether the Rocky Hill Coal Project was a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). DSEWPaC notified the Applicant on 11 May 2012 that the referred Rocky Hill Coal Project was not a controlled action. It remains the Applicant's position that the amended Project is not a controlled action and further referral under the EPBC Act is not required.

THE APPLICANT

The Applicant for the amended Project is Gloucester Resources Limited (GRL), a company formed in 2006 to focus on coal exploration activities within the Gloucester Basin and, subject to favourable results from those activities, to potentially develop the identified coal resources.

GRL is operated by a board and management team with extensive experience in the development, operation and management of open cut and underground coal mining projects.

Since 2013, GRL has continued to demonstrate its commitment to achieving high standards in its activities through its ongoing support for local community projects and the local agricultural industry through its proactive leasing agreements, including enabling expansion of the adjoining dairy operations. GRL has

continued its comprehensive environmental monitoring program first commenced in 2010 and has successfully undertaken an extensive tree planting program. These are all attributes that GRL would continue to exhibit throughout the life of the amended Project (if approved) as GRL recognises the need for the adoption of extremely high standards for the operation of the proposed mine, i.e. standards that will not only minimise impacts but also benefit the local and wider community and environment.

AMENDED PROJECT OBJECTIVES

The Applicant's objectives in developing and operating the amended Project are to:

- maximise the recovery of coking coal through efficient and safe mining operations;
- undertake all activities in an environmentally responsible manner to ensure compliance with relevant criteria / goals, reasonable community expectations and documented commitments and, to the extent practicable, the objectives of the Gloucester Local Environmental Plan 2010 (Gloucester LEP 2010);
- create a final landform that is safe, stable, visually and topographically comparable with the existing landform and one which is amenable to the progressive resumption of grazing activities and nature conservation;
- provide a stimulus to the Gloucester and district economies through employment opportunities and the purchase of goods and services required for the development and operation of the amended Project; and
- achieve the above objectives in a cost-effective manner to ensure the amended Project is viable.

PLANNING CONTEXT

The Site lies within land zoned RU1 and E3 under the Gloucester LEP 2010. Open cut mining is a permissible land use within both these zones by virtue of the Gloucester LEP 2010 and/or the *State Environment Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP)*.

The amended Project has been designed with recognition of the relevant elements of a number of State planning instruments, regional strategic planning documents and the Gloucester LEP 2010.

APPROVALS REQUIRED

In addition to development consent, the Applicant anticipates the following key environmental and planning approvals, licences and leases would be required.

- An Environment Protection Licence under the *Protection of the Environment Operations Act 1997*.
- Mining Leases under the *Mining Act 1992*.
- One or more licences under the *Water Management Act 2000*.
- Permits under the *Roads Act 1993* to undertake the proposed road and intersection works and improvements for the amended Project.

EXPLORATION HISTORY

Coal was first discovered in the Gloucester Basin in 1855, although it was not until the early 1970s when exploration programs were undertaken to provide the basis for the understanding of the geology of the basin.

In 2006, the Applicant was granted three Exploration Licences (ELs) namely EL6523, EL6524 and EL6563, with initial exploration programs undertaken in conjunction with land acquisition processes.

The ELs were renewed in 2009 and again in 2013. In the 2012 renewal application for EL6523, the Applicant relinquished a substantial proportion of the EL6523 area as initially granted. **Figure A** shows the current boundary of EL6523.

In early 2010, accelerated exploration programs commenced within EL6523 which identified sufficient coal resources to allow the Applicant to commence planning to develop the Rocky Hill Coal Project.

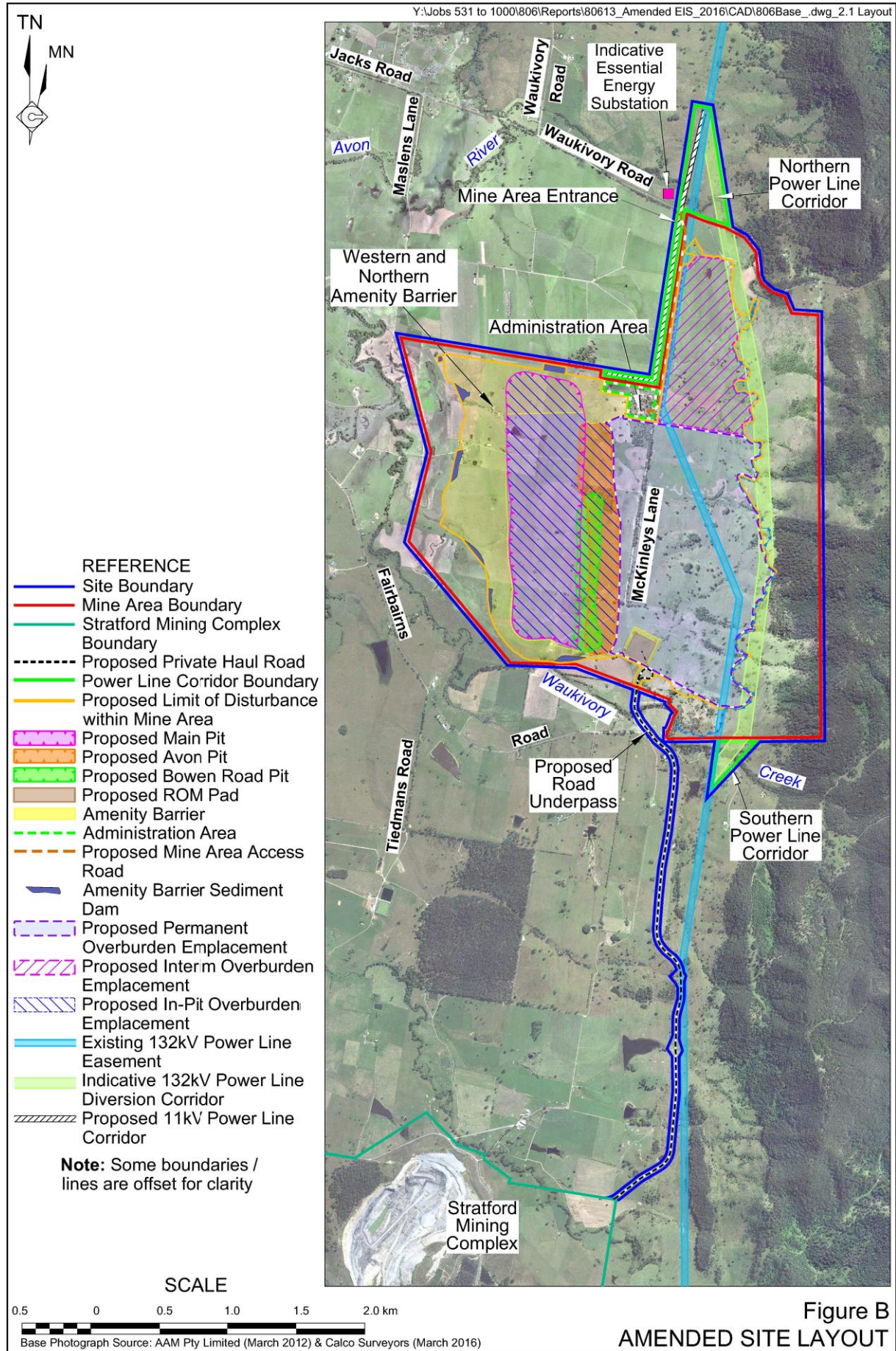
Based upon the geological modelling, mine design and coal quality information, up to 21Mt of ROM coal could potentially be recoverable from the open cut pits within the Mine Area.

AMENDED PROJECT DESCRIPTION

Overview

Figure B displays the indicative amended Site layout which includes the following principal components.

- A Mine Area entrance off McKinleys Lane.
- An administration area, incorporating site offices, amenities, workshop, water treatment plant and ancillary facilities.
- Three contiguous open cut pits (Avon, Bowen Road and Main Pits) varying in depth from approximately 80m to 220m.
- A long-term amenity barrier and two interim barriers to visually screen areas of activity and provide for noise mitigation.
- A consolidated in-pit and permanent out-of-pit overburden emplacement and an interim overburden emplacement which would be removed at the cessation of coal extraction, with the materials used to backfill the final void.



- A ROM pad and associated breaker station comprising a feed conveyor, rotary breaker, a sized coal conveyor and a nominal 500t capacity overhead sized coal bin within the Mine Area from which 60t nominal capacity road-registered multi-combination trucks would be loaded.
- A 4.4km sealed private haul road extending between the sized coal bin within the Mine Area and the boundary of ML1733, being the northern extent of the Stratford Mining Complex.
- A 5km section of re-located 132kV power line and a new 11kV power line providing power for the on-site operations.

