

Statement of Environmental Effects
Cowal Gold Operations Accommodation Village

Prepared for Evolution Mining (Cowal) Pty Limited
April 2021

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Statement of Environmental Effects

Cowal Gold Operations Accommodation Village

Report Number

J190140A RP2

Client

Evolution Mining (Cowal) Pty Limited

Date

30 April 2021

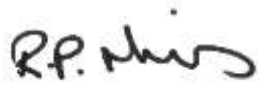
Version

v4 Final

Prepared by

Andrew Woidt
Associate
30 April 2021

Approved by



Rob Morris
Associate Director
30 April 2021

Executive Summary

Evolution Mining (Cowal) Pty Limited (Evolution) proposes to construct and operate an accommodation village (the project) on vacant land to the west of Boundary Street, West Wyalong, NSW (the site). This statement of environmental effects (SEE) and accompanying development application (DA) have been prepared for the project in accordance with Part 4 of the NSW *Environmental Planning and Assessment Act 1979*.

The village, once constructed, will accommodate the workforce associated with the construction and operation of the proposed Cowal Gold Operations (CGO) Underground Development Project, which will be located approximately 38 kilometres north-east of West Wyalong.

The project is being considered as a multi-dwelling residential development under the *Bland Local Environmental Plan 2011* (LEP) and therefore the relevant provisions of the *Bland Shire Development Control Plan 2012* (DCP) relating to multi-dwelling residential development have been applied to the design of the village. The capital investment value (CIV) for the project has been estimated at approximately $24 million.

The project is proposed to be developed on the same site which previously housed an accommodation village when the CGO was first developed in the early 2000s by Barrick Gold. However, the accommodation village proposed by Evolution will be vastly different to the previous accommodation village, with greater focus on urban design and integration into the surrounding area, both visually and functionally.

The project conceptually comprises accommodation capacity for up to 176 people. Key components include accommodation residencies and common buildings, including dining, administration, kitchen, waste, laundry, multipurpose function space, outdoor eating and quiet areas. The village components will be modular in design with different accommodation module layouts dependent on the workforce type and length of tenure. Appropriate security measures such as fencing, gates, cameras and night lighting will be installed. Site landscaping with native species will be undertaken to increase visual amenity consistent with the surrounding neighbourhood and will incorporate water sensitive urban design practices. This includes maintaining existing native vegetation wherever possible.

Construction of the project will be staged and this application seeks approval for all stages of the development. Construction of the accommodation modules is expected to take approximately eight months in total. Construction of additional amenities and facilities may take up to a further three years, post removal of the construction accommodation modules.

To assess potential environmental impacts of the project, various specialist technical assessments were undertaken, including biodiversity (terrestrial flora and fauna), bushfire hazard, heritage (Aboriginal and non-Aboriginal), visual impact, surface water, noise and vibration impact, air quality impact, traffic impact, contamination, socio-economic impacts and geotechnical.

Appropriate control and management measures to mitigate potential environmental impacts have been developed and are described in this SEE. The technical assessments concluded that, with appropriate mitigation and management measures in place, there will be no significant environmental impact as a result of the operation of the project, while a construction environmental management plan (CEMP) will be developed specifically to manage the potential impacts associated with the construction phase of the project.

The project is critical to addressing potential social impacts relating to the proposed CGO Underground Development Project as it will provide housing to support workers involved in the construction and operational phases of that project. Additionally, the proposed development will provide indirect economic benefits to the local area during both the construction and operational phases.

The proposed development is considered appropriate for the site and conforms with the relevant provisions of Bland Shire Council's LEP and DCP. The assessment of the proposed multi-dwelling residential development against the relevant provisions of the Bland LEP and DCP demonstrates its compliance with the land use activities and form of development considered appropriate for the site, and location more generally, in accordance with requirements of the R1 General Residential zone.

In summary, the proposed development, when considered both in isolation and in relation to the development of underground mining at CGOs, merits the granting of development consent.

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1 Introduction

1.1 Overview of the proposal

Evolution Mining (Cowal) Pty Limited (Evolution) proposes to construct and operate an accommodation village (referred to hereafter as 'the project') on vacant land comprising the whole of Lot 7044 DP1115128 and a portion of Lot 2 DP1239669, located immediately west of Boundary Street, West Wyalong, in the central west region of NSW (referred to hereafter as 'the site'). The regional and local setting of the site is shown on Figure 1.1 and Figure 1.2, respectively.

EMM Consulting Pty Limited (EMM) has been engaged by Evolution to prepare a statement of environmental effects (SEE) (this document) and accompanying development application (DA) for the project under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Evolution is the applicant of the project.

The site is located within the Bland Shire Local Government Area (LGA). The project is being considered as a multi-dwelling residential development under the *Bland Local Environmental Plan 2011* (LEP) and therefore the relevant provisions of the *Bland Shire Development Control Plan 2012* (DCP) relating to multi-dwelling residential development have been applied to the design of the village.

The project is being developed to accommodate the workforce associated with the construction and operation of the Cowal Gold Operations (CGO) Underground Development Project, located approximately 38 kilometres (km) north-east of West Wyalong (refer Figure 1.1). The CGO Underground Development Project is currently the subject of a State significant development (SSD) application (SSD 10367), under section 4.38 of the EP&A Act.

The project conceptually comprises the following key components (refer Figure 1.3):

- accommodation capacity for up to 176 people, including:
  - temporary construction workforce accommodation modules to house 96 people;
  - semi-permanent operational workforce accommodation modules to house 72 people; and
  - semi-permanent accessible accommodation modules to house 8 people, with facilities which are Commonwealth *Disability Discrimination Act 1992* (DDA) compliant;
- use of upgraded existing access points and on-site roads;
- administration buildings;
- communal facilities, including:
  - laundry units;
  - communal dining and kitchen building;
  - outdoor eating areas;
  - first aid and nursing room;
  - prayer room;
  - quiet room;

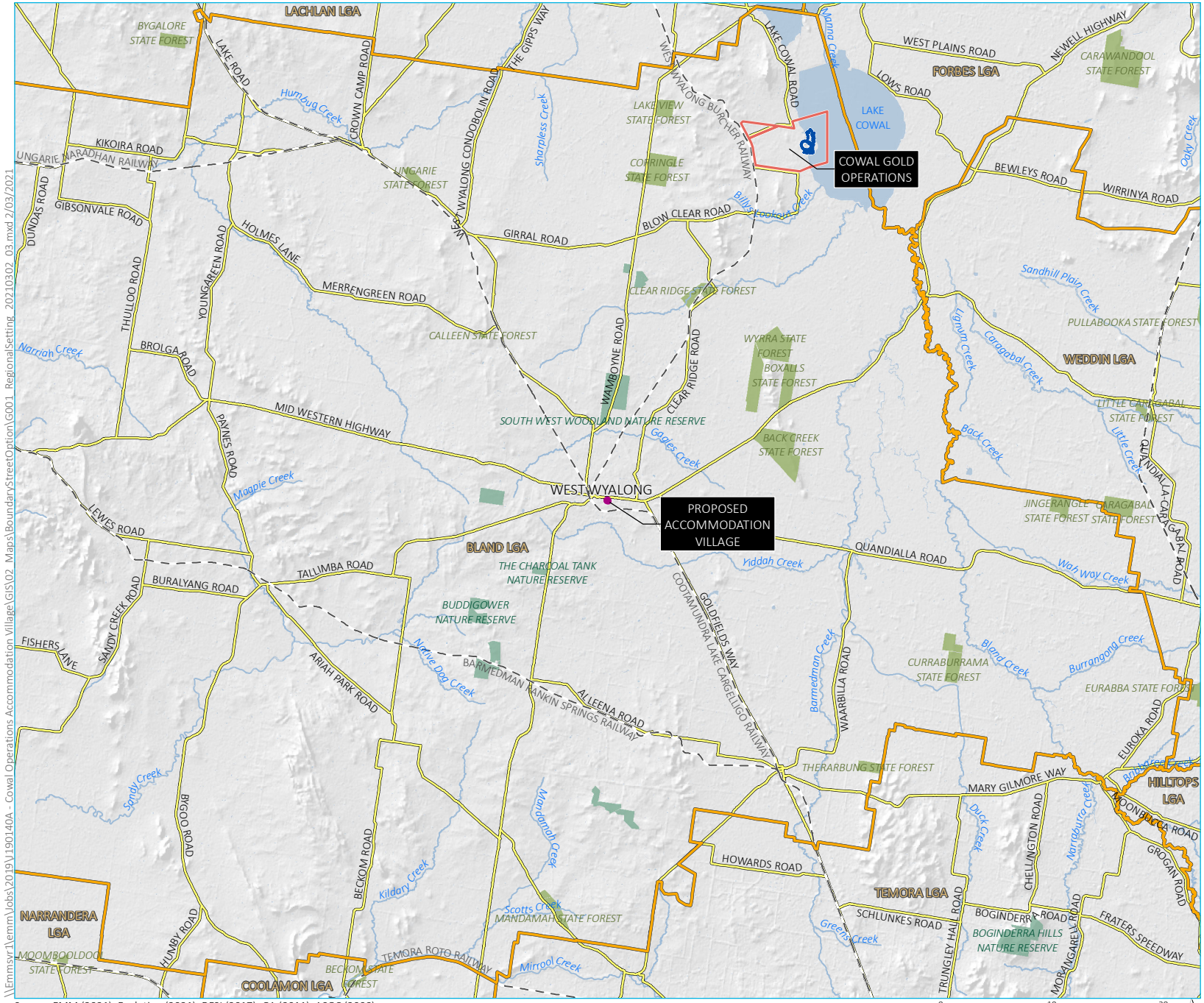
  - gymnasium;
  - multipurpose outdoor court; and
  - running track;
- undercover bus shelter and bus parking;
- light vehicle parking spaces;
- security fencing, gates, cameras and night lighting;
- reticulated services; and
- landscaping.

The village components will be modular in design with different layouts dependent on the workforce (construction, operational and accessible) supporting the CGO Underground Development Project. The development will be staged, with the operational (standard – Type 1 and Type 2) and operational (accessible) accommodation modules being constructed first to ensure this area of the village is ready to house the construction workforce as soon as possible. The construction workforce modules will be completed as soon as possible thereafter. Proposed staging is as follows (refer Figure 1.4):

- **Stage 1:** operational workforce accommodation modules to house 50 construction personnel initially and construction of enabling infrastructure and amenities sufficient for the operation of Stage 1. Eight of these accommodation modules will be accessible and DDA compliant should Evolution maintain an accessible workforce.
- **Stage 2:** remaining operational workforce accommodation modules in addition to construction workforce accommodation modules to house 46 people.
- **Stage 3:** construction workforce accommodation modules to house 80 people.
- **Stage 4:** gymnasium and multipurpose court.

Approval is sought for all stages of development as part of the SEE and DA. Construction of the accommodation modules is expected to take approximately eight months in total. Construction of additional amenities/facilities may take up to a further three years, post removal of construction accommodation modules. Minor earthworks will be required for site establishment activities, including vegetation clearing and grubbing, ground levelling and trenching for service installation. Any excavated topsoil will be stockpiled and reused on-site where possible.

Appropriate security measures such as fencing, gates, cameras and night lighting will be installed. Site landscaping will be undertaken to increase visual amenity consistent with the surrounding neighbourhood and will incorporate water sensitive urban design practices. This includes maintaining existing native vegetation wherever possible.



