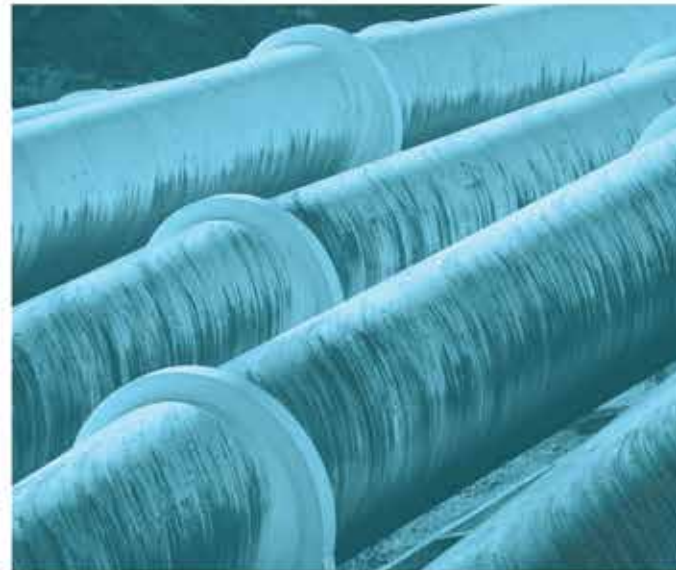




Cowal Gold Operations Open Pit Continuation Project

Scoping Report

Prepared for Evolution Mining (Cowal) Pty Limited
May 2022





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Cowal Gold Operations Open Pit Continuation Project

Scoping Report

Report Number

J190417 RP#4

Client

Evolution Mining (Cowal) Pty Limited

Date

4 May 2022

Version

v2 Final

Prepared by

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4 May 2022

Approved by

Andrew Woidt
Associate Environmental Engineer
4 May 2022

This report has been prepared in accordance with the brief provided by the client and has relied upon the information collected at the time and under the conditions specified in the report. All findings, conclusions or recommendations contained in the report are based on the aforementioned circumstances. The report is for the use of the client and no responsibility will be taken for its use by other parties. The client may, at its discretion, use the report to inform regulators and the public.

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1 Introduction

1.1 Overview

Evolution Mining (Cowal) Pty Limited (Evolution) is the owner and operator of Cowal Gold Operations (CGO) located approximately 38 kilometres (km) north-east of West Wyalong, New South Wales (NSW) (refer Figure 1.1). CGO is located immediately adjacent to Lake Cowal, an ephemeral waterbody (refer Figure 1.2).

CGO is an open pit and underground gold mining operation. The open pit mining operations commenced in 2005. Underground mining operations were approved on 30 September 2021 and are projected to commence in 2023.

CGO is regulated by two Ministerial development consents, for ‘surface’ operations (ie open pit mining and associated infrastructure) and ‘underground’ operations.

Development Consent DA 14/98 covering ‘surface’ operations has been modified 16 times since it was granted, and allows Evolution to:

- extract 167 million tonnes (Mt) of ore by open pit mining methods, with a life of mine until 2040;
- process ore on-site at a rate of up to 9.8 million tonnes per annum (Mtpa);
- produce up to 6.1 million ounces (Moz) of gold;
- emplace tailings and waste rock on site in an integrated waste landform (IWL) – which includes the current northern and southern tailings storage facilities (TSFs), and in waste rock emplacement (WRE) areas;
- operate a water supply pipeline to the Bland Creek Palaeochannel Borefield (BCPB); and
- progressively rehabilitate the site.

Development Consent SSD 10367 covers ‘underground’ operations and allows Evolution to:

- develop and operate an underground stope mine and a box cut to the underground;
- develop a pastefill plant to produce paste made from cement and tailings to backfill the extracted stopes for stability and safety purposes;
- extract 27 Mt of ore by underground stoping mining methods at a rate of 1.8 Mtpa, until 2040;
- deliver ore and waste rock from the underground mine to the surface; and
- produce up to 1.8 Moz of gold.

The current surface and underground mining infrastructure are wholly contained within Mining Lease (ML) 1535 (due to expire in 2024) and ML 1791 (due to expire in 2040). ML 1791 accommodates part of the IWL and soil stockpiles. Together, ML 1535 and ML 1791 host all facilities of the CGO and occupy a total area of approximately 2,873 hectares (ha). The CGO site also hosts a range of ancillary infrastructure to support mining operations. This includes an ore processing plant, the IWL, WREs, ore stockpiles, laydown areas, water storage dams and drainage diversion systems, workshops, offices, reagent storage and explosives magazine.

Evolution seeks to develop further open pit mining operations at CGO as part of the Open Pit Continuation Project (the Project). This will involve further development of the existing E42 Pit and the development of open pit mining in three new and adjacent orebodies, known as the 'E46', 'GR' and 'E41' pits. It is noted that the three new and adjacent ore bodies remain within the existing mining lease (ML 1535). It is anticipated that this development will extend the mine life to the end of 2042. The Project is further defined in Chapter 3.

No change to the approved ore processing rate of 9.8 Mt per annum is proposed at this time.

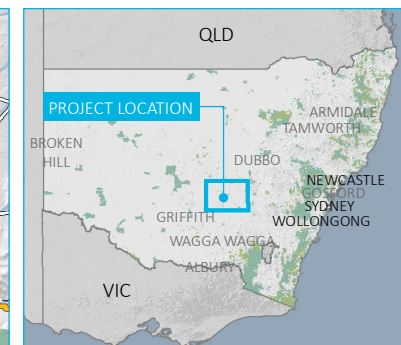
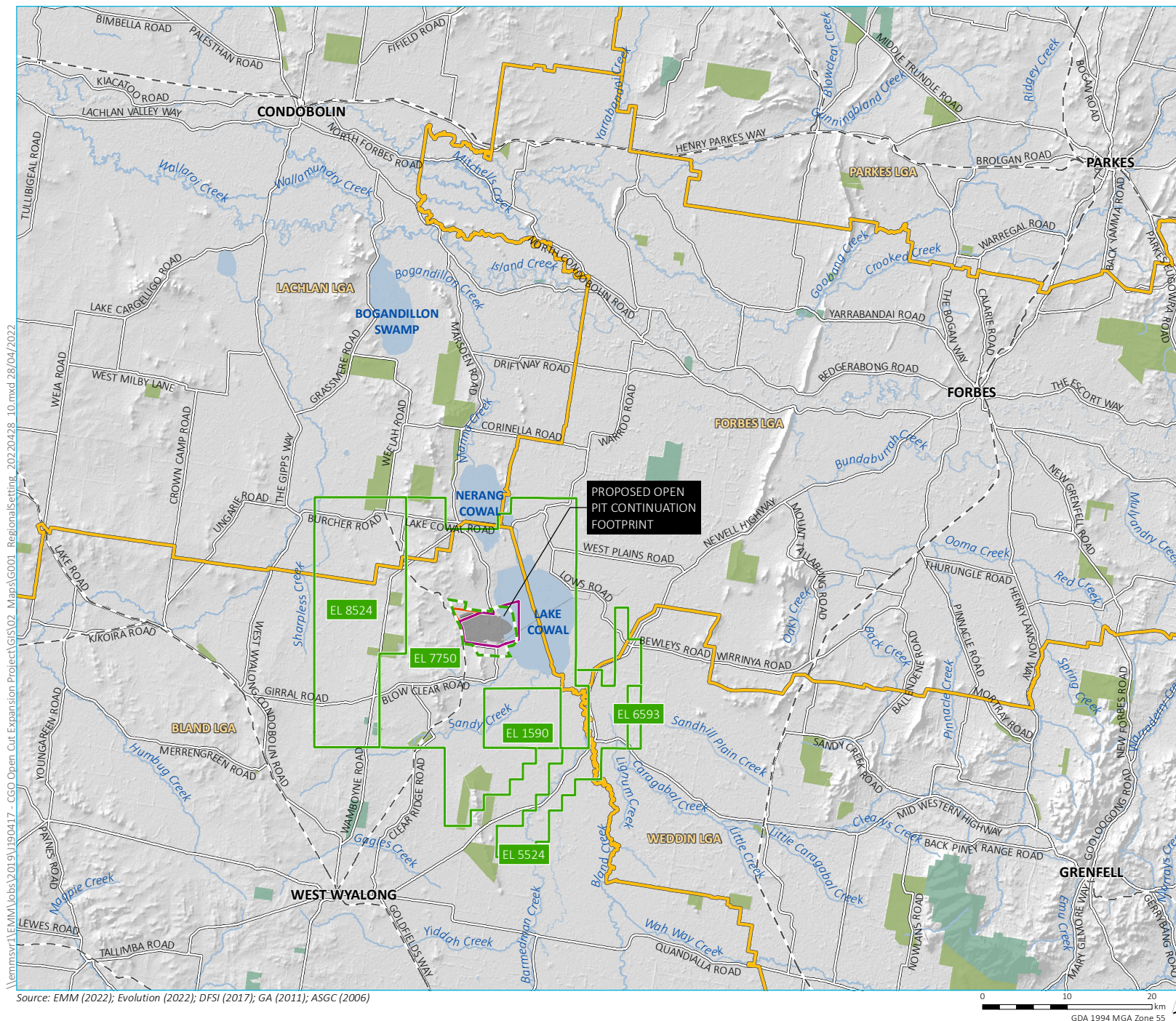
To enable the Project to be developed, a new State significant development (SSD) consent is required under Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.2 The site

The CGO site (the site) is located approximately 38 km north-east of West Wyalong, 60 km south-west of Forbes, and approximately 350 km west of Sydney (refer Figure 1.1).

The site is located adjacent to Lake Cowal, which is an ephemeral inland wetland system in the Lachlan Catchment. Lake Cowal is the largest natural inland lake in NSW, and when full it is approximately 21 km long (north to south) and 9.5 km wide (east to west) covering an area of over 13,000 ha (refer Figure 1.2).

DA 14/98 applies to activities on the land within ML 1535, ML 1791 and the CGO water supply pipeline to the BCPB and associated infrastructure (refer Figure 1.2). Evolution also holds development consent (DA 2011/64) for the operation of the Eastern Saline Borefield which was granted by the Forbes Shire Council on 20 December 2010.

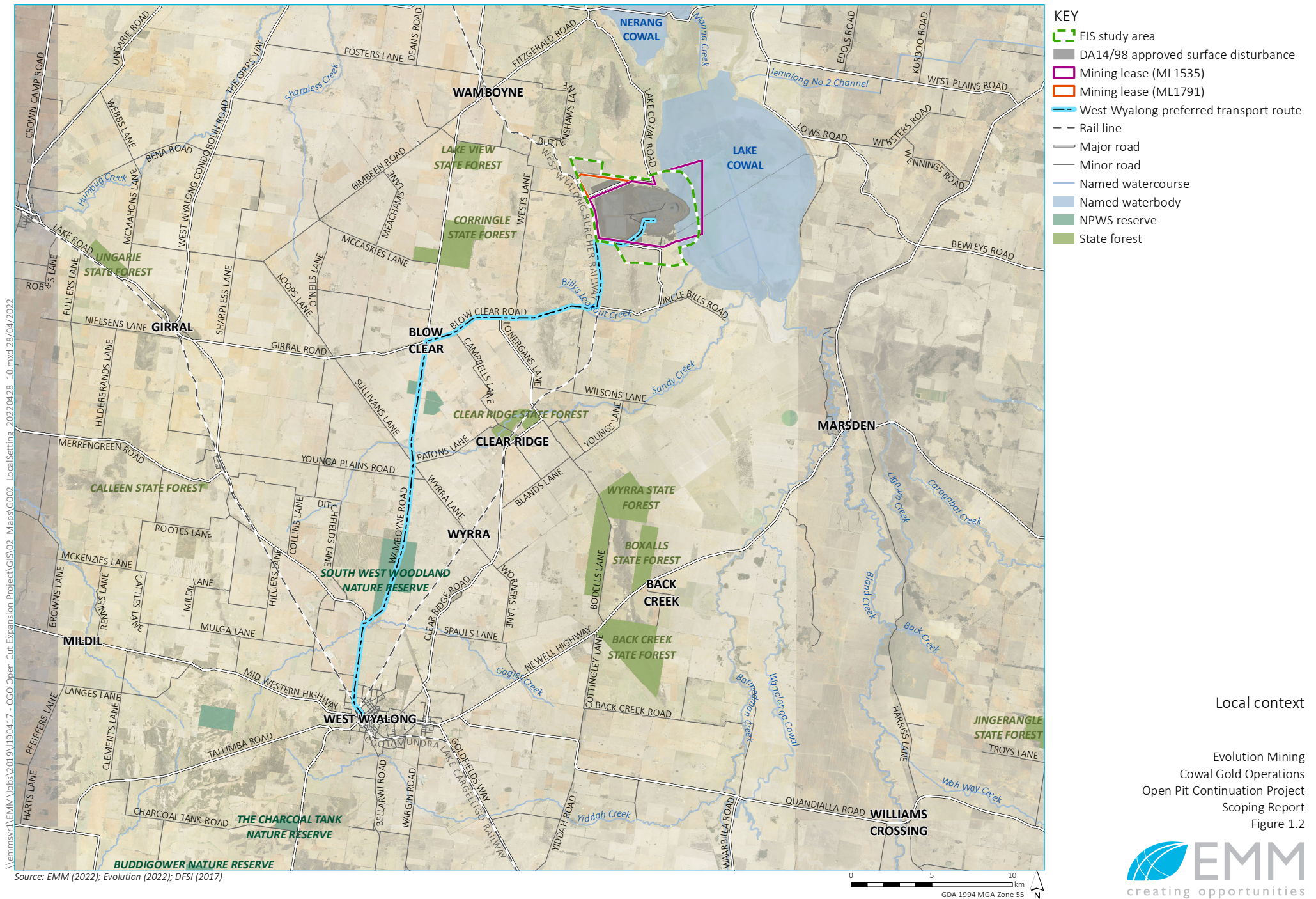


- KEY**
- EIS study area
 - DA14/98 approved surface disturbance
 - Mining lease (ML1535)
 - Mining lease (ML1791)
 - Exploration licence (EL)
 - Rail line
 - Main road
 - Named watercourse
 - Named waterbody
 - Local government area
 - NPWS reserve
 - State forest

Regional context

Evolution Mining
Cowal Gold Operations
Open Pit Continuation Project
Scoping Report
Figure 1.1





1.3 Existing operations

1.3.1 Surface operations

Surface operations at CGO, including open pit mining and associated infrastructure, have been operational since 2005. When complete, the total area of the E42 pit will be approximately 131 ha with a final depth of approximately -331 m Australian Height Datum (AHD) (678 RL¹) or 532 m below ground level.

Gold extraction from the ore uses conventional carbon-in-leach cyanide leaching circuit. Current concentrations of cyanide in the tailings slurry stream at the process plant must not exceed the following:

- 20 milligrams per litre (mg/L) weak acid dissociable cyanide (CN_{WAD}) (90th percentile over 6 months); and
- 30 mg/L CN_{WAD} (maximum permissible limit at any time).

Waste rock from the open pit is currently emplaced into three WREs (northern, southern and perimeter) and used in the construction of the IWL. The northern WRE will be constructed to a maximum height of 308 m AHD (1317 RL), the southern to a maximum of 283 m AHD (1292 RL), the perimeter to 223 m AHD (1232 RL) and the IWL will be constructed to a maximum height of 246 m AHD (1255 RL).

Approved heavy vehicle access to the site is via the designated route between the CGO site and West Wyalong with light vehicle access also available via Condobolin and Forbes (refer Figure 1.2). Hazardous goods are transported to site by truck either from Port Botany or their point of production (eg Yarwan, Queensland or Melbourne, Victoria etc) via the approved local road network.

Open pit mining operations at the CGO are currently supported by the on-site facilities summarised in Table 1.1.

¹ CGO has established a local datum (CGM) for the purposes of establishing survey levels across the site, with this measurement referred to as reduced level (RL) in metres. 1009 RL = 0 AHD.

Table 1.1 **Summary of existing CGO site facilities**

Facility	Description/components
Process plant	• Crushing and grinding circuit; • float tails leach circuit; and • carbon in-leach cyanide leaching circuit.
Stockpiles	• Run-of-mine (ROM) pads; • low-grade and high-grade ore stockpiles; and • soil and clay stockpiles.
Integrated waste landform (IWL)	The IWL incorporates three cells encapsulating the: • northern TSF; • southern TSF; and • a waste rock emplacement.
Waste rock emplacements surrounding the open pit	• Northern WRE; • southern WRE; and • perimeter WRE.
Water management infrastructure	• Lake protection bund; • temporary isolation bund; • water supply pipeline; • saline groundwater supply bores within ML 1535; • water diversion systems, including Up-Catchment Diversion System (UCDS) and Internal Catchment Drainage System (ICDS), and drainage; and • water storages and associated pumping and delivery systems. Evolution also operates the BCPB, which is approved under DA 14/98. This consists of four bores within the Bland Creek Palaeochannel (north-east of Lake Cowal), which are connected to the water supply pipeline. Part of the CGO water supply is sourced from the BCPB.
Ancillary facilities	• Access roads, internal roads and haul roads; • electricity transmission lines; • waste storage and transfer facility; • workshop facilities; and • administration and bathhouse buildings.

1.3.2 Underground operations

Construction activities supporting the underground operations at CGO commenced in 2022 with production expected to commence in 2023. The following key components are approved to support underground operations:

- Excavation of two declines providing underground access and ventilation: one decline via a portal on the existing open pit and the other via a box-cut. The declines will be approximately 6 metres (m) wide by 6 m high and will extend approximately 1.5 km to the point at which the first production drive commences. The final depth of the underground will be approximately -850 m AHD (159 RL).
- Development of a box-cut entry adjacent to the open pit, which will be the main access for personnel and materials to the underground mine and will be used to transport ore to the surface for processing.
- Development of stopes via conventional mechanised drill and blast techniques.
- Production of ore via mechanised sub-level open stoping with paste backfill.
- Load-haul-dump (LHD) vehicles used to remove rock from development and production areas and loading into diesel trucks for transport to the surface.
- Development of a paste fill plant, and backfilling excavated stopes with cemented paste fill made from cement and tailings.
- Installation of services, including power, ventilation, water and communications, which will be reticulated underground to serve the workings. An underground workshop area will provide facilities including wash bay, heavy vehicle service area, ablutions, crib room and office.

1.4 Applicant details

Key details of the proponent for the Project, the persons who prepared this scoping report and the site owner are shown in Table 1.2.

Table 1.2 **Proponent details**

Requirement	Detail
Proponent	Evolution Mining (Cowal) Pty Limited
Group office	Level 24, 175 Liverpool Street SYDNEY NSW 2000
Postal address	PO Box 210 West Wyalong NSW 2671
ABN	74 084 669 036
Nominated contact	Simon Coates Superintendent – Environment
Contact details	0437 371 886 Simon.Coates@evolutionmining.com.au
Name and qualifications of persons who prepared this scoping report	Lia Zwolinski Bachelor of Science (Geology) Masters of Environmental Planning Andrew Woidt Bachelor of Engineering (Civil and Environmental) Bachelor of Science (Ecology)
Site owner	Evolution Mining (Cowal) Pty Limited

1.5 Purpose of this document

The Project is SSD pursuant to the provisions of *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP). Therefore, an SSD application is required to be submitted to the NSW Department of Planning and Environment (DPE) under Section 4.38 of the EP&A Act.

This scoping report has been prepared by EMM Consulting Pty Limited (EMM) on behalf of Evolution, the applicant for the Project. It has been prepared in general accordance with *Draft State Significant Development Guidelines – Preparing a Scoping Report* (DPIE 2021). The purpose of this scoping report is to request and inform the content of the Secretary’s Environmental Assessment Requirements (SEARs) for the EIS.

2 Strategic context

2.1 Project justification

2.1.1 Need for the proposal

The Project will allow the CGO to continue mine production at the site to 2042 and develop ore bodies that are economical to extract via open pit mining methods. The Project will access a large resource of low-grade ore, which in turn will improve the economic value generated at CGO and thereby enhance its financial resilience in the face of external economic factors.

Extending the life of mine until 2042 requires new capital investment and has the benefit of continued employment for the existing workforce providing job security for local mine employees and contractors. Both these factors provide ongoing economic stimulus in the local and regional economies from the cash injection through employee and contractor wages and the purchase of goods and services.

Approval of the Project will also allow continuation of Evolution's support of the local community and shires through sponsorship, donations and other contributions, to foster strong, sustainable communities that can thrive well beyond the life of mine.

2.1.2 Alternatives considered

i Do nothing

If the Project was not to proceed, the following consequences are likely to occur:

- there will be no employment for the existing CGO open pit workforce (approximately 395 personnel and contractors and up to 445 during peak periods) past 2026, thereby forgoing job security for the open pit mine employees and contractors for another 10 years;
- the local and regional social and economic benefits of the development will be foregone;
- additional tax revenue from the development will not be created;
- additional royalties for the State of NSW will not be generated;
- the additional potential social and environmental impacts of the Project will not occur; and
- the identified additional gold resource will remain unmined.

ii Other alternatives

The design of the Project, presented in Chapter 3, represents the current optimised conceptual configuration for the Project. This conceptual design has been developed by Evolution in a collaborative, multi-disciplinary process through the completion of various concept and pre-feasibility studies (PFS). At the time of writing, the PFS had been completed for the Project, with a feasibility study (FS) currently in progress, scheduled to be completed in Q2 2023.

The development of the Project is subject to a range of constraints that will influence Evolution's capacity to develop the Project successfully, and the extent to which Project stakeholders (local communities and regulators) support its development. These constraints include:

- Physical: the fixed location of the orebody, site-specific geological, topographic, climatic and other factors.
- Environmental: the existing environmental values, including groundwater, surface water, soils, biodiversity and other factors.
- Social: the characteristics, values, lifestyle, expectations and concerns of community stakeholders.
- Cultural heritage: the cultural heritage values, expectations and concerns of traditional owners.
- Economic: the commercial viability of the Project and the values, expectations and concerns of Evolution's shareholders.

The conceptual design represents the current optimisation of the Project, taking into consideration all physical, environmental, social, cultural heritage and economic considerations. In reaching this point, a large array of alternatives were considered. They included:

- Waste rock emplacement on freehold land to the north of (and external to) ML 1535.
- A slim-line design of the lake protection bund (LPB) to reduce impacts on Lake Cowal, terrestrial and aquatic ecology and cultural heritage.
- Location of the LPB to allow future operational flexibility.
- Alternate configurations of tailings storage ie, upstream (vertical) versus downstream (lateral).
- Various WRE configurations for the Southern WRE in consideration of Superb Parrot habitat, Aboriginal cultural heritage, native title, surface water drainage.
- Relocation of the Travelling Stock Reserve.
- Pit production scheduling.
- Potential backfilling of one or more open pits.
- Relocation of several water storage dams (D3 and D5) and the creation of new dams and cut-off drains.
- Future gold price assumptions and alternate pit shells/WRE configurations.
- Alternate tenement strategies.

The FS and other studies supporting the EIS are continuing and there is potential that aspects of the proposed Project design, layout and schedule may change. There is a high probability of continued change to optimise the Project over the life of the mine to 2042.

The CGO site is an existing open pit mining operation with an established disturbance footprint and substantial existing surface infrastructure. Much of the existing surface infrastructure will be utilised or modified to support the Project. Given the identified orebody widths, depths, strip ratios and other properties, conventional open pit mining methods (versus underground) have been determined to be the only economical means of extraction.

A final decision by Evolution's Board to proceed with the Project will be based on the outcomes of both the Project's FS and the EIS.

2.2 Strategic policies

2.2.1 Strategic Regional Land Use Policy

The NSW Government released the *Strategic Regional Land Use Policy* (SRLUP) in 2012 to "provide greater protection for valuable agricultural land and better balance competing land uses" by "identifying and protecting strategic agricultural land, protecting valuable water resources and providing greater certainty for companies wanting to invest in mining and coal seam gas projects in regional NSW". The SRLUP provides a strategic framework and a range of initiatives to balance agriculture and resource development.

The SRLUP applies to mining proposals that are SSD under State *Environmental Planning Policy (Resources and Energy) 2021* (Resources and Energy SEPP) and require a new or amended mining tenement under the NSW *Mining Act 1992* (Mining Act). In such cases, applicants are required under the Resources and Energy SEPP to obtain a gateway certificate or a site verification certificate before lodging a development application.

As outlined in Section 6.2.10, a land and resource assessment will be completed to determine the presence of biophysical strategic agricultural land (BSAL) within the Project area. As preliminary findings indicate that BSAL is not present (and subject to the continued validity of those findings), the Project is expected to require a site verification certificate. In addition, any potential impacts to Lake Cowal will be assessed as part of the detailed hydrogeological (groundwater) assessment and surface water assessment (refer Sections 6.2.4 and 6.2.5).

The project is not predicted to have any significant adverse impacts on valuable agricultural land, valuable water resources or other land uses in the vicinity of the Project.

2.2.2 NSW Aquifer Interference Policy

The Aquifer Interference Policy (AIP) was released by the NSW Government in September 2012 to address water licensing and the potential impacts of activities that interfere with the state's aquifers. The policy outlines the regime for protecting and managing the impacts of aquifer interference activities on NSW's water resources and aims to assist proponents in their preparation of applications for activities that may affect aquifers. The AIP aims to:

- clarify water licence and impact assessment requirements for aquifer interference activities;
- ensure equitable water sharing among different types of water users;
- ensure that water taken by aquifer interference activities is properly licensed and accounted for in the water budget and water sharing arrangements; and
- enhance existing regulation, resulting in a comprehensive framework to protect the rights of all water users and the environment.

The AIP states that a proposed development must demonstrate minimal impacts on water table, water pressure and water quality. It also requires planning for measures if the actual impacts are greater than predicted, including making sure that there is sufficient monitoring in place.

The AIP focuses on high-risk activities such as mining, coal seam gas, sand and gravel extraction, construction dewatering, aquifer injection activities, and other activities that have the potential to contaminate groundwater or decrease aquifer storage and yields. Impacts on connected alluvial aquifers and surface water systems, as well as impacts to other water dependent assets, such as water supply bores and groundwater dependent ecosystems are also considered. Relevantly, the AIP requires that the proponent of a mining development that may result in aquifer interference carry out an assessment of the proposed development against the minimal impact considerations in Table 1 of the AIP, relating to water table, water pressure and water quality. If the predicted impacts are less than the applicable Level 1 minimal impact considerations set out in that table, then these impacts will be considered as acceptable under the AIP.

An assessment of the Project against the requirements of the AIP will be included in the hydrogeological (groundwater) assessment completed as part of the Project's EIS (refer Section 6.2.4).

2.2.3 Riverina Murray Regional Plan 2036

The *Riverina Murray Regional Plan 2036* (RMR Plan) was released by the Department of Planning, Industry and Environment (DPIE) (now DPE) in 2017 to guide the land use planning priorities and decision making in the Riverina Murray Region for the next 20 years. It covers the LGAs of Albury, Berrigan, Bland, Carrathool, Coolamon, Cootamundra-Gundagai, Edward River, Federation, Greater Hume, Griffith, Hay, Junee, Leeton, Lockhart, Murray River, Murrumbidgee, Narrandera, Snowy Valleys, Temora and Wagga Wagga.

The RMR Plan provides a strategic framework to grow the region's cities and local centres, supports the protection of high-value environmental assets and makes developing a strong, diverse and competitive economy central to building prosperity and resilience in the region. The goals of the RMR Plan are:

- a growing and diverse economy;
- a healthy environment with pristine waterways;
- efficient transport and infrastructure networks; and
- strong, connected and healthy communities.