Site Establishment and Construction Stage

The Applicant would undertake the following key site establishment and construction activities during an approximate 10 month period following receipt of development consent and all other necessary approvals, licences and leases. Site establishment and construction activities would generally be undertaken between 7:00am and 6:00pm Monday to Friday and 8:00am and 1:00pm on Saturday.

On-site Activities

1. Construction of key site water management structures prior to the commencement of other construction and mining activities.
2. Construction of the Mine Area access road commencing near the intersection of McKinleys Lane and Waukivory Road and extending to the administration area.
3. Construction of the private haul road incorporating a bridge over Waukivory Creek, the Fairbairns Road underpass.

4. Construction of the ROM pad.
5. Demolition of the existing buildings within the Mine Area not required for the amended Project and installation / construction of required additional offices and amenities, light vehicle car parks, the workshop and associated infrastructure.
6. Installation of a power supply and communications infrastructure.

Off-site Activities

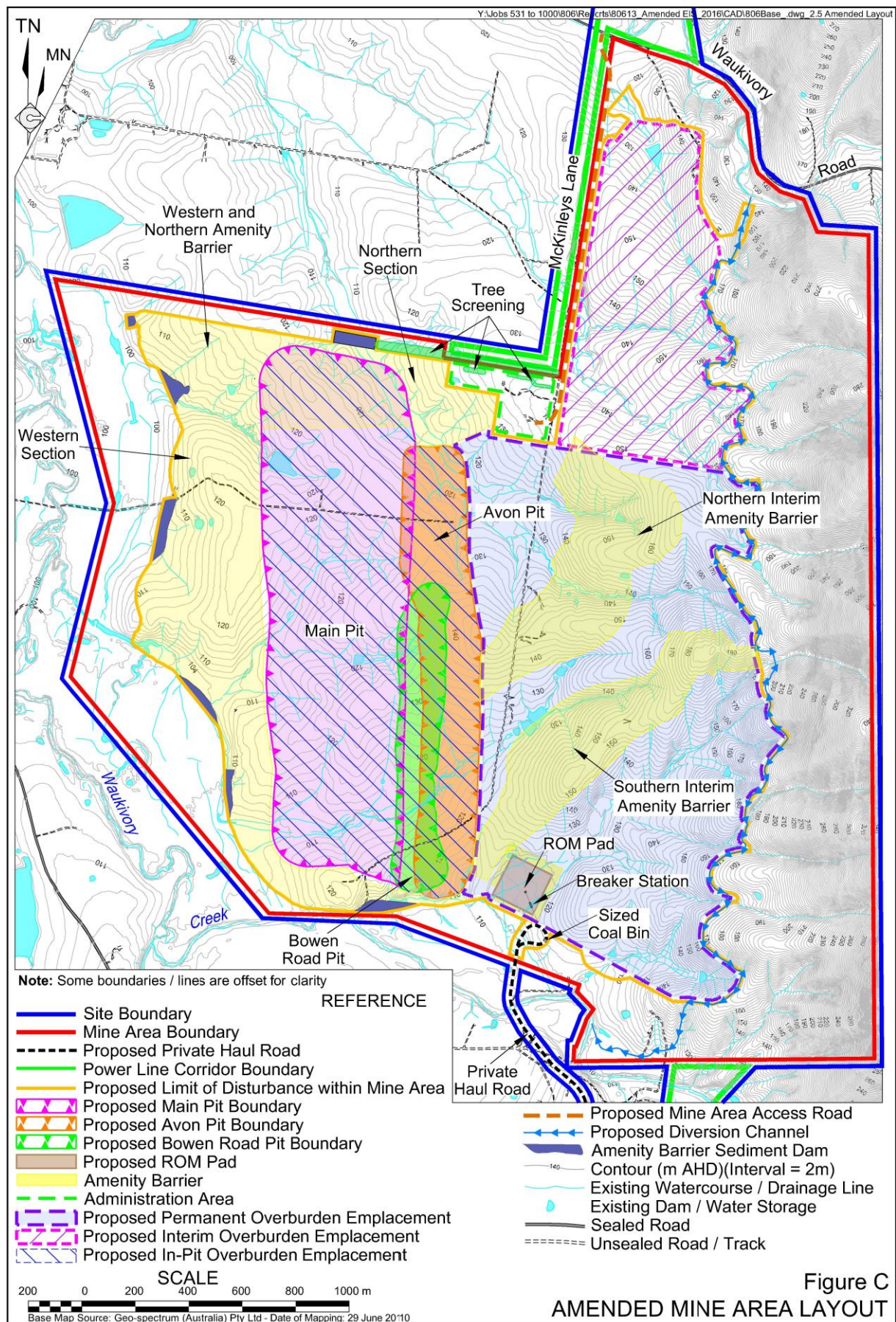
1. Construction of an upgraded Jacks Road / The Bucketts Way intersection.
2. Upgrading and widening the pavement along the full length of Jacks Road.
3. Construction of a new bridge across the Avon River on Jacks Road at GRL's cost.
4. Upgrading the 1.3km section of Waukivory Road from Jacks Road to McKinleys Lane.
5. Upgrading the Jacks Road / Waukivory Road and Waukivory Road / McKinleys Lane intersections and the initial 50m section of McKinleys Lane to the Mine Area entrance.

Where possible, structural elements would be fabricated or assembled off site to reduce the duration of on-site construction activities.

Mining Operations

Figure C presents an indicative layout within the Mine Area. Sequential mining operations would involve the following.

1. Mark out – The locations of each major component of the amended Project would be marked out prior to commencement of vegetation clearing and/or soil stripping in that area.



2. Vegetation Clearing – During the life of the amended Project, 51.8ha of remnant native vegetation would be progressively cleared. Given the scattered nature of some of the remnant native vegetation, the effective clearing area would be 41.5ha. Selective trees suitable for use for agricultural purposes (e.g. fence posts) would be separately removed and retained.

3. Soil Removal and Stockpiling – Topsoil and subsoil would be stripped and preferentially placed directly on either interim or final landforms. When no suitable landforms are available, it would be stored in nominated areas particularly on interim landforms (e.g. amenity barriers) until the sequence of mining allows its transfer onto the final landform.

Topsoil and subsoil would be separately stripped, with topsoil generally stripped to a depth of between 10cm and 15cm and subsoil generally for a further 60cm to 85cm.

4. Overburden/Interburden Removal – The majority of overburden/interburden (referred to collectively as “overburden”) from the initial 2 years of mining would be used to construct the western and northern amenity barrier. Subsequently, overburden would be placed within the proposed footprint of disturbance either beyond the open cut pits (out-of-pit emplacement) or within the open cut pits (in-pit emplacement). The overburden would be placed in a manner that would ultimately create a single landform within the footprint of disturbance. Blasting of most overburden would be required with a maximum of four blasts initiated in any week.

5. Coal Recovery – The coal exposed in each open cut pit would be removed by excavator and transported by haul truck to the ROM pad.

6. Rehabilitation – Areas of disturbance would be progressively rehabilitated (either temporarily or permanently) to minimise potential visual impacts, to control erosion and the potential for dust generation and expedite the return of nominated areas of the landform to a grazing or nature conservation land use.

Processing Operations

ROM coal would undergo preliminary sizing only, using a rotary breaker which would also remove a proportion of the contaminated rock recovered during mining. The sized ROM coal would then be conveyed to a sized coal bin prior to its transportation to the Stratford Mining Complex for preparation (washing).

Reject (rock) materials from the rotary breaker would be collected from the reject stockpile and backloaded by haul trucks to the active overburden emplacement where they would be mixed randomly with the overburden. The breaker rejects would comprise approximately 0.7% of the combined overburden and rejects.

Transportation and Traffic

Coal Transportation

All sized ROM coal would be transported in 60t capacity multi-combination trucks (see **Plate ES-1**) travelling on the private haul road to the CHPP at the Stratford Mining Complex. The number of coal trucks would vary over the life of the amended Project depending on the rate of ROM coal production, varying from 2 to 10 trucks. All product coal would be loaded at the Stratford rail load-out facilities and transported to the Port of Newcastle by train.

Public Road Traffic

Road traffic would comprise employee / visitor vehicle movements and delivery of consumables and equipment.

During both the site establishment and construction stage and operations, road traffic movements to and from the Mine Area would principally occur via The Bucketts Way and Waukivory Road, i.e. until the Jacks Road bridge over the Avon River is replaced. During the site establishment and construction stage, limited traffic would also be generated on Fairbairns Road during construction of the Fairbairns Road underpass and Wenham Cox Road for construction of the private haul road.