Source: EMM (2021); Evolution (2021); DFSI (2017); GA (2011); ASGC (2006)

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Regional setting

Evolution Mining
Cowal Gold Operations
Accommodation Village - Boundary Street
Statement of environmental effects
Figure 1.1

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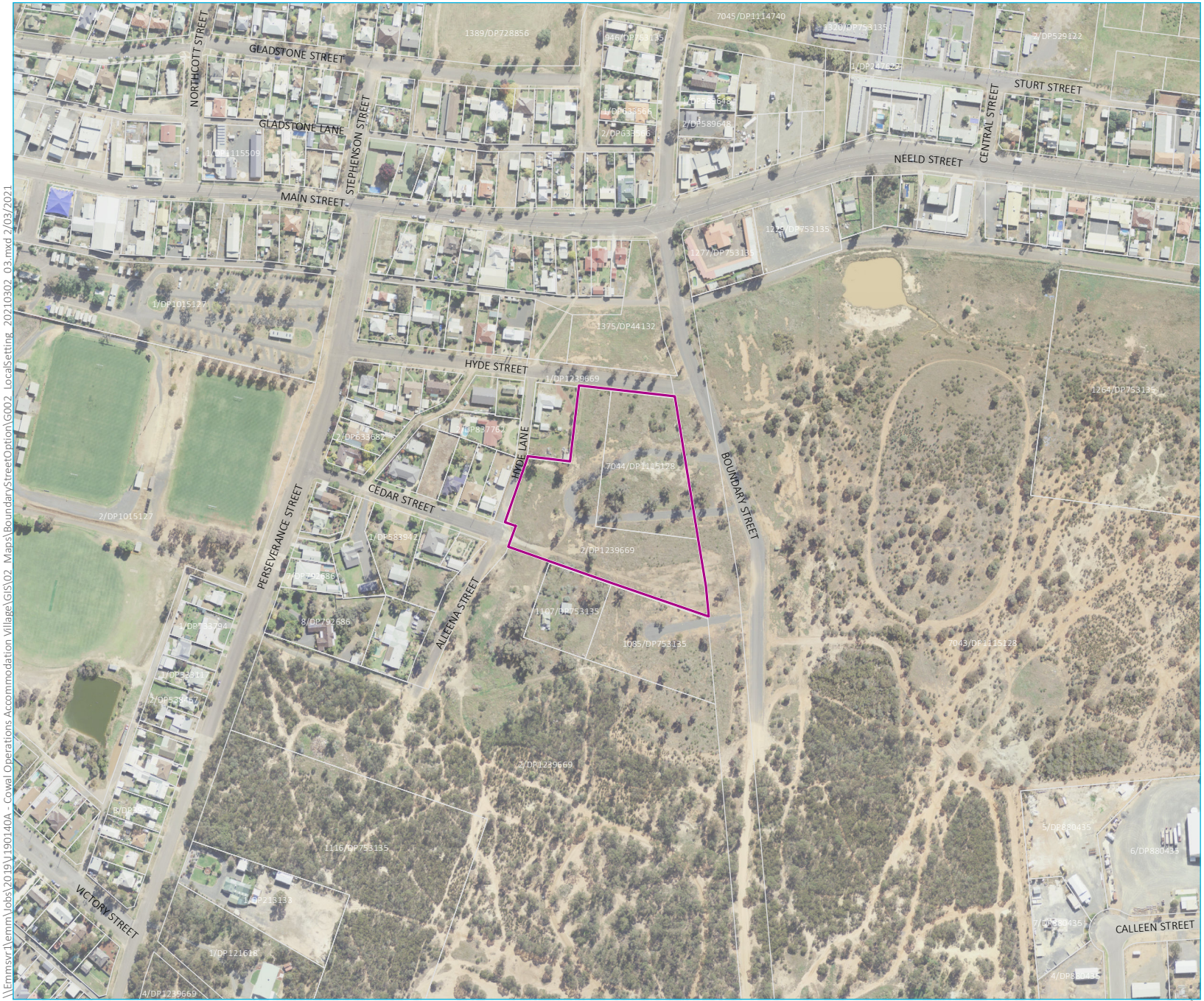

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Source: EMM (2021); Evolution (2021); DFSI (2017)

Local setting

Evolution Mining
Cowal Gold Operations
Accommodation Village - Boundary Street
Statement of environmental effects
Figure 1.2

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Source: Nettleton Tribe

Figure 1.3 Conceptual village site layout

Source: Nettleton Tribe

Figure 1.4 Conceptual village site staging plan

1.2 Applicant

Evolution is the applicant of the DA. Evolution Mining Limited is a publicly listed gold, silver and copper production mining company trading on the Australian Stock Exchange (ASX:EVN). Evolution's head office is located at Level 24, 175 Liverpool Street, Sydney, NSW 2000. Evolution's company details, including Australian Company Number (ACN) and Australian Business Number (ABN) are detailed below:

- ACN: 084 669 036.
- ABN: 74 084 669 036.

Evolution Mining Limited wholly owns the following assets across Australia and Canada:

- CGO in NSW;
- Mount Carlton Open Pit and Underground Gold Operation in Queensland (QLD);
- Mount Rawdon Open Pit Gold Operation in QLD;
- Mungari Open Pit and Underground Gold Operation in Western Australia (WA); and
- Red Lake Underground Gold Operation in Western Ontario, Canada.

Evolution also partly owns the Ernest Henry Copper-Gold Operation in QLD, Australia, operated by Glencore.

Further details about Evolution's assets, leadership team, corporate governance sustainability and investor information is available from the company's website: https://evolutionmining.com.au/.

Evolution is also the proponent of the CGO Underground Development Project, which is currently the subject of an Environmental Impact Statement (EIS) supporting an SSD application (SSD 10367), under section 4.38 of the EP&A Act. Ancillary surface changes associated with the CGO Underground Development Project are the subject of an application under section 4.55(2) of the EP&A Act for modification to the development application (DA14/98). The EIS, SSD application and modification report are being assessed by the NSW Department of Planning, Industry and Environment (DPIE).

1.3 Report structure

The purpose of this SEE is to assess the potential impacts of the project. This SEE has been prepared in consideration of section 4.15(1) of the EP&A Act (refer section 4.1.1) and Schedule 1 of the NSW Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) (refer section 4.1.2).

This SEE describes the site, its proposed use, the applicable legislative context and stakeholder consultation undertaken. It provides an assessment of the likely environmental impacts associated with the project and outlines associated mitigation measures to limit these impacts during construction and operation of the village. This SEE accompanies a development application to Bland Shire Council.

Conceptual architectural drawings supporting the SEE have been prepared by Nettleton Tribe architects and are provided in Appendix A. Conceptual landscaping drawings have been prepared by Arcadia Landscape Architecture Pty Limited (Arcadia) and are provided in Appendix B. Conceptual engineering drawings, including services strategy, have been prepared by Calibre Group Pty Limited (Calibre) and are provided in Appendix C. A preliminary construction management plan (CMP) has also been prepared by development manager Currajong Consultants (Currajong) and is provided in Appendix D.

The SEE is supported by the following technical assessments:

- Biodiversity Development Assessment Report (BDAR) prepared by EMM (Appendix E);
- Bushfire prepared by Blackash Bushfire Consulting (Blackash) (Appendix F);
- Aboriginal Heritage Due Diligence Assessment (AHDD) prepared by EMM (Appendix G);
- Historical Heritage Due Diligence Assessment (HHDD) prepared by EMM (Appendix H);
- Visual Impact Assessment prepared by EMM (Appendix I);
- Soil and Water Management Plan (SWMP) prepared by Calibre (Appendix J);
- Noise and Vibration Impact Assessment (NVIA) prepared by EMM (Appendix K);
- Construction Air Quality Impact Assessment (AQIA) prepared by EMM (Appendix L);
- Traffic Impact Assessment (TIA) prepared by EMM (Appendix M);
- Preliminary Site Investigation (PSI) prepared by EMM (Appendix N); and
- Geotechnical Report prepared by Xstract Mining Consultants Pty Limited (Xstract) (Appendix O).

Consistency of the project against the provisions of the Bland Shire DCP is provided in Appendix P.

2 Site description

2.1 The site

The site is located immediately west of Boundary Street in West Wyalong, which is located approximately 360 km west of Sydney (refer Figure 1.1 and Figure 1.2).

The site is located on freehold land comprising the whole of Lot 7044 DP1115128 and a portion of Lot 2 DP1239669 (refer Figure 2.1), held by the West Wyalong Local Aboriginal Land Council (LALC) (subject to determination of native title). A native title claim (NN2020/007) was lodged on 21 August 2020 by the West Wyalong LALC over part of the site. This claim is yet to be determined at the time of preparing the development application.

2.2 Land use and zoning

The site is vacant at present and is currently devoid of built structures. However, between 2004 and 2006 it was used for Barrick Gold's accommodation village, which was developed as a temporary residential village during construction of the CGO. The Barrick Gold accommodation village was demolished in 2006. There is a small shed outside the southern site boundary on Lot 1107 DP753135. This shed is not part of the site.

Under the Bland LEP (Land Zoning Map – Sheet LZN_007F), the site is zoned R1 General Residential (refer Figure 2.1). Land surrounding the site is also zoned R1 General Residential, including vacant land north and south of the site. Vacant land to the east of Boundary Street is zoned IN1 General Industrial, which extends down to Compton Road. West Wyalong Stadium and the town centre further west of the site are zoned RE1 Public Recreation and B2 Local Centre. Land fronting the Newell Highway off Boundary Road contains predominately visitor accommodation premises and is zoned B6 Enterprise Corridor.

2.3 Adjoining land

The site is immediately surrounded by vacant land to the north, east and south. Most of this vacant land is Crown land, including the vacant land north, east and a portion of the vacant land south of the site (including Lot 1376 DP44132, Lot 1375 DP44132, Lot 7043 DP1115128 and Lot 1085 DP753135). Hyde Lane and a portion of Hyde Lane are also mapped as Crown land (Lot 1 DP1239669).

Private residences are located west of the site and further north of the site. The closest private residence is located immediately west of the site on Hyde Lane (Lot 1059 DP753135). Land south of the site is freehold land and contains a shed but, no private residences (Lot 1107 DP75335 and Lot 1085 DP753135). One of these lots (Lot 1085 DP753135) contains a cul-de-sac called Gunters Close.

The site is bordered by Hyde Lane and Cedar Street to the west, Hyde Street to the north and Boundary Street to the east.

2.4 Existing environment

The site is currently vacant and highly disturbed, largely due to the earlier development of an accommodation village by Barrick Gold. The site contains a bitumen loop/ring road (identified as 'Nugget Crescent' in the Barrick Gold accommodation village SEE drawings) for site access and egress from Boundary Street. This ring road is not formally named in other databases, hence for the purposes of the SEE is simply referred to as the 'ring road'. The site also currently contains stockpiles of soil and waste fragments and minor unsealed access tracks.

Refer to Photograph 2.1, Photograph 2.2, Photograph 2.3 and Photograph 2.4 for photographs of the site.

2.4.1 Vegetation

Most of the site consists of cleared woodland of poor quality with scattered shrubs. Sections of these cleared areas are subject to on-going slashing maintenance. Where intact woodland exists, it is dominated by one native Plant Community Type (PCT) 217 – Mugga Ironbark – Western Grey Box – cypress pine tall woodland on footslopes of low hills in the NSW South Western Slopes Bioregion. The vegetation of this PCT is patchy and modified by past development including clearing and grubbing of the site for previous land uses and on-going disturbance by recreational activities such as bike trails.

The southern-most portion of the site is located within land identified as bushfire prone on the DPIE's ePlanning Spatial Viewer bushfire prone land map.