The RMR Plan states that the most likely economic opportunities for West Wyalong are in agribusiness, mining and tourism.

Mining is noted as a priority growth sector, as the region contains valuable mineral resources. Direction 12 of the goal 'a growing and diverse economy' is to 'sustainably manage mineral resources'. It notes that the mineral resources sector provides economic and employment benefits to the local communities and the broader region.

The RMR Plan also notes that care must be taken to manage the impacts of mining to produce long-term sustainable economic, social and environmental outcomes and so there is potential for other land uses apart from mining.

The EIS will assess the environmental, social and economic impacts associated with the Project, and where applicable, mitigation measures will be provided and implemented to minimise any adverse environmental outcomes.

The Project can therefore be considered consistent with the above-mentioned directions and goals of the RMR Plan.

3 The Project

The Project will involve further development of the existing 'E42' pit, known as the Stage I cutback (currently mining Stage H), and the open pit mining of three adjacent orebodies, known as the 'E46', 'GR' and 'E41' pits (refer Figure 3.1). The Project will aim to:

- safely and economically mine the identified Mineral Reserves at CGO²; and
- operate in a manner that will minimise surface disturbance and impacts on surrounding residences and the local environment.

Ore will continue to be processed in the existing ore processing plant at a rate of up to 9.8 Mtpa.

The Project primarily seeks to continue the open pit mine life by approximately 10 years to 2038 and total mine life by approximately two years to 2042. It comprises of the following key components (refer Figure 3.1):

- development of three new open pits which may result in the pits merging with the existing pit to form one or two final pits at mine closure;
- development of a conventional cutback (Stage I) of the existing pit to the east and south;
- expansion of the IWL using a northern expansion to accommodate tailings from the new open pits;
- re-development of the LPB system to provide continued separation and mutual protection between Lake Cowal and the mine;
- expansion of the footprint of the existing WRE areas to the north, south and vertically to accommodate additional waste rock;
- additional topsoil and subsoil stockpiles to accommodate materials from pre-stripping, with materials to be reused during progressive mine rehabilitation;
- realignment of a portion of the existing water supply pipeline and the existing electricity transmission line;
- development of new on-site access and haul roads to service the operations;
- development of new water storage dams and relocation of some components of the surface water drainage system;
- relocation of some existing infrastructure currently located in the footprint of the proposed satellite pits (eg water storage dams); and
- upgrades to the open pit mining fleet, as required.

² As defined in the most recent Annual Mineral Resources and Ore Reserves Statement, released to the Australian Securities Exchange (ASX) on 16 February 2022.

Other approved activities at the site which are included in the Project and will remain unchanged, include (and are not limited to):

- cyanide leaching circuit;
- cyanide destruction method;
- approved cyanide concentration limits in the aqueous component of the tailings slurry;
- water supply sources and approved water allocation limits;
- approved daily and annual extraction limits from the BCPB;
- existing mine access road;
- power supply;
- ongoing exploration and bulk sampling within (ie above and below ground) ML 1535 and ML 1791; and
- rosters and hours of operation.

As shown on Figure 3.2, the proposed expansion area of the southern WRE area is dissected by Lake Cowal Road and Crown land, which contains a Travelling Stock Reserve. The current Project design is conceptual and will be further refined during the EIS based upon consultation with the NSW Department of Industry regarding the use of Crown land.

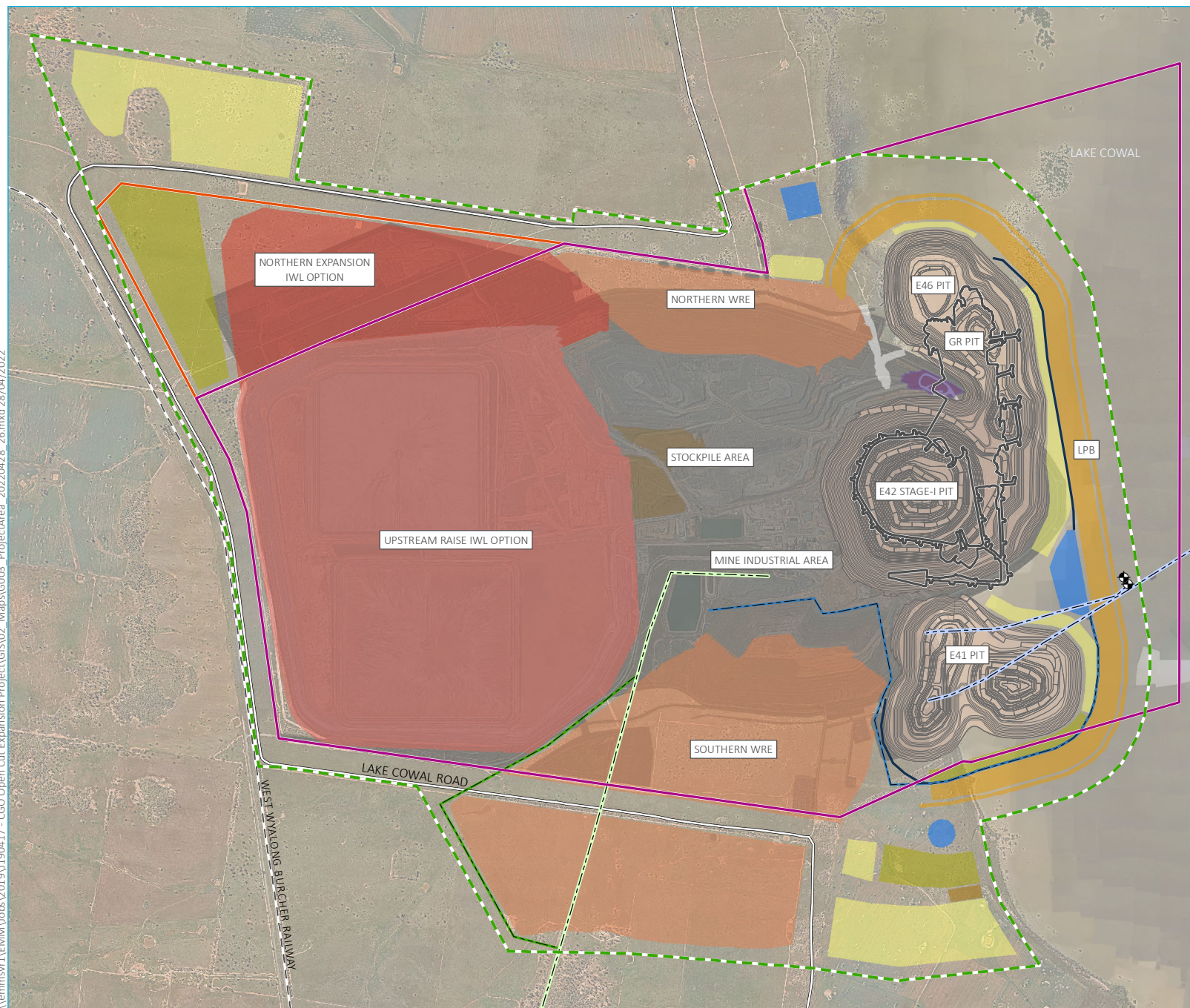
No major modifications to ore processing are proposed as a part of the Project.

The current estimated capital investment value (CIV) of the Project is greater than \$100 million.

The Project, and associated increase in disturbance footprint, is expected to require additional tenure under the Mining Act by way of ancillary mining activity (AMA) lease(s) hence, new application(s) will be prepared and submitted. The exact area and types of tenure required is subject to ongoing mine design and legal review. The activities proposed under the AMA will be assessed as part of the Project's EIS.

Both underground and open pit mining are proposed to operate concurrently and share the use of existing surface infrastructure. Evolution also intends to regulate all site operations under one development consent as part of the Project's SSD application process. This will have the benefit of efficient and transparent management of compliance obligations for government, community and Evolution. It will also ensure current mining operations are regulated in accordance with contemporary safety, environmental and social standards.

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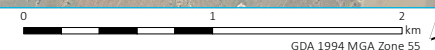
- KEY**
- EIS study area
 - DA14/98 approved surface disturbance
 - Mining lease (ML1535)
 - Mining lease (ML1791)
 - Approved UG mine design footprint
 - Approved UG project infrastructure
 - Saline groundwater supply bore
 - Water supply pipeline
 - Electricity transmission line
 - Rail line
 - Lake Cowal Road
 - Conceptual project infrastructure**
 - Drainage
 - Electricity transmission line re-alignment
 - Water supply pipeline re-alignment
 - Open cut pit footprint
 - Waste rock emplacement (WRE)
 - Lake protection bund (LPB)
 - Magazine
 - Water containment dam
 - Integrated waste landform (IWL)**
 - Upstream raise IWL option
 - Northern expansion IWL option
 - Stockpiles**
 - Topsoil
 - Subsoil
 - Clay

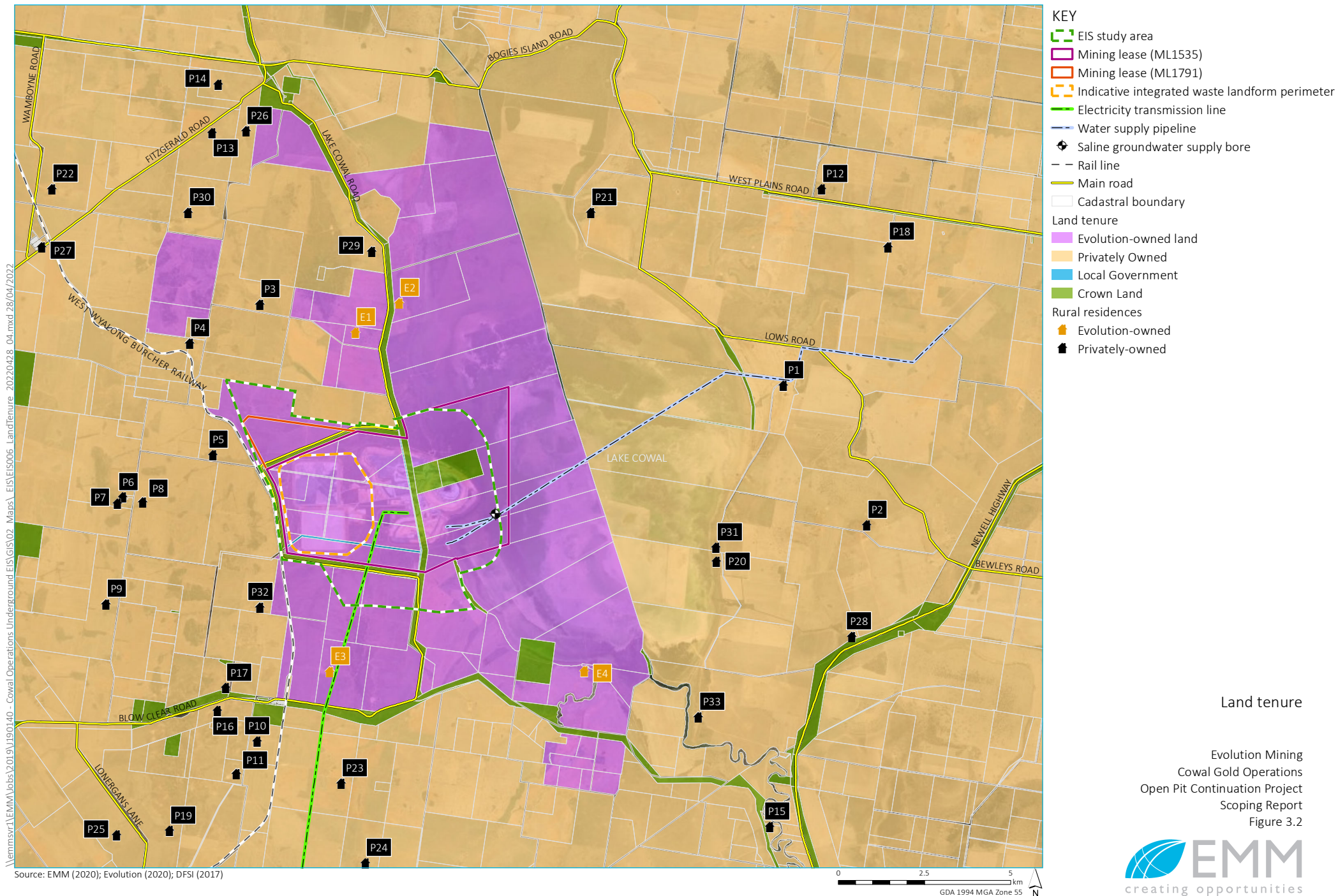
Conceptual project elements

Evolution Mining
Cowal Gold Operations
Open Pit Continuation Project
Scoping Report
Figure 3.1



Source: EMM (2022); Evolution (2022); DFSI (2017)





Land tenure

Evolution Mining
Cowl Gold Operations
Open Pit Continuation Project
Scoping Report
Figure 3.2

4 Statutory context

4.1 NSW planning framework

4.1.1 Approval pathway and process

i State significant development

The EP&A Act and NSW Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) provides the statutory framework for planning approval and environmental assessment in NSW. The statutory trigger for development consent is provided under Section 4.2(1) of the EP&A Act. The Act is supported by environmental planning instruments, including state environmental planning policies (SEPPs) and local environmental plans (LEPs).

Under Section 4.36 of the EP&A Act, projects are classified as SSD if they are declared as such by a SEPP, in this instance, the Planning Systems SEPP. Section 2.6(1) of the Planning Systems SEPP states:

- (1) Development is declared to be State significant development for the purposes of the Act if -
 - a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and
 - b) the development is specified in Schedule 1 or 2.

The Project is consistent with the developments specified in Section 5 of Schedule 1 of the Planning Systems SEPP:

- (1) Development for the purpose of mining that –
 - a) is coal or mineral sands mining, or
 - b) is an environmentally sensitive area of State significance, or
 - c) has a capital investment value of more than \$30 million.

With a currently estimated CIV in excess of \$100 million, the Project qualifies as SSD under Condition 2.6(1)c) of the Planning Systems SEPP and therefore, approval is sought under Part 4, Division 4.7 of the EP&A Act. The consent authority for SSD will be either the Minister for Planning or the Independent Planning Commission (IPC).

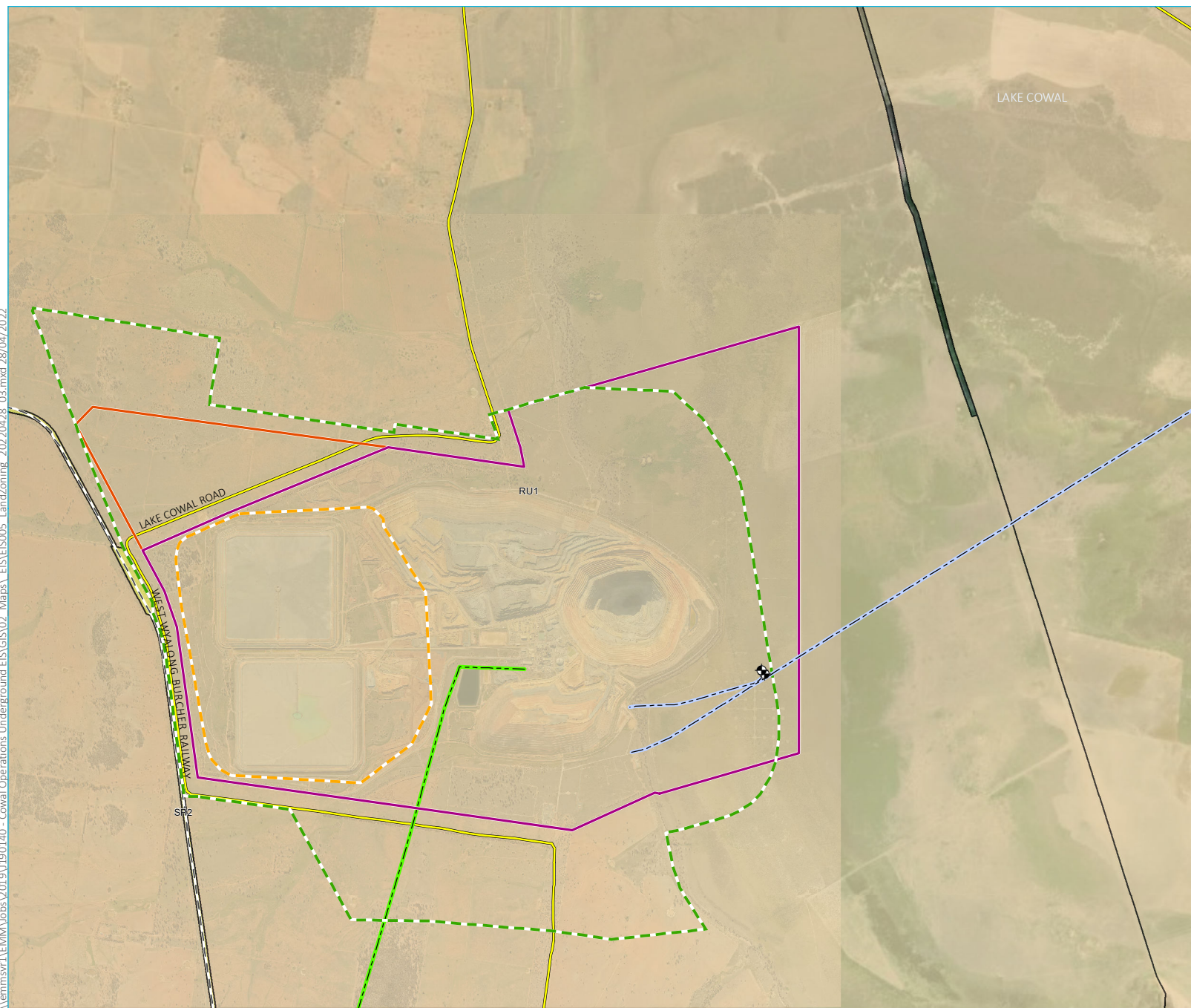
A development application for SSD must be accompanied by an EIS, prepared in accordance with the EP&A Regulation. Before preparing an EIS, an applicant must request SEARs, which set the terms of reference for the EIS. This document has been prepared to support Evolution's request for SEARs for the Project.

4.1.2 Permissibility

The main infrastructure areas of CGO are within the Bland Shire Local Government Area (Bland LGA) and are located on land zoned RU1 Primary Production under the *Bland Local Environmental Plan 2011* (Bland LEP) and also Crown land (refer Figure 3.2 and Figure 4.1).

Open pit mining is a permissible land use with development consent on land zoned RU1 Primary Production. The water supply pipeline from the BCPB to the site is mostly located within Bland LGA with a portion of the pipeline located within the Forbes Shire LGA. The pipeline is also located on land zoned RU1 Primary Production under the Bland LEP and the Forbes Local Environmental Plan 2013 (refer Figure 4.1). Water supply systems are a permissible land-use in the RU1 Primary Production zone under both instruments.

\\lemmsvr1\EMM\Jobs\2019\190140 - Cowal Operations Underground EIS\GIS\02 Maps\ EIS\EIS005 LandZoning_20220428_03.mxd 28/04/2022



- KEY**
- EIS study area
 - Mining lease (ML1535)
 - Mining lease (ML1791)
 - Indicative integrated waste landform perimeter
 - Electricity transmission line
 - Water supply pipeline
 - Saline groundwater supply bore
 - Rail line
 - Main road
 - Land zone**
 - RU1 Primary Production
 - SP2 Infrastructure

Land zoning

Evolution Mining
Cowal Gold Operations
Environmental impact statement
Figure 4.1



Source: EMM (2020); Evolution (2020); DFSI (2017)



4.1.3 Other NSW approvals and licences

Under Sections 4.41 and 4.42 of the EP&A Act, certain separate environmental authorisations may or may not be required for the Project depending on the planning approval granted for the Project. These separate environmental approvals are summarised in Table 4.1. These and other approvals will be considered and assessed in the EIS where relevant to the Project.

The Biodiversity Offsets Scheme (BOS) will apply as the Project has the potential to ‘significantly affect threatened species’, as defined under Section 7.2 of the NSW *Biodiversity Conservation Act 2016* (BC Act). In this instance, the BC Act requires that a biodiversity development assessment report (BDAR) is prepared by an accredited assessor and submitted with the SSD application. The Project’s biodiversity assessment is discussed further in Section 6.2.1.

As required under Section 30 of the Environmental Planning and Assessment Regulation 2021, the Project must undergo a site verification certificate (SVC) process to verify the land is not BSAL. As the SSD application cannot be lodged without an SVC, EMM has commenced the BSAL assessment.

The Project will also require one or more new ancillary mining activity lease applications, in accordance with Section 52 of the Mining Act, with approval to be sought from the NSW Minister for Resources and Water.

Table 4.1 Other NSW approvals and licences

Legislation	Comment
Approvals required to be issued consistently under Section 4.42 of the EP&A Act	
An aquaculture permit under Section 144 of the NSW <i>Fisheries Management Act 1994</i> (FM Act).	An aquaculture permit under Section 144 of the FM Act is not required. Regardless, any impacts to threatened aquatic species and key fish habitat will be assessed in the EIS as part of the aquatic biodiversity assessment (refer Section 6.2.1).
A mining lease under the Mining Act.	The Project is expected to require additional tenure via AMA lease(s). If required, new application(s) will be prepared and submitted in accordance with the Mining Act. The exact area and types of tenure required is subject to ongoing mine design and legal review. A targeted rehabilitation management plan will be developed to take into account any new AMA leases, the operational changes and future rehabilitation of the Project.
A production lease under the NSW <i>Petroleum (Onshore) Act 1991</i> .	The Project does not involve petroleum production.
An EPL under Section 3 of the NSW <i>Protection of the Environment Operations Act 1997</i> (POEO Act).	The Project will likely require an amendment to EPL 11912 as a scheduled activity under the POEO Act.
Consent under Section 138 of the NSW <i>Roads Act 1993</i> (Roads Act).	If any roadworks are required on local roads, then a Section 138 approval will be sought from the relevant roads authority.
A licence under the NSW <i>Pipelines Act 1967</i> .	An existing pipeline supplies water to the CGO site. No additional licences for pipelines are anticipated as part of the Project.

Table 4.1 Other NSW approvals and licences

Legislation	Comment
Approvals not required under Section 4.41 of the EP&A Act	
A permit under Section 201, 205 or 219 of the FM Act.	The EIS will include consideration of potential impacts on watercourses to be impacted by the Project and, where required, appropriate management measures will be identified.
An approval under Part 4, or an excavation permit under Section 139 of the NSW <i>Heritage Act 1977</i> .	No listed historic heritage sites occur within or in close proximity to the Project area. Notwithstanding, the EIS will consider potential impacts to historic heritage items and identify appropriate management and mitigation measures as required.
An Aboriginal heritage impact permit under Section 90 of the NSW <i>National Parks and Wildlife Act 1974</i> (NPW Act).	An Aboriginal cultural heritage assessment (ACHA) will be conducted over the Project area to identify any Aboriginal heritage sites and appropriate management and mitigation measures to be implemented, if required, as part of the Project.
A bushfire safety authority under Section 100B of the NSW <i>Rural Fires Act 1997</i> .	A bushfire risk assessment will be undertaken for the Project. CGO's existing Bushfire Management Plan (BMP) will be updated following receipt of approval of the Project.
A water use approval under Section 89, a water management work approval under Section 90 or an activity approval (other than a groundwater interference approval) under Section 91 of the NSW <i>Water Management Act 2000</i> (WM Act).	A water impact assessment will be prepared for the Project and will include a groundwater and surface water assessment. This assessment will consider potential impacts to water resources as a result of the Project, including any groundwater and surface water access licence requirements.

4.2 Surrender of consents

If the Project is approved, DA 14/98 and SSD 10367 will be surrendered in accordance with Section 4.63(3) of the EP&A Act which states:

3. If a development consent is to be surrendered as a condition of a new development consent and the development to be authorised by that new development consent includes the continuation of any of the development authorised by the consent to be surrendered—
 - a) the consent authority is not required to re-assess the likely impact of the continued development to the extent that it could have been carried out but for the surrender of the consent, and
 - b) the consent authority is not required to re-determine whether to authorise that continued development under the new development consent (or the manner in which it is to be carried out), and
 - c) the consent authority may modify the manner in which that continued development is to be carried out for the purpose of the consolidation of the development consents applying to the land concerned.

4.3 Commonwealth legislation

4.3.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides for the assessment of environmental impacts on matters of national environmental significance (MNES) and Commonwealth land.

A search of CGO was carried out on 10 March 2022, using the Department of Agriculture, Water and Environment's (DAWE) website Protected Matters Search Tool (refer to Appendix A). A list of the potential MNES that may be affected by the Project is provided in Table 4.2.

A referral under the EPBC Act was submitted to (DAWE) on 26 April 2022 for unavoidable impacts to threatened ecological communities (TECs) and listed flora and fauna species from direct and indirect impacts of the Project.

This includes direct impacts to TECs and listed flora and fauna species at ground level associated with activities such as vegetation clearance, topsoil excavation and indirect impacts from such things as increased dust, noise, and light emissions associated with activities that may include excavation, stockpiling, haulage and construction.

Determination of the referral will be undertaken by DPE's Biodiversity Conservation and Science Division (DPE-BCS) under the bilateral agreement process between the Commonwealth and NSW governments.

Table 4.2 **MNES under the EPBC Act**

MNES	Matters relevant to the CGO Underground Development
World heritage properties	None
National heritage places	None
Wetlands of international importance	The search tool identified four wetlands of international importance over 400 kilometres away.
Great Barrier Reef Marine Park	Not applicable
Commonwealth marine areas	Not applicable
Commonwealth listed threatened ecological communities (TECs)	Four Commonwealth listed TECs may/are likely to occur in the vicinity of the Project: • Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia; • Weeping Myall Woodlands; • Poplar Box Grassy Woodland on Alluvial Plains; and • White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.
Commonwealth listed threatened species	Twenty-four listed threatened species.
Commonwealth listed migratory species	Twelve listed migratory species, including the critically endangered Curlew Sandpiper and Eastern Curlew.
Other matters	
Commonwealth land	None
Commonwealth heritage places	None
Nuclear actions (including uranium mines)	None proposed
A water resource, in relation to coal seam gas development and large coal mining development	None proposed
Nationally important wetlands	The Lake Cowal/Wilbertroy Wetlands are listed as being of National significance in the Australian Wetlands Database.

5 Community engagement

5.1 Overview

CGO has been operating since 2005. As such, it is a known quantity for the adjoining landowners and local and regional communities that are familiar with CGO and the Project's importance for continued employment, investment and indirect economic opportunities enjoyed by those same communities to date.

Stakeholder engagement and community consultation for the Project commenced in late February 2022 with a Scoping Meeting held with the DPE. This was followed by a broad range of engagements to inform and consult with the community about the Project, offered locally and regionally, during March and early April 2022.

5.2 Community engagement strategy

A detailed communication and engagement plan was prepared for the Project, which included:

- communication and engagement context;
- stakeholder identification and classification;
- stakeholder database management;
- engagement methods and tools;
- project complaints and enquiry protocols;
- a communication and engagement schedule of activities;
- reporting requirements; and
- evaluation criteria and measures.