Following the construction of the private haul road, mining equipment would be delivered to the Mine Area via the Stratford Mining Complex off The Bucketts Way and the private haul road.

During operations, the majority of traffic would travel to and from the Mine Area, with approximately 156 to 278 light vehicle movements (78 to 139 return trips) and 10 to 18 heavy vehicle movements (5 to 9 loads) occurring per day.

Peak operational traffic movements would occur around shift start and finish times, i.e. between 6:00am and 7:00am, 1:45pm and 2:45pm and 5:30pm and 6:30pm and 10:15pm and 10:45pm. Expected peak traffic during these periods would range between 15 and 42 movements.

Hours of Operation and Project Life

The following operational hours are proposed.

Activity	Days*	Hours
Mining (Year 1 to 3)	Monday – Saturday	7:00am – 6:00pm
Mining (Year 4 onwards)	Monday – Saturday	7:00am – 10:00pm
Breaker Station Operations	Monday – Saturday**	7:00am – 6:00pm
Coal Haulage (via Private Haul Road)	Monday – Saturday**	7:00am – 6:00pm
Maintenance	Monday – Saturday	7:00am – 10:00pm
	Sunday	8:00am – 10:00pm
	Monday – Sunday	All other hours***
* Public Holidays excluded ** Operations would only occur on a Saturday in the event protracted operational time is lost during week days. *** If activities are not audible at privately-owned residences / receivers.		

The amended Project is estimated to be developed, operated and rehabilitated in a period of approximately 20 years, i.e. from the commencement of the site establishment and construction stage. However, a 21 year development consent is being sought to accommodate any circumstance(s) that may slow down the mining of coal and to allow for both the site establishment and construction stage as well as the proposed mining activities.

The site establishment and construction stage would occur over a period of approximately 10 months, mining operations over approximately 16 years and final void backfilling and mine closure over approximately 3 years.

Plate ES-1: A typical multi-combination truck



Rehabilitation and Final Landform

Throughout the life of the amended Project, the Applicant would progressively undertake both interim and long-term rehabilitation activities within disturbed areas. Interim rehabilitation works would be undertaken to stabilise all earthworks, amenity barriers, watercourses and disturbed areas as well as continually minimise dust generation, the potential for erosion/sedimentation and potential visual impacts. Depending on the location and timing, the rehabilitation would involve the establishment of a grass cover, grass and shrubs or a mixture of grasses, shrubs and small trees.

As the final landform is progressively developed (from Year 3 onwards), long-term revegetation activities would be undertaken. **Figure D** displays the indicative Mine Area final landform including proposed woodland plantings and native vegetation belts to provide fauna corridors.

Unlike many open cut mining developments, the proposed final landform for the amended Project would not include a final void. Rather, the final void would be backfilled to create a landform similar in form and drainage patterns to that prior to development.

CONSULTATION

Consultation has been undertaken to inform the Gloucester and district residents and government agencies about the Applicant's plans and to gain an understanding of the issues that need to be considered by the Applicant and addressed in the EIS.

Since 2010, the Applicant's consultation with the local community has involved the creation and use of a Project website, distribution of newsletters, information dissemination through the Gloucester Exploration Project Community

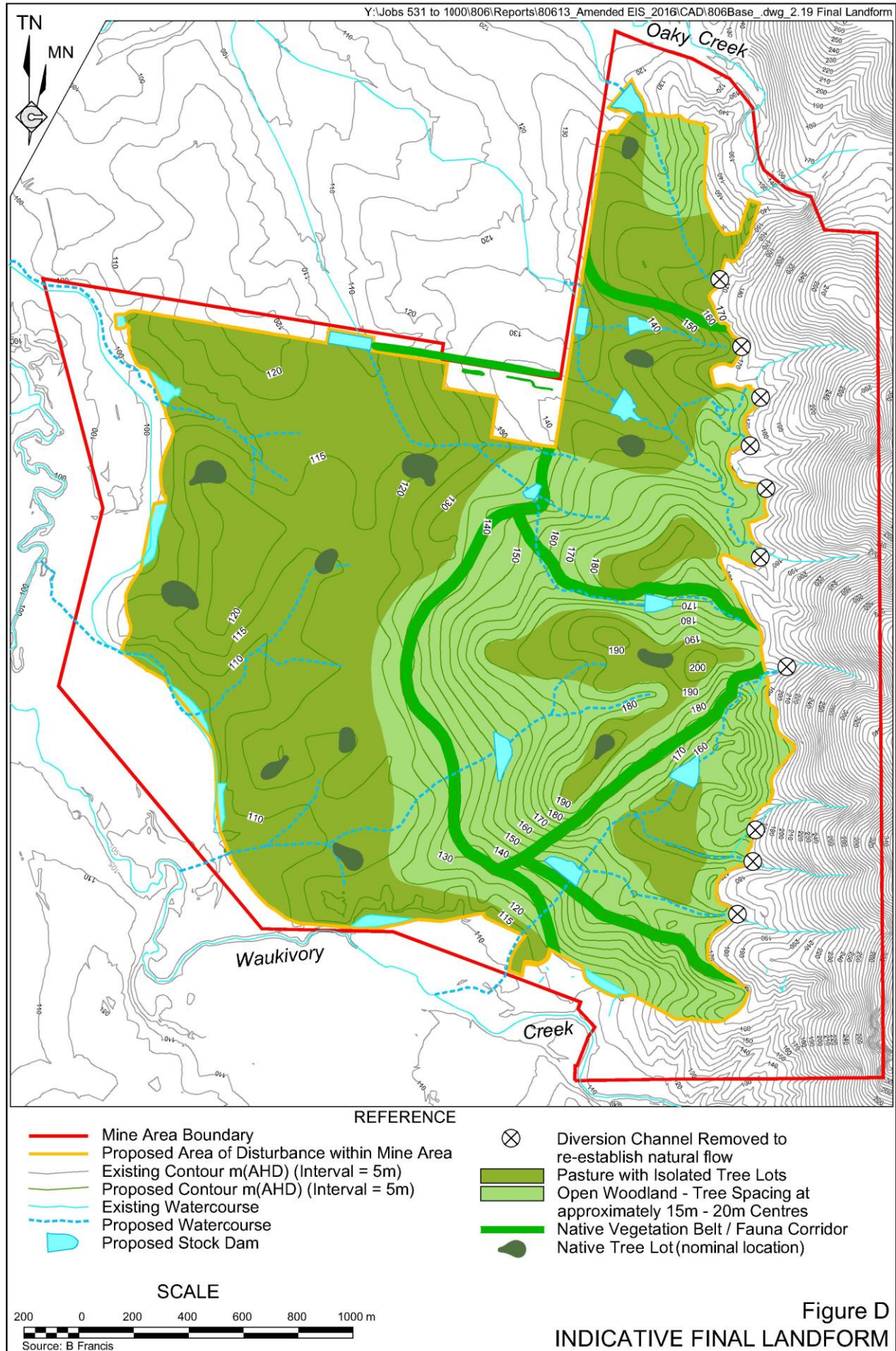
Consultative Committee Meetings, media releases, telephone calls and meetings between GRL management and any stakeholder who made contact and requested a face to face meeting with the Applicant's representatives. More recently, the Applicant provided presentations about the amended Project to open community meetings in Gloucester hosted by Advance Gloucester and the Chamber of Commerce.

As part of the wider Social Impact Assessment undertaken by Key Insights Pty Ltd which was used to inform the project design, a program of research was undertaken which included:

- extensive consultation with individuals, business owners and operators, service providers, Council and community groups; and
- a Community Perception Survey to identify the issues and concerns that the community had regarding the proposed mine.

The following key issues were identified as a result of the consultation and perception survey.

1. Impacts on the water supply in the local area.
2. Dust impacts.
3. Visual impacts of the proposed open cut mine.
4. Impacts on agriculture.
5. Impacts on the local character of the area.
6. Noise impacts.
7. Flora and fauna impacts.
8. Increased traffic associated with workers and deliveries to the Site.
9. Coal mining's impact on climate change.



Potential health impacts were not specifically included in the summary of key potential issues raised during the perception survey, however issues that could potentially affect health, e.g. water quality, dust and noise are addressed comprehensively in the EIS. Mental health was also raised as a potential issue relating to stress levels and the ability to manage unavoidable change in the local environment.

A number of respondents also identified the positive benefits that would occur for Gloucester and district residents through improved employment opportunities and support for local businesses.