2.4.2 Topography

The site is generally flat, with a slight slope towards the north from approximately 256 metres Australian Height Datum (m AHD) at the southern boundary of the site to approximately 254 m AHD at the northern boundary. This slope is consistent with the surrounding area, which generally slopes towards the north.

2.4.3 Geology and soils

The Forbes 1:250,000 geological map indicates that the site is underlain by predominately highly weathered granite with scattered ferruginous lag derived from mottled saprolite; with colluvial sediments on plains and rises. A north-west/south-east fault is located approximately 700 m east of the site.

The soils at the site are identified as Quaternary alluvium and colluvium on gently undulating side slopes, plains and drainage lines west of West Wyalong. Acid Sulfate Soils (ASS) have a 'low' probability of occurrence.

The geotechnical properties of the site are described in section 6.14.

2.4.4 Hydrogeology

The aquifer type beneath the site is identified as fractured or fissured, extensive and of low to moderate productivity.

Four registered groundwater bores were identified within a 2 km radius of the site however, no groundwater bores were identified within the site. Two monitoring bores are installed approximately 1.3 km to the west of the site (GW703611 and GW703585). These bores were drilled to a total depth of 4.4 m below ground level (m bgl) in sandy clay and gravelly clay and had a recorded standing water level (SWL) of 4.35 m bgl within the superficial aquifer following installation. One bore identified for industrial use is installed 0.8 km to the north-east of the site (GW059484). This bore was drilled to a total depth of 74 m bgl in granite and did not have a SWL noted, although a water bearing zone was noted at 74 m bgl during drilling. Limited information is available on the final bore, which was installed for domestic use 1.4 km to the north-west of the site.

2.4.5 Surface water and drainage

No drainage features are currently visible on the site, with overland surface water flow anticipated to flow towards the north in line with local topography. Surface water flow at the site would be expected to infiltrate the ground due to the soil present at the surface. If sufficient groundwater is present within the superficial aquifer to generate flow, groundwater flow is anticipated to be towards the north following the topography.

There are several farm dams and retention ponds surrounding the site, with the closest approximately 160 m to the north-east of the site.

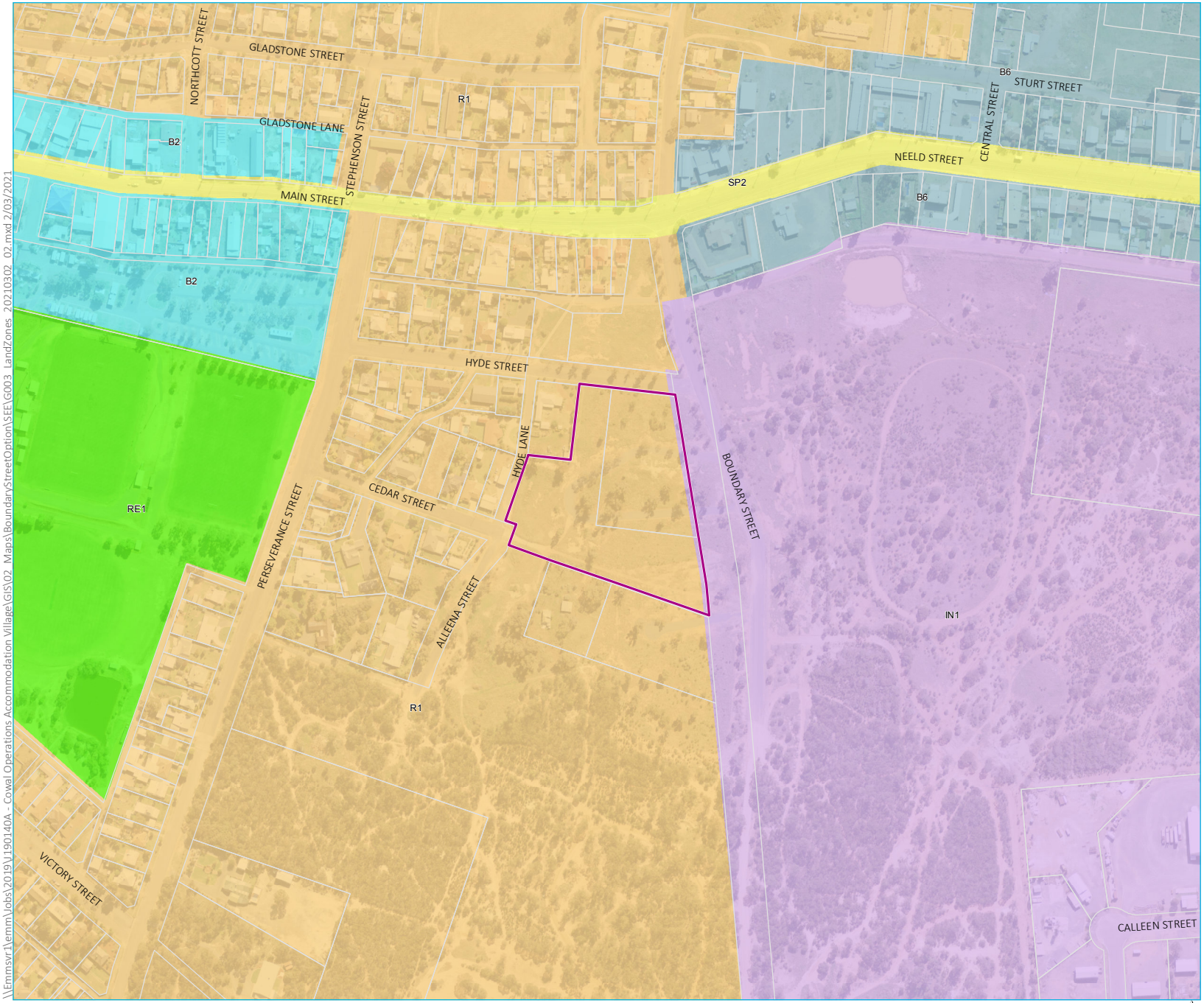
Low potential groundwater dependant ecosystems (GDE) are present in the southern portion of the site.

Photograph 2.1 The site, facing west from Boundary Street

Photograph 2.2 The site, facing south from Hyde Street

Photograph 2.3 **The site, facing east from the eastern boundary of Lot 1059 DP753135**

Photograph 2.4 **The site, facing east from Hyde Lane**



Land zoning

Evolution Mining
Cowal Gold Operations
Accommodation Village - Boundary Street
Statement of environmental effects
Figure 2.1

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3 Proposed development in detail

3.1 Overview

The village is proposed to house staff and contractors during the construction and operation of the CGO Underground Development Project.

The village will be modular in design. There will be accommodation modules with different layouts dependent on the workforce (eg construction, operational and disability accessible) and their respective tenure in supporting the CGO Underground Development Project.

The village construction will be staged, with the operational and accessible modules being constructed first to ensure this area of the village is ready to house the workforce as soon as possible, to limit the construction impacts on the local residential population and to ensure the village is quickly integrated with the surrounding residential areas. The construction workforce modules will be completed as soon as possible thereafter. The construction timeframe for the whole village is around 8 months from start to finish. Approval is being sought for all stages of development under the DA.

The village has been carefully designed so that it occupies Lot 7044 DP1115128 and a portion of Lot 2 DP1239669, which are located between Boundary Street and Alleena Street in West Wyalong, NSW (refer Figure 1.1 and Figure 1.2). The site covers an area of around 2.4 ha.

The site is located within the Bland LGA. The project is being considered as a multi-dwelling residential development under the Bland LEP and therefore the relevant provisions of the Bland Shire DCP relating to multi-dwelling residential development have been applied to the design of the village.

The conceptual layout of the village is shown in Figure 1.3. The village conceptually comprises the following key components:

- accommodation for up to 176 people, including:
  - temporary construction workforce accommodation modules to house 96 people;
  - semi-permanent operational workforce accommodation modules to house 72 people; and
  - semi-permanent accessible accommodation modules to house 8 people, with facilities which are Commonwealth DDA compliant;
- administration buildings;
- communal facilities, including:
  - laundry units;
  - communal dining and kitchen building;
  - outdoor eating areas;
  - first aid and nursing room;
  - prayer room;

- quiet room;
- gymnasium;
- multipurpose outdoor court; and
- running track;

- undercover bus shelter and bus parking;
- light vehicle car parking;
- fencing and lighting;
- reticulated services; and
- landscaping.

The project will have an estimated capital investment value (CIV) of $23,730,042 excluding GST. The conceptual architectural drawings prepared by Nettleton Tribe supporting this SEE are summarised in Table 3.1 and provided in full in Appendix A.

Table 3.1 Architectural drawings list

Drawing No.		Description
11985-	DA-0000	COVER PAGE & LOCATION PLAN & SCHEDULE OF DRAWING
11985-	DA-0111	SITE PLAN – GROUND LEVEL
11985-	DA-0112	SITE PLAN – ROOF LEVEL
11985-	DA-0113	SITE STAGING PLAN
11985-	DA-0121	SITE PLAN – EXISTING & DEMOLITION PLAN
11985-	DA-0201	SITE ELEVATION – STREET ELEVATIONS
11985-	DA-1101	COMMON BUILDINGS-GENERAL ARRANGEMENT PLAN – GROUND
11985-	DA-1102	COMMON BUILDINGS-GENERAL ARRANGEMENT PLAN – ROOF
11985-	DA-1201	COMMON BUILDINGS – ELEVATIONS (SHEET 1)
11985-	DA-1202	COMMON BUILDINGS – ELEVATIONS (SHEET 2)
11985-	DA-2101	OPERATIONS MODULE – STANDARD – CONFIGURATION TYPE 1 – PLANS & ELEVATIONS
11985-	DA-2111	OPERATIONS MODULE – STANDARD – CONFIGURATION TYPE 2 – PLANS & ELEVATIONS
11985-	DA-3101	OPERATIONS MODULE – ACCESSIBLE – CONFIGURATION TYPE 1 – PLANS & ELEVATIONS
11985-	DA-4101	CONSTRUCTION MODULE – STANDARD – CONFIGURATION TYPE 1 – PLANS & ELEVATIONS
11985-	DA-5101	LAUNDRY MODULE – CONFIGURATION TYPE 1 – PLANS & ELEVATIONS

3.1.1 Design

The conceptual design of the village (refer Figure 1.3) has been prepared by Nettleton Tribe in consultation with Evolution and the design team (Currajong, Arcadia, Calibre and EMM). Key components of the design are discussed in more detail in the following sub-sections.

The village layout has been selected based on the following general design principles:

- creation of an established and communal village that is sympathetic with surrounding residential area;
- implementation of 'hub and spoke' design approach placing more active communal facilities in the centre of the site and quieter accommodation modules fronting to the surrounding streetscapes;
- creation of a long-term permanent street presence on Hyde Street and Alleena Street;
- orientation of accommodation modules and common buildings to ensure equal northern sunlight to all rooms;
- retention and protection of existing trees wherever possible, including the cluster of quandong trees; and
- use of the existing ring road on the site and cul-de-sac to the south of the site (Gunters Close) and all existing inground services, to minimise disturbance from the project.

i Buildings

a Accommodation modules

The conceptual plans and elevations for each of the four accommodation module types are provided in Appendix A. This includes operations modules in 'standard' configuration Type 1 and Type 2 (drawing nos. 11985-DA-2101 and 11985-DA-2111), operations modules in 'accessible' configuration Type 1 (11985-DA-3101) and construction modules in 'standard' configuration Type 1 (11985-DA-4101). A total of four Type 1 Operation Modules are located along the northern boundary of the site to provide sympathetic design response in the context of existing housing along Hyde St. Through the inclusion of a small verandah and pergola roof structure, the modular unit has been altered to provide residential scale and form. The remainder of the operations modules located on the site are the Type 2 variant. These provide a similar level of amenity for the building occupant, with a simplified verandah and roof structure.