5.2.1 Stakeholder identification

Identified stakeholder groups with an interest in the Project included:

- adjoining and local landowners;
- nearby towns and regional communities including West Wyalong, Condobolin and Forbes;
- first nation peoples/Indigenous groups (refer Section 6.2.6);
- the Community Environmental Monitoring and Consultative Committee (CEMCC);
- the Lake Cowal Foundation (LCF) Limited;
- local service providers and agencies;
- Forbes Shire, Bland Shire and Lachlan Shire Councils;
- NSW Government representatives;
- the general public; and
- local media.

5.3 Stakeholder engagement

Planned stakeholder engagement activities were aligned with the requirements of the *Undertaking Engagement Guidelines for State Significant Projects* (DPE 2021), which requires early and ongoing engagement. During the scoping phase of the Project, information was provided to the community using the following communication methods and tools:

- dedicated Project website (https://emm.mysocialpinpoint.com/cgo_opc);
- addressed mailout to adjoining landowners/ landowners residing within 5 km of the CGO site;
- unaddressed mailout of the Project newsletter (refer Appendix B);
- newspaper advertisements (refer Appendix B);
- face-to-face, teleconference and video conferences; and
- community information sessions.

Once identified, a series of engagement activities were carried out with key stakeholders in March and early April 2022. A Project-specific website, 1800 number and email address were established for the purposes of facilitating the exchange of information with interested parties. The level of planned engagement for the Project reflects the importance Evolution places on maintaining a social licence to operate.

5.3.1 Community consultation and feedback

Although the community information sessions were advertised extensively, few people chose to attend. This is believed to be related to the generally positive to neutral community sentiment towards the existing CGO mining operations. To date, the existing operations have not generated significant opposition from community stakeholders. Session attendees were generally interested in the Project, including the planned infrastructure and future operations, as well as the history of mining in the region.

All community members who attended the information sessions made comments that on balance, the mine was beneficial in bringing many local benefits and opportunities. There was discussion about key issues such as local housing/accommodation availability, visual and light impacts, water use and site rehabilitation, as summarised in Section 5.4. These discussions were calm and reflective. The most common issues discussed across all community information sessions were housing/accommodation availability and water use.

Details of formal consultation activities and key issues raised during community and stakeholder engagement are shown in Table 5.1.

Table 5.1 Summary of consultation activities

Number	Stakeholder groups	Engagement type	Key issues and themes
1.	Local landowners and community	• In person. • Community Information Session #1. • West Wyalong Services and Citizens Club. • 21 March 2022 (3 hrs).	• Attendees: 2. • The existing mine provides many benefits for local and regional communities, accommodation/housing, water use, site rehabilitation, future of gold exploration in the region.
2.	Local landowners and community	• In person. • Community Information Session #2. • Condobolin RSL Club. • 21 March 2022 (3 hrs).	• Attendees: 1 (Condobolin Argus journalist).
3.	Local landowners and community	• In person. • Community Information Session #3. • Forbes Bowls Club. • 22 March 2022 (3 hrs).	• Attendees: 3. • The existing mine provides many benefits for local and regional communities, accommodation.
4.	Local landowners and community	• Online. • Community Information Session #4. • 22 March 2022 (1 hr).	• Attendees: 0. • Session cancelled due to zero community registrations for this event.

The variety of ways in which the community information sessions were advertised is summarised in Table 5.2.

Table 5.2 **Community information sessions – advertising channels**

Media type	Outlet/channel	Date of appearance/distribution	Number
Digital	CGO OPC webpage, including opportunity to download digital newsletter.	From 22 February 2022 – 25 March 2022.	- During this time period: – 1,000 page visits; – 248 unique visitors; and – 10 newsletter downloads.
Newsletter [hard copy]	Addressed mail [with letter of introduction] to adjacent landowners.	22 February 2022.	29.
Print Advertising	West Wyalong Advocate.	11 March 2022. 18 March 2022.	2 publications.
Print Advertising	Condobolin Argus.	9 March 2022. 16 March 2022.	2 publications.
Print Advertising	Forbes Advocate.	10 March 2022. 17 March 2022.	2 publications.
Newsletter [hard copy]	Letterbox drop	7 March 2022.	Residents of East Girral, West Wyalong, Pulbooka, Lake Cowal, Condobolin and Forbes.

5.3.2 Project briefings

Project briefings were offered in March 2022 to a broad range of elected representatives, Government agencies, adjoining landowners, community groups, advisory bodies and service providers in the local and regional area. Project briefings were formally offered to 28 organisations and individuals. A total of 14 invitees accepted the offer for further information about the Project, after direct contact was made to begin a conversation about this process.

Project briefings included a presentation and/or discussion about the Project using location maps and site maps showing the planned Project layout and infrastructure, and information about the planning approval process and Project timeline. Refer to Appendix B for copies of the communication materials.

Following the Project briefing, attendees were invited to discuss community benefits and challenges. A record of the discussion around Project benefits and challenges forms part of the social impact assessment (SIA) process for this scoping phase (refer Section 6.2.6).

Details of the Project briefing sessions conducted during March 2022 are shown in Table 5.3.

Table 5.3 **Summary of Project briefings**

Stakeholder group	Engagement setting	Organisation/individuals
Local elected representatives	Online	1. MP Phil Donato, MP for Orange (includes constituents in Forbes).
Local Councils	Online/in person	2. Bland Shire Council, 29 March 2022 (online).
Senior representatives including: Mayor, GM, Department Directors		3. Forbes Shire Council, 24 March 2022 (in person).
		4. Lachlan Shire Council, 25 March 2022 (in person).
Advisory committee	Online	5. CEMCC, 9 March 2022.
Local community groups	In person	6. LCF, 21 March 2022.
Service providers	In person	7. Jemalong Irrigation Limited, 24 March 2022.
Adjoining landowners	Online/in person/ phone	8. Bill Buttenshaw 'Laurel Park', 23 March 2022 (in person).
		9. Christine Lee 'Foxwood Downs', 23 March 2022 (in person).
		10. Dan and Nadine Mettiske, 8 April 2022 (phone briefing) <i>*re-scheduled</i> .
		11. Dent Family 'Gumbelah', 22 March 2022 (in person).
		12. Matt Duff, 24 March 2022 (phone briefing).
		13. Low Family 'Cowal North', 22 March 2022 (in person).
		14. West Family 'Lake View', 23 March 2022 (in person).

5.3.3 Media

During March 2022, Evolution representatives were interviewed by ABC Radio Riverina, Wagga Wagga. On 11 March 2022, sound grabs about the Project, featured in news bulletins on ABC Radio (Wagga Wagga and Central West NSW).

Evolution representatives were also interviewed by the Condobolin Argus and received information enquiries from the West Wyalong Advocate newspaper and Prime 7 News Wagga Wagga.

The media coverage about the Project was positive to neutral in sentiment.

5.4 Issues raised by stakeholders

A summary of key issues that were raised during the community information sessions is provided in Table 5.4.

Table 5.4 Key issues and concerns

Issue or concern	Stakeholder group	Level of interest	Geographical context	Alternatives	EIS engagement	EIS assessment
Worker housing/ accommodation availability	Local landowners and community	Medium	Local and regional	None	Landowners and engaged stakeholders requested to remain engaged about the Project.	SIA
Visual impacts	Local landowners and community	Low	Local	None	Landowners and engaged stakeholders requested to remain engaged about the Project.	Day-time visual amenity
Light impacts	Local landowners and community	Low	Local	None	Landowners and engaged stakeholders requested to remain engaged about the Project.	Night-time visual amenity
Water use	Local landowners and community	Medium	Local	None	Landowners and engaged stakeholders requested to remain engaged about the Project.	Water use strategy
Future use of open pits/land rehabilitation	Local landowners and community	Low	Local	None	Landowners and engaged stakeholders requested to remain engaged about the Project.	Post-project land rehabilitation/ land re-use plan

5.5 NSW Government agencies

A Scoping Meeting was held with DPE on 24 February 2022, where EMM and Evolution provided a presentation and discussion with DPE, around the following broad topics:

- Project overview – location, history of approvals and Project key components;
- assessment and approvals pathway;
- identified relevant matters and impacts;
- community and stakeholder engagement program; and
- program (schedule) and next steps.

At the Scoping Meeting, DPE recommended that Evolution also engage with the NSW Mining, Exploration and Geoscience (MEG), to provide a briefing on the Project during the scoping phase. Evolution subsequently met with MEG on 7 April 2022, where a presentation was provided, and discussion with MEG held, around the following broad topics:

- objectives of the Mine Development Panel (MDP) process;
- rehabilitation outcomes – final landforms/voids, tailings and progressive rehabilitation;
- employment/job opportunities; and
- demonstration of economic development of the resource.

5.6 Ongoing stakeholder engagement

Evolution is committed to continuing its engagement with stakeholders throughout the EIS process for the Project. Between now and the end of the EIS exhibition phase, EMM will continue to monitor the dedicated Project email inbox, 1800 number and provide staged webpage updates and advise Evolution on any emerging issues or requests for further individual or group consultation. This has the potential to include additional EIS specialist studies.

In addition to the direct community engagement initiatives outlined, Project information will also be provided to the local community and targeted stakeholders via local media outlets. Targeted engagement for the Project EIS will be guided and modified by the outcome of the SEARs, but will generally comprise of several main initiatives, as outlined in Table 5.5.

Table 5.5 **Future engagement activities - EIS phase**

Stakeholder group	Planned activities
Elected representatives	• Regular Project briefings; • newsletters; • ongoing email correspondence; and • meetings (face-to-face/virtual).
Government agencies	• Regular Project briefings; • newsletters; • ongoing email correspondence; and • meetings (face-to-face/virtual).
Adjoining landowners	• Direct correspondence (ie phone calls, emails and face-to-face meetings); • newsletters; • website updates; and • community information sessions.
Broader community	• Newsletters; • website updates; • briefings on request; and • community information sessions.
Registered stakeholders	• Newsletters; • website updates; and • community information sessions.
Community groups, advisory bodies and service providers	• direct correspondence (ie phone calls, emails and face-to-face meetings); • newsletters; • website updates; and • community information sessions.

6 Proposed assessment of impacts

6.1 Issues identification

The environmental, social and economic issues relevant to the Project have been identified and the proposed level of assessment in the future EIS specialist studies have been characterised in accordance with the *Draft Preparing a Scoping Report – State Significant Development Guide* (DPIE 2020).

The proposed level of assessment for each issue is provided in Table 6.1. With reference to Appendix D of *Draft Preparing a Scoping Report – State Significant Development Guide* (DPIE 2020), the level of assessment can be allocated into the following categories:

- Detailed assessment – these issues have been identified as requiring detailed studies and investigations carried out by technical specialists as the potential impact may be significant or involve uncertainties.
- Standard assessment – these issues will also require assessment by a technical specialist; however, are unlikely to result in significant impacts, generally well understood, easy to predict and capable of being compliant to relevant standards via mitigation measures.
- No further assessment required – the Project will have no impact on these issues, or the impact will be so minimal that it is not worth considering further.

Table 6.1 **Proposed level of assessment for Project-related issues**

Technical area	Level of assessment	Reference
Biodiversity	Detailed	Section 6.2.1
Landform	Detailed	Section 6.2.2
Rehabilitation	Detailed	Section 6.2.3
Groundwater	Detailed	Section 6.2.4
Surface water	Detailed	Section 6.2.5
Social	Detailed	Section 6.2.6
Geochemistry	Detailed	Section 6.2.7
Geotechnical – subsidence	Detailed	Section 6.2.8
Aboriginal heritage	Detailed	Section 6.2.9
Soils	Standard	Section 6.2.10
Economic	Standard	Section 6.2.11
Contamination	Standard	Section 6.2.12
Traffic	Standard	Section 6.2.13
Visual	Standard	Section 6.2.14
Noise and vibration	Standard	Section 6.2.15
Air quality and greenhouse gas	Standard	Section 6.2.16
Bushfire	Standard	Section 6.2.17
Historic heritage	Standard	Section 6.2.18
Waste	No further assessment required	Section 6.3.1

6.2 Matters requiring further assessment in the EIS

The following environmental studies are currently proposed by EMM to inform the preparation of the EIS. The scopes of work for the studies will be amended as necessary following inputs from DPE, the community and Government agencies during consultation and the directions contained in the SEARs.

6.2.1 Biodiversity

i Existing environment

The CGO is located in the central north-west of the NSW South Western Slopes Interim Biogeographic Regionalisation for Australia Bioregion and is surrounded by predominately cleared agricultural land with scattered patches of native vegetation.

As part of the CGO development, several biodiversity values were impacted. To offset these impacts, areas of native vegetation were set aside for biodiversity conservation by Evolution (ie the Northern Offset Area and Southern Offset Area).

Evolution is also in the process of securing additional biodiversity offset areas, approved as a component of Modification 14 to DA 14/98. Many flora surveys and monitoring programs have been conducted in ML 1535 and the broader Lake Cowal catchment as part of the approvals processes for the CGO.

ii Key environmental risks

The proposed disturbance footprint associated to the Project has the potential to result in direct and indirect impacts to the terrestrial and aquatic biodiversity surrounding CGO and within Lake Cowal. These impacts could arise from activities such as vegetation clearance, excavation, stockpiling, haulage and construction of Project-related infrastructure.

A referral under the EPBC Act was submitted to DAWE on 26 April 2022. The referral requests approval for disturbance to TECs and flora and fauna species listed under the EPBC Act.

iii Assessment method

A detailed BDAR will be prepared by an accredited assessor in accordance with the BOS under the BC Act and relevant conditions of the FM Act and EPBC Act. The Biodiversity Assessment Method (BAM) will be applied to identify reasonable measures and strategies that can be taken to avoid and minimise impacts on biodiversity. This includes the need for any ecosystem or species credit offsets.

A detailed desktop assessment has already been completed to determine any TECs or threatened flora and fauna species which may be impacted by the Project. Based upon the results of the desktop assessment, detailed vegetation and threatened species surveys were then carried out to inform the EPBC Act referral, this scoping report and the BDAR. This included plant community type (PCT) mapping, habitat assessments, a groundwater dependent ecosystem (GDE) assessment, vegetation integrity surveys, targeted flora surveys, targeted fauna surveys and migratory bird and shorebird surveys.

The results of the surveys will continue to inform the design process, seeking to avoid and minimise biodiversity impacts where possible. The details of the survey methods and results and potential impacts of the Project will be documented in the BDAR.

The BDAR will include consolidated results of the field surveys, an assessment of impacts to biodiversity values, mitigation measures and offset requirements.

As the Project is located within and adjacent to Lake Cowal, an aquatic biodiversity assessment will also be prepared. A field survey was completed during an inundation period of Lake Cowal to inform the aquatic biodiversity assessment and the EPBC Act referral. The survey was completed in accordance with the FM Act and included an assessment of abiotic and biotic components such as water and sediment quality, macrophytes, phytoplankton, aquatic invertebrates and aquatic vertebrates. The details of the survey methods and results and potential impacts of the Project will be documented in the aquatic biodiversity assessment.

6.2.2 Landform

i Existing environment

Evolution has historically used a soil-rock matrix cover system as a primary growth media on the final landform of waste enclosures. The use of soil rock matrix covers has demonstrated high resistance to erosion and is supportive of re-vegetation.

ii Key environmental risks

The Project will require the expansion of the IWL to accommodate tailings from the new open pits and the existing WRE areas to the north, south and vertically to accommodate additional waste rock. A key Project risk is the long-term stability of these facilities once the final landform has been established post-mining.

iii Assessment method

EMM has engaged Landloch Pty Ltd (Landloch) to prepare a detailed Landform Design Study, which will assess the long-term stability of the proposed expansion of the IWL and existing WRE areas and their resilience to erosion and ability to be self-sustaining post-closure. It is proposed that soil-rock covers will continue to be used as the primary growth media on final landforms, followed by the re-establishment of vegetation.

To inform the Landform Design Study, Landloch will develop an inventory of materials used on-site for landform construction (ie the soil-rock covers currently used on-site as primary growth media) followed by a Sampling and Analysis Plan (SAP). The SAP will guide collection of site-specific information to address data gaps and confirm suitability of the materials to support the growth of vegetation. Landloch will complete a field survey guided by the SAP to further characterise the material, including:

- scaled photographs of rock waste to enable computer analysis of rock particle size distribution;
- measurement of vegetation ground cover percentage and species composition in existing rehabilitation areas; and
- observation of depth of existing root zones at existing rehabilitation areas.

From this, the material can be characterised based upon the agronomic and erodibility properties. Two types of modelling will be completed in consideration of the agronomic and erodibility properties, including:

- Water Erosion Prediction Project (WEPP) erosion simulations – including runoff and erosion modelling to consider a wide range of slope profile and surface treatment/revegetation options for outer batter slopes.
- SIBERIA landform evolution model – including evaluation of erosion of the final landform design over a long period of time (eg 10 to 10,000 years) using the results of the WEPP erosion simulations.

The results of the modelling will assess the long-term stability of the final landform design, focusing on the proposed IWL and WRE expansion areas. The results will be presented in the Landform Design Study, including:

- identified weak points in the final landform design;
- discussion of the final landform design's long-term erodibility risk; and
- recommendations for any sections of the final landform design that may have an increased risk of erosion.

The Landform Design Study will also consider the Rehabilitation and Landscape Management Strategy prepared for the EIS (refer Section 6.2.3).

6.2.3 Rehabilitation

i Existing environment

The rehabilitation of existing CGO landforms has commenced and is progressing in accordance with the Land Management Plan (LMP) and Rehabilitation Management Plan (RMP) prepared as required by DA 14/98. Extensive trees and shrub cover has been established as per the requirements of Bland Shire Council for the maintenance of satisfactory visual amenity from outside ML 1535. The visual appearance of buildings, structures and facilities have been designed with the intention of blending with the surrounding landscape.

Condition 2.4 of DA 14/98 covers the rehabilitation requirements of existing open pit operations at CGO, including rehabilitation objectives, progressive rehabilitation and the RMP. The rehabilitation requirements of underground operations are covered in conditions B23 and B24 of the development consent for SSD 10367.

Rehabilitation and mine closure activities will be explained in detail as part of the EIS for the Project, however progressive rehabilitation will continue as soon as reasonably practicable following disturbance in line with the development consent conditions and Mining Act requirements.

ii Key environmental risks

A key environmental risk that could occur if rehabilitation and mine closure activities are not successful is the potential instability of post-mining landforms in the long term.

iii Assessment method

During the detailed design phase of the Project and prior to submission of the EIS, Evolution will present to the Resources Regulator its preferred final open pit void strategy for the Project. As summarised in Chapter 3, the Project will include the development of three new open pits E46, GR and E41 pits and the Stage I cutback of the E42 open pit. The new pits may merge with the existing pit to form one or two final pits at mine closure. Options for final voids will consider relevant risks (ie hydrogeological, hydrological, geotechnical, geochemical and biodiversity), potential opportunities and the practical and economic challenges associated with each. Comprehensive final landform designs will be prepared to inform the options associated with post-mining land-uses.

A detailed Rehabilitation and Landscape Management Strategy will be prepared to inform the EIS and include:

- identification of key environmental and socio-economic risks;
- identification of the primary rehabilitation domains;
- summary of soil landscapes and physical and chemical soil properties as they relate to rehabilitation including LSC and BSAL;
- erosion and hazard assessment in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom 2004) and subsequent management and mitigation measures;
- description of post mining land-use and rehabilitation objectives;
- description of proposed landforms and rehabilitation requirements;
- description of the rehabilitation strategy, including any post-closure maintenance requirements such as monitoring; and
- identification of any necessary research and opportunities for continual improvement.

The Rehabilitation and Landscape Management Strategy will consider the results of the Landform Design Study prepared by Landloch (refer Section 6.2.2), including the proposed final landforms of the IWL and existing WRE areas and the erodibility of the primary growth media cover.

The *Strategic Framework for Mine Closure* (Australian and New Zealand Minerals and Energy Council and Mineral Resources Council of Australia 2000) and *Leading Practice Sustainable Development Program for the Mining Industry – Mine Closure* (Commonwealth Department of Industry, Innovation and Science 2016) has been used to guide mine closure planning at CGO. A targeted rehabilitation management strategy will be developed to consider the Project in consultation with the Resources Regulator and other relevant regulatory authorities. The LMP and RMP will also be updated to consider the Project in accordance with the relevant conditions.

6.2.4 Groundwater

i Existing environment

A significant number of hydrogeological studies and site investigations have been conducted for the CGO area and surrounds. The conceptual model of the existing groundwater regime in the region has been developed progressively since 1995 and was last updated in 2020 by Coffey Services Australia Pty Ltd (Coffey) as part of the CGO Underground Development Project. As noted in Section 6.2.4(iii), this model will be reviewed and updated as part of the EIS to predict the cumulative potential impacts of groundwater extraction for mine use associated with the Project.

The existing pit interacts with two groundwater systems, including the alluvial groundwater system and fractured rock groundwater system (Coffey 2018).

Incident rainfall and groundwater inflow into the pit is managed by in-pit sumps and depressurisation holes. Current groundwater inflow is estimated to be approximately 159 mega litres per annum (ML/annum), with approximately 10% of groundwater inflows from the alluvial groundwater system and 90% of groundwater inflows from the fractured rock groundwater system (Coffey 2018). Process water uses the captured water from within the internal catchment drainage system (ICDS) with additional make-up water from external sources including the saline groundwater supply bores, BCPB and the Lachlan River via pipeline from the Jemalong Irrigation Channel.

Groundwater inflow to the pit is estimated to have generally decreased since 2008 as the aquifers connected to the pit depressurise. No material increase in groundwater inflow to the pit occurred during and following the 2010, 2012 or the 2016 lake-fill events, based on monitored pit dewatering records (Coffey 2018).

Within ML 1535, monitoring data shows some drawdown in the Cowra Formation (alluvial system) due to groundwater inflow into the pit. The monitoring data indicates that this drawdown is localised and is considered to have not significantly affected groundwater levels in the either the Cowra Formation or Lachlan Formation outside of ML 1535 (Coffey 2018).

Previous studies indicated that Lake Cowal is hydraulically separated from the underlying aquifers, due to the very low permeability of the clay pan deposits that form the lake bed. Based on this, it was predicted there would be very low potential for significant quantities of water to infiltrate from Lake Cowal to the underlying aquifers (ie associated with the Cowra Formation) (Coffey 2018).

Monitoring data collected since the 2010, 2012 and 2016 lake-fill events indicates no increase in groundwater inflow to the pit has occurred, which supports the predictions of previous assessments regarding the hydraulic separation of Lake Cowal from the underlying aquifers (Coffey 2018).

ii Key environmental risks

Further localised drawdown of groundwater may occur due to the dewatering of the proposed new pits and cutback of E42.

While there will be no change to water supply sources or the approved daily or annual extraction limits of the BCPB for the Project, there is potential for impacts to existing and future users of the BCPB from the extension in water abstraction from the BCPB to mine closure in 2042.

iii Assessment method

a Influence of the open-pit mining on groundwater

EMM will complete a detailed hydrogeological (groundwater) assessment to inform the preparation of the EIS for the Project. This will include a review of the conceptual model of the existing groundwater regime in the region developed previously during studies undertaken by Coffey. The assessment will primarily determine the rate of groundwater inflow associated with progressive development of the proposed new pits.

Field surveys have already been undertaken to inform the hydrogeological assessment, which included review of existing groundwater activity and management within the existing pit.

The rate and timing of groundwater inflow into the existing pit is likely to change. Coffey's earlier groundwater model will be further developed by EMM to predict the impacts on the groundwater system and potential dewatering rates over the life of the mine. It will consider the interaction of the existing pit, underground operation and proposed new pits on the surrounding groundwater regime.

The hydrogeological assessment will be peer reviewed by an independent external body.

b Water supply assessment

Water is used primarily as a transport media during ore processing and in dust suppression, TSF embankment construction and other potable and non-potable uses.

Coffey's regional model of the Bland Creek Palaeochannel aquifer system will be updated and merged with the site mine model to predict cumulative potential impacts of groundwater extraction for mine use, on the both the alluvial and deeper Lachlan groundwater systems. As suggested by DPE Water in its assessment of the Underground Development Project EIS, the model will combine the mine site and the BCPC into one comprehensive numerical model to consider impacts of the underground development, the Project and various bore water use for the operation of the mine. The model will also consider these issues in combination with the expected water demand for the duration of the Project.

The Bland Creek Palaeochannel system is also widely used for irrigation in an area where water resources are not abundant. Previously the Bland Creek Palaeochannel groundwater model has been calibrated taking account of mining and agricultural groundwater extraction. Given the importance of this resource it is expected that review of groundwater records, including records for mining and agricultural usage, will need to be carried out as part of re-build and subsequent calibration of the groundwater model for use as an assessment tool of mine water usage and the potential effects to the groundwater system for the planned underground and open pit mining operations. Importantly, no increases to extraction limits in the BCPB are proposed as part of the Project.

The hydrogeological assessment will include commentary against the relevant criteria identified in *Department of Primary Industries NSW Aquifer Interference Policy* (2012a), *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources* (2012b), and the *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources* (2012c). Following the assessment and where necessary, Evolution will obtain new or updated licences, as may be required under the WM Act.

6.2.5 Surface water

i Existing environment

The CGO is located on the western side of Lake Cowal, an ephemeral freshwater lake predominantly filled by runoff from Bland Creek to the south, and flood breakout from the Lachlan River to the north. Lake Cowal occupies an area of 105 square kilometres (km²), holds approximately 150 gigalitres (gL) of water and has a maximum depth of approximately 4 m when full. When flows are sufficient, Lake Cowal overflows into Nerang Cowal to the northwest, and ultimately drains to the Lachlan River via Bogandillon Creek.

The existing CGO water management infrastructure is designed to separate Lake Cowal from the CGO, contain potentially contaminated water (contained water) generated within the mining area, and to divert water unaffected by mining activities around the perimeter of the site.

The effectiveness of the existing LPB has been demonstrated under peak water levels in Lake Cowal during the lake-fill events in recent years. During the lake-fill periods, no material increase in groundwater inflow to the existing pit occurred, based on pit dewatering monitoring data. This indicates that the lake protection bund and lacustrine clay on the lake's bed are preventing significant loss of water from the lake to the existing pit (Resource Strategies 2018).

ii Key environmental risks

The LPB will be modified as part of the Project to provide continued separation and mutual protection between Lake Cowal and CGO. The surface water study will consider the impacts of the proposed modification to the LPB on the hydrological regime of Lake Cowal, including any potential flooding impacts on land adjacent to the Lake Cowal.

The surface water study will also consider proposed mine water usage across CGO, taking into consideration the existing operations, the underground development, surface changes approved under Modification 16 and those proposed in this Project. Any impacts to the quality and availability of local (mine site) surface water will also be considered.

iii Assessment method

EMM has engaged ATC Williams Pty Ltd (ATC Williams) to prepare a detailed surface water assessment to inform the preparation of the EIS. This will include:

- updating the existing description for the physical and hydrological setting provided in *Cowal Gold Operations Processing Rate Modification Surface Water Assessment* (HEC 2018), including an update of any available meteorological and surface water data such as level, flow and quality;
- updating the existing site water balance (GoldSim) to reflect any changes to the existing water management system to provide a predicted final void water balance, including final void water level versus time;
- preparation of a water balance model for Lake Cowal to simulate the forecasted volume and spill in consideration of the project; and
- preparation of a flooding assessment including a description of flood conditions and identification of flood prone land.

The surface water assessment will also consider the design of the proposed modification to the LPB, including options to minimise the impacts on Lake Cowal and downstream watercourses during construction and operation of the LPB.