Consultation with government agencies has been ongoing since 2012 with liaison involving correspondence, discussions and some site inspections.

The environmental, economic and social issues raised throughout the consultation process with the local community and Government agencies have been considered by the Applicant throughout the design of the amended Project. Emphasis has also been placed upon achieving a design which, when assessed, satisfies relevant criteria and guidelines to the extent practicable.

ENVIRONMENTAL FEATURES SAFEGUARDS AND IMPACTS

The components and features of the existing environment within and in the vicinity of the Site have been studied in detail, and used to inform the design of the amended Project so as to avoid or minimise potential impacts. **Figure E** places the Site in its local setting, i.e. within the eastern side of the Stroud-Gloucester Valley southeast of Gloucester township. The Mine Area is set back from Waukivory Creek and the Avon River and rises to the east onto the lower slopes of the Mograni Range.

The Site is located within a rural area primarily used for beef and dairy cattle operations. Privately-owned residences are primarily located on rural properties, adjacent to The Bucketts Way and within three rural-residential subdivisions.

Figure F displays the surrounding land ownership and residence locations used by the Applicant and its consultants for the design of the amended Project and assessment of potential environmental impacts.

The following provides a brief overview of the main components of the existing environment, the proposed safeguards to be implemented to minimise adverse effects and the assessed level of impact(s) arising from the amended Project.

Noise

Background noise measurements have established that the existing daytime noise levels are typically at or just below 30dB(A) in areas away from The Bucketts Way and Gloucester township. Background noise levels in all areas, including Gloucester are low during the evening.

The absence of the CHPP, overland conveyor, rail loop and rail load-out facility will result in reduced noise impacts from those identified for the 2013 Project, particularly at the residences within the southern side of the Forbesdale Estate and adjacent to The Bucketts Way south of Fairbairns Road.

Management of operational noise impacts from the amended Project would include:

- the use of interim or long-term amenity barriers which provide acoustic shielding as well as visual benefits;
- restrictions on the number and location of equipment items used;
- restricted operations of an evening and under specific meteorological conditions;

- use of sound suppressed equipment;
- use of predictive meteorological forecasting;
- a regime of real-time noise monitoring; and
- adaptive site management.

The adoption of the amended design and the controls outlined above underpin the improved level of predicted compliance for the amended Project compared with the 2013 Project.

During the site establishment and construction stage, the construction noise management level would be satisfied at all residences and receivers except for short periods for two activities.

1. Road construction activities on and near McKinleys Lane would cause noise exceedances for approximately 1 month at two residences near McKinleys Lane
2. Road upgrading activities along Jacks Road would cause noise exceedances for approximately 1 week at the adjoining rural-residential estates. All other construction activities would comply with the required noise levels.

During mining operations, the project specific noise level would be satisfied at all residences and receivers in the vicinity of the Mine Area with the exception of three of the closest privately-owned residences where negligible exceedances of 1dB(A) to 2dB(A) are predicted to occur, mainly during Years 4 to 7 when out-of-pit overburden emplacement activities are underway. Beyond Year 8, when all activities are confined to the Main Pit, compliance would be achieved at all residences and receivers. Marginal to moderate exceedances of 4dB(A) to 5dB(A) are predicted at one residence of an evening in Years 4 and 7. These exceedances would

typically occur under adverse weather conditions, principally light southerly winds during winter evenings.

The Applicant is committed to discussing noise-related matters with the owners and/or occupiers of the three subject residences prior to the predicted periods of exceedances to ensure that the effects of these exceedances are avoided, minimised or appropriately mitigated.

Predicted road traffic noise levels at the closest residences adjacent to the road network would satisfy the relevant noise criteria during both the site establishment and construction stage and throughout the period of mining operations.

Although predicted noise levels would predominantly be compliant with relevant noise criteria, it is recognised that the activities within the Mine Area would be periodically audible at residences within the vicinity of the Mine Area.