Regardless of configuration, each accommodation module will be of prefabricated modular construction, made from durable and non-flammable materials, including compressed fibre cement wall cladding and metal cladding for the external walls. Details of the external finish of accommodation modules are shown in the conceptual plans and elevations (refer Appendix A). Australian made or imported building materials and any required fill material will not contain asbestos or other hazardous materials. Each module will sit on a preconstructed pedestal. The walls will be insulated to manage acoustics and temperature.

All buildings in the village will be single storey constructions and less than 6.5 m in height. Therefore, the buildings will not overlook the private open space of nearby private residences. Modules nearest Hyde Lane and Cedar Street will have pitched roofs to respect the architecture and style of the adjacent residential dwellings, which are mostly also single storey dwellings. Refer to Appendix A for details of the external finishing of the roofing.

The village will be landscaped, with communal gardens and open space across the site. Windows will be more than 2 m away from the windows of nearby private residences, thereby avoiding any visual or privacy impacts to these private residences.

The accommodation modules will be Class 3 under the Building Code of Australia 2019 (BCA).

b Setbacks

None of the accommodation modules will adjoin the street frontage due to the modular layout of the village.

The village will be appropriately set back from all primary and secondary streets. This will include:

- 5 m setback on the eastern boundary with Boundary Street (primary street);
- 3 m setback on the western boundary with Cedar Street and northern boundary with Hyde Street (secondary streets); and
- 11 m setback on the southern boundary of the site which contains the asset protection zone (APZ).

c Common buildings

The conceptual plans and elevations for the common buildings, including dining, administration, kitchen, waste areas, multipurpose function space and quiet areas, are provided in Appendix A (drawing nos. 11985-DA-1101, 11985-DA-1102, 11985-DA-1201 and 11985-DA-1202). Conceptual plans and elevations for the laundry buildings are also provided (11985- DA-5101).

The common buildings will also be of single storey construction and less than 6.5 m in height. The common buildings will be prefabricated modular construction, made from durable and non-flammable materials. The construction materials will be the same as the accommodation modules, including compressed fibre cement wall cladding and metal cladding for the external walls and metal deck for the roof. Details of the external finish of common buildings are shown in the conceptual plans and elevations (refer Appendix A). Each module will sit on a preconstructed pedestal. The walls will be insulated to manage acoustics and temperature. The common buildings will have similar external finishes to the accommodation buildings.

The common buildings will have at least one window which is 1 m by 1.2 m. The dining hall will have several large windows. This will ensure adequate sunlight is provided during the day.

Pathways will connect all general amenities, either paved or concreted with adequate lighting and approximately 1.5 width. The accommodation modules and common buildings will therefore be accessible from the driveways and parking area. All pavements will have a minimum grade of 1% and maximum grade of 4%.

The design has provision for 4 laundry buildings (1 per 44 rooms) spaced throughout the village. Each laundry building will nominally include 9 washing machines, 9 dryers, 4 washing tubs and 44 storage lockers, so that workers are provided with short-term storage for their belongings when not staying at the village. Clothes lines will be provided at each laundry building. They will not be visible from public areas surrounding the site and located separate from recreational space and common areas within the site.

The dining, administration, kitchen and waste areas will be Class 5, 7b and 9b under the BCA. The multipurpose function and quiet areas will be Class 9b under the BCA.

ii Vehicle access and parking

The proposed vehicular access, car and bus parking for the village is shown in Figure 1.3. Vehicular access to the site will be from Boundary Street, using the existing ring road. Traffic will be strictly controlled on the ring road by a one-way system with separate entry and exit driveways. These driveways are already sealed.

A network of pathways will connect common buildings, communal facilities, car parking areas, accommodation modules and the bus pull-in bay. The primary and secondary pathways within the site will be constructed from aggregate concrete and brushed concrete. Pathways will also provide accessibility between the buildings and the driveway off Boundary Street. All pathways will be approximately 2.4 m wide and have a maximum grade of 1% and minimum grade of 4%.

Buses will be used to transport personnel between the accommodation village and CGO. There will be a covered bus shelter located near the eastern site boundary, which will be well signposted and have traffic controls to allow worker buses to arrive and depart without the need for reversing.

The design has provision for 95 parking spaces total. This includes 51 standard, 6 accessible, 6 visitor and 2 visitor accessible parking spaces with the remaining 30 spaces for spill over parking. During high bushfire risk, spill over carparking along the southern site boundary will not be utilised to allow access to the site by emergency vehicles. There will also be a bicycle parking area for 20 bicycles.

The design also has provision for 2 bus layover areas designed for 12.5 m length buses. A maximum of 4 buses is expected to service the village during the peak demand period.

All parking area construction and design will be compliant with Australian Standard AS2890 Part 1 and 2. The parking facilities will be constructed with permeable paving and be 2.6 m wide by 5.5 m long. Wayfinding/directional signage will be provided for all parking facilities.

iii Landscaping

The conceptual landscaping plan for the village is shown in Figure 3.1 with the full set of drawings provided in Appendix B.

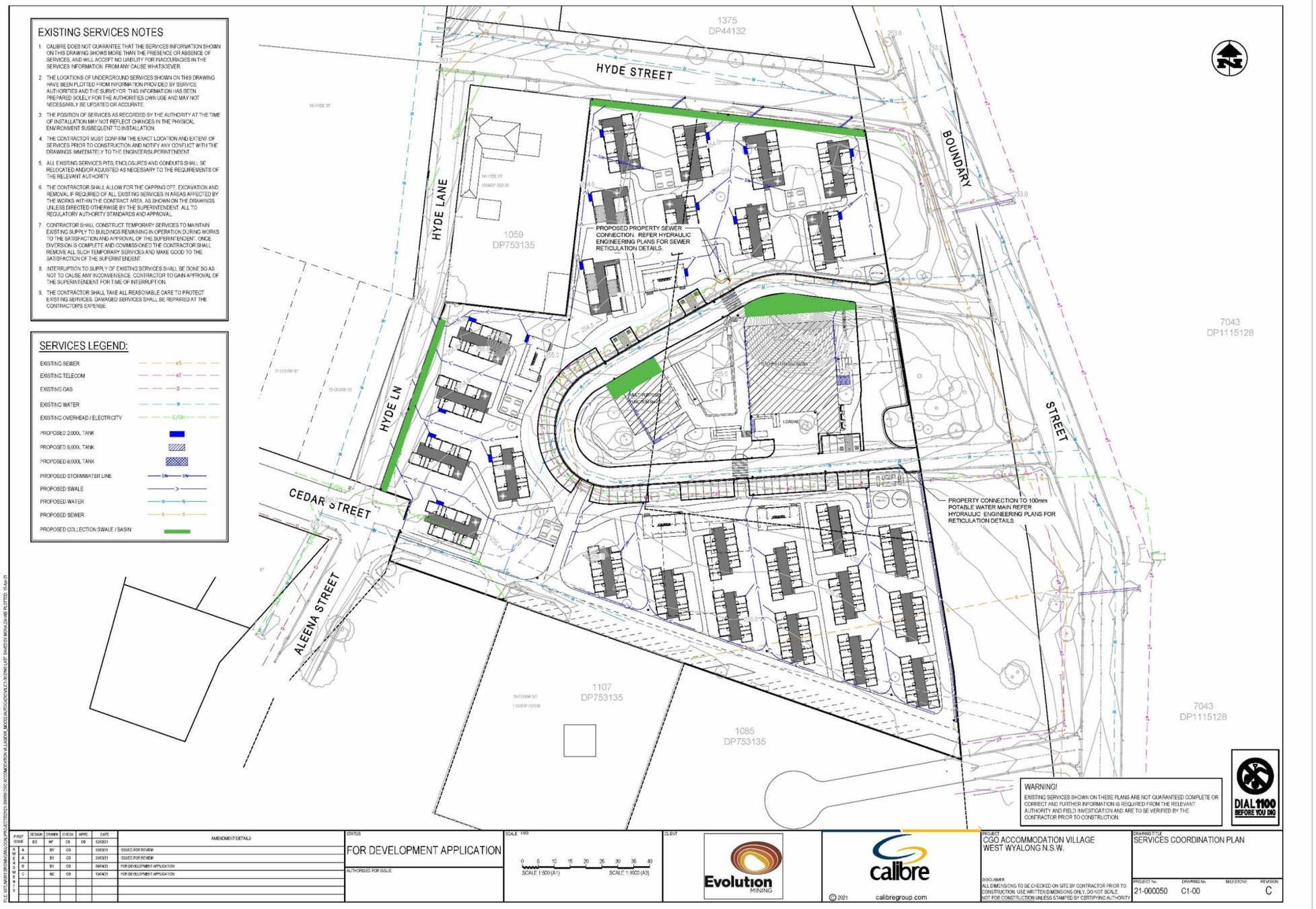
More than 20% of the site will remain unpaved. Landscaping of the site will take into consideration the existing vegetation on the site and the vegetation in the surrounding streets. Given that the southern-most portion of the site is mapped as bushfire prone land, landscaping will also take into account the recommendations of the BHR completed by Blackash for the project. Further discussion of the BHR is provided in section 6.3.

The aim with landscaping will be to integrate the site floristically into the neighbourhood and include native species in planted areas where possible. Existing vegetation on-site has been maintained where possible. Additional landscaping will include vegetation to act as suitable street frontage on Boundary Street in addition to the planting of shade trees to act as heat mitigation for the accommodation modules, amenity buildings and outdoor eating areas.

Water sensitive urban design practices have been incorporated into the landscaping design of the village, including the collection of rainwater for use in irrigation (50,000 L tank) and collection for firefighting purposes (150,000 L tank). Additionally, an onsite stormwater detention system will be constructed through the placement of tanks across the operations accommodation modules. Stormwater treatment will be incorporated into the site landscaping.

Source: Arcadia

Figure 3.1 Conceptual site landscaping plan



Source: Calibre

Figure 3.2 Conceptual services coordination plan

iv Stormwater management

The conceptual stormwater management plan for the village is shown in the services coordination plan in Figure 3.2.

Further detail on proposed surface water management measures is provided in section 6.7.

The key features of the proposed system are:

- all roof runoff is directed to above ground tanks for detention and retention;
- roof runoff stored in retention tanks will be reused to irrigate landscaped areas and reduce consumption of reticulated potable water;
- discharge from detention tanks is directed to vegetated gravel-lined swales, which drain into bioretention swales and basins; and
- bioretention swales and basins are drained as sheet flow or distributed pipe connections off-site to the nearest road gutter or swale.

Each permanent accommodation module and the multipurpose function space will have a detention tank installed. The main kitchen, dining and administration building will have detention and retention tanks installed. No detention or retention tanks are proposed for the temporary construction workforce modules. Each on-site detention system has been designed in accordance with BSC requirements to attenuate peak runoff flow rates to pre-development conditions for the 20% to 1% AEP events.

The stormwater detention basins will be 52,000 L in total for the site with various sized basins spread across the semi-permanent buildings which will drain into the existing public stormwater drainage system:

- 2,000 L tank for each accommodation module and laundry unit; and
- 4,000 L and 20,000 L tanks for the administration building and communal facilities.