6.2.6 Social

i Existing environment

CGO is located in the Bland Shire LGA. The CGO's area of social influence generally extends to the towns of West Wyalong in Bland Shire LGA, Forbes in Forbes Shire LGA and Condobolin in Lachlan LGA.

West Wyalong is approximately 46 km by road from CGO and has a population of 3,141 people with a median age of 42 years (ABS 2016). West Wyalong is the central hub within the Bland Shire LGA accounting for close to half of the LGA's total population (ABS QuickStats 2017). West Wyalong reported 83% labour force participation with a comparatively low unemployment rate when compared to NSW and Australia. Of the employed people in West Wyalong, 10.9% worked in gold ore mining. Other major industries of employment included local government administration 5.9%, supermarket and grocery stores 4.4%, secondary education 3.0% and grain-sheep or grain-beef cattle farming 2.7% (ABS QuickStats 2017).

The town of Forbes is located approximately 86 km by road from CGO. The population of Forbes is approximately 8,432 with a median age of 42 (ABS 2016). Forbes is the largest town in Forbes Shire LGA and reported 64% labour force participation. The main industries of employment for workers in Forbes are health care and assistance, retail trade, agriculture, forestry and fishing, and education and training. Mining accounted for 3% of employment (REMPAN Community Profile 2016).

Condobolin is approximately 80 km by road from CGO. Condobolin has a population of 3,486 people with a median age of 38 (ABS 2016). The suburb has a high proportion of Aboriginal and Torres Strait Islander people (22.1%) compared to NSW and Australia. Condobolin has a higher unemployment rate than both Forbes and West Wyalong (8.1%). Top industries of employment include local government administration, primary education and grain-sheep or grain-beef cattle farming (ABS QuickStats 2017).

ii Assessment methods

The scoping phase of the social impact assessment (SIA) for the Project was conducted in accordance with *Social Impact Assessment Guideline for State Significant Projects* (DPIE 2021). This phase has aimed to identify and understand the Project's area of social influence and apply scoping methodology to identify the potential social impacts with their associated level of assessment required in the EIS. The results are summarised in the SIA scoping report, which has been prepared by EMM and provided in full as Appendix C.

The main objective of the scoping phase SIA was to:

- identify potentially affected people;
- identify and understand the Project's area of social influence; and
- identify the Project's potential negative and positive social impacts for further investigation and determine the level of assessment required for each potential social impact.

The scoping phase SIA comprised a baseline review of relevant information and identification of the applicable area of social influence. The baseline review considered the scope of the Project and its proximity to and interaction with residences, businesses and services. This information was used to determine the Project's applicable area of social influence. Consultation activities were then completed within the applicable area of social influence, being the LGAs of Bland Shire, Forbes Shire and Lachlan Shire. A wide range of identified stakeholders were consulted as part of the scoping phase SIA, with COVID-19 safe environment practices being employed for all face-to-face interactions.

A community survey was also distributed to the broader community along with a newsletter that provided a summary of the Project. The survey was administered on-line with hard copies available at the Community Information Sessions in West Wyalong, Forbes and Condobolin, and during in-depth interviews.

The community survey and results are provided in Attachment A and B of Appendix C.

a Social impacts and benefits

A range of issues were identified by community stakeholders during consultation activities, including social, economic and environmental issues, as summarised in Table 5.1 of Appendix C.

During stakeholder interviews, the most common issues raised were around ongoing employment and the potential for cumulative impacts, with many noting other existing and potential new projects (ie two solar farms, various mining projects and road upgrades) planned for the region.

Those interviewed noted that CGO contributes to the community, with the benefits that CGO provided during recent drought periods, in terms of employment security, community assistance and financial contributions noted repeatedly. However, some stakeholders interviewed did feel that there is an opportunity to do more, particularly in terms of the legacy left in the community post-mining.

Key issue areas identified during the interviews are summarised as follows, with further detail of each provided in Section 5.1.1 of Appendix C:

- housing and accommodation;
- capacity of health services;
- surroundings;
- legacy; and
- traffic.

A total of seven responses were received for the community survey, with respondents being mostly supportive of the Project.

b Next steps

EMM will prepare the detailed SIA to inform the EIS for the Project. The methodology shown in Figure 6.1 of Appendix C will be applied, including social science methods and tools for the collection of quantitative and qualitative data. It will be informed by the preliminary social impacts identified in the scoping phase SIA, as summarised in Table 6.2.

Table 6.2 Preliminary social impacts identified in the scoping phase SIA

Potential social impact	Matter – negative related to:	Matter – positive related to:
Accessibility	- Housing shortages. - Accommodation shortages – tourism.	- Worker’s accommodation village and use of motel accommodation reduces impact on housing. - CGO’s ongoing provision of housing to police.
Health and wellbeing	- Health and emergency services in crisis – loss of health service would affect local residents. - Fear that extending the bund (lake protection bund) surrounding the pits would increase flooding.	- Employment security providing positive mental health benefits - Positive social and financial contributions to community.
Surroundings	- Noise and vibration. - Visual amenity related to lights. - Flooding. - Groundwater. - Biodiversity.	Not provided.
Culture	- Potential loss of Aboriginal cultural heritage. - Lake Cowal encroachment.	Continued investment in Lake Cowal Foundation and the Wiradjuri Condobolin Corporation (WCC).
Livelihoods	Tourism providers miss out on business due to lack of tourist accommodation.	- Ongoing work for local workforce. - Continued income stream for accommodation providers during tourism downturn due to COVID-19.
Decision-making systems	Not provided.	Landholders have access to complaints mechanisms that are responded to and remedied.

The identification of social impacts will be further defined by additional community and stakeholder engagement activities (including those completed as part of the SIA scoping report) and field study activities. Additional engagement activities will be conducted in an integrated manner to ensure consistency, reduce duplication and allow for management of consultation fatigue. Findings from the technical assessments will be considered to understand the consequences to the community in addition to the findings of previous SIAs completed for CGO.

Potential social impacts, both positive and negative, will then be assessed according to the requirements of *Social Impact Assessment Guideline for State Significant Projects* (DPIE 2021) via a risk-based approach (refer to the risk matrix shown in Table 6.2 of Appendix C).

6.2.7 Geochemistry

i Existing environment

Studies of the geochemistry of the rocks intersected by mining at the CGO were completed in 1995, 1996, 1997, 1998 and 2004 by various consultants before the start of open pit mining in 2005. Since then, further targeted investigations were completed in 2008, 2011, 2013 and 2016. A summary of these findings is provided below.

a Salinity and sodicity

Waste rock and tailings from the existing open pit (E42), were initially found to have low salinity and high levels of carbonates. Waste rock and tailings consisting of oxide material, including such shallow geology as saprock, saprolite and alluvium, were found to be moderately to highly saline and highly sodic.

More recent investigations found the waste rock, ore, low grade ore and tailings to have low salinity and to be non-sodic. Oxide materials were found to be moderately to highly saline and have high sodicity.

b Acid forming characteristics

Waste rock and tailings from the existing open pit (E42) were initially found to be non-acid forming (NAF) and contain reactive sulfides neutralised by a high acid neutralising capacity (ANC). Oxide material was found also be NAF and contain a relatively low reactive sulfide content.

More recent investigations found waste rock, ore, low grade ore and tailings to be NAF due to a high ANC. Oxide material were also found to be NAF still due to a relatively low reactive sulfide content.

c Metal enrichment and solubility

Geochemical studies have been carried out on waste rock, ore, low grade ore, tailings and oxide material from the existing open pit (E42) from 1995 to 2006. Generally, these found high concentrations of arsenic, silver, cadmium, lead, selenium, antimony, molybdenum and zinc in rocks within the area of the E42 open pit.

Geochemical investigations completed in 1995 and 1997 also included sequential batch water extractions of the waste rock and column leach tests of tailings. These concluded that the leaching of environmentally important elements from waste rock stored at CGO was unlikely to occur if pH values were maintained. It was also found that soluble copper and zinc would initially leach from tailings stored at CGO, however this was unlikely to impact the surrounding water quality.

ii Key environmental risks

As described in Section 1.3.1, ore and waste rock produced from open pit mining at CGO is stockpiled in existing low-grade and high-grade ore stockpiles and the three WRE (northern, southern and perimeter). As part of the Project, the footprint of the existing WRE will be expanded to the north, south and vertically to accommodate additional waste rock from the proposed open pits. Ore will continue to be stockpiled in the low- and high-grade ore stockpiles prior to processing.

A key environmental risk is the potential for deleterious leachate from temporary ore stockpiles or waste rock causing salinity, sodicity or acid and metalliferous drainage.

iii Assessment method

EMM has engaged Geo-Environmental Management Pty Ltd (GEM) to complete a detailed geochemistry assessment report to inform the EIS for the Project. The geochemical properties of ore and waste rock excavated from the new open pits can affect its behaviour when stockpiled or applied in the development of the final landform. The geochemistry assessment will aim to identify any risks or constraints associated with the geochemistry of the ore and waste rock.

To inform the geochemistry assessment, GEM will undertake a drill-hole sampling program within the footprint of the new open pits. This will aim to collect rock core or chips of the primary lithologies present within both oxidised and fresh rock. The samples will be geochemically characterised in two stages. Stage 1 will include:

- pH;
- electricity conductivity;
- total sulfur assay;
- acid neutralising capacity; and
- single addition net acid generation.

Stage 2 will be an extension of Stage 1 work and include:

- sodicity assessment;
- sulfide sulfur (chromium reducible sulfur) analysis;
- determination of the acid buffering characteristic curve (if required);
- multi-element scans on solids and water extracts; and
- leach column testing (if required).

Stage 1 and 2 testing, will allow the geochemical characterisation of the samples to be presented in a report that defines any potential for salinity, sodicity or acid and metalliferous drainage risks present within the ore and waste rock intersected by the new pits. Any potential geochemical impacts will be identified, including recommendations for the management of these impacts or further work.

6.2.8 Geotechnical – subsidence

i Existing environment

The land surrounding the existing CGO is characterised by flat to gently undulating topography and is located on the central western plains of NSW, towards the western edge of the exposed rocks of the Lachlan Fold Belt geological formation. The landforms are mainly ephemeral lacustrine (ie Lake Cowal), extensive gilgai areas, stagnant alluvial plains with ephemeral drainage lines and low hills (eg Cowal West Hill).

ii Key environmental issues

The principal intention of the study is to ensure that the risk of subsidence or structural relaxation of the rock mass does not threaten the safety and long-term integrity of existing or planned open pits, underground mine or surface structures (both man-made and natural). This includes Lake Cowal.

iii Assessment methods

EMM has engaged Beck Engineering Pty Ltd (Beck) to complete a detailed subsidence assessment to inform the preparation of the EIS. Beck has extensive experience in subsidence assessment across the mining industry. As part of the subsidence assessment, Beck will prepare a three dimensional, discontinuum, strain softening, dilatant, hydromechanically coupled simulation model to consider subsidence impacts. Numerical modelling will use the Abaqus 2018 Explicit finite element code, which has features relevant to this Project scope including:

- higher-order tetrahedral elements;
- detailed structural information built explicitly into the model paired with a very accurate representation of the most complex mining geometry;
- minor faults simulated as a discrete fracture network (DFN), if required;
- possibility of including numerous intermediate mining steps for a better replication of the planned mining sequence to achieve most accurate simulation results; and
- detailed representation of the planned mining sequence of the proposed new pits.

This model will also consider the underground operations and existing open pit. This modelling has been previously used for evaluation of the environmental impacts associated with the CGO Underground Development Project. Although the same model will be updated to predict any subsidence related impacts associated only with the Project, it will still consider the interaction between the existing pit, underground operations and new pits proposed under the Project. Simulation of the open pit mined to date will be used to calibrate model parameters using open pit monitoring data such as radar and LIDAR measurements.

Beck will use the three-dimensional structural model and geotechnical models provided by Evolution. Lithological units, alteration and discontinuities will be used as provided.

The material model for the rock mass will be a strain-softening dilatant material model with a generalised Hoek-Brown yield criterion for the rock mass and structures. This material model is used because it realistically captures the evolution of damage and deformation for rock masses and structures.

Material properties will initially be assigned according to current geotechnical rock mass characterisation studies using Beck's material property estimation scheme where information is limited.

6.2.9 Aboriginal heritage

i Existing environment

Lake Cowal sits in the Country of the Wiradjuri people. Wiradjuri was the largest language grouping in the area that is now NSW. It is generally accepted that Aboriginal occupation of Australia dates back at least 45,000 years, and the Wiradjuri were likely present in the Lachlan and Lake Cowal area from the beginning of this time.

Evolution has obtained permits and consents under sections 87 and 90 of the NPW Act for the management of Aboriginal heritage at CGO. The majority of the previously registered sites within ML 1535 have been the subject of management and mitigation measures, and as such have been managed (ie salvaged) in accordance with the CGO permits and consents and the Indigenous Archaeology and Cultural Heritage Management Plan (IACHMP).

ii Key environmental risks

The proposed open pit mining operations and associated infrastructure changes will result in ground disturbance beyond that previously approved. This may affect the cultural landscape or previously unidentified objects and sites which hold social or cultural significance.

iii Assessment method

A detailed ACHA will be completed in accordance with:

- *Aboriginal Consultation Requirements for Proponents* (DECCW 2010a);
- *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (the Code) (DECCW 2010b); and
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011).

The purpose of the ACHA will be to identify, assess and manage the Aboriginal cultural heritage values related to the disturbance area, specifically those that are at risk of being impacted. Aboriginal heritage values will be identified from the following methods:

- consultation with registered Aboriginal parties (RAPs) to identify Aboriginal sites, social or cultural values of the study area and places of special significance that should be considered;
- search of the Aboriginal Heritage Information Management System (AHIMS) register for records of previously registered Aboriginal sites;
- development of a predictive model of Aboriginal site location;
- an archaeological survey by archaeologists and RAPs;
- assessing the significance of Aboriginal places and/or objects identified in the course of the archaeological investigations and through Aboriginal community consultation;
- assessing the impact of the Project on identified Aboriginal cultural heritage values; and
- proposing appropriate management measures for potentially impacted Aboriginal cultural heritage values in response to their assessed significance.

The RAPs registered under the existing development consent will be notified during the preparation of the ACHA and any documentation circulated for their review prior to the public exhibition period. The consultation completed with RAPs to date has been summarised in Chapter 5.

6.2.10 Soils

i Existing environment

BSAL refers to land with high quality soil and water resources. There is currently no BSAL mapped within the Project area, with the closest mapped BSAL located approximately 30 km north-east on the Lachlan River. The Project area has been previously assessed as Land and Soil Capability (LSC) Class 3 with moderate fertility.

ii Key environmental risks

The Project will result in additional ground disturbance beyond that previously approved. A key environmental risk associated with the Project is the loss of BSAL which has not been previously identified or mapped within the disturbance footprint.

iii Assessment method

EMM has engaged Minesoils to assess whether BSAL exists within the Project area. This will include the completion of a standard soil and land resource assessment in accordance with the *Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land* (OEH and OASFS 2013). As preliminary findings indicate that BSAL is not present, Minesoils will apply for a site verification certificate from DPE. An assessment under the gateway process will likely not be required. Once an SVC is obtained, the EIS can be submitted, which will include an agricultural impact assessment (AIA) which will also be completed by Minesoils.

As part of the soil and land resource assessment, Minesoils will complete a fieldwork program to satisfy sampling and testing requirements of *Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land* (OEH and OASFS 2013) and in accordance with:

- Australian Soil and Land Survey Field Handbook (CSIRO 2009);
- Australian Soil Classification (CSIRO 2021); and
- *The Land and Soil Capability Assessment Scheme* (OEH 2013).

This will include identification of the soil types, soil resources (including a soil balance) and soil qualities (including erosion risk, dispersion and the presence of acid sulfate soils and salinity). The soil and land resource assessment will include an assessment of BSAL and LSC and provide mitigation measures for the handling of soil during the operation and rehabilitation phase of the Project.

The AIA will be prepared to inform the EIS for the Project in accordance with the *Strategic Agricultural Land Use Policy: Guideline for Agricultural Impact Statements* (DPI 2012). The AIA will include:

- detailed assessment of the agricultural resources and agricultural production of the Project area;
- identification of the agricultural resources and current agricultural enterprises within the surrounding locality of the Project area;
- identification and assessment of the impacts of the Project on agricultural resources or industries;
- accounting for any water that is transferred or will no longer be available for agricultural use as a result of the Project;
- assessment of the impacts on agricultural support services, processing and value adding industries and regional employment;
- assessment of any potential impact on visual amenity, landscape values and tourism infrastructure relied upon by agricultural enterprises; and
- identification of options for minimising adverse impacts on agricultural resources, including agricultural lands, enterprises and infrastructure at the local and regional level.

6.2.11 Economic

Evolution is a leading, growth focussed Australian gold company. CGO is a reliable and low-cost production gold operation.

Through local employment, its ongoing operational and capital expenditure and grants program, CGO is a major contributor to the economy of the Riverina. Through royalties and taxation, CGO is also an important contributor to the NSW economy. Evolution invests in and partners with their communities to achieve meaningful outcomes and prioritises local procurement and employment and training opportunities, including:

- partnership with WCC;
- total local procurement spend of approximately \$28 million per annum;
- support of local charities and sports clubs;
- renovation of the Tivoli Theatre in West Wyalong;
- revival of the local newspaper in West Wyalong;
- approximately 70% of employees reside across the region; and
- approximately 7% of employees identify as Indigenous.

Evolution has a Planning Agreement (PA) in place with Bland Shire Council for its underground development project, which is outlined in Appendix 4 of the development consent SSD 10367. Evolution's financial contributions made under the PA fund are for road maintenance, community initiatives and housing strategies within the Bland Shire LGA as summarised in Table 6.3.

Table 6.3 General terms of Evolution's PA with Bland Shire Council

Evolution's contribution	Intended use
\$250,000	Initial sign-on amount.
\$200,000	Annual contribution to the Bland Shire Council for the length of the granted term of the Development Consent.
\$60,000	Annual contribution to road maintenance costs for the length of the granted term of the Development Consent.
\$150,000	Minimum annual contribution for targeted Community initiatives for the length of the term for the Development Consent.
\$25,000	One off contribution to the Bland Shire Council Housing Strategy.

i Key economic risks

The discontinuation of mining operations at CGO is likely to have a deleterious impact on the local economy of West Wyalong, and the broader regional economy of the Riverina. The Project will allow continuation of ore production and processing until 2042, sustain local employment and local domestic product in the operational phase with short-term increases in employment and expenditure associated with the construction phase.

If left unmitigated, increases to the construction workforce at CGO could potentially put additional pressure on existing housing cost and availability issues within West Wyalong. To mitigate any pressure on housing costs and availability, Evolution received approval from Bland Shire Council on 24 August 2021 to build and operate an accommodation village in West Wyalong for construction and operational staff and contractors working at the CGO. The accommodation facility will have an approximate capacity of up to 176 people.

The economic benefits associated with the Project include continued demand associated with staff increases including local salary inflation and increased demand for local services and supplies.

ii Assessment methods

EMM has engaged AEC Group (AEC) to prepare a standard economic impact assessment to inform the EIS preparation for the Project. The economic and social impact assessments will be closely aligned, to ensure consistency in assessment method and outcomes. The economic impact assessment will include a cost benefit analysis (CBA), which will:

- establish the base case and define the Project;
- identify incremental costs and benefits;
- quantify and value the economic costs and benefits of the project including mining costs and benefits, and environmental costs and benefits (benefit transfer); and
- develop a spreadsheet model that considers risk and uncertainty, unquantified impacts, and the distribution of costs and benefits.

The economic impact assessment will also include a local effects analysis (LEA) of direct effects in accordance with the *Guidelines for the economic assessment of mining and coal seam gas proposals* (DPE 2015). The LEA will include:

- development of input-output model of the regional economy;
- preparation of summary information on the structure of the regional economy;
- sort and allocate financial data;
- analysis of the construction and operation regional economic impacts; and
- consideration of the regional economic effects of cessation of the mine.

6.2.12 Contamination

i Existing environment

The Project will be undertaken on land surrounding Lake Cowal which is not contaminated land and on land within the existing CGO site for which there is no known evidence of contamination.

ii Key environmental risks

Land surrounding Lake Cowal and within the CGO site is not known to be contaminated. However, the incorrect management of chemicals or hazardous materials could potentially result in contamination of the site and surrounding environment, which could present a risk to environmental and human health. This could result from the spillage of chemicals during transport or on-site handling and storage.

Since the commencement of operations at CGO in 2006, no hazardous events or incidents with the potential to contaminate the surrounding environment have occurred. The management of chemicals and hazardous materials on-site will continue to be managed in accordance with the relevant management plans listed below, which will be revised as necessary to incorporate any outcomes from the EIS process for the Project if approved:

- *Emergency Response/Pollution Incident Management Plan* (Evolution 2018a);
- *Blast Management Plan* (Evolution 2015b);
- *Cyanide Management Plan* (Evolution 2018b); and
- *Hazardous Waste and Chemical Management Plan* (Evolution 2018c).

iii Assessment methods

In accordance with Section 4.6 of the State *Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP), a consent authority must not consent to any development on land unless it has considered whether the land is contaminated, and if so, whether suitable remediation would be carried out.

Although the land surrounding Lake Cowal and within the CGO site is not known to be contaminated, a standard preliminary site investigation (PSI) will be prepared to inform the EIS and in accordance with the process outlined in the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPC 2013) and *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (EPA 2020). This is because the Project will expand beyond the boundary of approved open pit and underground operations.

The PSI will include a desktop assessment to review all relevant information, including:

- identification of any known contaminated sites within or surrounding the Project area as detailed on EPA's list of contaminated sites;
- identification of properties within the Project area and surrounding lands which are listed on EPA's record of notices;
- review of Bland Shire Council records, including Section 149 certificates for selected properties near the Project area;
- search of SafeWork NSW Dangerous Goods Records of Identified Contaminated Sites where possible;
- identification of current or historical land uses located in proximity to the Project area that may have caused contamination;
- review of historic aerial photographs to identify the presence of any visually identifiable potentially contaminating activities in proximity to the Project area; and
- review of published maps of the Project area to gain an understanding of surface and subsurface conditions.

Based on the findings of the desktop assessment, a site inspection may be undertaken focussing on identified disturbance areas where the potential for encountering contaminated material during construction or operation of the Project is highest.

The PSI will discuss any areas of potential contamination and include a conceptual site model that shows linkages between these areas on sensitive receptors. A determination on the suitability of the land will be provided based on the Resilience and Hazards SEPP. Suitable mitigation measures, including the requirement for further investigation, will also be provided as may be appropriate.

6.2.13 Traffic

i Existing environment

In the vicinity of the CGO, the Newell Highway (HW17) is a sealed arterial road which links West Wyalong, Forbes and Parkes. Traffic along this highway includes a range of heavy vehicles such as B-doubles and road trains. The Newell Highway is a State Road and is under the management and control of Transport for NSW (Roads) (TfNSW).

The approved CGO access route from West Wyalong comprises Ungarie Road, Wamboyne Road, Blow Clear Road and Bonehams Lane. This route was upgraded in 2005 as part of relevant CGO works and is therefore of recent design construction standard and provides a 7 m to 8 m carriageway with 1 m sealed shoulders.

ii Key risks

The Project has the potential to increase traffic on the local and regional road network during construction of future mine infrastructure associated with the Project. The traffic assessment will assess the likely Project impacts to road capacity, traffic safety and site access including Austroads intersection design standards and the likely maximum size of heavy vehicles using each intersection. This assessment will consider the cumulative impact of traffic generated from both the Project and underground operation.

The Project will involve the development of new on-site roads for access and haulage. These roads will be private and used by CGO-related vehicles only and therefore will have no impact to the local or regional road network.

iii Assessment methods

The study method will follow the standard TfNSW guidelines for traffic impact assessment incorporating the following:

- site observations and existing road network and traffic generation;
- proposed site access and circulation;
- traffic generation by the Project;
- impacts to the road network;
- impacts to intersection operations;
- traffic safety and review of accident history; and
- adequacy of the site truck and car parking areas.

The Project's baseline traffic volumes and existing pavement width and condition for the road network between CGO and West Wyalong, Condobolin and Forbes will be based upon the traffic assessment completed for the underground development project.

Existing TfNSW and Council traffic data for the road network will be reviewed and used to confirm the current daily and hourly traffic volumes for each route, which will then enable the Project access and transport route traffic impacts to be assessed.

A standard traffic impact assessment (TIA) will be prepared by EMM to inform the EIS for the Project. The TIA will assess traffic impacts during the construction and operational phases of the Project and will include the quantification of daily construction and operational traffic.

6.2.14 Visual

i Existing environment

The area surrounding CGO comprises several distinct land use types and landscape units of varying levels of scenic quality, including agricultural areas, Lake Cowal, residential dwellings, a game reserve, Billy's Lookout and the associated ridgeline system, and Wamboyno Mountain.

Most of the local and sub-regional setting has been cleared for grazing and/or cultivation (including land within Lake Cowal itself). Remnant tree and shrub vegetation occur primarily on rocky elevated ground, areas of impeded drainage, patches of sandy soils, the shoreline of Lake Cowal and road verges.

The most sensitive visual settings in the vicinity of the CGO are rural residences. Only limited views of the existing CGO are available from viewpoints along the Newell Highway due to intervening topography and roadside vegetation.

Overhead lighting of structures, mobile lighting plants on waste rock emplacement and mobile vehicle mounted lights lead to night-time light emissions.

Rehabilitation of existing CGO landforms has commenced and is progressing in accordance with the LMP and RMP prepared in accordance with DA 14/98. Trees and shrubs have been established in accordance with the requirements of the Bland Shire Council for the maintenance of satisfactory visual amenity from outside ML 1535. The visual appearance of buildings, structures, facilities or works have been designed with the intention of blending with the surrounding landscape.

ii Key environmental risks

As described in Chapter 3, the Project will include multiple components which may be visible to nearby residences, including but not limited to the changes to the IWL and WRE areas and development of additional soil stockpile areas. As a result, additional vegetation screens may be required to maintain satisfactory visual amenity for nearby residences.

iii Assessment methods

There are no Commonwealth, NSW or local government planning policies, guidelines or standards directly applicable to this assessment, therefore a standard visual impact assessment (VIA) will be prepared with reference to the methods outlined in the *Guidelines for Landscape and Visual Impact Assessment* Third Edition (2013) prepared by the UK Landscape Institute and Institute of Environmental Management and Assessment.

A VIA will be completed to determine the visual impact of the Project to nearby residences. A viewshed analysis will be completed to determine four representative viewpoints surrounding the site, which will provide a sample of the likely impacts on the residences surrounding the site and their visual exposure to the Project.

Photomontages will be prepared for the four viewpoints and will comprise photographs taken at each viewpoint, which will have the project component visible from each viewpoint digitally superimposed on them to produce a panoramic view of the potential visual impacts. Three photomontages will be prepared for each viewpoint, comprising:

- intermediate mining stage (worst case for each viewpoint);
- end of mining (nominally 2042); and
- final landform (after rehabilitation).

The VIA will include a description of the surrounding visual character of the landscape and an analysis of the magnitude of change of the Project and the visual sensitivity of the residences. The significance of the Project's visual impact will be determined and appropriate mitigation measures provided based upon the findings.

6.2.15 Noise and vibration

i Existing environment

Existing noise management and monitoring measures are described in the currently approved Noise Management Plan (NMP) prepared under DA 14/98 and EPL 11912. The existing monitoring program includes operator-attended monitoring at locations representative of six privately-owned dwelling locations and two reference locations.