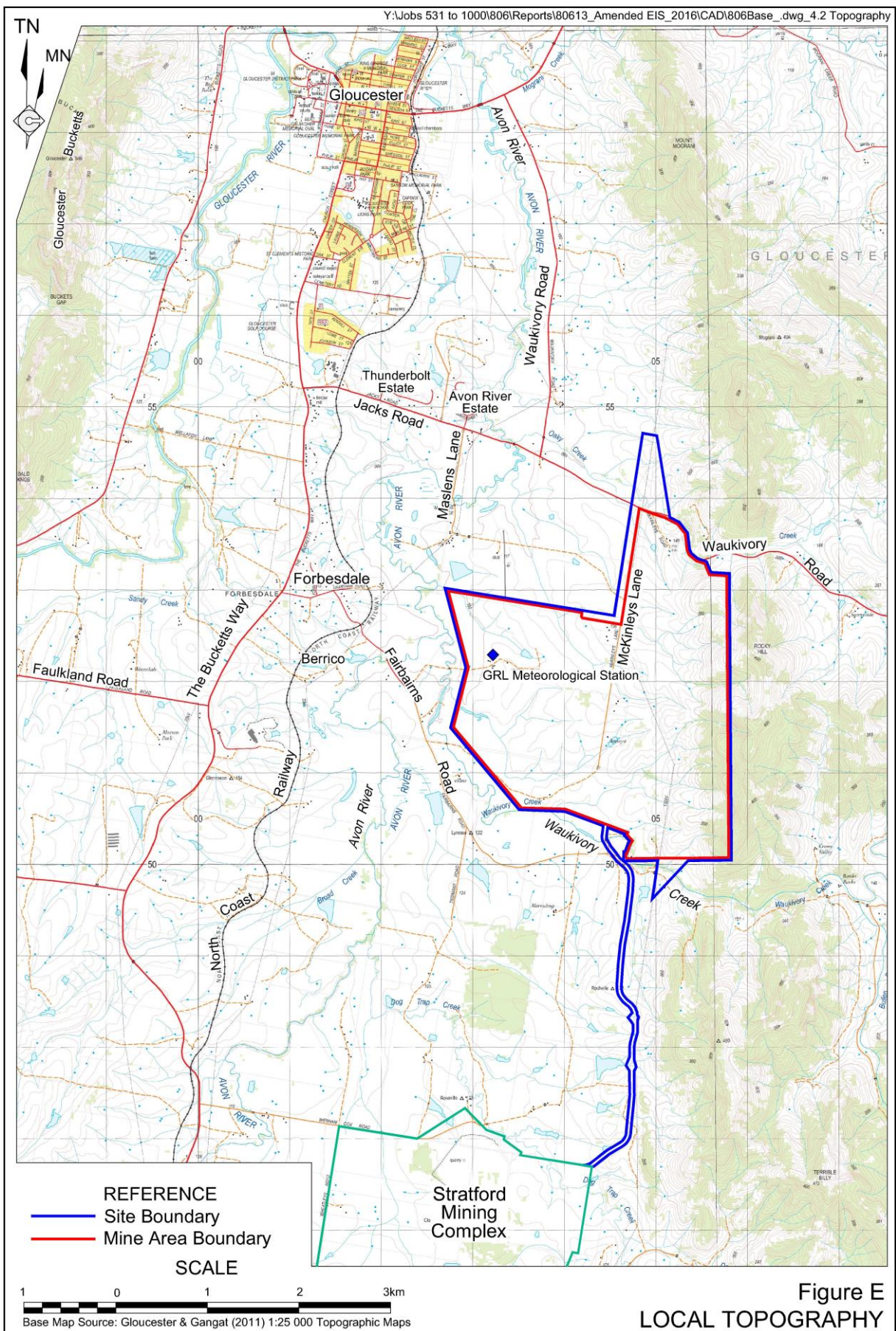
Blasting and Vibration

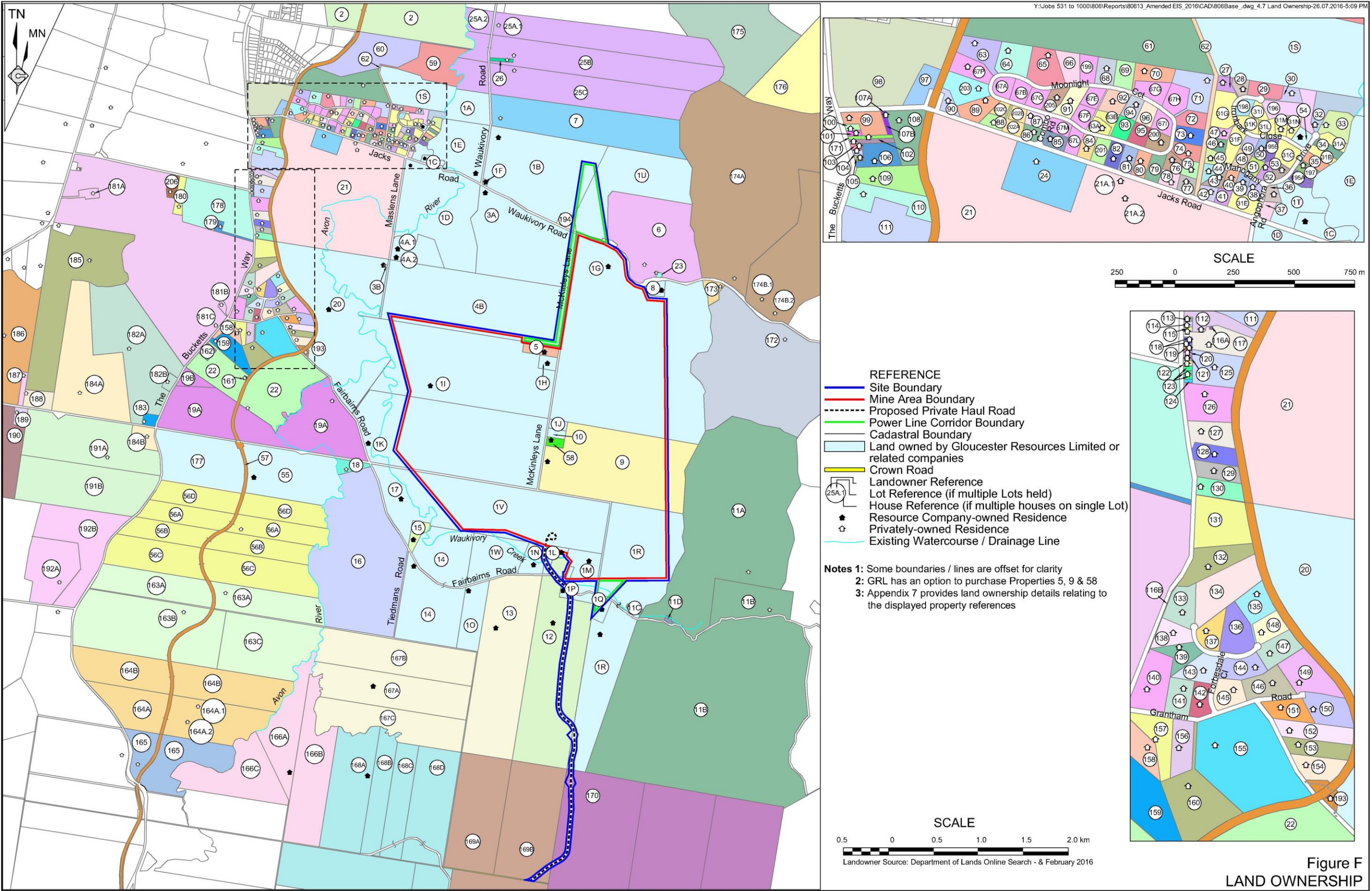
In order to ensure the impacts from blasting associated with the amended Project are minimised, each blast would be designed to ensure compliance with the relevant blasting criteria at all privately-owned residences and receivers.

All blasts would be monitored to enable continuous refinement of blasting practices and the development and updating of site laws based on blast monitoring results.

All residents within 2km of the open cut pits would be informed of the proposed blasting schedules, noting that most of the blasts in the first few years of operation would be in excess of 2.5km from the nearest privately-owned residences.

Prior to the commencement of blasting, the Applicant would commission structural surveys of residences within a 2km radius of the open cut pit limits, subject to access being provided by the landowner/occupier.





This page has intentionally been left blank

This page has intentionally been left blank

The blasting and vibration assessment of the amended Project predicted there would be no exceedances of any blast criteria provided that an adaptive approach is taken by adjusting the maximum instantaneous charge consistent with the site law established for the Mine Area.

Monitoring of the impacts associated with blasting and vibration would be undertaken in accordance with a Blast Management Plan.

Air Quality

The results from the Applicant's comprehensive air quality monitoring network which records PM₁₀, PM_{2.5} and deposited dust, confirms the Site is situated within an area with generally low levels of dust.

Dust generating activities associated with the amended Project have been identified and quantified through dispersion modelling. The modelling results indicate that the potential impact on air quality at surrounding privately-owned residences / receivers would be minor and would not exceed the applicable air quality criteria for Total Suspended Particulates, PM₁₀, PM_{2.5} and deposited dust.

The predicted 'project-only' maximum 24-hour average PM₁₀ and PM_{2.5} concentrations at surrounding private residences and within the Gloucester township (including Gloucester High School, Gloucester Hospital and Captain Cook Park) are also well below the applicable air quality criteria.

A statistical analysis using the Monte Carlo Simulation was also undertaken to assess the likely cumulative impacts (background, project sources and other sources) at five representative residences. This analysis predicts that the amended Project would result in less than one additional exceedance per year of the 24-hour PM₁₀

criteria at three residences and up to two additional exceedances per year of the 24-hour PM_{2.5} criteria at the five residences than would otherwise occur in the absence of the amended Project. These represent a low probability of additional exceedances which can be managed through real-time monitoring and adaptive management practices.

The generation of nitrogen dioxide (NO₂) from blast fume and diesel combustion was also modelled. The predicted maximum cumulative 1-hour and annual average NO₂ concentrations were below the applicable criteria at all assessed residences.

Utilising conservative estimates of predicted particulate and NO₂ concentrations, the potential for short-term and long-term health effects has also been assessed. The assessment of health risk concluded that air emissions from the amended Project would present little likelihood of causing adverse health effects to individuals in the vicinity of the Site and that health issues were within levels considered acceptable within NSW.

Consideration was also given to the potential for impacts from the predicted emissions on surrounding stock, agricultural productivity and domestic water tanks. It is assessed that no significant impacts are likely for these aspects.

Average annual Scope 1 greenhouse gas emissions, namely emissions attributable to on-site sources, would represent approximately 0.02% of Australia's commitment under the Kyoto Protocol and a very small portion of global greenhouse emissions, given that Australia contributed approximately 1.12% of the global GHG emissions in 2012.

Visual Impacts

Consideration of visual impacts has been central to the design of the amended Project, with emphasis placed on both

short-term and long-term outcomes. The removal of the overland conveyor, rail loop and rail load-out facility would decrease the mine-related components visible from both residences and public vantage points, particularly The Bucketts Way.

The key visual controls include long-term and interim amenity barriers designed to shield operational activities for the bulk of the life of the amended Project. A range of physical lighting controls, together with restricted operations during the evening and no night-time mining operations would also limit visual impacts after dusk.

The Applicant's tree screen plantings would also assist to limit the visibility of operations within the Mine Area from the public road network as well as an effective lighting shield for operations undertaken after dusk.

Approximately one third of the residences within and near the rural-residential estates to the west and through to the north of the Mine Area would possibly have views towards the mine area from their main living areas. When viewed from these properties, initial construction of the western and northern amenity barrier would be visible. However, as the barrier is progressively constructed and vegetated, the visibility of mining operations would reduce.

Beyond early in Year 3, mining operations would generally be shielded from all directions with the subsequent construction of the two interim amenity barriers providing additional shielding until about Year 6. The existing tall vegetation adjacent to McKinleys Lane would provide considerable shielding during the construction of the interim overburden emplacement. Beyond Year 8, mining operations would be confined to the open cut pits and ROM pad and would not be visible from any surrounding residences.

Given the permanent nature of the final rehabilitated landform, emphasis has been placed upon a design which exhibits drainage features and slopes comparable with the existing landform. This approach would result in a final landform which would be indistinguishable from the surrounding landscape.

In order to assist in reducing visibility and potential visual impacts, the Applicant has undertaken a significant strategic vegetation planting program since 2012, concentrating on areas of its properties adjacent to public roads which had been cleared by previous landowners. This program, which will also assist in the re-instatement of corridors for fauna movement, will be ongoing.

Surface Water and Flooding

The Site is located within the Avon River catchment which incorporates the smaller Waukivory, Oaky and Dog Trap Creek catchments. The Avon River, which is itself a tributary of the Gloucester River, feeds into the Manning River system before entering the Pacific Ocean near Taree. Water sourced for a number of towns within the region are supplied from the Manning River, approximately 50km downstream of Gloucester, via MidCoast Water's Manning Scheme.