Hard paved areas will be minimised and at least 20% of the site will remain unpaved to further minimise stormwater runoff and maximize ground water recharge.

v Fencing

Solid ‘good neighbour’ style fencing (Colorbond® or similar) of 1.8 m height will be installed around a portion of the western site boundary to provide a secure and private barrier between the accommodation village and the private residence at 14 Hyde Street.

The remainder of the western site boundary along Hyde Lane and Alleena Street and the southern site boundary will be chain wire fencing (Cyclone or similar) of 1.8 m height.

The northern site boundary along Hyde Street and the eastern site boundary along Boundary Street will be chain wire fencing (Cyclone or similar) of 1.2 m height.

The use of chain wire fencing along the majority of the site boundary is intended to provide views from the site to existing vegetation outside of the site. Considering the land surrounding these boundaries is largely vacant, privacy considerations are less relevant and therefore solid fencing is not considered necessary to mitigate any potential impacts to visual amenity from these viewpoints. Regardless, fencing will be constructed to be respectful of neighbourhood character and will not exceed a height of 1.8 m.

vi Lighting and security

Safety lighting will be installed along all pathways and at amenity buildings and active areas such as the bus shelter and loading areas. Each accommodation module will have independently controlled porch lighting. Low glare security lighting will be installed at strategic locations at the site. This lighting will be directed below the horizontal to ensure light spill to nearby residences is minimised. Security cameras will be installed to maintain safety for the residents as a crime prevention measure.

vii Services and communications

The servicing strategy report prepared by Calibre, including engineering services drawings, is provided in Appendix C. The conceptual services coordination plan is shown in Figure 3.2.

The servicing strategy describes in detail how the site will be serviced for power, potable water, sewer, communications and stormwater.

The site will be connected to the potable water mains and electricity supply network. Liquified petroleum gas (LPG) bottles will be used in the kitchen as the site will not be connected to mains gas. Rainwater will be captured from the modules and overhead shade structures and reused for irrigation and firefighting purposes.

The site will be connected to the National Broadband Network (NBN).

viii Waste management

The project will maintain the existing sewerage network reticulated through the site.

A waste management plan (WMP) will be prepared for the operational phase of the project in consideration of all relevant legislation, policies and strategies. Waste will be managed in accordance with the general hierarchy of waste minimisation such as reduce, reuse and recycle to minimise the quantity of waste that must be disposed off-site.

A designated and enclosed waste storage area will be used for the temporary storage of waste, which will be collected from the site frequently by contractors. Waste will be transported and disposed of at an appropriately licenced facility.

3.1.2 Operation

At the completion of Stages 1 to 3, both construction and operational workforces associated with the CGO Underground Development Project are anticipated to stay concurrently at the accommodation village. Upon arrival, village residents will report to the administration office to 'check in' and obtain keys for their module. There will be common shower and change facilities for incoming and outgoing residents to use. During their stay, residents will have access to the communal facilities. While the residents will have access to the communal kitchen and other recreation services at the site, the proximity of the village to the commercial centre of West Wyalong will make it easy for the residents to avail themselves of recreation, dining and other services in West Wyalong.

The communal kitchen will have capacity to serve 300 meals per day and have temperature-controlled storage areas. The communal dining room will have an indoor seating area with capacity for 120 persons and outdoor veranda with capacity for 50 persons. It will be acoustically treated to mitigate noise impacts to the surrounding accommodation modules, amenity buildings and private residences.

The workforce will have access to other communal facilities during their stay, including laundry units, outdoor eating areas, first aid and nursing room, prayer room, quiet room and running track. Once constructed as part of Stage 4, the operational workforce will also have access to a gymnasium and multipurpose outdoor court.

3.1.3 Construction

The preliminary construction management plan (CMP) prepared by Currajong for the project is provided in Appendix D. The CMP outlines the key environmental, health and safety matters to be considered during the construction delivery phase of the project. The CMP is a preliminary plan prepared in advance of the appointment of a Principal Contractor for the project. A more detailed construction environmental management plan (CEMP) will be prepared prior to the commencement of construction.

Construction of the accommodation modules (ie Stages 1 to 3) is expected to take approximately eight months in total and require a workforce of approximately 40 persons. Construction activities will involve:

- site establishment and preparatory works such as clearing and grubbing;
- installation of fencing and security systems;
- soil erosion and sediment control works;
- confirmation and relocation of any affected services which will need to be relocated or required to be made safe to allow construction to proceed;
- earthworks, including:
    - clearing and stripping of topsoil and vegetation (excavated topsoil to be stockpiled for reuse on-site);
    - minor cut and fill where required to provide a level area for car parking and setting of modules and buildings;
    - trenching to install service, including connection to waste and water mains; and
    - laying of asphalt or concrete for car parking areas;
- demarcation of accommodation modules and amenity buildings;
- installation of preconstructed pedestal to sit beneath accommodation modules and amenity buildings;
- installation of prefabricated accommodation modules and amenity buildings;
- construction or installation of other communal facilities;
- service connection to modules and amenity buildings; and
- finishing works including line marking, signposting, construction of pathways, landscaping and lighting.

i Construction hours and scheduling

The NSW EPA's *Interim Construction Noise Guideline* (DECC 2009) (ICNG) recommended standard construction hours are:

- Monday to Friday: 7 am to 6 pm;
- Saturday: 8 am to 1 pm; and
- no work on Sundays and public holidays.

Proposed construction hours will be consistent with the ICNG recommended standard hours, with the exception of Saturday, where the applicant will be seeking non-standard hours of 7 am to 6 pm.

Construction activities will be undertaken in the following sequence:

- site establishment;
- earthworks including construction of inground services; and
- building works including construction of the accommodation modules and common buildings followed by internal road works.

ii Plant and equipment

A list of plant and equipment likely to be required for construction of the project is provided in Table 3.2. Note that not all the equipment below will be required for all phases of construction or operation of the project.

Table 3.2 Indicative construction equipment

Backhoe	Dump trucks
Bob cats	Rigid tippers
Excavators	Concrete agitators
Rollers	Concrete pumps
Cranes	Transport trucks
Trenchers	Jackhammers
Bulldozers	Generators

iii Construction environmental management

The proposed works will be undertaken in accordance with a CEMP prepared for the project. The CEMP will include appropriate management controls for the construction phase, including, but not limited to:

- site safety and security;
- soil erosion and sediment management;
- construction waste management;
- feral animal and weed management;
- biodiversity management practices;
- topsoil management, including contamination;
- dust management;
- noise and vibration management; and
- construction traffic management.

The CEMP will be prepared in consideration of all relevant legislation, policies and strategies.

Construction phase waste will be managed in accordance with the general hierarchy of waste minimisation such as reduce, reuse and recycle to minimise the quantity of waste that must be disposed off-site. All construction waste that cannot be reused or recycled will be disposed of at an appropriately licenced facility.

Excavated topsoil will be reused for filling works or landscaping where possible.

3.1.4 Decommissioning and rehabilitation

At the completion of construction of the CGO Underground Development Project, the temporary accommodation modules for the construction workforce will no longer be required. These modules will be decommissioned and removed from the site as soon as possible to minimise the impact on nearby residents.

At the completion of operations at CGO, the current strategy is to retain the remaining semi-permanent modules, administration buildings, communal facilities and other on-site components until an evaluation of options for the final use of the site is undertaken in consultation with the landowner and subject to discussion with the BSC.

3.2 Need for the development

The village is needed to support the anticipated workforce associated with the construction and operation of the CGO Underground Development Project and associated changes to surface infrastructure at CGO.

The peak construction and operational workforces are anticipated to be 150 and 75 full-time equivalent (FTE) persons, respectively. While a portion of this workforce is expected to be sourced from the local area, many of the jobs will be specialised (eg underground miners), for which there is a limited availability in the region. As it is anticipated that most of the workforce will be sourced from outside the region, these workers would benefit from staying in a purpose-built village. Therefore, the village is viewed as being able to provide an appropriate accommodation solution to house most of the CGO Underground Development Project's workforce.

Failure to provide adequate housing and transport for the workforce has the potential for adverse social impacts (refer section 6.11.1). This could include a shortage of housing within West Wyalong, Condobolin and Forbes, as the workforce would need to purchase or rent housing within these towns. The accommodation village will therefore reduce the impacts that housing availability and inflation of housing prices in addition to limiting pressure to local facilities and services within West Wyalong. It will also provide economic opportunities from the use of local contractors and services during construction.

It is proposed that a bus, supplied by Evolution, will transport workers between the accommodation village and CGO on a scheduled roster.

3.3 Consideration of alternatives

In developing the conceptual layout of the village, Evolution considered a number of alternatives in terms of location, accommodation options (eg build new, lease or purchase existing) and accommodation layout/design. The 'do nothing' alternative has also been considered. These alternatives are described in more detail in the following sub-sections.

i Alternative site options

Fifteen alternative sites within West Wyalong were initially considered for the location of the project. Site options were assessed in terms of the following criteria:

- land area;
- approximate walking distance to town;
- land zoning under the Bland LEP;
- site access and street frontage;
- sensitivity of adjacent land uses (eg residential, commercial, etc);
- existing vegetation for offset purposes;
- existing improvements (ie infrastructure);
- existing utilities / services availability; and
- other considerations (eg native title, land tenure, landholder, etc).

The alternative sites were ranked in accordance with the above criteria. Two sites were shortlisted for further investigation as a result of the assessment, including the Boundary Street site (Lot 7044 DP1115128 and a portion of Lot 2 DP1239669) and a site located at 82 Ungarie Road (Lot 604 DP753135).

The Boundary Street site was ultimately selected due to its favourable size, proximity to town, land zoning, existing improvements and access to utilities connections as a result of its previous land use as an accommodation village. The Boundary Street site also met Evolution's continued objective to partner with the West Wyalong LALC, the owners of the site, to achieve mutually beneficial outcomes for the community.

ii Alternative accommodation options

In addition to the development of a new purpose-built village in West Wyalong, Evolution also considered other accommodation options, as described in the following sub-sections.

a Long-term and short-term renting of available housing

Evolution has a long-standing policy to lease local properties and sub-let them to workers. While it will continue to adopt this policy, the rental stock in local areas is insufficient to cater for the number of workers required to construct and operate the CGO Underground Development Project.

This option includes the renting of available housing and other long-term accommodation options in West Wyalong. Although Evolution may require short-term rental of accommodation in West Wyalong during the initial period of construction of the village and the Underground Development Project, this option wasn't considered feasible in the long-term due to the likely shortfall in the number of suitable of private rooms required for rental during the required period. In addition, perceived inconsistency between rental lodgings, including access to facilities like kitchenettes and restaurants, was also viewed as unfavourable in the longer-term.

This option was regarded as undesirable as it had the potential to cause a decrease in the availability of rental properties and short-stay accommodation for local residents.

This may, in turn, reduce access to, or affordability of, adequate housing for existing and new residents which could result in resident out-migration and/or an increase in pressure on social housing service providers. More discussion on the social and economic impacts of the project are discussed in Chapter 6.

b Development of the accommodation village on Evolution-owned land

This option includes the construction and operation of the accommodation village on Evolution-owned land near the CGO. This option is also considered to be least preferable, as it will result in a village being developed in an isolated location which is disconnected from regional towns and centres and the services they offer. Developing the village near the mine would result in decreased spending on local private services and businesses, resulting in decreased local economic activity and decline in services. This in turn would generate decreased social and economic capital in the towns. Further, this option could result in decreased mental and physical health of the workforce relating to fatigue and social isolation, which may reduce human capital and social wellbeing over time.