Evolution has entered into noise mitigation agreements with the owners of several private residences. Noise mitigation/management agreements have also been discussed with other privately-owned residences in accordance with the requirements of DA14/98.

ii Key environmental risks

Noise related to the Project, including blasting and material haulage and handling, has the potential to increase the overall mine noise and vibration emissions.

iii Assessment methods

A standard noise impact assessment (NIA) and blast impact assessment will be prepared to inform the EIS for the Project in accordance with *Noise Policy for Industry* (NPfI) (EPA 2017) and *Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration* (ANZECC 1990).

The NIA will include a comprehensive baseline noise measurement survey, including the installation of up to 6 unattended continuous noise loggers for approximately two weeks. The location of the loggers will be representative of the nearest noise sensitive receivers. Onsite plant and equipment sound power level measurements will also be taken for all acoustically significant fixed and mobile plant and equipment.

The NIA will include:

- development of noise criteria for the Project in accordance with relevant policies, standards and guidelines;
- preparation of an operational computer noise model (Predictor) using measured sound power level data;
- prediction of noise levels from up to three worst case scenarios from the proposed project, including the 'beginning', 'middle' and 'end' of the mine life extension;
- assessment of predicted noise levels using procedures provided in the NPfI;
- where noise levels above the NPfI criteria are predicted, recommend feasible and reasonable noise mitigation measures will be provided;
- assessment of the potential for cumulative noise impacts with other industry in the area in accordance with the NPfI;

- assessment of the construction noise impact of the Project in accordance with relevant assessment procedures; and
- assessment of the road traffic noise impacts in accordance with relevant assessment procedures based on the road traffic movements associated with the Project.

The standard Blast Impact Assessment will include:

- development of relevant criteria, including for public and private infrastructure within proximity of the project;
- quantify and model blast emissions (including vibration and overpressure), considering the existing site model input parameters, as appropriate, and confirm the blast model parameters applicable to the Project based on provided blast monitoring data;
- identification and assessment of any potential impacts on surrounding residences, structures, heritage sites and existing infrastructure (such as railways, local roads and power lines); and
- identification of blasting management measures required to ensure blasting impacts are appropriately managed.

6.2.16 Air quality and greenhouse gas

i Existing environment

Air quality management and monitoring at the CGO is conducted in accordance with the currently approved Air Quality Management Plan (AQMP). The existing CGO air quality monitoring network currently consists of one high volume air sampler, located near the Coniston residence, measuring total suspended particulate (TSP) concentrations. In addition, there are 12 dust deposition gauges in use around the approved CGO.

CGO is currently required to operate in compliance with criteria for TSP, particulate matter less than 2.5 µm in aerodynamic diameter (PM_{2.5}), particulate matter less than 10 µm in aerodynamic diameter (PM₁₀) and dust deposition as provided in DA 14/98.

ii Key environmental risks

Key risks associated with air quality and greenhouse gas for the Project are as follows:

- potential increase in dust emissions from the Project;
- potential increase in period of exposure to dust emissions for nearby sensitive receivers by extending the life of mine;
- demonstrating compliance with cumulative impact assessment criteria, accounting for background air quality and existing approved CGO emission sources; and
- accurate quantification of all emission sources associated with the Project, including greenhouse gas, to the requirements of EPA.

Accurate quantification of emission sources will be undertaken using the most recent and applicable emission estimation resources used for approval by the NSW EPA on projects of this nature.

iii Assessment methods

A standard air quality impact assessment (AQIA) will be completed in consideration of *Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW* (EPA 2016).

A review of existing air quality monitoring and meteorological data is currently being completed to establish a representative dataset of the cumulative baseline of air quality at CGO which considers both existing operations, underground development and surface changes approved under Modification 16. The baseline data set will be used to establish the impact assessment criteria for the Project to inform the AQIA.

The AQIA will include:

- preparation of draft emissions inventories for TSP, PM₁₀, PM_{2.5}, metals/metalloids and fugitive processing emissions (ie hydrogen cyanide) and scope 1, scope 2 and scope 3 greenhouse gas emission sources based on the National Greenhouse Accounts Factors workbook;
- preparation of an air quality model for comparison against the baseline data set; and
- preparation of an air quality and greenhouse gas assessment report which includes:
 - approach to the assessment;
 - description of the baseline environment;
 - emission estimates and controls, including best practice determination;
 - modelling predictions at discrete receptors and comparison with impact assessment criteria and VLAMP criteria;
 - contour plots showing spatial extent of predicted impact;
 - GHG emissions and assessment; and
 - recommended management measures, mitigation and monitoring.

6.2.17 Bushfire

i Existing environment

Although the CGO site is not located on bushfire prone land, measures are still present on-site to mitigate any potential bushfire risk should it occur.

CGO has an existing BMP which includes appropriate strategies for the management of ignition sources and fire breaks. Additionally, fire fighting equipment such as extinguishers and hoses are located within the CGO site.

CGO's emergency or incident response process for environmental emergencies such as flooding, bushfire chemical spills or vehicle incidents is managed under the *Cowal Gold Operations Environmental Management Strategy* (Evolution 2018d). The bushfire management measures for offset areas are included in *Cowal Gold Operations (Biodiversity Offset Management Plan)* (Evolution 2015d) and include measures for bushfire prevention such as employee education and the management of ignition sources and fire breaks.

ii Key environmental risks

If adequate mitigation measures are not in place, bushfires can pose a risk to human life, infrastructure and vegetation.

iii Assessment methods

A standard bushfire hazard assessment will be undertaken and include an assessment of the likely risks to public safety, as related to potential bushfire risks. An assessment of the Project's bushfire risk will be carried out in accordance with *Planning for Bushfire Protection* (RFS 2019).

The assessment will determine the site's bushfire attack level (BAL), which is a measure of a building's exposure to ember attack, radiant heat and direct flame contact. This provides an understanding of potential bushfire behaviour of the site and immediate surroundings. Determination of the site's BAL will require consideration of vegetation and slope. During field surveys completed as part of the Project's biodiversity assessment scope, an ecologist will inspect the site and determine the vegetation type in accordance with *Ocean Shores to Desert Dunes: The Native Vegetation of New South Wales and the ACT* (Keith 2005). A slope analysis will be completed for the disturbance footprint in addition to a 1.5 km buffer.

Appropriate fire safety measures, including but not limited to the implementation of asset protection zones (APZ), will be determined based upon the BAL. Fire and Rescue NSW may need to be consulted with during determination of the Project's fire safety measures via submission of a Fire Engineering Brief Questionnaire.

The existing BMP and other relevant management plans will be updated where required to consider the bushfire risk of the project and any new fire safety measures.

6.2.18 Historic heritage

i Existing environment

The *Cowal West Group comprising homestead, quarters, shed and stables* is listed as a heritage item I11 on the Bland LEP and located with ML 1535 (Lot 7 DP 753083). Despite the listing, removal of the heritage elements to which this listing relates was approved. The approved demolition of *Cowal West Group comprising homestead, quarters, shed and stables* occurred during 2011 to 2012. The relocation and reconstruction of the Shearing Shed at the Lake Cowal Conservation Centre was completed in April 2013.

ii Key environmental risks

The Project will result in additional ground disturbance beyond that previously approved. Although considered unlikely, this may impact previously unidentified historical heritage objects.

iii Assessment methods

The scope of works will include a standard desktop due diligence assessment comprising:

- a summary of statutory requirements and relevant legislation;
- a search for listed heritage sites, including:
 - State Heritage Register;
 - Section 170 Registers;
 - LEPs;
 - National Heritage List;
 - Commonwealth Heritage List; and
 - Register of the National Estate;
- review of existing works and surveys completed to date.

As the Project will likely result in minimal risk to historic heritage, the assessment will be included in a chapter of the EIS, rather than a stand-alone technical document. Any identification of previously unrecorded historic heritage items within the Project area may result in the requirement for further investigation and reporting.

6.3 Matters requiring no further assessment in the EIS

The technical areas which require no further assessment in the EIS are provided below, including an explanation as to why no further assessment is deemed necessary.

6.3.1 Waste

Waste generated on-site is currently managed under an existing waste management strategy (WMS) as detailed in CGO's approved Hazardous Material Management Plan. The WMS is based upon principles detailed in *Leading Practice Sustainable Development Program for the Mining Industry – Hazardous Materials Management* (Commonwealth Government, 2016) and involves the following aspects:

- Waste inventory – an inventory of the waste types generated and the compilation of potential environmental hazards/impacts associated with each waste.
- Waste management hierarchy – the implementation of the waste management hierarchy from the *National Waste Minimisation and Recycling Strategy* (Commonwealth Environment Protection Agency 1992) being avoidance, re-use, recycling, and treatment/disposal.
- Waste recycling procedure – before disposing of general wastes to landfill, the following recycling procedures are implemented:
 - consider recycling that may be possible on-site (eg. secondary use of used office paper, cardboard and newspapers, reuse of clean containers for storage of inert goods, mulching pallets for rehabilitation);
 - where possible, require consumable suppliers to collect and recycle packaging material (eg. bulky boxes and pods);
 - consider recycling or reuse options that may require an off-site component (eg returning printer cartridges to the supplier for refilling and reuse); and
 - consider commercial and non-commercial/charity off-site recycling services that may be available (eg. aluminium can and glass bottle recycling services).
- Personnel training - education and training programmes are used to instruct employees and contractors on the management of waste.
- Auditing waste management - the CGO is subject to periodic audits and reviews. During the audit and review process, the operational phase waste management practices and procedures are assessed against relevant management plans. The most recent audit was conducted in June 2019.

The Project will not introduce any new waste streams during construction and operation, and as a result there will be no change to how waste is managed on-site. Therefore, as there will be no impact to waste generation or management as a result of the Project, this technical area does not require further assessment in the EIS.

7 Conclusion

Evolution seeks to continue open pit mining operations at CGO as part of the Project, which will involve further development of the existing E42 pit and the development of open pit mining in three adjacent orebodies, known as the 'E46', 'GR' and 'E41' pits.

This document outlines the development of the Project scope, the proposed assessment pathway, how Evolution intends to undertake the impact assessments, report on the findings of scoping phase consultation, and identify the range of consultations proposed as part of the assessment report preparation and public exhibition.

This scoping report has been prepared by EMM on behalf of Evolution, the applicant for the Project and is submitted to support a request for SEARs for the Project.

Based on the findings of the scoping assessment, the following assessments are proposed to be undertaken as part of the EIS for the Project:

- Detailed assessments:
 - biodiversity;
 - landform;
 - rehabilitation;
 - groundwater;
 - surface water;
 - social;
 - geochemistry;
 - geotechnical – subsidence; and
 - Aboriginal cultural heritage.
- Standard assessment:
 - soils;
 - economic;
 - contamination;
 - traffic;
 - visual;
 - noise and vibration;
 - air quality and GHG;

- bushfire; and
- historic heritage.

Other issues or matters that do not require further assessment in the EIS include:

- Waste.

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Abbreviations

ACHA	Aboriginal cultural heritage assessment
AEC	AEC Group
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ANC	Acid neutralising capacity
AIP	Aquifer Interference Policy
AQIA	Air quality impact assessment
AQMP	Air Quality Management Plan
AMA	Ancillary mining activity
APZ	Asset protection zones
ATC Williams	ATC Williams Pty Ltd
BAL	Bushfire attack level
BAM	Biodiversity Assessment Method
BC Act	<i>Biodiversity Conservation Act 2016</i>
BCPB	Bland Creek Palaeochannel Borefield
BDAR	Biodiversity development assessment report
Beck	Beck Engineering Pty Ltd
Bland LGA	Bland Shire Local Government Area
Bland LEP	Bland Shire Local Environmental Plan 2011
BMP	Bushfire Management Plan
BOS	Biodiversity Offset Scheme
BSAL	Biophysical strategic agricultural land
CBA	Cost benefit analysis
CGO	Cowal Gold Operations
CIV	Capital investment value
Coffey	Coffey Services Australia Pty Ltd
DOEE	Department of Environment and Energy
DPE	Department of Planning and Environment
DPIE	Department of Planning, Industry and Environment
EIS	Environmental impact statement
EMM	EMM Consulting Pty Limited
EP&A Regulation	NSW Environmental Planning and Assessment Regulation 2021
EP&A Act	<i>NSW Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
Evolution	Evolution Mining (Cowal) Pty Limited

FM Act	<i>Fisheries Management Act 1994</i>
FS	Feasibility study
GDE	Groundwater dependent ecosystem
GEM	Geo-Environmental Management Pty Ltd
gL	Gigalitres
Ha	Hectare
IACHMP	Indigenous Archaeology and Cultural Heritage Management Plan
ICDS	Internal catchment drainage system
IPC	Independent Planning Commission
IWL	Integrated waste landform
Km	Kilometres
km ²	Square kilometres
LCF	Lake Cowal Foundation
LEA	Local effects analysis
LEPs	Local environmental plans
LHD	Load-haul-dump (vehicle)
LMP	Land Management Plan
LPB	Lake protection bund
MEG	Mining, Exploration and Geoscience
ML	Mining lease
ML/annum	Megalitres per annum
Mt	Million tonnes
Mtpa	Million tonnes per annum
Mining Act	<i>Mining Act 1992</i>
MNES	Matters of national environmental significance
Moz	Million ounces
MOP	Mining Operations Plan
NAF	Non-acid forming
NMP	Noise management plan
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NSW	New South Wales
Planning Systems SEPP	State Environmental Planning Policy (Planning Systems) 2021
PCT	Plant community type
PFS	Pre-feasibility studies
PM ₁₀	Particulate matter less than 10 µm in aerodynamic diameter
PM _{2.5}	Particulate matter less than 2.5 µm in aerodynamic diameter
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
PSI	Preliminary site investigation

RAP	Registered Aboriginal party
Resources and Energy SEPP	State Environmental Planning Policy (Resources and Energy) 2021
Resilience and Hazards SEPP	State Environmental Planning Policy (Resilience and Hazards) 2021
Roads Act	<i>Roads Act 1993</i>
RMS	Roads and Maritime Services
RMP	Rehabilitation Management Plan
RMR Plan	Riverina Murray Regional Plan 2036
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State environmental planning policy
SSD	State Significant Development
SRLUP	Strategic Regional Land Use Policy
TEC	Threatened ecological community
The Project	The Open Pit Continuation Project
TSF	Tailing storage facility
TSP	Total suspended particulate
VIA	Visual impact assessment
WEPP	Water Erosion Prediction Project
WCC	Wiradjuri Condobolin Corporation
WM Act	<i>Water Management Act 2000</i>
WRE	Waste rock emplacement



Appendix A

Scoping summary table



Table A.1 **Scoping summary table**

Level of assessment	Matter	Cumulative impact assessment required	Engagement	Relevant government plans, policies and guidelines	Scoping report reference
Detailed	Biodiversity	No	General	• <i>Biodiversity Assessment Method</i> (OEH 2017)	Section 6.2.1
Detailed	Landform	No	General	• Refer to scoping report	Section 6.2.2
Detailed	Rehabilitation	No	General	• <i>Strategic Framework for Mine Closure</i> (Australian and New Zealand Minerals and Energy Council and Mineral Resources Council of Australia 2000) • <i>Leading Practice Sustainable Development Program for the Mining Industry – Mine Closure</i> (Commonwealth Department of Industry, Innovation and Science 2016)	Section 6.2.3
Detailed	Groundwater	No	General	• <i>NSW Aquifer Interference Policy</i> (Department of Primary Industries 2012) • <i>Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources</i> (2012) • <i>Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources</i> (2012)	Section 6.2.4
Detailed	Surface water	No	General	• <i>Water Sharing Plan for the Lachlan Regulated River Water Source</i> 2016 • <i>Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources</i> 2012 • <i>Australian Guidelines for Fresh and Marine Water Quality</i> (ANZECC/ARMCANZ 2000)	Section 6.2.5
Detailed	Social	No	Specific	• <i>Social Impact Assessment Guideline</i> (DPIE 2021)	Section 6.2.6
Detailed	Geochemistry	No	General	• Refer to scoping report	Section 6.2.7
Detailed	Geotechnical – subsidence	No	General	• Refer to scoping report	Section 6.2.8
Detailed	Aboriginal heritage	No	Specific	• <i>Aboriginal Consultation Requirements for Proponents</i> (DECCW 2010) • <i>Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW</i> (the Code) (DECCW 2010) • <i>Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW</i> (OEH 2011)	Section 6.2.9

Table A.1 **Scoping summary table**

Level of assessment	Matter	Cumulative impact assessment required	Engagement	Relevant government plans, policies and guidelines	Scoping report reference
Standard	Soils	No	General	• <i>Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land</i> (OEH and OASFS 2013) • <i>Australian Soil and Land Survey Field Handbook</i> (CSIRO 2009) • <i>Australian Soil Classification</i> (CSIRO 2021) • <i>The Land and Soil Capability Assessment Scheme</i> (OEH 2013) • <i>Strategic Agricultural Land Use Policy: Guideline for Agricultural Impact Statements</i> (DPI 2012)	Section 6.2.10
Standard	Economic	No	General	• <i>Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals</i> (DPE 2015)	Section 6.2.11
Standard	Contamination	No	General	• <i>National Environment Protection (Assessment of Site Contamination) Measure 1999</i> (NEPC 2013) • <i>Contaminated Land Guidelines: Consultants Reporting on Contaminated Land</i> (EPA 2020).	Section 6.2.12
Standard	Traffic	Yes	General	• <i>Guide to Traffic Generating Developments</i> (RTA 2002) • <i>Austroads Guide to Road Design Part 4: Intersections and Crossings: General</i> (Austroads 2017)	Section 6.2.13
Standard	Visual	No	General	• <i>Guidelines for Landscape and Visual Impact Assessment Third Edition</i> (UK Landscape Institute and Institute of Environmental Management and Assessment 2013)	Section 6.2.14
Standard	Noise and vibration	Yes	General	• <i>NSW Voluntary Land Acquisition and Mitigation Policy</i> (EPA 2018) • <i>Noise Policy for Industry</i> (EPA 2017) • <i>Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration</i> (ANZECC 1990)	Section 6.2.15
Standard	Air quality	Yes	General	• <i>Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW</i> (EPA 2016)	Section 6.2.16

Table A.1 **Scoping summary table**

Level of assessment	Matter	Cumulative impact assessment required	Engagement	Relevant government plans, policies and guidelines	Scoping report reference
Standard	Bushfire	No	General	• <i>Planning for Bushfire Protection</i> (RFS 2019) • <i>Ocean Shores to Desert Dunes: The Native Vegetation of New South Wales and the ACT</i> (Keith 2005)	Section 6.2.17
Standard	Historic heritage	No	General	• <i>Historical Archaeology Code of Practice</i> (Heritage Council 2006)	Section 6.2.18



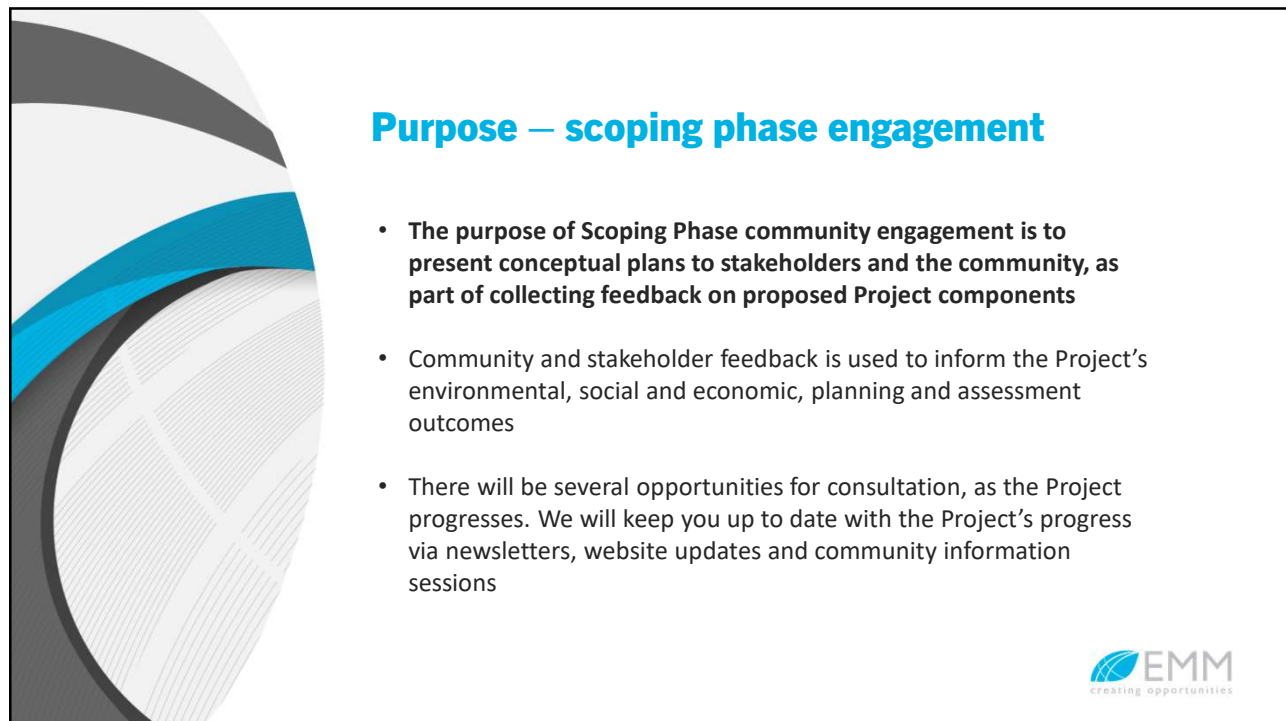
Appendix B

Communications material





1



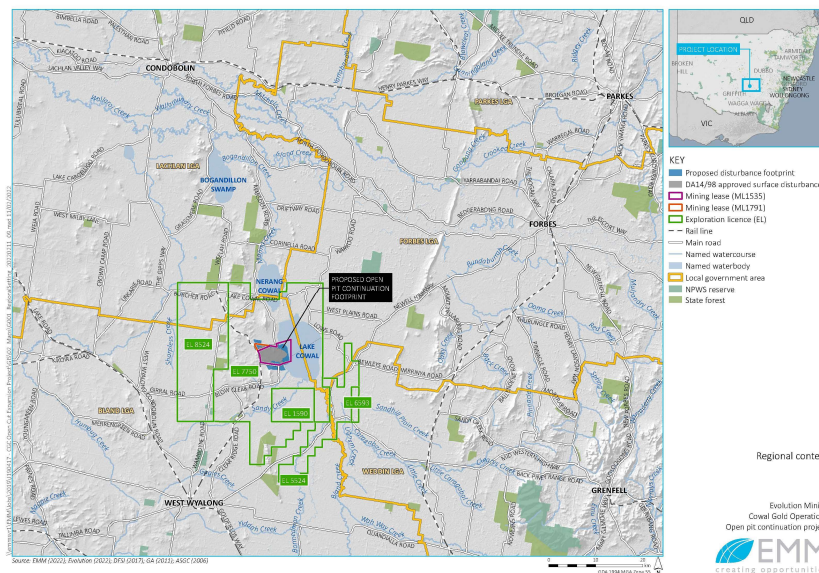
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Project overview



3

Project overview – location



Regional context



4

Project overview – CGO history

- Cowal Gold Operations (CGO) is located approximately 38 km north-east of West Wyalong, within the Bland Shire Council local government area (LGA), in central western NSW
- CGO is located directly adjacent to Lake Cowal, an ephemeral freshwater lake, located in the Lachlan Catchment
- CGO's open-cut mine has been operational under Evolution Mining (Cowal) Pty Limited since 2005 under Development Consent DA 14/98, within Mining Lease (ML) 1535 and ML 1791. DA 14/98 has been modified 16 times since it was granted
- In September 2021, State Significant Development Consent (SSD 10367) was received for underground mining and associated activities at CGO
- Evolution is an ASX listed company, that has a demonstrated record of operating CGO sustainably, reliably, and transparently. Evolution actively contributes to it's local community through sponsorships, the Lake Cowal Foundation, and community grants

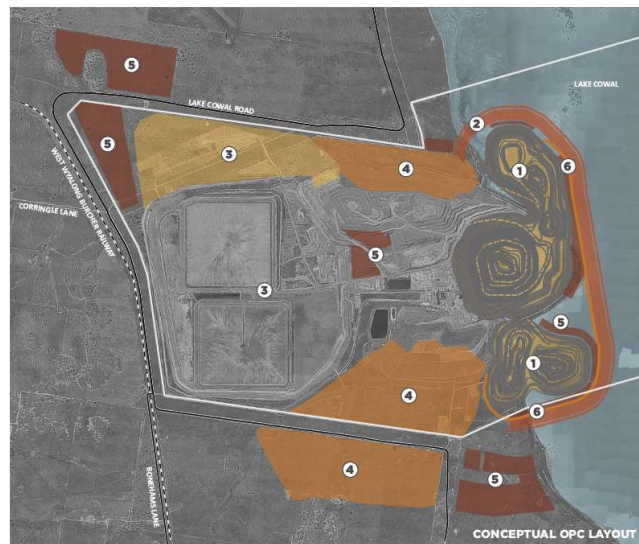
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5

Project overview – key components

- ① NEW OPEN-CUT MINING PITS**
Development of new open-cut mining satellite pits to the north and south of the existing open-cut pit. Proposed expansion to existing open-cut mining pit to the east and south.
- ② LAKE PROTECTION BUND**
Expansion of the lake protection bund system to provide separation and mutual protection between Lake Cowal and CGO.
- ③ INTEGRATED WASTE LANDFORM**
Continued use of the approved integrated waste landform to safely store tailings from ore processing, with either an 'upstream raise' on the existing facility or 'northern expansion', to ensure sufficient capacity for the project.
- ④ WASTE ROCK EMPLACEMENT**
Extension to waste rock emplacement to the north and south of the existing open-cut mining pit.
- ⑤ TEMPORARY SOIL STOCKPILES**
New topsoil and subsoil stockpiles, with materials to be temporarily stored for later use during mine rehabilitation.
- ⑥ WATER STORAGE & UPGRADES**
New water storage dams and upgrades to surface water drainage system, including proposed realignment of water supply pipeline and drainage pipeline.