The results of surface water monitoring at 13 sites within and in the vicinity of the Site under a range of flow conditions have shown the water in Waukivory and Oaky Creeks and the Avon River generally has a neutral pH, low total dissolved solids (TDS) and exhibits low levels of total suspended solids (TSS) and turbidity under low flow conditions. However, periodically, levels of salinity, TSS and turbidity exceed trigger values identified in the NSW Water Quality Objectives (WQOs) for the protection of aquatic ecosystems in upland rivers of the Manning River catchment, and ANZECC (2000) trigger values for the 95% protection of freshwater species. Total median

nitrogen and phosphorous concentrations were above the WQO trigger levels for the 95% protection of aquatic species, as were a number of samples for cadmium, copper, chromium, lead and zinc. Samples collected from farm dams across the Mine Area generally exhibited slightly higher salinity and TSS values than the receiving waters.

Surface water within the Mine Area would be separated and managed according to quality in the following manner.

- **Clean Water** – During the initial years of mining, clean water diversion channels would be constructed upslope of the overburden emplacements to direct upslope runoff to the north (to Oaky Creek) and south (to Waukivory Creek). Clean water would also be directed off rehabilitated areas. Following the successful rehabilitation of all disturbance areas, the diversion channels would be decommissioned and surface runoff re-directed through the natural and re-constructed watercourses on the post-mining landform.
- **Sediment-laden Water** – Runoff from stockpiled subsoil, topsoil and most disturbed areas within the overburden emplacements would be directed to a series of sediment dams before being tested and released in accordance with the Site's environment protection licence. Sediment-laden water of a quality which is not suitable for release, would be used on site for dust suppression.
- **Saline Water** – Groundwater inflow and surface runoff entering the open cut pits would be managed on site in a closed saline water management system and used for dust suppression within disturbed sections of the Mine Area. Water balance modelling has established that insufficient on-site storage would be available for the

likely quantities of saline water generated. Hence, the Applicant would install and operate a water treatment plant, from Year 4, to treat up to approximately 2.5ML of saline water per day. The treated water would be used to irrigate rehabilitated areas and GRL land in the vicinity of the Mine Area, particularly on the adjoining Speldon Dairy. The Applicant would consider a range of options for the disposal of the solid salt produced within the water treatment plant including transportation off site to a licensed waste facility, a reprocessing facility or directly to an end user.

The diversion of clean water around the disturbance areas would cause minor increases in flows to sections of Waukivory Creek and Oaky Creek. Overall, the amended Project would decrease flows in Waukivory Creek (upstream of the Avon River) by up to 2.1% and Avon River downstream of the Mine Area by up to 1.5%. However, the changes to stream flows would be negligible and within their natural variability.

Potential flooding impacts arising as a consequence of the amended Project were recognised in the design phase with the toe of the western and northern amenity barrier constructed to generally coincide with or lie above the 1 in 100 year Waukivory Creek/Avon River flood level. The barrier, together with the elevated internal haul road and end walls on the southern side of the open cut pits would act as flood levees and prevent any potential floodwater from entering the open cut pits.

Impacts of the western and northern amenity barrier and the bridge over Waukivory Creek on flood flows and behaviour would be negligible.

With the implementation of all surface water mitigation and management measures proposed for the Site, it is assessed that

surface water would be appropriately managed with negligible impacts on the surrounding environment or downstream surface water users.

Groundwater

Three distinct groundwater systems occur within the Mine Area, each displaying differing yields and levels of permeability.

- Permian coal seams and interburden.
- Shallow weathered bedrock (regolith) with associated colluvial deposits.
- Shallow alluvium associated with the floodplains of Waukivory Creek and the Avon River.

The majority of groundwater to be intercepted throughout the life of the amended Project is associated with the coal seams, with negligible groundwater intercepted from the overburden / interburden. Only limited quantities of shallow alluvial groundwater would be intercepted by the open cut pits.

Groundwater levels and gradients typically reflect the overlying topography, with a gentle gradient to the southwest occurring within the Mine Area. The quality of the groundwater, ascertained from 15 monitoring bores developed across the Mine Area is summarised as follows.

- pH does not substantially differ between groundwater sources and is typically neutral to slightly alkaline.
- Salinity varies between slightly brackish and moderately saline in the coal seams, with water in the alluvium also displaying a saline character reflecting inflows of saline water (from the coal seams) near the margins of the alluvium.

A detailed groundwater assessment was undertaken for the amended Project, including groundwater modelling. The assessment determined that the volume of

intercepted water from the alluvial system is adequately covered by the Applicant's existing entitlement for the Avon River Water Source, and complies with the *Lower North Coast Unregulated and Alluvial Water Sources Water Sharing Plan*.

The Applicant has also ascertained that there are sufficient water access licences/entitlements available to account for the groundwater inflows from the Permian Strata, i.e. in accordance with the *Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources*.

The groundwater assessment concluded that:

- no surrounding groundwater users would be impacted by the amended Project;
- there would not be any substantial reduction in water availability to the shallow groundwater system;
- there would be no impacts to any groundwater dependent ecosystems;
- there would be no measurable impact on flows within Waukivory Creek or the Avon River; and
- groundwater levels would recover within approximately 10 years after the cessation of coal extraction.

Groundwater monitoring would continue using a combination of the existing groundwater monitoring network and additional and/or replacement bores to further define baseline values and set trigger values for both groundwater quality and levels.

Terrestrial Ecology

More than 90% of the area to be disturbed is open pasture with some isolated remnant native vegetation ranging from low to good condition.

Four vegetation communities were identified within the proposed disturbance area, one of which corresponds with a Vulnerable Ecological Community (VEC) (a dry rainforest). No threatened flora species listed under the NSW *Threatened Species Conservation Act 1995* (TSC Act) or EPBC Act, nor flora species that form part of an Endangered Population listed under the TSC Act, nor rare flora species were detected during the comprehensive flora surveys.

A total of 67 threatened fauna species or migratory bird species were identified from database and literature searches as known or as having potential to occur within a 10km radius of the Site (at least periodically), with this number subsequently refined to 38 species following the field habitat assessment and surveys. Of these, 12 species were observed within the Study Area.

The impact assessment identified that 51.8ha of native vegetation within the approximately 500ha proposed disturbance area would be impacted by the amended Project. The 51.8ha of native vegetation comprises 46.9ha of Dry sclerophyll forest, 0.7ha of Riparian vegetation and 4.2ha of Dry Rainforest. Given the scattered nature of some of the remnant native vegetation, the effective area of clearing would be 41.5ha.

An assessment of significance of impact has been carried out in accordance with *Draft Guidelines for Threatened Species Assessment* and the 7-part test of section 5A of the EP&A Act for each of the 38 threatened fauna species and migratory birds that could potentially frequent the Site and for the dry rainforest VEC. The assessment concluded that the Squirrel glider, Brush-tailed phascogale and Grey-crowned babbler are the only local populations of threatened species that may be impacted by the amended Project, predominantly due to their occurrence within the remnant vegetation along the northern section of

McKinleys Lane. Potential indirect impacts may occur from adjacent mining-related activities including light, noise, and blasting, and vehicles moving on the Mine Area access road, although the following ameliorative measures will largely mitigate these impacts.

- Retention of the roadside vegetation along the northern section of McKinleys Lane.
- Tree planting adjacent to Waukivory Road which has already been initiated.
- Rehabilitation of the no longer required section of McKinleys Lane beyond the Mine Area access road.
- The progressive revegetation of the final landform to create woodland and native vegetation corridors to the east of McKinleys Lane.

Based upon the 2011/2012 ecological studies for the Rocky Hill Coal Project, the project was determined not to be a controlled action under the EPBC Act. The 2015/2016 ecological studies for the private haul road similarly established that the amended Project would not have any significant impact on any threatened species, ecological community or migratory species listed under the EPBC Act.

A 267ha Biodiversity Offset Area would be established along the eastern and southeastern sides of the Mine Area, along the mid to upper slopes of the Mograni Range and incorporating areas adjacent to Waukivory Creek, and be retained in perpetuity. The offset area would consist of approximately 142ha of managed native vegetation including 41.1ha of low condition Dry sclerophyll forest which the Applicant would actively revegetate. Vegetated fauna corridors on the rehabilitated post-mining landform would provide linkages between the offset area and the remnant vegetation along the northern section of McKinleys Lane and Waukivory and Oaky Creeks and the Avon River.

Aquatic Ecology

Investigations into the existence and state of the aquatic ecology within and in the vicinity of the Site determined that the aquatic environment is variable in condition, water quality and biota.