In terms of utilities/services, this option would also be much more capital intensive than development of an accommodation village in West Wyalong on a site with mains supplied utility connection points already available.

iii Alternative design options

Upon selecting the Boundary Street site as the preferred site, Evolution undertook a process of considering alternative design options, both in terms of village layout and type/form of buildings.

The village layout has been selected based on the general design principles described in section 3.1.1.

The preferred layout was developed in consultation with EMM, taking into account site environmental constraints such as bushfire hazard (refer section 6.3), biodiversity (refer section 6.2) and heritage (see sections 6.4 and 6.5).

A modular building type was selected as the preferred option due to ease of constructability, transportability, and capital and operating costs.

Different layouts have been selected for the modules dependent on the workforce type (construction, operational and accessible).

iv Do nothing alternative

The ‘do nothing’ alternative would mean not proceeding with the accommodation village. This was not seriously contemplated by Evolution as it could result in a range of negative social impacts and compromise the wellbeing of the construction and operations workforce and impact the Underground Development’s delivery timeframes and viability.

Without adequate housing for the construction and operational workforce, workers from outside the region will be required to purchase or rent housing in West Wyalong, Forbes, Condobolin and other regional towns. This in turn could decrease the availability of rental properties and short-stay accommodation in surrounding regional towns and increase rental market prices for existing residents.

If the village was not constructed, it would be more difficult to attract workers to construct and operate the Underground Development Project and the associated infrastructure at CGO. Workers may be required to drive long distances between regional towns and CGO which could impact fatigue levels and result in road safety risks. More discussion on the social and economic impacts of the project are discussed in Chapter 6.

4 Statutory context

4.1 NSW legislation

4.1.1 Environmental Planning and Assessment Act 1979

The EP&A Act is the principal environmental planning legislation in NSW. Implementation of the EP&A Act is the responsibility of the Minister for Planning, statutory authorities and local councils. Amongst other objectives, it aims to facilitate ecologically sustainable development, by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.

Section 4.5 of the EP&A Act specifies the relevant consent authority. The proposed project is not State significant development, regionally significant development, or development that requires the consent of another public authority (other than council), therefore BSC is the consent authority for the proposed development (section 4.5(d) of the EP&A Act).

i Matters for consideration

In determining a development application, a consent authority is to consider the matters listed under section 4.15(1) of the EP&A Act. These matters and where they are addressed in this SEE are detailed in Table 4.1.

Table 4.1 Section 4.15(1) matters for consideration

Section 4.15(1) matter for consideration		Comments/where addressed
(a) the provisions of:		
i.	any environmental planning instrument, and	The relevant planning instruments are addressed in Section 4.3, including: • State Environmental Planning Policy No. 55 – Remediation of Land; • State Environmental Planning Policy (Infrastructure) 2007; • Bland Local Environmental Plan 2011; and • Bland Shire Development Control Plan 2012.
ii.	any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred definitely or has not been approved), and	There are no proposed instruments relevant to this DA.
iii.	any development control plan, and	The Bland Shire DCP is relevant to this DA and is addressed in Section 4.5.
iv.	any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and	There are no planning agreements relevant to this DA.

Table 4.1 Section 4.15(1) matters for consideration

Section 4.15(1) matter for consideration	Comments/where addressed
v. the regulations (to the extent that they prescribe matters for the purposes of this paragraph) that apply to the land to which the development application relates,	The requirements of the EP&A Regulation are addressed in Section 4.1.2.
(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	This SEE comprehensively describes the likely impacts of the proposal, including environmental impacts on both the natural and built environments, and social and economic impacts in the local area and region (refer Chapter 6).
(c) the suitability of the site for the development,	The site was selected due to its favourable size, proximity to town, land zoning, existing improvements/infrastructure and access to utilities connections as a result of its previous land use as an accommodation village.
(d) any submissions made in accordance with this Act or the regulations,	This SEE will be placed on public exhibition and submissions will be sought from relevant agencies and the community. It is anticipated that any submissions received by BSC will be forwarded to Evolution for consideration and response.
(e) the public interest.	To assist Evolution in determining whether the proposal is in the public interest, this SEE provides a justification for the proposed development, taking into consideration its potential environmental impacts, its associated economic and social significance and the suitability of the subject land (refer section 3.3 and Chapter 6).

4.1.2 Environmental Planning and Assessment Regulation 2000

i Schedule 1 requirements

Part 6 of the EP&A Regulation details procedures relating to DAs. Schedule 1 of the EP&A Regulation relates to the preparation of DAs and in particular, clauses 1 and 2 of this schedule prescribe the information required to be provided in the DA and the documents to accompany a DA. The Schedule 1 requirements, and where they are addressed in this SEE, are set out in Table 4.2.

Table 4.2 Schedule 1 requirements for a development application

Schedule 1 requirement	Comment/where addressed
(a) the name and address of applicant	Section 1.2.
(b) a description of the development to be carried out	Section 3.1.
(c) the address, and formal particulars of title, of the land on which the development is to be carried out	Section 2.1.
(d) an indication as to whether the land is, or is part of, critical habitat,	Section 6.2.
(e) an indication as to whether the development is likely to significantly affect threatened species, populations or ecological communities, or their habitats, unless the development is taken to be development that is not likely to have such an effect because it is biodiversity compliant development.	Section 6.2.
(ea) for biodiversity compliant development, an indication of the reason why the development is biodiversity compliant development.	Section 6.2.

Table 4.2 Schedule 1 requirements for a development application

Schedule 1 requirement	Comment/where addressed
(f) a list of any authorities from which concurrence must be obtained before the development may lawfully be carried out or from which concurrence will have been required but for section 4.13(2A) or 4.41.	The BSC may seek concurrence from other public authorities prior to determining this application.
(f1) in the case of an application that is accompanied by a biodiversity development assessment report, the reasonable steps taken to obtain the like-for-like biodiversity credits required to be retired under the report to offset the residual impacts on biodiversity values if different biodiversity credits are proposed to be used as offsets in accordance with the variation rules under the *Biodiversity Conservation Act 2016*,	Section 6.2.
(f2) if the land is subject to a private land conservation agreement under the Biodiversity Conservation Act 2016, a description of the kind of agreement and the area to which it applies,	N/A
(g) a list of any approvals of the kind referred to in section 4.46(1) of the Act that must be obtained before the development may lawfully be carried out,	Section 4.1.3.
(h) the estimated cost of the development,	Section 3.1.
(h1) if the land is subject to a private land conservation agreement under the Biodiversity Conservation Act 2016, a description of the kind of agreement and the area to which it applies,	The land is not subject to a conservation agreement under the NSW *Biodiversity Conservation Act 2016*.
(i) evidence that the owner of the land on which the development is to be carried out consents to the application, but only if the application is made by a person other than the owner and the owner's consent is required by this Regulation,	Owner's consent has been sought.
(j) a list of the documents accompanying the application.	A list of documents has been provided on the cover letter.

4.1.3 Other relevant legislation

i Protection of the Environment Operations Act 1979

The NSW *Protection of the Environment Operations 1979* (POEO Act) is the principal NSW environmental protection legislation.

Schedule 1 of the POEO Act lists the 'scheduled activities' which are required to be regulated by an environment protection licence (EPL). The project is not considered a scheduled activity under Schedule 1 of the POEO Act and therefore an EPL is not required.

Noise and air quality impacts are regulated under the POEO Act. An NVIA and AQIA have been completed to determine the potential noise or air quality impacts resulting from the project.

ii Biodiversity Conservation Act 2016

Pursuant to section 1.7 of the EP&A Act, the EP&A Act has effect subject to the provisions of Part 7 of the NSW *Biodiversity Conservation Act 2016* (BC Act). The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of Ecological Sustainable Development (ESD). It establishes the regulatory framework for assessing and offsetting biodiversity impacts for proposed development.

Section 7.7 of the BC Act requires a Biodiversity Development Assessment Report (BDAR) to be prepared for development applications under Part 4 of the EP&A Act. Section 7.7 states:

> Biodiversity assessment for Part 4 development (other than State significant development or complying development)
>
> 1. This section applies to an application for development consent under Part 4 of the Environmental Planning and Assessment Act 1979, except –
>
>   a. an application for development consent for State significant development, or
>
>   b. an application for a complying development certificate.
>
> 2. If the proposed development is likely to significantly affect threatened species, the application for development consent is to be accompanied by a biodiversity development assessment report.

A BDAR has been prepared for the project by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under Section 6.10 of the BC Act. The BDAR is summarised in Section 6.2 and has concluded:

- The site contains Plant Community Type (PCT) 217 Mugga Ironbark - Western Grey Box - cypress pine tall woodland on footslopes of low hills in the NSW South Western Slopes Bioregion.
- Candidate species assessment identified 18 threatened potential species credit species to potentially exist onsite. Targeted surveys were completed for *Tylophora linearis*, Koala and Squirrel Glider, which ultimately did not detect the presence of these species onsite.
- The project will require 16 ecosystem credits to compensate for impacts on native PCTs and ecosystem credit species.

iii National Parks and Wildlife Act 1974

The NSW *National Parks and Wildlife Act 1974* (NPW Act) provides for nature conservation in NSW, including the conservation of places, objects and features of significance to Aboriginal people and protection of native flora and fauna.

The potential Aboriginal heritage impacts of the project are assessed in detail in section 6.4. No Aboriginal cultural heritage sites have been identified within the site.

iv Heritage Act 1977

The NSW *Heritage Act 1977* (Heritage Act) aims to protect and conserve the natural and cultural history of NSW, including scheduled heritage items, sites and relics. No items listed on the Bland LEP, or the State Heritage Register, are within the site.

The potential heritage impacts of the project are assessed in detail in section 6.4 and 6.5.

v Rural Fires Act 1997

The NSW *Rural Fires Act 1997* (RF Act) aims to prevent, mitigate, and suppress bushfires and other fires in local government areas of the State.

Much of the site is noted as being bushfire prone (as shown on the ePlanning Spatial Viewer). A bushfire risk assessment for the site has been undertaken (see section 6.3) and asset protection zones (APZ) have been recognised to limit bushfire risks.

An Emergency Response Plan will be prepared for the project and include bushfire management protocols.

vi Local Government Act 1993

Connecting the site to the town water supply, sewer and installing stormwater drains are activities listed in section 68 of the NSW *Local Government Act 1993* (Local Government Act) which require approval from the relevant local council prior to carrying out the activity. These activities include:

Part B Water supply, sewerage and stormwater drainage work

1. Carry out water supply work.
2. Draw water from the council water supply or a standpipe or sell water so drawn.
3. Install, alter, disconnect or remove a meter connected to a service pipe.
4. Carry out sewerage work.
5. Carry out stormwater drainage work.
6. Connect a private drain or a sewer with a public drain or sewer under the control of a council or with a drain or sewer which connects with such a public drain or sewer.

Approval from BSC will therefore be required prior to construction of the activities listed above.

4.2 Commonwealth legislation

4.2.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides the legal basis to protect and manage internationally and nationally important flora, fauna, ecological communities, heritage places and water resources which are deemed to be matters of national environmental significance (MNES). MNES, as defined under the EPBC Act are:

- World Heritage properties;
- places listed on the National Heritage Register;
- wetlands of international significance listed under the Ramsar Convention;
- threatened flora and fauna species and ecological communities;
- migratory species;
- Commonwealth marine areas;
- Great Barrier Reef Marine Park;
- nuclear actions (including uranium mining); and
- water resources, in relation to coal seam gas or large coal mining development.

Under the EPBC Act, actions that will, or are likely to, have a significant impact on a MNES are deemed to be controlled actions and can only proceed with the approval of the Commonwealth Minister for the Environment.