Existing mining leases - - - Rail line — Main road

Aerial Image: NearMap, 2021

6



6

Project overview – key components

- Continuation of open-cut pit mining at CGO
- Further extension of E42 pit with Stage I cutback (currently mining Stage H)
- Mining of three adjacent orebodies, known as 'E46', 'GR' and 'E41'
- Ore will continue to be processed on-site at a rate of up to 9.8 Mtpa (current approved rate)
- Extend open-cut mine life by ~10 years to 2036 and total mine life ~2 years to 2042
- Other benefits:
 - Extend local job security and retention of the open-cut pit mining work force
 - Continued economic benefits to the region via sustained local services and procurement
 - Continued support for the community and local shires through sponsorship, donations and other contributions, to foster strong, sustainable communities that can thrive well beyond the life of mine
 - Continuation of royalties and State / Commonwealth tax payments

7



7

Project overview – key components

- No major modifications to ore processing proposed
- Estimated capital investment value (CIV) >\$100 million = SSD project
- Feasibility Study concurrent with EIS: conceptual layout for EIS = maximum footprint / 'future proofing' (\$3,000 per oz gold price)
- Expected additional tenure by way of ancillary mining activity (AMA) lease(s)
- The exact area and types of tenure required is subject to ongoing mine design and legal review
- Should the OPC Project be approved, a single SSD consent for the CGO that includes both Open Pit and Underground Operations is proposed

8

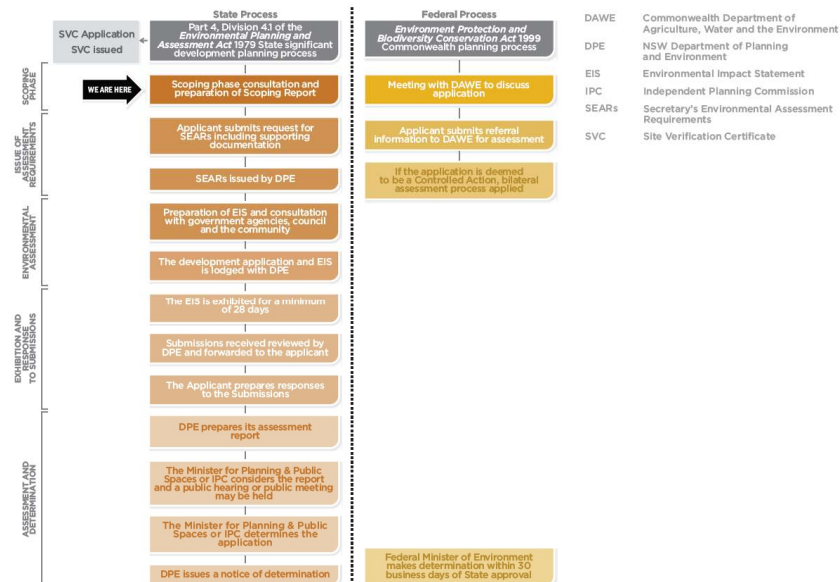


8

Assessment and approvals pathway

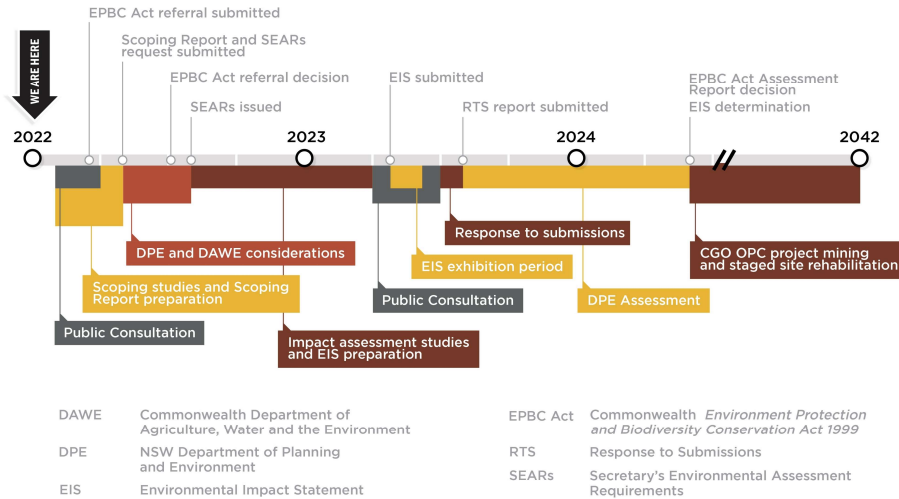
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Assessment and approvals pathway – process



10

Assessment and approvals pathway – timeline



11



Relevant matters and impacts



12

Impact assessments

- **Key issues** (technical studies and engagement required):
 - Biodiversity – native vegetation and fauna (terrestrial and aquatic)
 - Land – post-mining land use (including final voids)
 - Groundwater – modelling and impact assessment
 - Surface water – quality and flow paths
 - Heritage – Aboriginal cultural heritage
 - Land – stability / structure, soil chemistry, capability
 - Geotechnical – subsidence
 - Social – community services and facilities, housing availability and social cohesion
- **Other (non-key) issues** (technical studies and engagement proposed):
 - Economic
 - Contaminated land
 - Traffic
 - Visual
 - Noise and vibration
 - Air quality
 - Bushfire hazard

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13

Community and stakeholder engagement



14

Community and stakeholder engagement

Scoping phase community consultation opportunities	
In-person/ online Project briefings	- Q1 2022 and over the life of the Project - Invitations sent to State, Federal and local governments - Newsletters and letters posted to adjacent landholders - Newsletters letterbox drop
Face-to-face and online community information sessions	- At West Wyalong, Forbes and Condobolin, March 2022 - Online session, March 2022
Social Impact Assessment	Surveys, in-depth interviews and workshops
Traditional Owner Consultation	Project updates, meetings and workshops
Communication channels	P: 1800 161 205 E: cgo_opc@emmconsulting.com.au W: emm.mysocialpinpoint.com/cgo_opc

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Social Impact Assessment (SIA)

- Project social impacts are assessed under the *Social Impact Assessment Guideline for State Significant Projects* (SIA Guideline) (DPIE 2021)
- The SIA Guideline applies for State significant projects requiring an EIS under the *Environmental Planning and Assessment Act 1979*
- Social impacts generally refer to the consequences that people experience when a new project brings change, such as:

Changes to	Definition
Way of life	How people live, work, play and interact
Community	Composition, cohesion, character, how it functions, and sense of place
Accessibility	How people access and use infrastructure, services and facilities, whether provided by public, private or not-for-profit organisation
Culture	Shared beliefs, customs and stories, connection to land, places and buildings (including Aboriginal culture and connection to country)
Health and wellbeing	Physical and mental health
Surroundings	Access and use of ecosystem, public safety and security, access to and use of the natural and built environment, and its aesthetic value and/or amenity.
Livelihood	People's capacity to sustain themselves through employment or business
Decision-making systems	Extent to which they have a say in decisions that affect their lives, access to complaint, remedy and grievance mechanisms

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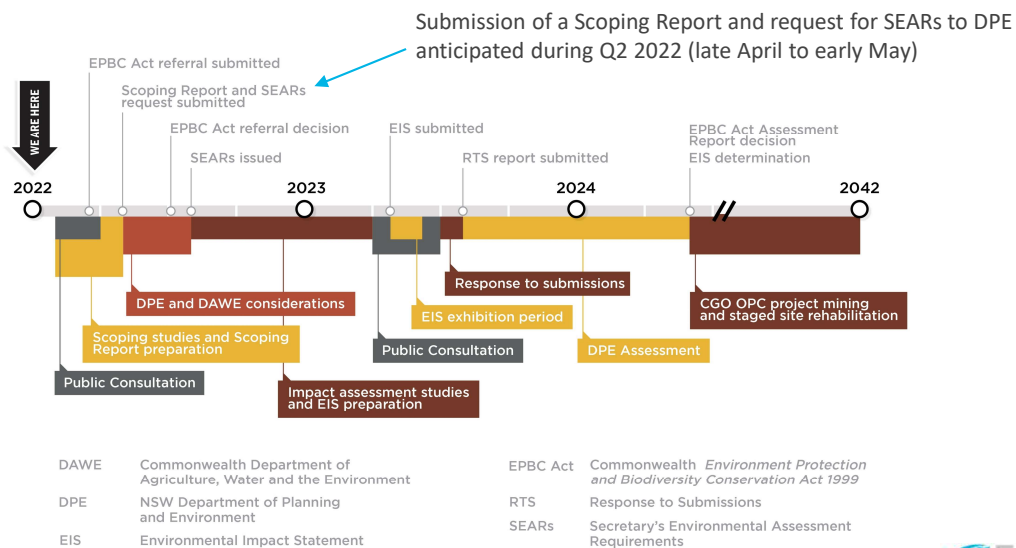


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Program and next steps

17

Program and next steps



18

18

Questions



19

Contact us



20

Contact us

For more information about the OPC

For more information about the proposed OPC, or to register to receive Project updates, please contact the Project team:

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21

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188 Normanby Road
SouthBank VIC 3006

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Level 9, Suite 9.02
109 St Georges Terrace
Perth WA 6000



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Cowal Update

OPEN PIT CONTINUATION PROJECT

March 2022

Evolution Mining Limited (Evolution) is in the early planning stage of developing a proposed continuation of the Cowal Gold Operations (CGO), known as the Open Pit Continuation (OPC) Project.

About the Project

The existing CGO open-cut gold mine at Lake Cowal is located 38 kilometres north-east of West Wyalong, in central western NSW. The mine includes associated surface infrastructure, comprising an ore processing plant, waste rock emplacements and an integrated waste landform, for tailings disposal.

The OPC will extend open-cut mining by approximately 10 years to 2036 and the total mine life by approximately two years to 2042. The project will enable the retention of the

open-cut mining workforce, allowing CGO to continue to contribute to the local and national economies, through local employment, community advancement and environmental protection.

In September 2021, development approval was received for an underground gold mining operations at the CGO site. This extended the life of the mine to 2040. The OPC does not involve any changes to the previously approved yearly CGO ore processing rate.



Imagery: Evolution Mining – Cowal Gold Operations

COMMUNITY CONSULTATION

Stakeholder and community engagement is an important component of the OPC planning and assessment process. You will have a number of opportunities to have your say on the project throughout the environmental assessment process. We will keep you up to date via newsletters, website updates and community information sessions.

Face-to-face information sessions

Three community information sessions are being held in March 2022:

Monday, March 21

West Wyalong Services and Citizens Club – Auditorium
100 Monash St, West Wyalong
7 am–10 am

Condobolin RSL Club – Auditorium
20 McDonnell St, Condobolin
3 pm–6 pm

Tuesday, March 22

Forbes Bowls Club – Function Room
175 Lachlan Street, Forbes
7 am–10 am

Online community information session

Tuesday, March 22

6 pm–7 pm

To attend an online community information session, scan the QR code and follow the prompts to register your details and receive an invite. For further information, visit the project website: emm.mysocialpinpoint.com/cgo_opc



Social Impact Assessment

As part of the Social Impact Assessment (SIA), a community survey will be undertaken, to better understand the potential project impacts and benefits. Hard copies of the community survey will be available at the community information sessions, and it can be completed online. Go to: <https://www.surveymonkey.com/r/3ZH6WWD>

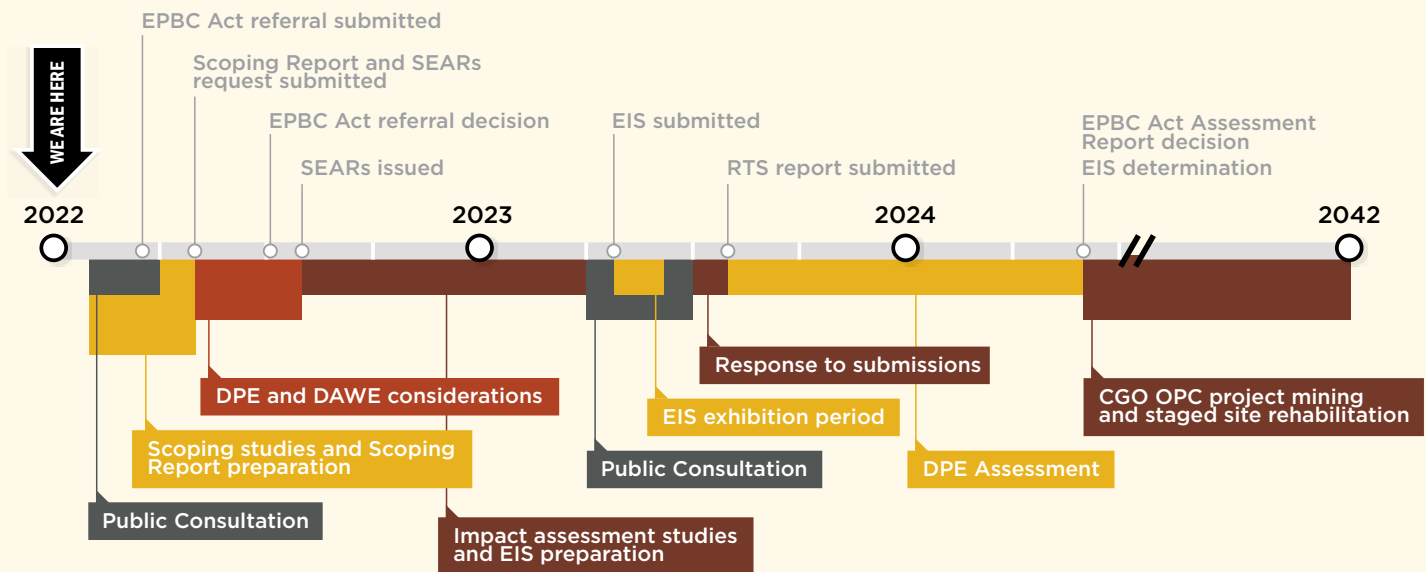


Community engagement during COVID-19

All face-to-face consultation activities will comply with current NSW Health advice.



PROPOSED TIMELINE



DAWE Commonwealth Department of Agriculture, Water and the Environment

DPE NSW Department of Planning and Environment

EIS Environmental Impact Statement

EPBC Act Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

RTS Response to Submissions

SEARs Secretary's Environmental Assessment Requirements

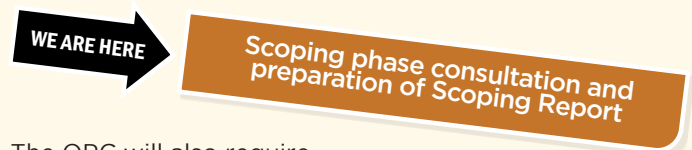
NOTE: Project timeframes are subject to change, depending on a range of factors including, environmental assessment requirements and Government approval processes.

Planning and assessment process

The OPC is classified as state significant development and will require approval under the *Environmental Planning and Assessment Act 1979*. This means an Environmental Impact Statement (EIS) will be prepared, and the Minister for Planning and Public Spaces or the Independent Planning Commission will determine the development application.

The OPC has commenced a Scoping Phase, involving early planning of the specialist environmental, social and economic studies to be undertaken, including a SIA, as part of preparing an EIS. A Scoping Report will be prepared and submitted to the Department of Planning and Environment, requesting the Secretary's Environmental Assessment Requirements (SEARs) for the project.

The SEARs will identify the type and detail of technical and environmental assessments, and the level of consultation required to be undertaken.



The OPC will also require an approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The project will be referred to the Commonwealth Department of Agriculture, Water and the Environment (DAWE). DAWE will issue guidance on the scope of the assessment, which will be detailed in the EIS produced for State approval under a bilateral agreement.

EMM Consulting Pty Ltd (EMM Consulting), a leading Australian planning and environmental consultancy, has been engaged to prepare the Scoping Report, the EIS and the EPBC Act assessment for the project.



LEGEND

Existing mining leases

--- Rail line

— Main road



Aerial Image: NearMap, 2021

KEY COMPONENTS

The key components of the OPC include:

1 NEW OPEN-CUT MINING PITS

Development of new open-cut mining satellite pits to the north and south of the existing open-cut pit. Proposed extension to existing open-cut mining pit to the east and south.

2 LAKE PROTECTION BUND

Expansion of the lake protection bund system to provide separation and mutual protection between Lake Cowal and CGO.

3 INTEGRATED WASTE LANDFORM

Continued use of the approved integrated waste landform to safely store tailings from ore processing with either an 'upstream raise' on the existing facility or 'northern expansion', to ensure sufficient capacity for the project.

4 WASTE ROCK EMPLACEMENTS

Extension to waste rock emplacements to the north and south of the existing open-cut mining pit.

5 TEMPORARY SOIL STOCKPILES

New topsoil and subsoil stockpiles, with materials to be temporarily stored for later use during mine rehabilitation.

6 WATER STORAGE UPGRADES

New water storage dams and upgrades to surface water drainage system, including proposed realignment of water supply pipeline and drainage pipeline.

The project design will align with Evolution's commitments to reducing greenhouse gas emissions by 30% by 2030 & achieving net zero greenhouse gas emissions by 2050 (or earlier).

ABOUT

Evolution Mining Limited



Imagery: Evolution Mining Limited

The Cowal Gold Operations (CGO) site is a world-class, open pit, gold operation held in ownership by Evolution since 2015. Evolution is an ASX-listed company that aims to build a reputation for sustainability, reliability and transparency while maintaining an active pipeline of quality exploration and development projects. The company currently own and operate gold mine sites in Australia and Canada.

Moving beyond compliance, sustainable considerations are applied to CGO operations in relation to health and safety, environmental stewardship, community giving, cultural heritage, innovation and the development of employees.

For more information about Evolution go to: evolutionmining.com.au/cowal

FOR MORE INFORMATION ABOUT THE OPC

For more information about the proposed OPC, or to register to receive project updates, please contact the project team:



1800 161 205 (free call)



cgo_opc@emmconsulting.com.au



emm.mysocialpinpoint.com/cgo_opc





COMMUNITY INFORMATION SESSIONS

Cowal Gold Operations – Open Pit Continuation Project

Evolution Mining Limited (Evolution) is in the early planning stage of developing a proposed continuation of open-pit mining at the Cowal Gold Operations (CGO), known as the Open Pit Continuation (OPC) Project. The existing CGO open-pit gold mine at Lake Cowal is located 38 kilometres northeast of West Wyalong, in central western NSW.

The OPC will extend open-pit mining by approximately 10 years to 2036 and the total mine life by approximately two years to 2042. The project will enable the retention of the open-pit mining workforce, allowing CGO to continue to contribute to the local and national economies, through local employment, community advancement and environmental protection.



Community Information Sessions

Stakeholder and community engagement is an important component of the OPC planning and assessment process. To provide an opportunity to speak to the Project team, we are holding four community information sessions:

Face-to-face information sessions

Monday, March 21

West Wyalong Services and Citizens Club – Auditorium

100 Monash St, West Wyalong
7 am–10 am

Condobolin RSL Club – Auditorium

20 McDonnell St, Condobolin
3 pm–6 pm

Tuesday, March 22

Forbes Bowls Club – Function Room

175 Lachlan Street, Forbes
7 am–10 am

Online

Tuesday, March 22

6 pm–7 pm



To attend an online community information session, enter your details here: <https://forms.office.com/r/M5hQp4716C> or scan the QR code and follow the prompts to register your details to receive the online meeting link.

Alternatively, if you would like to receive a call back from a member of the Project team, we would be pleased to arrange this for you. We've also set up a dedicated webpage for the proposed Project providing further information and an opportunity to register to receive ongoing project updates.



1800 161 205 (free call)



cgo_opc@emmconsulting.com.au



emm.mysocialpinpoint.com/cgo_opc



Appendix C

Social impact assessment scoping report





Social Impact Assessment - Scoping Report

Cowal Gold Operations Open Pit Continuation Project

Prepared for Evolution Mining (Cowal) Pty Limited
May 2022





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Canberra City ACT 2601

Social Impact Assessment - Scoping Report

Cowal Gold Operations Open Pit Continuation Project

Report Number

J190417 RP#7

Client

Evolution Mining (Cowal) Pty Limited

Date

4 May 2022

Version

v2 Final

Prepared by

Approved by



Andrea Kanaris

National Technical Lead, Social Impact Assessment

4 May 2022



Rob Morris

Associate Director

4 May 2022

This report has been prepared in accordance with the brief provided by the client and has relied upon the information collected at the time and under the conditions specified in the report. All findings, conclusions or recommendations contained in the report are based on the aforementioned circumstances. The report is for the use of the client and no responsibility will be taken for its use by other parties. The client may, at its discretion, use the report to inform regulators and the public.

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1 Introduction

1.1 Project overview

Evolution Mining (Cowal) Pty Limited (Evolution) is the owner and operator of Cowal Gold Operations (CGO) located approximately 38 kilometres (km) north-east of West Wyalong, New South Wales (NSW). CGO is located immediately adjacent to Lake Cowal, an ephemeral waterbody.

CGO is an open pit and underground gold mining operation. The open pit mining operations commenced in 2005. Underground mining operations were approved on 30 September 2021 and are projected to commence in 2023.

CGO is regulated by two Ministerial development consents; one for 'surface' operations (ie open pit mining and associated infrastructure) and one for 'underground' operations.

Development Consent DA 14/98 covering surface operations has been modified 16 times since it was granted, and allows Evolution to:

- extract 167 million tonnes (Mt) of ore by open pit mining methods, with a life of mine until 2040;
- process ore on-site at a rate of up to 9.8 million tonnes per annum (Mtpa);
- produce up to 6.1 million ounces (Moz) of gold;
- emplace tailings and waste rock on site in an integrated waste landform (IWL) – which includes the current northern and southern tailings storage facilities (TSFs), and in waste rock emplacement (WRE) areas;
- operate a water supply pipeline to the Bland Creek Palaeochannel Borefield (BCPB); and
- progressively rehabilitate the site.

Development Consent SSD 10367 covers underground operations and allows Evolution to:

- develop and operate an underground stope mine, a box cut to the underground and a pastefill plant;
- extract 27 Mt of ore by underground stoping mining methods at a rate of 1.8 Mtpa, until 2040;
- deliver ore and waste rock from the underground mine to the surface;
- backfill the extracted stopes with paste made from tailings; and
- produce up to 1.8 Moz of gold.

Evolution operates within Mining Lease (ML) 1535 and ML 1791. The current surface and underground mining area is wholly contained within ML 1535. ML 1791 accommodates part of the IWL and soil stockpiles. Together, ML 1535 and ML 1791 host all facilities of the CGO and occupy a total area of approximately 2,873 hectares (ha). The CGO site also hosts a range of ancillary infrastructure to support mining operations. This includes an ore processing plant, the IWL, WREs, ore stockpiles, laydown areas, water storage dams and drainage diversion systems, workshops, offices, reagent storage and explosives magazine.

Evolution seeks to develop further open pit mining operations at CGO as part of the Open Pit Continuation Project (the Project). This will involve further development of the existing E42 Pit and the development of open pit mining in three new and adjacent orebodies, known as the 'E46', 'GR' and 'E41'.

It is anticipated that this development will extend the mine life to the end of 2042. No change to the approved ore processing rate of 9.8 Mt per annum is proposed at this time.

To enable the Project to be developed, a new state significant development (SSD) consent is required under Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). An Environmental Impact Statement (EIS) will therefore be required for the Project.

1.2 Purpose

The purpose of this social impact assessment (SIA) scoping report is to accompany the main scoping report that requests and informs the content of the Secretary's Environmental Assessment Requirements (SEARs) for the Project. The SEARs will state the NSW Government's requirements for the environmental assessment required in the EIS that accompanies the SSD application for the Project.

The primary objective of the SIA scoping study is to define the scope of the SIA for the Project by:

- identifying potentially affected people;
- identifying and understanding the SIA study area;
- identifying the potential, negative and positive, social impacts for further investigation; and
- determining the level of assessment required for each potential social impact.

This report has been prepared by EMM Consulting Pty Limited (EMM) on behalf of Evolution in accordance with the *Social Impact Assessment Guideline for State Significant Projects* (SIA Guideline) (DPE 2021a).

2 Scoping methodology

2.1 Baseline review

A description of the Project and its proximity to and interaction with residents, businesses, and services, along with Australian Bureau of Statistic (ABS) demographic and economic data were used to determine the Project SIA study area and to identify potentially affected communities and key stakeholders (refer Section 3).

2.2 Identification of SIA study area

Potential stakeholders in the SIA study area were assessed to see who could be directly or indirectly affected by the Project. This included identifying landholders, businesses and social services.

2.3 Stakeholder engagement activities

A wide range of the stakeholders identified were then consulted as part of the scoping phase of the Project. COVID-19 safe practices were employed during the engagement program, which included the following activities:

- scoping meeting held as a videoconference via Microsoft Teams with NSW Department of Planning and Environment (DPE);
- face-to-face interviews and videoconference via Microsoft Teams with Bland, Forbes and Lachlan Shire Councils, landholders, and other key stakeholders;
- meeting with the CGO Community Environmental Monitoring and Consultative Committee (CEMCC);
- distribution of information sheets; and
- on-line and hard copy surveys.

Engagement activities were undertaken during March 2022 in Bland Shire, Forbes Shire and Lachlan Shire local government areas (LGAs) with a range of key stakeholders as summarised in Table 2.1. A detailed breakdown of consultation activities can be found in Chapter 5 of the Scoping Report.

CGO and EMM representatives met with Bland Shire, Forbes Shire and Lachlan Shire Council representatives to present the conceptual Project components, key approval processes and timeframes, seek feedback on issues and concerns for consideration and to provide a briefing on the preparation of the SIA.

Face-to-face interviews took place between stakeholders listed in Table 2.1 and an EMM representative who:

- provided a Project briefing;
- provided an overview of the EIS and SIA processes; and
- documented stakeholder concerns regarding the Project.

Table 2.1 Consultation activities undertaken relevant to the SIA

Stakeholder	Location	Date
Local council		
Bland Shire Council (one representative present)	Online via Microsoft Teams	29 March 2022 1.30 pm – 2.30 pm
Forbes Shire Council (four representatives present)	Face-to-face in Forbes Shire Council Chambers	24 March 2022 9.00 am – 10.00 am
Lachlan Shire Council (one representative present)	Face-to-face in Lachlan Shire Council Meeting Room	25 March 2022 10.00 am – 11.00 am
Additional stakeholder groups		
CEMCC (ten representatives present)	Online via Microsoft Teams	9 March 2022 9.00 am – 11.00 am
Lake Cowal Foundation (one representative present)	Face-to-face at the Lake Cowal Conservation Centre	21 March 2022 11.30 am – 12.30 pm
Jemalong Irrigation (two representatives present)	Face-to-face at Jemalong Irrigation offices, Jemalong Weir	24 March 2022 1.00 pm – 2.00 pm
Service providers	Via telephone x 4	17 March 2022 – 22 March 2022
Near neighbours x 12		
Landholders and identified near neighbours	Face-to-face x 10	22 March 2022 and 23 March 2022
	Via telephone x 1	24 March 2022
	Via online meeting x 1	8 April 2022
Local community meetings		
Local landholders and community	Three in person sessions (5 attendees in total)	21 March 2022 and 22 March 2022
	One online session (0 attendees)	

A community survey (refer Appendix A) was also conducted, which posed questions to identify:

- awareness of and previous interactions with CGO;
- previous matters raised and satisfaction with CGO response;
- current awareness of the Project; and
- potential impacts and benefits related to the Project.

Hard copies of the information sheet and survey were mailed out to allow residents without access to the internet to provide feedback and respond to the survey in writing. No responses were received from the hard-copy surveys. A total of seven online responses were received. For a full summary of the EIS engagement activities refer Chapter 5 of the scoping report.

3 SIA study area

3.1 Identification of the SIA study area

The SIA study area is the geographical area that EMM believes requires examination of the potential social impacts associated with the Project on the affected communities and key stakeholders. The SIA study area considers the way people organise themselves, connect with each other and move around the broader geographic area.

The study area was determined by identification of the main population centres where people live, work and visit, as well as the existing transport networks between them. Consideration of the following requirements outlined in the SIA Guideline (DPE 2021a) and international leading practice inform the identification of the SIA study area:

- the proximity of landholders and nearby neighbours to the project boundary;
- the potential impacts and benefits on the local communities as a consequence of the project;
- the scale, location and nature of the project;
- workforce accommodation facilities location(s);
- major connecting roads and transport routes, including those used by the project;
- who may be affected by the project;
- whether vulnerable or marginalised people will be affected by the project;
- built or natural features on or near the project that could be affected;
- relevant social, cultural, demographic trends or social change processes occurring now or in the past near the project site and in the broader region; and
- the history of the proposed project and the area, and any similar experiences people near the project have had.