The existing habitats and aquatic communities in Waukivory Creek, Oaky Creek and the Avon River were assessed as being moderately to significantly impaired in terms of the stream condition and of moderate to poor habitat quality for fish. Notwithstanding this, the Avon River system as a whole is significant in that there are no major barriers to movement by fish between the Pacific Ocean and the upper sections of the system. Eels, which are migratory, were recorded during field investigations and anecdotal evidence indicates that other migratory fish such as Australian bass and mullet may also occur in streams adjacent to the Mine Area.

The amended Project would not interfere with longitudinal connectivity (i.e. fish passage) within the Avon River system.

One threatened aquatic flora species (Tall knotweed) was identified as potentially occurring within the Study Area. However, this species was not observed and it is considered unlikely that it is present or that it would be impacted by the amended Project.

Three invasive aquatic fauna species were identified as occurring, or could occur, within the watercourses near the Site.

The Applicant's commitments to protecting water quality within the Avon River and Waukivory Creek would ensure the existing aquatic ecology would not be adversely impacted as a result of the amended Project. The replacement of existing bridges across the Avon River at Jacks Road and Waukivory Creek at an existing private crossing would improve in-stream ecology at these locations due to the removal of

obstructions to stream flow such as pylons that also collect debris during periods of high flow.

Investigations have also shown that it is unlikely that stygofauna are present in substantial numbers within the groundwater beneath the Site, largely because of the salinity in the groundwater systems.

Soils and Land and Soil Capability

Five Soil Mapping Units (SMUs) have been identified within the Site, reflecting their locations on the upper, mid and lower slopes, the floodplains or in watercourses.

With the exception of the SMU within the watercourses, the physical and chemical properties of the SMUs within the Mine Area are acceptable for rehabilitation purposes as they display generally stable characteristics, moderate erodibility, and acceptable pH levels (with the potential requirement for lime to be added to some subsoils to enhance plant growth). Subsoils within the watercourses display elevated salinity levels and would need to be placed directly into the overburden emplacements.

Within the private haul road corridor, the majority of topsoils sampled are limited by soil acidity and would need to be limed to support revegetation. Given the dispersive nature of the majority of subsoils within the private haul road corridor and the adequate volume of topsoil for revegetation, all subsoils would be placed in the fill sections of the road, covered with topsoil, and revegetated.

The use of appropriate soil stripping, handling and stockpiling procedures, together with appropriate erosion controls would result in a minimal impact to soils within the Site.

Land and Soil Capability (LSC) Classes were determined based upon published mapping, with additional confirmatory field studies undertaken. It was determined that

the majority of the land within the Mine Area disturbance limit is classified as LSC Classes 4 and 5 land (land with moderate to severe limitations). There are no LSC Class 1, 2 or 3 lands within the Mine Area.

The private haul road corridor was determined to contain predominantly LSC Class 4 land (moderate to severe limitations) and smaller areas of LSC Class 6 (very high limitations) and LSC Class 3 (moderate limitations) land.

The Site is not located on biophysical strategic agricultural land as identified on the Strategic Regional Land Use Plan - Upper Hunter maps nor based upon a review of the Site's soil physical and chemical properties.

With the exception of the section of private haul road and Mine Area access road retained for future access, following the completion of rehabilitation activities, land disturbed during the life of the amended Project would be returned to the respective current or better LSC classes.

Agricultural Impact Assessment

Agricultural activities within the former Gloucester LGA are dominated by the beef industry (for human consumption) and the dairying industry. A range of niche livestock and vegetable, herb and fish enterprises are also in operation.

Prior to the Applicant's purchase of the properties within the Mine Area, no dairy and no large scale commercial beef farms were in operation. However, there are currently six operating dairies within the local area together with small scale beef operations.

The largest of the local dairies, the Speldon Partnership dairy, has historically used 271ha of farmland on that site and grazing country elsewhere for dry cattle and heifers. The Speldon Partnership dairy land has been purchased by the Applicant, and leased back to the former owner.

Additionally, the Applicant has reached an agreement with the Partnership to allow grazing and fodder production to be undertaken on land within the Mine Area as well as adjoining land owned by the Applicant that would not be used for mining or mining-related purposes. This represents an increase of approximately 1 130ha of land available to the Speldon Partnership. As a result, production rates at the Speldon Dairy have already improved significantly with the number of dairy cows being milked increasing from 500 to 680 and total milk production up from 12 000L per day to 14 000L per day. This has led to an additional two full time employees and five part-time employees at the dairy.

The amended Project would result in negligible impacts upon the total area of agricultural land available for grazing operations with a maximum 447ha temporarily removed over the life of the amended Project. This equates to approximately 0.4% of the total available grazing land area within the former Gloucester LGA. The temporary loss of potential production from this land is equivalent to a loss of 1.23 full time equivalent employees from the agricultural industry and support services. However, the increased production achieved to date at the Speldon partnership dairy has more than offset this potential labour loss. The proposed ongoing intervention and supply of water during mining operations would continue to increase production resulting in a net increase in employment in the agricultural sector.

It is anticipated that no surrounding agricultural industries or infrastructure would be impacted as a direct result of the amended Project.

Transportation

The existing road network has been reviewed and the potential impacts of the amended Project assessed for the site establishment and construction and operational stages.

An analysis of the principal intersection (Jacks Road/The Bucketts Way) was undertaken using SIDRA intersection performance simulation software. The modelling indicates that, during the peak traffic periods associated with the amended Project, the intersection would continue to operate well below its capacity with no significant impacts, even in the event of no upgrading works. Considering that surrounding intersections generally have similar configurations and significantly less traffic, similar levels of intersection performance would be anticipated.

Despite the outcomes of SIDRA intersection analysis, the following road and intersection works are proposed.

- Upgrading of the Jacks Road/The Bucketts Way, Jacks Road/Waukivory Road and Waukivory Road/McKinleys Lane intersections.
- Upgrading of the road pavement on Jacks Road and Waukivory Road (east of Jacks Road).
- Replacement of the single lane Avon River bridge on Jacks Road with a dual lane structure.
- A range of other minor upgrade works including line marking and signage.

The following specific management measures and safeguards would also be adopted to minimise road traffic-related impacts.

- Implementation of Construction and Operational Traffic Management Plans.
- Implementation of a Driver's Code of Conduct for contractors and employees.
- Payment of a road maintenance contribution to Council reflecting traffic generated on Jacks and Waukivory Roads and the upgrade works completed.
- Payment of an annual contribution to the maintenance of The Bucketts Way.

The proposed upgrades would increase the road and intersection capacities and safety, and improve the structural integrity of the pavement of Jacks Road and Waukivory Road east of Jacks Road. The road upgrades and replacement of the currently load-limited Jacks Road bridge would improve long-term access for all motorists and reduce the costs to Council to maintain and repair this existing infrastructure.

It has been assessed that, with the implementation of the proposed upgrades and mitigation and management measures, no significant impacts are expected upon the existing road network or road users as a result of the amended Project. Rather, the benefits arising from the proposed road and bridge works would benefit the community directly and indirectly well beyond the life of the amended Project.

Aboriginal Cultural Heritage

A search of the Aboriginal Heritage Information Management System (AHIMS) identified five previously registered sites within the Site, comprising open scatters and a potential archaeological deposit. Field surveys undertaken in conjunction with Registered Aboriginal Parties identified an additional four sites, resulting in a total of nine sites occurring within the Site.

Following receipt of development consent for the amended Project, each of the identified nine sites would be salvaged and their contents relocated to a secure place, with three of these sites being subject to further subsurface investigations.

The land that lies between Waukivory Creek and Fairbairns Road has been identified as the location within the private haul road corridor most likely to contain artefacts. Monitoring of turf stripping by Registered Aboriginal Parties with an association to Worimi Country would be undertaken during construction of the private haul road.

An Aboriginal Cultural Heritage Management Plan would be prepared following receipt of development consent. The Plan would outline the approach to salvaging the artefacts from the identified sites and the education of the mine workforce on Aboriginal heritage identification and procedures to follow if any currently undiscovered sites are identified during the life of the amended Project.

The implementation of the Aboriginal Cultural Heritage Management Plan and the subsequent salvage and storage of identified sites, as agreed upon by the Registered Aboriginal Parties and stakeholders, would result in no significant impacts to Aboriginal heritage.

Historic Heritage

An historic heritage assessment was undertaken for the amended Project in conjunction with the visual impact assessment of the Stroud-Gloucester Valley.

A search of the relevant heritage databases revealed that there are no recorded historic heritage sites within or immediately in the vicinity of the Site. The “Aminya” residence adjacent to McKinleys Lane, was examined and assessed to have no historical significance.