An action that may potentially affect a MNES has to be referred to the Commonwealth Minister for determination as to whether it is a controlled action.

The project will not impact any MNES and therefore is not required to be referred to the Commonwealth Minster as a controlled action.

4.2.2 Native Title Act 1993

The Commonwealth *Native Title Act 1993* (NT Act) recognises and protects native title in Australia. It protects native title from unlawful interference by establishing a regime that governs all dealings with land and waters after 1 January 1994 that affect native title (called 'future acts') and by prescribing standards for those dealings. A future act is invalid to the extent it affects native title, unless it is otherwise validated by a provision of the NT Act.

A native title claim (NN2020/007) was lodged on 21 August 2020 by the West Wyalong LALC over part of the site. This claim is yet to be determined at the time of preparing this SEE.

4.3 Environmental planning instruments

4.3.1 State Environmental Planning Policy No 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) applies to the state and provides a planning framework for the remediation of contaminated lands, designed to reduce the risk of harm to human health and the environment. Under SEPP 55, a consent authority must not consent to the carrying out of development on land unless it has considered potential contamination issues. Clause 7(1) requires a consent authority to take into consideration contamination and remediation in all development applications.

A preliminary site investigation (PSI) was undertaken by EMM in support of the project's DA. The PSI included a site inspection and desktop review of historical records, plans, photographs, maps, and land title information to assess whether historical or present activities have the potential to or have caused contamination that may impact on the future development of the site.

The PSI and potential contamination impacts of the project are discussed further in section 6.10.1.

4.3.2 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process.

Development applications that concern 'traffic-generating development' must be formally referred to the NSW Roads and Maritime Services (RMS) for certain developments listed in Columns 1, 2 and 3 of Schedule 3 of the Policy and consider any representations made by the RMS.

The project is not consistent with any development type listed in Column 1 of Schedule 3. The development is not classified as traffic generating development in accordance with clause 104 and Schedule 3 of the Policy as it will not result in more than 300 dwellings or 75 dwellings fronting a classified road.

4.4 Bland Local Environmental Plan 2011

The site is located within the Bland LGA and governed by the Bland LEP. It is zoned R1 General Residential and has the following objectives:

- to provide for the housing needs of the community;
- to provide for a variety of housing types and densities;
- to enable other land uses that provide facilities or services to meet the day to day needs of residents; and
- to promote seniors housing on land in the vicinity of the West Wyalong District Hospital.

The project meets the zoning objective by providing accommodation for a community of workers in a location that is near to existing facilities and services and that will integrate well with the surrounding context and established character. Additionally, the project will alleviate pressure on the existing housing supply in West Wyalong.

The project can be considered 'multi dwelling housing' under the Bland LEP, which is defined as:

> 3 or more dwellings (whether attached or detached) on one lot of land, each with access at ground level, but does not include a residential flat building

Multi dwelling housing is permitted with consent on land zoned R1 General Residential under the Bland LEP.

Other clauses of the Bland LEP that apply to the project are addressed in Table 4.3.

Table 4.3 Compliance with the Bland LEP

Provision	Comment	Compliance
5.10 Heritage conservation		
The objectives of this clause are as follows: a) to conserve the environmental heritage of Bland, b) to conserve the heritage significance of heritage items and heritage conservations areas, including associated fabric, settings and views, c) to conserve archaeological sites, d) to conserve Aboriginal objects and Aboriginal places of heritage significance.	The site is not a heritage item nor in a heritage conservation area. It is located approximately 800 m away from the nearest recorded heritage item at 106 Railway Road, West Wyalong. The project will not impact upon this heritage item.	Compliant
6.1 Essential services		
Development consent must not be granted to development unless the consent authority is satisfied that any of the following services that are essential for the proposed development are available or that adequate arrangements have been made to make them available when required: a) the supply of water, b) the supply of electricity, c) the disposal and management of sewage, d) stormwater drainage or on-site conservation, e) suitable road access.	The site will be fully serviced with mains potable water, electricity and sewerage services during construction and operation. Suitable road access will be provided from Boundary Street. A circular entry and exit driveway will be constructed on Chudleigh Crescent. Gutters and downpipes will be constructed on accommodation modules and buildings to capture stormwater, which will be discharged away from accommodation modules and buildings into drainage channels.	Compliant

Table 4.3 Compliance with the Bland LEP

Provision	Comment	Compliance
6.2 Earthworks		
The objectives of this clause are as follows: a) to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land, b) to allow earthworks of a minor nature without requiring separate development consent.	The proposed earthworks are minor and nominally include: • the construction of footings for pre-fabricated accommodation modules and buildings; • trenching for serves and stormwater drainage; • construction of the entry and exit driveway; • construction of the car park; and • landscaping. The proposed works will be undertaken in accordance with a CEMP prepared for the construction phase of the project. No impact to existing and natural drainage patterns or soil stability is expected as a result of the project.	Compliant

4.5 Bland Shire Development Control Plan 2012

The Bland DCP applies to the site. In general, the design of the village complies with the DCP provisions which relate to multi-dwelling residential development. A compliance assessment of the village against the relevant controls of the Bland DCP is provided in Appendix P.

4.6 Strategic context

4.6.1 Bland Shire Council Community Strategic Plan 2017-2027

The Bland Shire Community Strategic Plan 2017-2027 (the Strategic Plan) was prepared as a tool to guide the future direction of the Bland LGA. Through community consultation, various objectives to guide the future direction of the Bland LGA were identified across the four themes of: 'our people', 'our places', 'our leadership' and 'our prosperity'.

The project will not adversely affect any of the objectives noted in the Strategic Plan. This includes any impact to tourism or community services (including health, business, manufacturing or industrial services), access to the local and regional road network, condition of roads within the local and regional road networks or the community's sense of safety.

The project is however, believed to be consistent with the following objectives under the themes of 'our leadership' and 'our prosperity':

- Provide sustainable, productive, highly skilled and committed workforce which supports current and future service delivery needs.
- Ensure a sustainable environment for current and future generations through effective management and planning for the long term future by ensuring appropriate land is zoned and available to support business and industry growth.

The CGO Underground Development Project will allow the continued mining of gold at CGO, and the continued employment and upskilling opportunities of the anticipated construction and operation workforce. The project is located on appropriately zoned land and will support the CGO Underground Development by providing adequate accommodation for the construction and operation workforce. This will in turn continue to provide social and economic benefits to the community of West Wyalong.

4.6.2 Riverina Murray Regional Plan 2036

The Riverina Murray Regional Plan 2036 (the RMR Plan) was released by DPIE 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 identifies the LGA economic opportunities for West Wyalong to be 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 is identified that the mineral resources sector provides economic and employment benefits to the local communities and the broader region.

The RMR Plan notes that care must be taken to manage the impacts of mining to produce long-term sustainable economic, social and environmental outcomes and so, caters for land uses beyond the life of mining.

The village will support the anticipated workforce associated with the construction and operation of the CGO Underground Development Project. Failure to provide adequate housing and transport for the workforce has the potential to result in adverse social impacts, including increased fatigue of the workforce, decreased availability of adequate rental properties and short stay accommodation in surrounding regional towns and increased rental market prices for existing residents of these regional towns.

The construction and operation of the village will have limited environmental impacts. Traffic impacts will not affect the State and local road networks (including freight corridors) as bus transport for the workforce between the village and CGO will be provided, as it currently is from West Wyalong and other regional centres. It will not affect tourism or community services (including health, business, manufacturing or industrial services).

The project is therefore considered to be consistent with the abovementioned directions and goals of the RMR Plan.

5 Stakeholder engagement

5.1 Introduction

This chapter provides an overview of the outcomes of community and stakeholder engagement actions undertaken for the project by Evolution. The engagement program undertaken during preparation of the SEE included different communication methods to ensure community members directly or indirectly affected by the project, and other stakeholders, were kept informed about the project. The engagement program will continue to be delivered as the project progresses into the detailed design, construction and operational phases to ensure the community and relevant stakeholders are kept informed.

Evolution has been actively engaging with and supporting the surrounding community since the commencement of operations at CGO in 2005. As part of the CGO Underground Development Project, a range of stakeholders were consulted, including members of the local community, neighbouring landowners, Bland Shire Council, Forbes Shire Council, Lachlan Shire Council and CGO's existing Community Environmental Monitoring & Consultative Committee (CEMCC).

Conceptual information about the accommodation village was included in engagement actions completed for the CGO Underground Development Project. Additional targeted engagement has been completed for the accommodation village since this time. The engagement process has continued to be guided by Evolution's core values of accountability, excellence, respect and safety.

5.1.1 Stakeholder engagement

i Stakeholder engagement tools

Evolution uses a range of tools to inform the community about its operations and proposals. It has adapted its stakeholder engagement methods to respond to the current COVID-19 pandemic and resulting restrictions. The key tools Evolution uses are summarised as follows:

- face-to-face meetings with stakeholders;
- Community Environment Monitoring Consultative Committee;
- online consultation sessions;
- newsletter updates; and
- social responsibility team emails.

ii Stakeholder meetings

Evolution has met regularly with key stakeholders throughout the social impact assessment and consultation studies for the EIS for the CGO Underground Development Project to discuss accommodation needs for that project.

This included meeting with Bland Shire Council to discuss their views about the proposed village development. BSC has shown interest in the village, noting that the site is the same site which housed the Barrick Gold village in the mid-2000s. During early consultation discussions, BSC did not raise significant concerns with the operation of the previous Barrick Gold village, as it was generally considered to be well managed. BSC did not foresee any significant issues with the current proposal if the village is again well managed.

Evolution representatives have met with BSC officers on several occasions during the preparation of this SEE. The key items for discussion were the approval pathway and local planning considerations, the layout of the site, existing services connections, and site access and traffic issues.

The WWLALC was consulted during the social impact assessment study completed for the CGO Underground Development Project and since completion of the EIS exhibition, there have been a number of meetings to discuss use of the site for a village. WWLALC is generally supportive of the village, as it would make use of their land and provide an income stream through the lease of the site. It is also supportive due to the potential employment opportunities for the local community that may result from the development and ongoing operation of the village.

WWLALC representatives were in attendance during the Aboriginal heritage due diligence site inspection undertaken in August 2020. WWLALC representatives identified that the cluster of quandong trees in the centre of the site has cultural significance, and as a result, the village layout has been designed to respect this feature and retain these trees.

Evolution has long standing partnerships with local short stay accommodation providers in West Wyalong. It has closely consulted with these providers during the planning for the village. Evolution hosted an online conference for providers and has set up a reference group to discuss the opportunities that would arise during the construction of the village.

iii Community Environmental Monitoring & Consultative Committee

The CEMCC is made up of Evolution representatives (including the CGO Superintendent – Environment), the mayors and officers of the three local councils and various community members. It has an independent chairperson and meets at least four times a year. The CEMCC is a key communication forum to keep the community up to date about the CGO. The accommodation strategy, including details of the village was socialised with the CEMCC in late 2020 when the underground development project consultation was being undertaken.

iv Online consultation

In September and October 2020, Evolution hosted several online consultation workshops which detailed the applications for the CGO Underground Development Project and the associated changes to the existing infrastructure at the mine. This included discussion on the accommodation village. No concerns were raised about the village during the online consultation sessions.

v Newsletter updates

Evolution releases a newsletter on a regular basis to inform the wider community of its operations and any key changes proposed for CGO. The newsletter also keeps the community informed about the community initiatives that Evolution is involved with, including local sponsorships, community funding and scholarship updates.