Within the SIA study area there are two considerations:

- **Local area:** which include landholders and nearby communities and are most likely to be directly affected.
- **Regional area:** which include residents and businesses within the study area that are likely to experience impacts and benefits of the project. The regional area and the State of New South Wales will be used in the project socio-economic baseline for reference and comparative purposes against the local area.

Within the local area, the SIA will also explore and assess identified place-based communities where people live, work, travel and visit, and where there are existing socio-economic networks and services. The SIA study area for this Project includes the following local communities within proximity to the Project site and their related local government areas:

- Local area:
 - Bland Shire local government area;
 - Forbes Shire local government area; and
 - Lachlan Shire local government area.
- Regional area:
 - Central West.

Each of the locations are mapped to their ABS data categories shown in Table 3.1 and will be used to develop the community profile and social baseline. The local and regional areas (hereto referred to as local area or regional area) are illustrated in Figure 3.1.

Table 3.1 **Locations with the SIA study area mapped to ABS categories**

Study area	Geographic area	ABS data category
Local area	Bland Shire local government area	Bland Local Government Area (LGA)
	Forbes Shire local government area	Forbes Local Government Area (LGA)
	Lachlan Shire local government area	Lachlan Local Government Area (LGA)
Regional area (NSW)	Central West	Statistical Area 4 (SA4)
NSW*	State of NSW	New South Wales State/Territory (STE)

*Data will be used for reference and comparative purposes.

3.2 Geographical

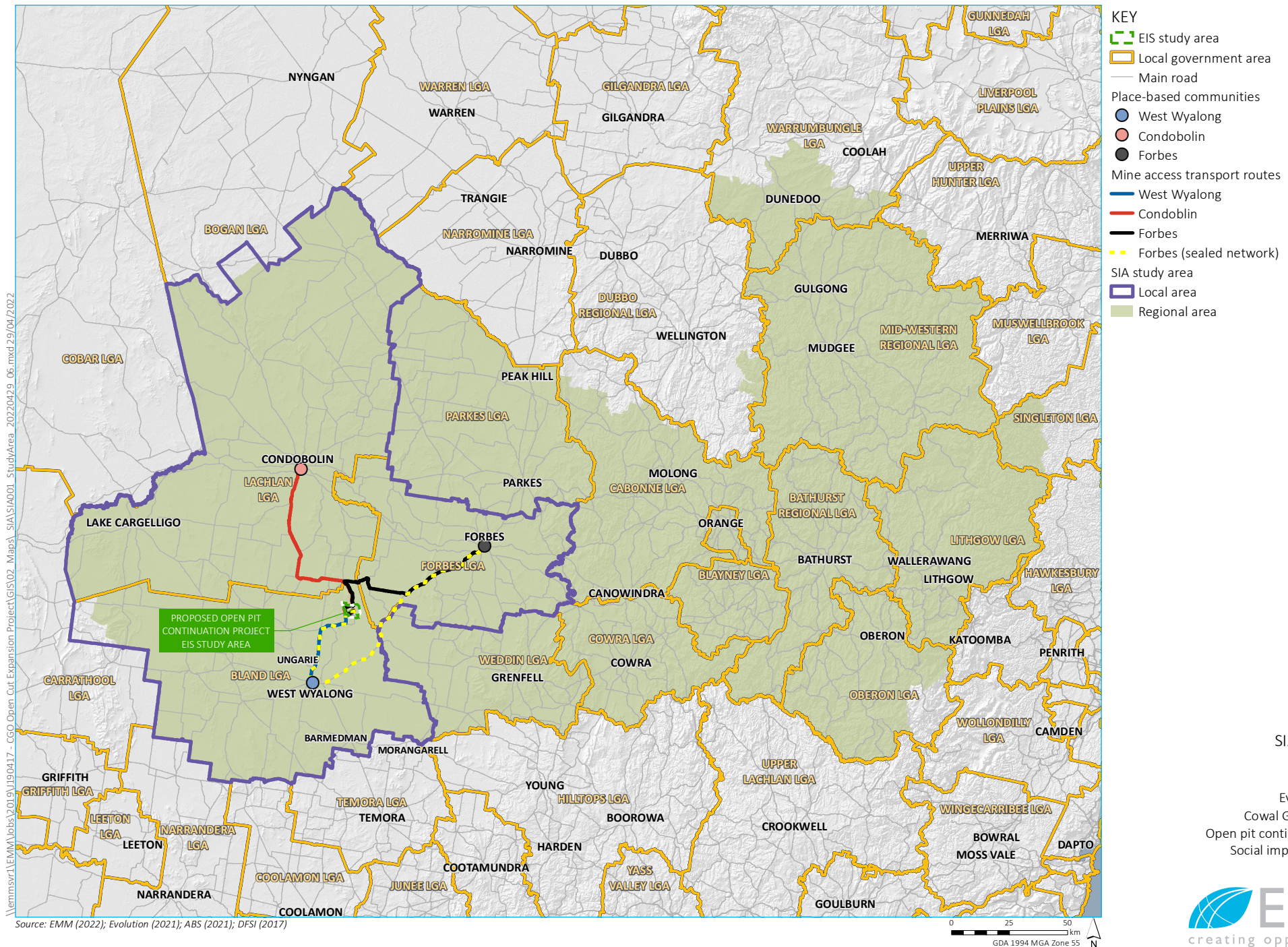
The Project is located within the Bland LGA and has the potential to directly affect many landowners, residents, and businesses within the vicinity of the Project site. The LGAs of Bland, Forbes and Lachlan are nearest to the Project site and therefore, most likely to be the communities directly affected by the Project.

The Project is likely to have a broader reach due to for example, the purchase of goods and services, use of transport infrastructure (road, rail and warehousing), community services (health, education, power, water, sewerage, government services, accommodation), and cumulative impacts arising with other projects within the area (DPE 2021a). These factors require the study area to include regional areas likely to be impacted by the Project which will extend to the Central West Region (refer to Figure 3.1), which is the identified regional area.

3.3 Potentially directly impacted people

Potentially directly impacted people include:

- residents of Bland, Forbes and Lachlan LGAs;
- service providers in Bland, Forbes and Lachlan LGAs;
- Aboriginal community members;
- landholders and nearby neighbours, including businesses;
- local business community; and
- employee workforce of the CGO.



SIA study area

Evolution Mining
Cowal Gold Operations
Open pit continuation project
Social impact assessment
Figure 3.1

4 Community profile

4.1 Overview

This section provides a brief overview of the social conditions of the local and regional communities in which the Project will operate.

4.2 Local area

The Project is located within the Bland LGA and may directly impact landowners, residents, and businesses within the vicinity of the CGO site. Direct and indirect impacts and benefits may be far reaching. The potential direct and indirect impacts, which are anticipated to occur primarily within the Bland, Forbes, and Lachlan LGAs, relate to local social infrastructure and services, local workforce, local business and industry, transport routes, local housing and accommodation, and community health and wellbeing.

West Wyalong, located within the Bland LGA, is the closest town to the CGO site and is approximately 46 km by road, with a population of 3,141 people and a median age of 42 years (ABS 2016). West Wyalong is the central hub within the Bland Shire LGA accounting for close to half of the LGA's total population (ABS QuickStats 2017). West Wyalong reported 83% labour force participation with a comparatively low unemployment rate when compared to NSW and Australia. Of the employed people in West Wyalong, 10.9% worked in gold ore mining. Other major industries of employment included local government administration (5.9%), supermarket and grocery stores (4.4%), secondary education (3.0%) and grain-sheep or grain-beef cattle farming (2.7%) (ABS QuickStats 2017).

The town of Forbes, within the Forbes LGA, is located approximately 86 km by road from CGO. The population of Forbes is approximately 8,432 with a median age of 42 (ABS 2016). Forbes is the largest town in Forbes LGA and reported 64% labour force participation. The main industries of employment for workers in Forbes are health care and assistance, retail trade, agriculture, forestry and fishing, and education and training. Mining accounted for 3% of employment (REMPPLAN Community Profile 2016).

The town of Condobolin, within Lachlan LGA, is located approximately 80 km by road from CGO. Condobolin has a population of 3,486 people with a median age of 38 (ABS 2016). The suburb has a high proportion of Aboriginal and Torres Strait Islander people (22.1%) compared to NSW and Australia. Condobolin has a higher unemployment rate than both Forbes and West Wyalong (8.1%). Top industries of employment include local government administration, primary education and grain-sheep or grain-beef cattle farming (ABS QuickStats 2017).

Table 4.1 provides an overview of the population size for the place-based communities and their relevant LGAs in the local area and their approximate distance to the Project site.

Table 4.1 Populations and estimated travel time from the Project site to local communities

Location	Population (according to ABS 2016 Census)	LGA population (according to ABS 2016 Census)	Approximate distance by road (km)	Estimated travel time (min)
West Wyalong (Bland LGA)	3,141	5,955	46	32
Forbes (Forbes LGA)	8,432	9,587	86	60
Condobolin (Lachlan LGA)	3,486	6,194	80	60

While the Weddin LGA is in proximity (10 km) to the Project site, CGO has no interactions with landholders, service providers or the local government in the Weddin LGA. Similarly, it has no significant impacts on the Weddin community or its economy. Transport routes of goods, services and workers do not go through the Weddin LGA (refer Figure 3.1). This is not expected to change with the Project. Therefore, the Weddin LGA will only be considered in the regional area, as the Weddin LGA falls within the Central West region (see Section 4.3).

4.3 Regional area

The Project is likely to have a broader reach due to the use of infrastructure, supply chains, haulage routes, transportation of goods, materials and equipment, and cumulative impacts arising with other projects within the area (DPE 2021a). These factors require the study area to include regional areas likely to be impacted by the Project which will extend to the Central West Region (refer Figure 3.1) which is the identified regional area. The Central West is identified as per the ABS Statistical Area Level 4 (SA4) with a population of 213,384 in 2019.

The Central West Region provides a comparison for the demographic and socio-economic characteristics of the local area. Furthermore, aids the understanding of the Project's location in relation to the region in which is located and to understand the regional socio-economic characteristics and potential impacts.

5 Outcomes of SIA scoping study and issue identification

This section summarises the findings of the scoping phase engagement activities. The consultation had two key objectives:

1. Provision of information to the community about:
 - the Project;
 - the EIS process; and
 - opportunities for the community/stakeholders to provide feedback on the Project and the EIS.
2. Identification of community and stakeholder issues relating to the Project.

The findings summarised below are based on a small sample of residents and groups. Due to the following factors, the findings cannot be assumed to represent the views of the local or regional communities:

- participants chose to be part of the SIA;
- sampling method; and
- small sample size.

5.1 Summary of SIA scoping engagement

The *Social Impact Assessment Guideline for State Significant Projects* (DPE 2021a) defines 'social impacts' as 'the consequences that people experience when a new project brings change'. The issues listed below are some of the areas the community identified which can be investigated further. These are summarised in Table 5.1.

Table 5.1 Issues identified by community stakeholders

Issues areas	Bland Shire Council	Forbes Shire Council	Lachlan Shire Council	CEMCC	Landholders and nearby neighbours	Special interest groups	Community Survey	Service providers
Employment	✓	✓	✓	✓	✓	✓	✓	✓
Cumulative mining	✓	✓	✓	✓	✓	✓	✓	✓
Access to housing	✓	✓	✓	✗	✓	✗	✓	✓
Access to services	✓	✓	✓	✓	✓	✗	✓	✓
Access to social infrastructure	✓	✓	✓	✓	✓	✗	✗	✓
Property prices	✓	✓	✓	✗	✓	✗	✓	✓
Lake Cowal	✓	✗	✗	✓	✓	✓	✓	✗

Table 5.1 Issues identified by community stakeholders

Issues areas	Bland Shire Council	Forbes Shire Council	Lachlan Shire Council	CEMCC	Landholders and nearby neighbours	Special interest groups	Community Survey	Service providers
Rehabilitation	✓	✗	✓	✗	✓	✓	✗	✗
Aboriginal cultural heritage	✗	✓	✗	✓	✗	✓	✓	✗
Land management	✗	✗	✗	✓	✓	✓	✗	✗
Noise	✗	✗	✗	✗	✓	✓	✓	✗
Small business	✓	✓	✓	✗	✗	✗	✗	✓
Groundwater	✗	✗	✗	✓	✓	✓	✓	✗
Visual Amenity	✗	✗	✗	✗	✓	✓	✓	✗
Agriculture	✗	✗	✗	✗	✓	✓	✓	✗
Air quality	✗	✗	✗	✗	✗	✗	✗	✗
Climate change	✗	✗	✗	✗	✗	✗	✗	✗
Ecology	✗	✗	✗	✗	✓	✓	✓	✗
Health	✗	✗	✗	✗	✗	✗	✗	✓
Traffic	✗	✗	✗	✗	✓	✓	✗	✗
Blast vibration	✗	✗	✗	✗	✓	✗	✗	✗

Note: ✓ = Issue identified; ✗ = Issue not identified

5.1.1 Stakeholder interviews

The most common issues raised by community stakeholders were ongoing employment and the potential for cumulative impacts, with many noting other existing and potential new projects (ie two solar farms, various mining projects and road upgrades) planned for the area.

Those interviewed noted that CGO contributes to the community, with the benefits that CGO provided during recent drought periods, in terms of employment security, community assistance and financial contributions noted repeatedly. However, some stakeholders interviewed did feel that there is an opportunity to do more, particularly in terms of the legacy left in the community post-mining.

Although outside the scope of the EIS being prepared by EMM, Lachlan and Forbes Shire Councils raised the issue of early negotiation of Planning Agreements (PAs) as part of the approvals process.

The following sub-sections summarise key issue identified during the interviews.

i Housing and accommodation

Access to housing and accommodation and access to services such as health and childcare were raised frequently. Health workers, emergency workers and trades people are unable to find housing locally. Access to housing is also impacting communities beyond West Wyalong and into the Forbes and Lachlan LGAs.

Accommodation providers noted that they are benefitting from consistent occupancy rates as a result of mining workers and contractors staying in the area. Conversely, businesses associated with tourism in the area are reportedly losing business due to accommodation being used by the mine. Bland Shire Council noted that a basketball tournament was unable to be held in West Wyalong due to shortage of accommodation locally. It was also raised that as part of the Riverina Murray area there are tourist opportunities that are being missed due to occupancy rates in West Wyalong being consistently high due to mining.

Some SIA interview participants also raised that they have experienced an increase in property prices due to the shortage of accommodation. It had been noted that when a property comes on the market (rental or sale), real estate agents sometimes go straight to Evolution. In addition, during consultation it was raised that large corporates are reportedly offering higher than market rates for farming land which is pushing local family farmers out of the market. Bland Shire Council also noted challenges related to the release of land for residential development.

Several participants expressed that while other communities may resist workers camps, the West Wyalong community is supportive of the approved accommodation village associated with the underground mine, due to the housing and accommodation issues. Residents appear to appreciate the importance of the CGO mine and what Evolution does for the local communities.

ii Capacity of health services

As stated previously, health professionals, nursing staff and emergency workers are amongst a number of professions struggling to find local housing. Consultation with health service providers has noted that this has exacerbated the health service problem in attracting and retaining nurses and other medical staff, with the health service currently classed as in crisis.

iii Surroundings

Some landholders reported that they occasionally experience unwelcome noise, vibration or light from the existing CGO mine.

Several landholders around Lake Cowal and other stakeholders also raised concerns about the proposed increased bund (ie lake protection bund) and what that might mean for flooding and surface water flows in the area. Some landholders were concerned about access to their land during flooding events and the potential impacts that even a small change (eg 5 cm) in lake level could have on their ability to farm and access their land. Some felt that elements of the proposed Project infrastructure (eg topsoil stockpiles) could divert water away from the dams used for farming.

One landholder interviewed expressed concern about the ongoing extraction by CGO of fresh groundwater supply from the Bland Creek Palaeochannel Borefield and the potential impacts this might have on groundwater security. This landholder highlighted that fresh groundwater supply/security is critical to their farming operations and livelihood.

Some landholders and special interest group participants also expressed concern over the location of some elements of proposed Project infrastructure (ie topsoil stockpiles and lake protection bund) as potentially affecting perceived sensitive biodiversity habitat.

iv Legacy

Those interviewed noted that CGO contributes to the community but did feel there is an opportunity to do more, particularly in terms of the legacy left in the community post-mining. Several stakeholders, including a landholder, a special interest group member and an elected representative commented that there should be a 'relative' (financial) contribution made to the community to balance the perceived environmental and social impacts of the proposed Project. The potential for greater contributions to health, housing and accommodation, transport and tourism infrastructure in particular were highlighted.

v Traffic

A representative from an emergency service provider raised concern over the potential for an increase in accidents should traffic increase in the area and asked whether the existing road infrastructure in the local area is suitable for an increase in traffic.

One special interest group raised the issue that the traffic route from CGO to Forbes along the western side of Lake Cowal means that 25 properties in 3 shires are affected. They suggested a route where only 4 properties in 1 Shire would be affected. It was suggested that this would also improve fatigue management and quality of the road, as well as maintenance.

5.1.2 Community survey

A survey was distributed to the community along with a newsletter that provided a summary of the Project. The survey was administered on-line with hard copies available at the Community Information Sessions in West Wyalong, Forbes and Condobolin, and during in-depth interviews.

A total of seven responses were received. Respondents were mostly supportive of the Project.

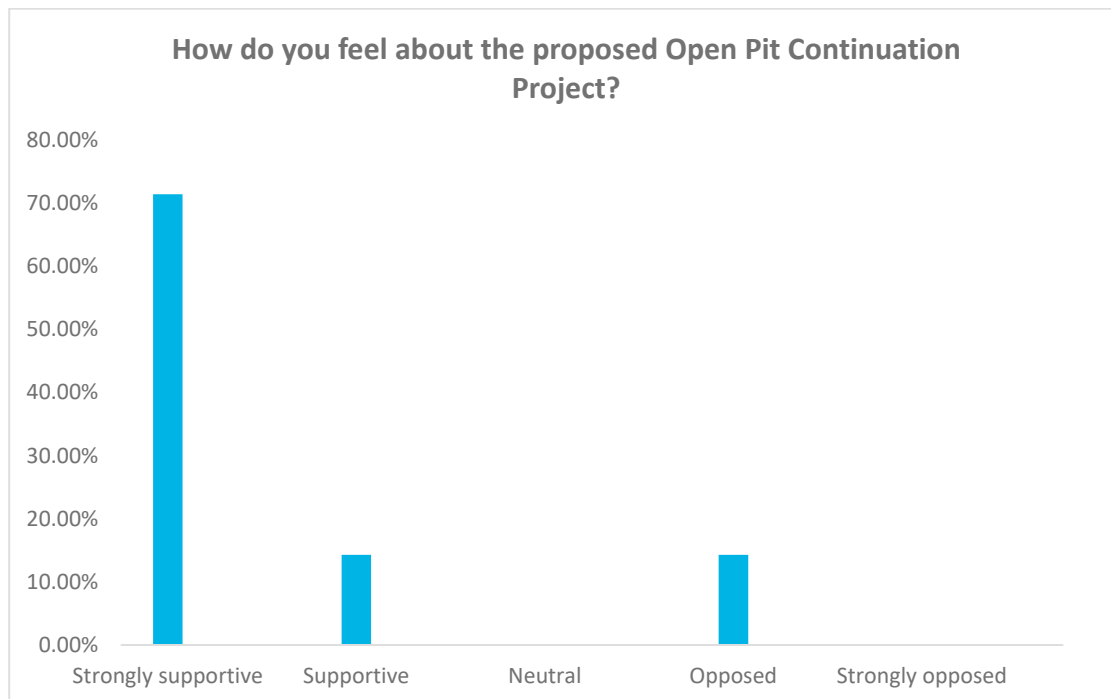


Figure 5.1 Survey responses related to stakeholder feeling about the Project

When asked why they felt this way, respondents who supported the Project provided the following responses:

“The mine is great for the community. Not only for employment for the area but the mine supports lots of charities and projects around the area.”

“Continuation of jobs and contribution to state and federal coffers through royalties, taxes and employee payments.”

“Provides longer term security of jobs in the region. West Wyalong would die if the mine closes.”

“Jobs in the area, infrastructure spending for the town.”

“Great for the town and current work force.”

“Job security”.

The one respondent that objected to the Project raised concerns regarding rehabilitation of the site and groundwater impacts and felt the short-term benefits did not outweigh the longer-term environmental impacts. In addition, one respondent stated that the increase in property prices would be bad for those not working in the mine.

Respondents were asked to rank a list of potential impacts and benefits that are commonly associated with large mining projects and consider how the Project may affect the community. The rankings are shown in Figure 5.2. For a full summary of the survey results see Appendix B.

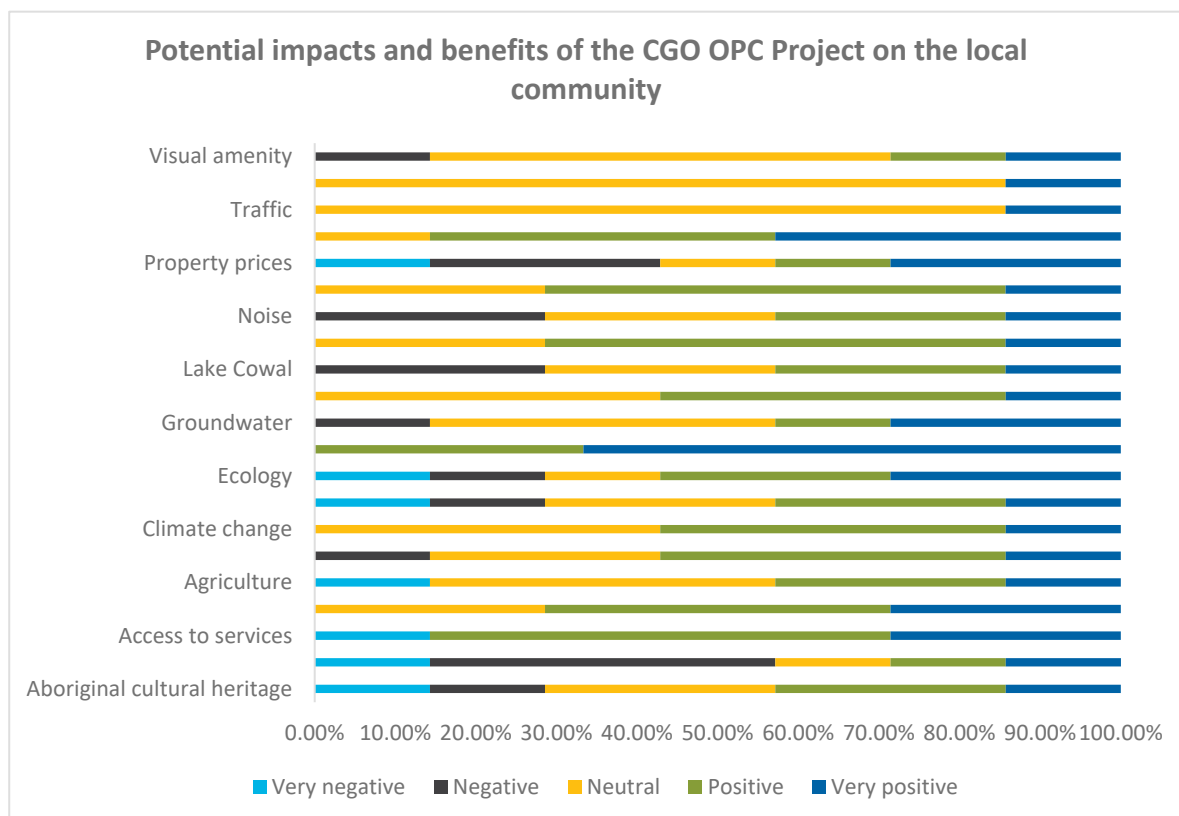


Figure 5.2 Online survey results – potential impacts and benefits of the CGO OPC Project on the local community

6 Proposed SIA scope

This section outlines EMM's proposed scope of the SIA for the OPC Project EIS.

6.1 Potential social impacts

Potential adverse and beneficial impacts of the Project have been identified during the scoping assessment based on the outcomes of a community survey, community and stakeholder engagement and observations of the local community and Project area. The purpose of identifying them at this preliminary stage is to ensure the EIS preparation focusses on:

- the potential social impacts identified by, and of greatest concern, to the community as a whole; and
- an appropriate range of stakeholders, and that affected groups or individuals are included in the SIA engagement activities.

Potential adverse impacts that have been identified requiring further assessment, together with the likelihood of potential beneficial social impacts, are detailed in Table 6.1.

Table 6.1 **Proposed SIA study areas**

Study Category	Potential adverse impacts	Potential beneficial impacts
Accessibility	- Housing shortages. - Accommodation shortages – tourism.	- Worker’s accommodation village and use of motel accommodation reduces impact on housing. - CGO’s ongoing provision of housing to police.
Health and wellbeing	- Health and emergency services in crisis – loss of health services would affect local residents. - Fear that extending the bund (lake protection bund) surrounding the pits would increase flooding.	- Employment security providing positive mental health benefits. - Positive social and financial contributions to community.
Surroundings	- Noise and vibration. - Visual amenity related to lights. - Flooding. - Groundwater. - Biodiversity.	Not provided.
Culture	- Potential loss of aboriginal cultural heritage. - Lake Cowal encroachment.	Continued investment in Lake Cowal Foundation and the Wiradjuri Condobolin Corporation (WCC).
Livelihoods	Tourism providers miss out on business due to lack of tourist accommodation.	- Ongoing work for local workforce. - Continued income stream for accommodation providers during tourism downturn due to covid.
Legacy	Mine closure outcomes (socioeconomics and environmental).	Mine closure outcomes (socioeconomics and environmental).
Decision-making systems	Not provided.	Landholders have access to complaints mechanisms that are responded to and remedied.

Many stakeholders feel there is an opportunity for CGO to leave a legacy in the community post-mining. The potential for greater contributions to health, housing and accommodation, transport and tourism infrastructure should be explored in the social impact assessment through the social impact management plan.

6.2 Proposed methodology

The SIA will be led by a suitably qualified Social Scientist who will adopt the methodology illustrated in Figure 6.1 and will use social science methods and tools for the collection of qualitative and quantitative data.