A Statement of Heritage Significance and a Statement of Heritage Impact were completed. They concluded that whilst the Stroud-Gloucester Valley holds certain historic heritage qualities, they provide evidence of an organically evolved landscape and that the historic heritage landscape would not be significantly affected by the short term impacts associated with the amended Project.

Social Impact

A comprehensive, independent social impact assessment was undertaken and involved an analysis of the available data

sourced from the Australian Bureau of Statistics and other sources, and relevant planning or strategic documents prepared by the former Gloucester Shire Council and the NSW Department of Planning and Environment. This data and the results of qualitative research undertaken with local people and organisations were used to identify the full range of potential issues and opportunities arising from the amended Project within the community.

The research established there is a diversity of views in the local Gloucester community regarding the positive and negative impacts of the amended Project. While some within the community are strongly opposed to the amended Project, there is wide support within the community based on the employment and other economic benefits as well as the contribution the amended Project would make to maintain a locally diverse economic and social base. A range of potential social impacts, including health, social infrastructure capacity, community sense of place, social cohesion, housing, employment and cumulative impacts were analysed.

A total of 22 recommendations were made in the social impact assessment to manage and mitigate the potential social risks and maximise the social benefits. These recommendations have been accepted by the Applicant and are in addition to its previous announcement of a Community Grants Program which includes a range of other sponsorship and training opportunities.

Economic Benefits and Impacts

The amended Project would result in significant economic benefits to the local, Regional, State and National economies, including the following. Benefits and costs presented in the economic assessment are expressed in terms of net present value (NPV), that is, a 7% discount rate has been applied to discount all values to 2016 price terms.

Local/Regional

- The Applicant has set a target rate of 75% local resident employment by end of Year 3 of operations. Local direct employment at this rate would result in 32 local full-time equivalent people during the site establishment and construction stage and 73 local full-time equivalent people during operations. Employment for the amended Project would generate estimated average annual wage payments of approximately \$9.0 million.
- Project spending on non-labour items such as fuel, tyres and a range of services is estimated at \$31 million during the site establishment and construction stage and \$65 million per year during ongoing operations, \$48 million of which is estimated to be spent in the locality each year.
- Payment of additional local government rates on project-related property would be in the order of \$5.6 million (\$3.5 million NPV) over the life of the amended Project based on the rate information provided by the former Gloucester Shire Council for 2016-17 local rates for mining land. This represents an increase of approximately 520% in rate payments for project-related land as a consequence of the differential rating policy, when compared to existing rates over the same area.
- Contribution of approximately \$6.5 million (\$2.9 million NPV) to the local community as a result of a production-related Community Grants Program, at an average of approximately \$400 000 per annum.
- Additional local expenditure based on employee disposable income, contributions to local road maintenance and the local share of corporate tax payments that would be accessed by

the local community through Federal funding of infrastructure, health and education services.

- Flow-on benefits to the local/regional economies from each of the above.

The economic impacts of costs associated with the amended Project that would occur at a local level principally include air quality impacts estimated at approximately \$20,000 per year and the local share (based on population) of greenhouse gas emissions estimated at approximately \$3,000 per year.

State

- Payment of \$144 million (\$63 million NPV) in royalties to the NSW State Government over the life of the amended Project.
- Payment of an estimated \$47 million (\$19 million NPV) based on the NSW community share of corporate tax payments received through Federal funding of infrastructure, health and education services.
- Subsequent flow-on effects from each of the above.

Commonwealth

- Payment to the Commonwealth government of in excess of \$146 million (\$60 million NPV) in taxation obligations throughout the life of the amended Project.

Over the operational life of the amended Project, it is estimated that there would be significant economic benefits to the NSW economy while the locality would benefit from a projected \$48 million in annual spending and the flow-on effects of an average of approximately 97 full time equivalent jobs.

Economic impacts of costs relating to residual environmental, social and transport effects over the life of the amended Project have been quantified at an estimated

\$24 million (\$9.9 million NPV) at a national level, of which approximately a third would be attributable to the NSW community over the life of the amended Project (based on population share).

On balance, the amended Project is estimated to deliver a net economic benefit for the NSW community and the benefits assessed at a local scale would far outweigh costs associated with the assessed residual impacts.

PROJECT EVALUATION AND JUSTIFICATION

The amended Rocky Hill Coal Project has been evaluated and justified in light of the assessment of the amended Project's potential impacts on the environment and potential costs and benefits to the local and wider community.

The evaluation of the amended Project was undertaken in the context of the emphasis placed upon:

- the Applicant's approach to project design and high standards of environmental performance and commitments;
- the principles of ecologically sustainable development;
- the key amendments to the 2013 Project addressing environmental issues; and
- the importance of the production of the high quality coking coal from within the Rocky Hill Mine Area.

The evaluation has found that with the implementation of the proposed comprehensive range of operational controls, and where necessary additional mitigation measures, the residual risk posed by the various potential environmental risk sources would be acceptable and therefore enable the amended Project to proceed.

The amended Project has addressed each of the principles of ecologically sustainable development with a conclusion reached that the amended Project would achieve a sustainable outcome for the local and wider environment.

The amended Project has also been justified in terms of a wide range of biophysical, social and economic impacts particularly given the very high quality of, and demand for, the coking coal to be produced. These impacts have been justified in terms of the low risk of adverse environmental outcomes and the positive economic and social benefits that would result for the local and regional communities and for the State and Commonwealth.

The agreement with Yancoal that removes the necessity to duplicate coal washing and handling facilities and rail loading capabilities that are already present in the local area are recognised as beneficial for both companies. Considered with the proposed re-commencement of mining operations at the Stratford Mining Complex in 2018, the amended Project would result in a cumulative benefit with respect to infrastructure cost savings by not requiring an overall increase in processing activities in the Gloucester region, but rather undertaking processing and despatch within the existing approved rate for the existing Stratford Mining Complex.

The amended Project has also been modified to take into account feedback received from the community and Government agencies on the 2013 Project. It is considered that the most significant amendments to the 2013 Project such as those made to operating hours and reduced air quality, noise and visual impacts have resulted in an amended Project that is better able to address community expectations, while providing an acceptable financial return.

CONSEQUENCES OF NOT PROCEEDING WITH THE AMENDED PROJECT

In the event the amended Project does not proceed in the manner proposed, the following outcomes would not eventuate.

- Employment opportunities for numerous Gloucester and district residents.
- Direct expenditure totalling an estimated \$65 million annually, of which \$48 million is expected to occur within the locality annually.
- Additional rates revenue to Mid-Coast Council of approximately \$5.6 million (\$3.5 million NPV).
- Additional beneficial environmental and related outcomes from the amended Project such as road and bridge works which would otherwise not eventuate or need to be financed by ratepayers.

Based on the demographic projections for Gloucester, other likely outcomes from the no development option would include:

- inadequate jobs ratio growth to meet demand resulting from a small but slowly growing population;
- a continued exodus of people in primary working years forced to seek employment opportunities outside of Gloucester;
- the consequences on an increasingly ageing population including an increase in the percentage of the population over 55 years of age and the ratio of people not working relying on those that are working;
- out-migration to neighbouring employment centres; and
- a real reduction in rates earnings by Council.

CONCLUSION

The amended Project has, to the extent feasible, been designed to address the identified concerns of the local community and the environmental criteria nominated by the State government. The amended Project would provide for the mining and despatch of high quality coking coal products destined for export to Asian steel mills.

The use of real-time air quality and noise monitoring, predictive meteorological forecasting and diligent, adaptive management would enable the Applicant to successfully develop and operate the amended Project to a high standard of environmental performance. Operating to a high standard is recognised by the Applicant as fundamental to the success of the amended Project and its acceptance as a valued member of the community.

The proposed rehabilitation activities and final landform, including no retained final void, would allow the progressive re-instatement of the land within the Mine Area for agricultural purposes and demonstrate the Applicant's recognition of the values attributed to an E3 zoning.

The amended Project would provide sought-after employment, particularly for young people, which in turn would provide a social and economic boost to, and encourage a stable base for, the community as well as help address the dependency ratio and the implications of an ageing population in Gloucester.

This EIS concludes that, provided the proposed management and mitigation measures are adopted, the amended Project could be constructed and operated in a manner that effectively mitigates residual risks while providing benefits for the local community of Gloucester, the Mid-Coast Local Government Area, NSW and Australia. In doing so, the amended Project would satisfy relevant statutory goals and criteria, environmental objectives and reasonable community expectations.