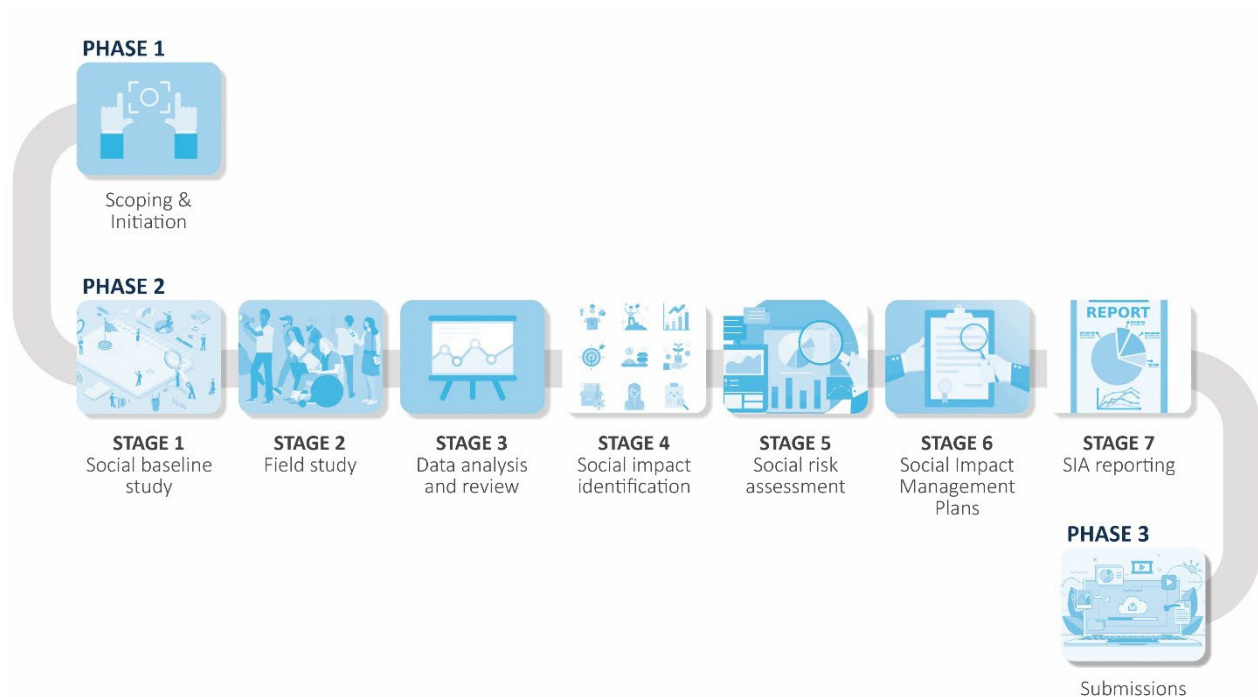


Figure 6.1 SIA methodology

The identification of social impacts will be informed by community and stakeholder engagement activities as well as SIA field study activities and will be conducted in an integrated manner to ensure consistency, reduce duplication, and allow for management of consultation fatigue. In addition, findings from the EIS specialist technical studies will be considered to understand the potential consequences for the community and existing research and previous SIAs will inform the identification of the social impacts.

Potential social impacts and benefits will then be assessed according to the requirements of the *Social Impact Assessment Guideline for State Significant Projects* (DPE 2021a) and will use the risk matrix presented in the *Technical Supplement* (DPE 2021b) (refer Table 6.2). Proposed mitigation measures for identified social impacts will be developed during the later stages of the SIA process.

Table 6.2 Social impact significance matrix

		Magnitude level				
		1	2	3	4	5
Likelihood level		Minimal	Minor	Moderate	Major	Transformational
A	Almost certain	Low	Medium	High	Very High	Very High
B	Likely	Low	Medium	High	High	Very High
C	Possible	Low	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Very unlikely	Low	Low	Low	Medium	Medium

References

ABS 2016a, Census of Population and Housing: General Community Profiles, Australian Bureau of Statistics.

ABS 2017, *QuickStats* (Available: <https://www.abs.gov.au/websitedbs/censushome.nsf/home/quickstats>).

DPE 2021a, Social Impact Assessment Guideline for State Significant Projects, NSW Department of Planning, Industry and Environment.

DPE 2021b, Technical Supplement: Social Impact Assessment Guideline for State Significant Projects, NSW Department of Planning, Industry and Environment.

REMPLAN 2016, *Community Profile* (Available: <https://www.remplan.com.au/community/>)



Appendix A

Community survey



Cowal Gold Operations Open Pit Continuation Project Community Survey

Introduction

Evolution Mining Limited (Evolution) is in the early planning stages of developing a proposed continuation of the Cowal Gold Operations (CGO), known as the Open Pit Continuation (OPC) Project.

What is the CGO Open Pit Continuation Project?

The existing CGO open-cut gold mine at Lake Cowal is located 38 kilometres northeast of West Wyalong, in central western NSW. The mine includes associated surface infrastructure, comprising an ore processing plant, waste rock emplacements and an integrated waste landform, for tailings disposal.

The OPC will extend open-cut mining by approximately 10 years to 2036 and the total mine life by approximately two years to 2042. The project will enable the retention of the open-cut mining workforce, allowing CGO to continue to contribute to the local and national economies, through local employment, community advancement and environmental protection.

The key components of the OPC include:

- new open-cut mining pits;
- lake protection bund;
- integrated waste landform;
- waste rock emplacements;
- temporary soil stockpiles; and
- water storage upgrades.

Planning and assessment process

The OPC is classified as state significant development and will require approval under the Environmental Planning and Assessment Act 1979. This means an Environmental Impact Statement (EIS) will be prepared, and the Minister for Planning and Public Spaces or the Independent Planning Commission will determine the development application.

The OPC has commenced a Scoping Phase, involving early planning of the specialist environmental, social and economic studies to be undertaken, including a SIA, as part of preparing an EIS. A Scoping Report will be prepared and submitted to the Department of Planning and Environment, requesting the Secretary's Environmental Assessment Requirements (SEARs) for the project. The SEARs will identify the type and detail of technical and environmental assessments, and the level of consultation required to be undertaken.

For more information about the proposed OPC Project please contact the project team:

Phone: 1800 161 205 (free call)

Email: cgo_opc@emconsulting.com.au

Website: emm.mysocialpinpoint/cgo_opc

Survey Purpose

EMM Consulting Pty Ltd (EMM Consulting) has been engaged by CGO to prepare an Environmental Impact Statement for the OPC Project, including a Social Impact Assessment.

As part of the Social Impact Assessment scoping phase, EMM Consulting have designed a survey to get community input into the identification of potential social impacts and benefits related to the OPC Project for further investigation during the Environmental Impact Statement delivery phase. The results of this survey will be presented in the Scoping Report.

Please complete the survey by **27 March 2022**. If you have any further questions about the project please contact the project team using the details above.

Please note your responses to this survey are voluntary and the confidentiality of the information you provide will be safeguarded in accordance with the Privacy Act.

1. Have you had any previous communications with Cowal Gold Operations (CGO)?

☐ Yes

☐ No

2. If yes, what was the topic of discussion?

3. How would you rate your awareness of the proposed Open Pit Continuation Project?

Very good	Good	Fair	Poor	Very poor
☐	☐	☐	☐	☐

4. How do you feel about the proposed Open Pit Continuation Project?

Strongly supportive	Supportive	Neutral	Opposed	Strongly opposed
☐	☐	☐	☐	☐

Why do you feel this way?

5. How supportive are you of continued mining in the Lake Cowal area?

Strongly supportive	Supportive	Neutral	Opposed	Strongly opposed
☐	☐	☐	☐	☐

Why do you feel this way?

6. Below is a list of potential impacts and benefits that are commonly associated with large mining projects.

Consider how the Open Pit Continuation Project may affect the local community and select the appropriate ranking for each **potential impact and benefit** using the buttons provided.

	Very negative	Negative	Neutral	Positive	Very positive
Aboriginal cultural heritage	☐	☐	☐	☐	☐
Access to housing	☐	☐	☐	☐	☐
Access to services	☐	☐	☐	☐	☐
Access to social infrastructure	☐	☐	☐	☐	☐
Agriculture	☐	☐	☐	☐	☐
Air quality	☐	☐	☐	☐	☐
Climate change	☐	☐	☐	☐	☐
Cumulative mining impacts	☐	☐	☐	☐	☐
Ecology	☐	☐	☐	☐	☐
Employment	☐	☐	☐	☐	☐
Groundwater	☐	☐	☐	☐	☐
Health	☐	☐	☐	☐	☐
Lake Cowal	☐	☐	☐	☐	☐
Land management	☐	☐	☐	☐	☐
Noise	☐	☐	☐	☐	☐
Rehabilitation	☐	☐	☐	☐	☐
Property prices	☐	☐	☐	☐	☐
Small business	☐	☐	☐	☐	☐
Traffic	☐	☐	☐	☐	☐
Blast vibration	☐	☐	☐	☐	☐
Visual amenity	☐	☐	☐	☐	☐

Any other potential impacts or benefits not listed above:

7. Do you have any other comments?

8. What is your suburb?

9. What is your postcode?

10. Which of the following age brackets do you fall into? (optional)

☐ 14 and under

☐ 45 - 54

☐ 15 - 24

☐ 55 - 64

☐ 25 - 34

☐ 65+

☐ 35 - 44

11. Which of the following do you identify as? (optional)

Please select all that apply to you.

☐ Male

☐ Torres Strait Islander

☐ Female

☐ I speak a language other than English at home

☐ Non-binary

☐ I have a disability and/or special need

☐ Aboriginal

12. Which of the following best describes you?

Please select all that apply to you

☐ Business owner

☐ Local resident

☐ Landholder

☐ Service provider

☐ CGO Employee/Contractor

☐ Other (please specify)

13. Would you like to provide further input on the CGO Open Pit Continuation Project?

☐ Yes (please contact the Project team via email: cgo_opc@emmconsulting.com.au or phone: 1800 161 205)

☐ No



Appendix B

Community survey results



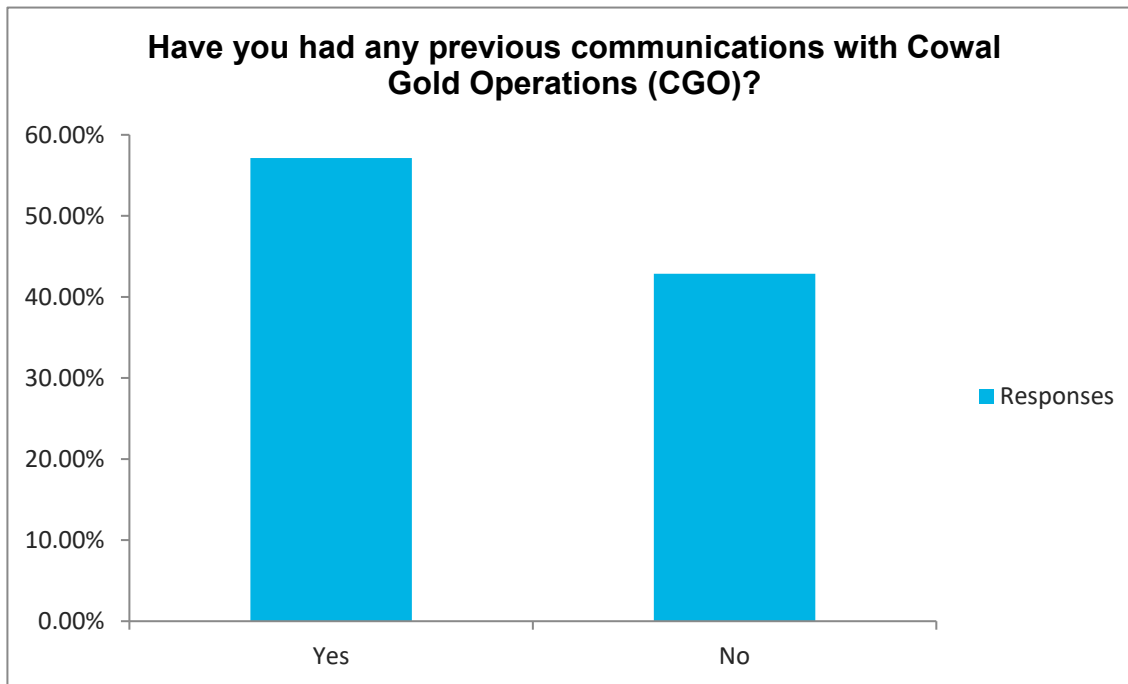
B.1 Community survey results

B.1.1 Question 1

How would you rate your awareness of the proposed Open Pit Continuation Project?

Answered 7

Skipped 0



B.1.2 Question 2

If yes, what was the topic of discussion?

Answered 4

Skipped 3

Respondent comments:

- “As an employee, I have constant comms”
- “Newsheets in local town”
- “Family day at the mine”
- “Stage H development, Underground development”

B.1.3 Question 3

How would you rate your awareness of the proposed Open Pit Continuation Project?

Answered 7
Skipped 0



B.1.4 Question 4

How would you rate your awareness of the proposed Open Pit Continuation Project?

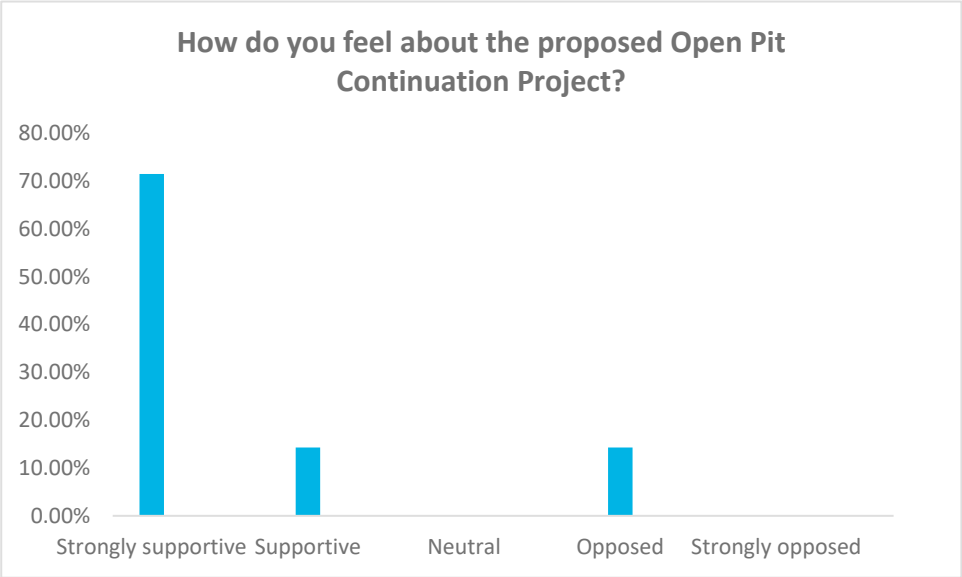
Answered 7
Skipped 0



B.1.5 Question 5

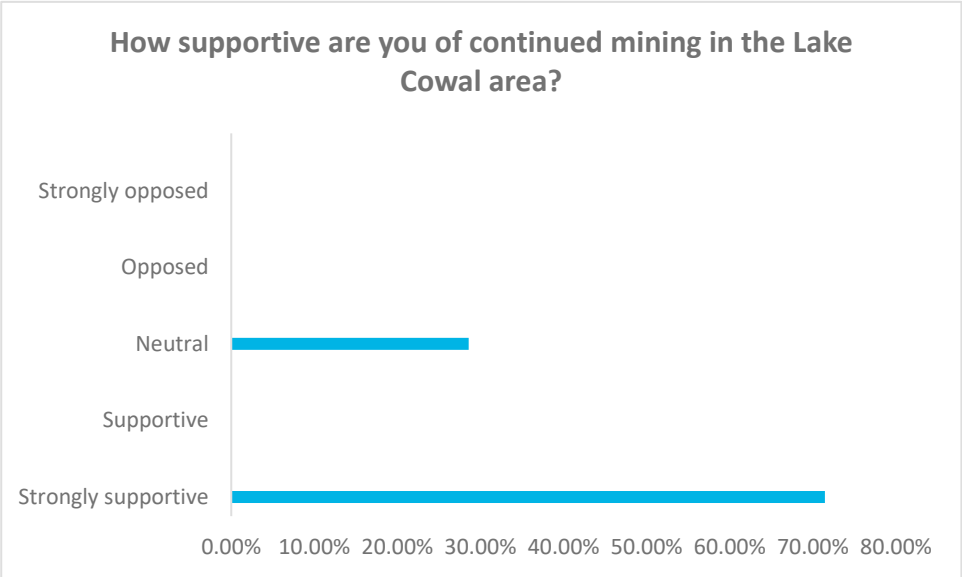
How do you feel about the proposed Open Pit Continuation Project?

Answered 7
Skipped 0



B.1.6 How supportive are you of continued mining in the Lake Cowal area?

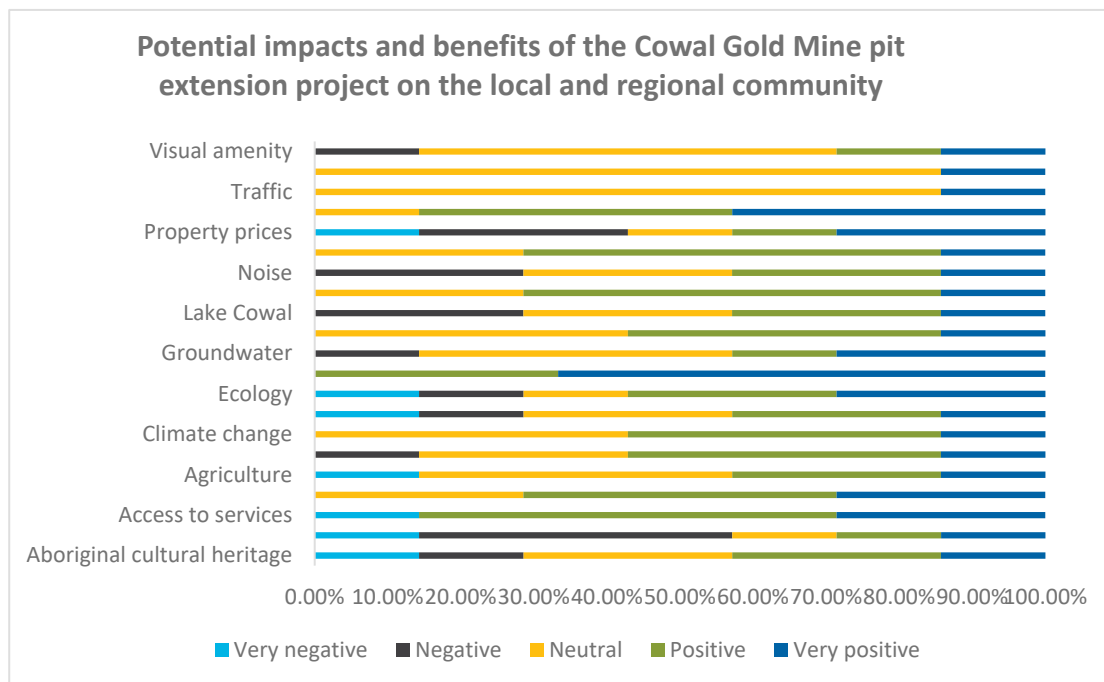
Answered 7
Skipped 0



B.1.7 Question 6

Below is a list of potential impacts and benefits that are commonly associated with large mining projects. Consider how the Open Pit Continuation Project may affect the local community and select the appropriate ranking for each potential impact and benefit using the buttons provided.

Answered 7
Skipped 0



B.1.8 Question 7

Do you have any other comments?

Answered 4
Skipped 3

Respondent comments:

- "None at this stage"
- "I think the mine has shown it can operate safely and environmentally responsibly in the environment. The benefit of longer term jobs and employment justify the incremental impact"
- "None"
- "No"

B.1.9 Question 8

What is your suburb?

Answered 7
Skipped 0

Respondent answers:

- West Wyalong
- West Wyalong
- West Wyalong
- Forbes
- West Wyalong
- West Wyalong
- West Wyalong

B.1.10 Question 8

What is your postcode?

Answered 7
Skipped 0

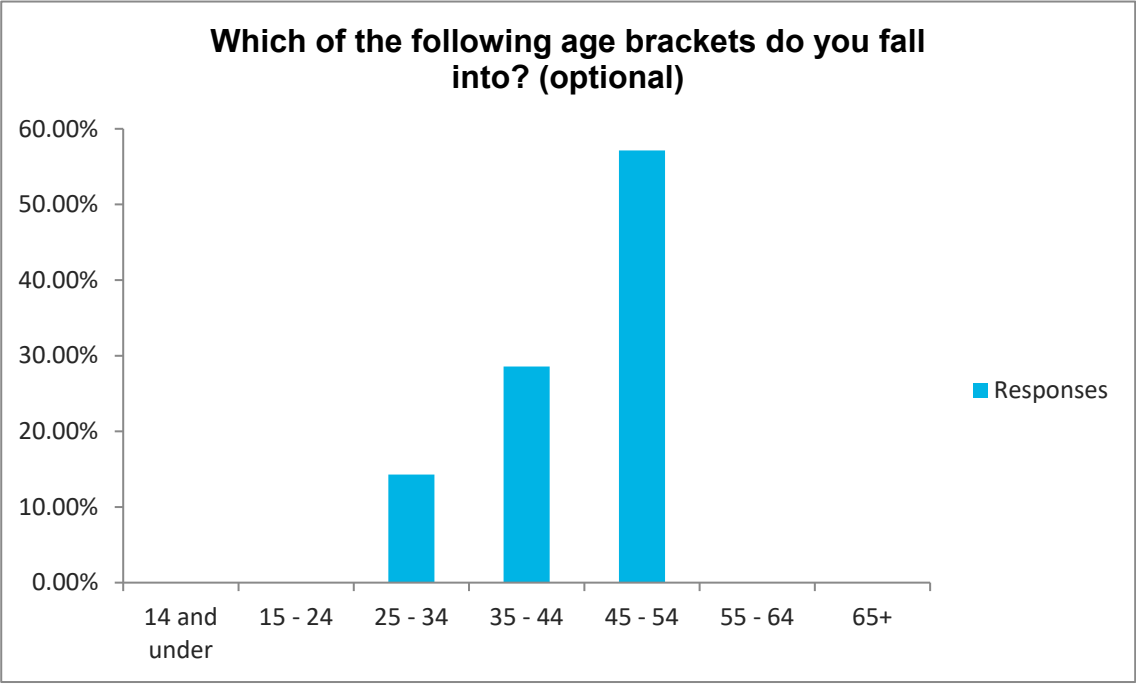
Respondent answers:

- 2671
- 2671
- 2671
- 2871
- 2671
- 2671
- 2671

B.1.11 Question 9

Which of the following age brackets do you fall into? (optional)

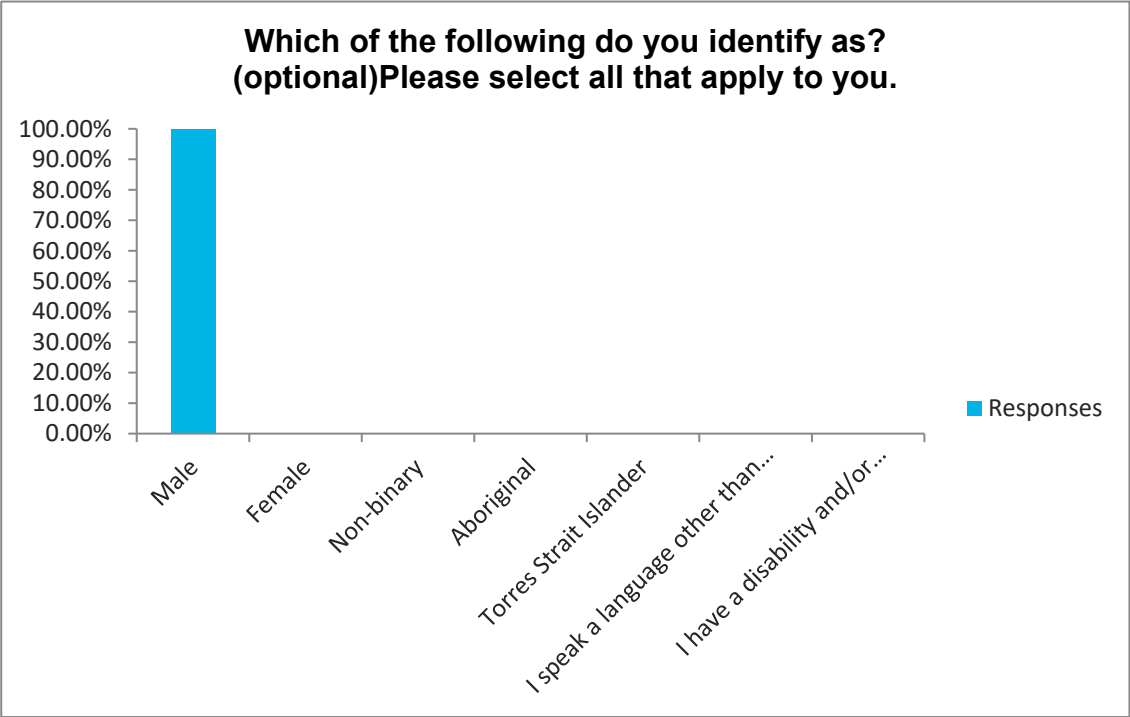
Answered 7
Skipped 0



B.1.12 Question 10

Which of the following do you identify as? (optional)Please select all that apply to you.

Answered 6
Skipped 1

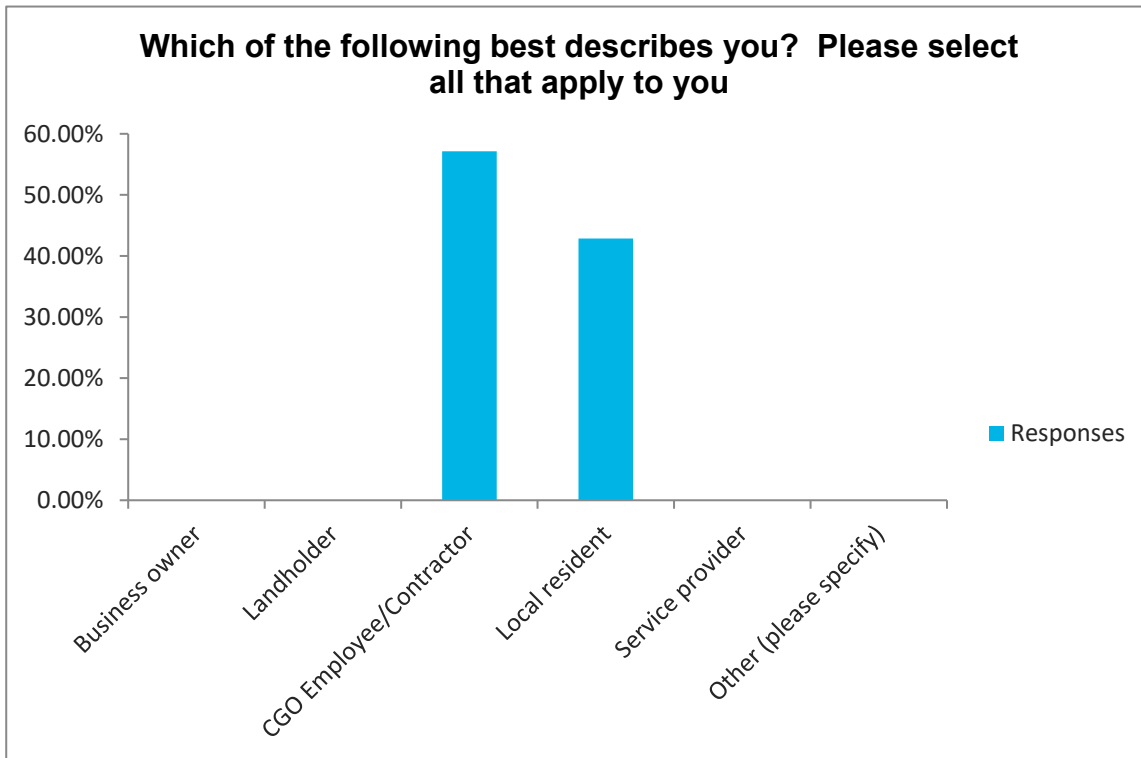


B.1.13 Question 11

Which of the following best describes you? Please select all that apply to you

Answered 7

Skipped 0



B.1.14 Question 12

Would you like to provide further input on the CGO Open Pit Continuation Project?

Answered 7
Skipped 0