Evolution distributed a newsletter specifically focussing on its accommodation strategy, including details of the village prior to the lodgement of the DA. This newsletter was distributed to households in West Wyalong in April 2021.

vi Social Responsibility Team

Evolution's Social Responsibility team leads the communication on behalf of CGO with the community. The team operates a dedicated email at community.cowal@evolutionmining.com.au where the community can be provided with information about the operations of the mine and the development of the village. This channel of communication was open during the preparation of the SEE.

5.1.2 Ongoing stakeholder engagement

Evolution will continue to work closely with the local community, BSC, the WWLALC and neighbouring landowners to ensure stakeholders are kept informed of progress with the village. Ongoing engagement will generally apply similar engagement techniques as used currently for communications regarding CGO.

The SEE will be placed on public exhibition by BSC and the community given the opportunity to comment on the proposed development. Evolution will be expected to respond to any comments made by the community to assist BSC in assessing the DA.

Evolution will continue to operate its open channels of communication via the Social Responsibility email address and through targeted consultation with neighbours as necessary during the assessment of the DA.

6 Environment

6.1 Introduction

The predicted environmental impacts of the project during construction and operational phases, including proposed mitigation measures, are identified in this chapter.

The assessment approach for each environmental matter (eg noise emissions, traffic, etc) was determined based on the initial predicted environmental impacts, including the level of each impact if left unmitigated.

For key environmental matters where the unmitigated impact had the potential to be significant (high), detailed technical assessments have been undertaken. For other environmental matters, where the level of unmitigated impact was deemed to be insignificant (low or negligible), detailed technical assessments were not undertaken.

The environmental matters considered as part of this assessment, along with the supporting technical assessments undertaken are summarised in Table 6.1.

Table 6.1 Environmental assessment

Environmental matter	Technical assessment	SEE section	Appendices
Key matters			
Biodiversity	Biodiversity Development Assessment Report	Section 6.2	Appendix E
Bushfire	Bushfire Hazard Report	Section 6.3	Appendix F
Aboriginal heritage	Aboriginal Heritage Due Diligence Assessment	Section 6.4	Appendix G
Non-Aboriginal heritage	Historical Heritage Due Diligence Assessment	Section 6.5	Appendix H
Visual	Visual Impact Assessment	Section 6.6	Appendix I
Surface water	Surface Water Drainage and Flood Plan	Section 6.7	Appendix J
Noise and vibration	Noise and Vibration Impact Assessment	Section 6.8	Appendix K
Air quality	Construction Air Quality Impact Assessment	Section 6.9	Appendix L
Traffic	Traffic Impact Assessment	Section 6.10	Appendix M
Contamination	Preliminary Site Investigation	Section 6.11	Appendix N
Social	Social Impact Assessment[1]	Section 6.12	-
Economic	Economic Impact Assessment[1]	Section 6.13	-
Geotechnical	Geotechnical Report	Section 6.14	Appendix O
Other matters			
Rehabilitation	-	Section 6.15.1	-
Greenhouse gas	-	Section 6.15.2	-
Hazards	-	Section 6.15.3	-
Waste	-	Section 6.15.4	-

1. The Economic Impact Assessment (AEC 2020) and Social Impact Assessment (Elton 2020) undertaken for the CGO Underground Development Project EIS considered the economic and social impacts of the CGO accommodation village at the site and this information has been used to support the economic and social impact assessments presented in this SEE.

6.2 Biodiversity

6.2.1 Overview

This section provides a summary of the BDAR completed by EMM (2021a) for the project, prepared in accordance with the BC Act, the EPBC Act and the Biodiversity Assessment Method (BAM) (DPIE 2020).

The biodiversity impact has been determined through the following steps:

- identification of the subject land's biodiversity values;
- likelihood of occurrence of threatened species and communities (threatened biodiversity) listed under relevant the BC Act and EPBC Act within the subject land;
- identification of strategies to avoid and/or minimise impacts of the project on threatened biodiversity;
- assessment of residual threatened biodiversity impacts, after avoidance and minimisation strategies have been implemented; and
- identification of environmental safeguards to mitigate threatened biodiversity impacts during construction and operation.

The subject land as identified in the BDAR includes the area of land which was surveyed for ecological values. It includes the site in addition to adjacent lots on the northern, eastern and southern site boundary (refer Figure 3.2 of the BDAR).

The project will result in disturbance to one PCT which will require offset in accordance with the BAM (DPIE 2020). The project is not expected to affect any threatened ecological communities, threatened species or migratory species.

6.2.2 Existing environment

i Native vegetation

The method to identify native vegetation is described in section 4.2 of the BDAR (refer Appendix E) and included detailed vegetation mapping and vegetation integrity and habitat assessments.

The majority of the subject land consists of cleared woodland of poor quality with scattered shrubs. Sections of these cleared areas are subject to on-going slashing maintenance. Where intact woodland exists, it is dominated by native species, however it is patchy and modified by past development including historical land clearing and ongoing disturbance by recreational activities such as bike trails.

One plant community type (PCT) and two vegetation zones were identified within the subject land (refer Table 6.2), being PCT 217 - *Mugga Ironbark - Western Grey Box - cypress pine tall woodland on footslopes of low hills in the NSW South Western Slopes Bioregion*. This PCT is further detailed in Table 4.4 of the BDAR (refer Appendix E). The vegetation integrity score for each vegetation zone was below the threshold for requiring offsets under the BAM (DPIE 2020).

Table 6.2 PCT and vegetation zones

PCT ID	PCT name	Vegetation formation	Vegetation class	Condition	Extent in the site (ha)	Extent Boundary Street APZ (ha)	Extent in the subject land (ha)
217	Mugga Ironbark - Western Grey Box - cypress pine tall woodland on footslopes of low hills in the NSW South Western Slopes Bioregion	Dry Sclerophyll Forests (Shrubby sub-formation)	Western Slopes Dry Sclerophyll Forests	Medium	0.70	0.32	1.98
217	Mugga Ironbark - Western Grey Box - cypress pine tall woodland on footslopes of low hills in the NSW South Western Slopes Bioregion	Dry Sclerophyll Forests (Shrubby sub-formation)	Western Slopes Dry Sclerophyll Forests	Poor	1.49	0.31	2.51

ii Threatened ecological communities

The PMST identified four threatened ecological communities listed under the EPBC Act to potentially occur in the subject land, including:

- White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland listed as a CEEC under the EPBC Act;
- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia listed as an EEC under the EPBC Act;
- Poplar Box Grassy Woodland on Alluvial Plains listed as an EEC under the EPBC Act; and
- Weeping Myall Woodlands listed as an EEC under the EPBC Act.

Upon further assessment, all four threatened ecological communities were identified to have a negligible likelihood of occurrence within the subject land and were not assessed further in the BDAR.

iii Threatened species

The Protected Matters Search Tool (PMST) identified twenty-one threatened flora and fauna species (refer Table 7.2 of the BDAR) listed under the EPBC Act that may occur in the subject land. Three EPBC Act listed fauna species (Swift Parrot, Superb Parrot, and Corben's Long-eared Bat) were considered to have a moderate likelihood to occur in the subject land. The BDAR concludes that the project will not cause a significant impact to these species (refer Table 7.4 of the BDAR).

One flora candidate species (*Tylophora linearis)* and two fauna candidate species (Squirrel Glider and Koala) required further assessment by targeted surveys in accordance with the BAM (DPIE 2020) (refer Table 5.1, Table 5.2 and section 5.3.3 of the BDAR). During the targeted surveys, no flora or fauna candidate species were identified in the survey area.

iv Migratory species

The PMST identified eight species listed as migratory under the EPBC Act to potentially occur in the subject land. Upon further assessment, these migratory species are considered unlikely to occur in the subject land (refer Table 7.3 of the BDAR).

6.2.3 Predicted impacts

Without any mitigation measures, the project could result in the following direct and indirect impacts to biodiversity:

- direct impacts:
  - loss of native vegetation; and
  - loss and degradation of native fauna habitats;
- indirect impacts:
  - erosion and sedimentation;
  - weed introduction and spread;
  - potential inadvertent disturbance of retained habitats;
  - removal of habitat resources for threatened fauna;
  - removal of one hollow-bearing tree; and
  - increased noise, vibration and dust levels resulting in disturbance of fauna species, and consequent abandonment of habitat, or changes in behaviour (including breeding behaviour).

6.2.4 Mitigation measures

Mitigation measures include strategies to promote the avoidance or minimisation of impacts to native vegetation where possible and offsetting the loss of impacted native vegetation in accordance with the BAM (DPIE 2020) where avoidance is not possible.

i Avoidance and minimisation strategy

An avoidance and minimisation strategy has been implemented to manage biodiversity impacts. Native vegetation has been avoided where possible through an iterative design process. This process has considered a number of avoidance and minimisation strategies, including:

- use of the current ring road from Boundary Street;
- use of existing in-ground services where possible;
- minimising removal of existing established trees during placement of accommodation modules; and
- incorporating existing established vegetation into the landscaping design of the village.

ii Offsetting

Impacts to native vegetation requiring offset include the disturbance of 0.70 ha of PCT 217 – Mugga Ironbark - Western Grey Box - cypress pine tall woodland on footslopes of low hills in the NSW South Western Slopes Bioregion. A total of 16 ecosystem credits are required to offset the impacts of the project (refer Table 6.3 of the BDAR). Evolution will meet the credit obligation via purchase of credits from the biodiversity credit market, establishment of site(s) to create credits, or payment to the Biodiversity Conservation Fund.

6.3 Bushfire

6.3.1 Overview

As the site has been mapped as being bushfire prone under the Bland LEP, a bushfire risk assessment has been undertaken.

This section provides a summary of the Bushfire Hazard Report (BHR) completed by Blackash for the project, prepared in accordance with Planning for Bushfire Protection (PBP) (Rural Fire Service 2019). The BHR is provided in full in Appendix F.

The BHR (Blackash 2021b) provides an assessment of the bushfire threat posed to the site, through the establishment of the Bushfire Attack Level (BAL) for the site and provides mitigation measures to reduce the threat. The BAL is used to assess the ability of buildings to withstand attack from bushfire or prevent/slow its spread. It is based on increments of radiant heat expressed in kilowatts per square metre.

In accordance with PBP (RFS 2019), the BAL (indicating the site's potential bushfire threat) was determined through the following steps:

- step 1 – determine vegetation formation in all directions around the buildings to a distance of 140 m;
- step 2 – determine the effective slope of the land from the buildings for a distance of 100 m;
- step 3 – determine the relevant Forest Fire Danger Index (FFDI) for the council area in which the development is to be undertaken;
- step 4 – determine the separation distance by measuring from the edge of the unmanaged vegetation to the closest external wall of an asset; and
- step 5 – match the relevant FFDI, appropriate vegetation, distance and effective slope to determine the appropriate BAL using the relevant information in PBP (RSF 2019).

A site inspection was completed to determine the vegetation and slope of the site, using the method outlined in PBP (RFS 2019). This included measuring the worse-case scenario slope where vegetation occurs over a 100 m transect measuring outwards from the boundary of the proposed buildings.

From the BAL, the appropriate asset protection zone (APZ) and requirements for construction, such as access, water supply, gas and electrical supply and emergency procedures can be established to improve the BAL and reduce the threat. An APZ is a cleared buffer zone, or physical separation, between an asset and a bushfire hazard.

6.3.2 Existing environment

The site is located in a peri-urban area and sits on the fringe of the southern residential area of West Wyalong. The site has Hyde Street on its northern border and Boundary Street on its eastern border.

The southern portion of the site is located within the 100 m buffer of bushfire prone land as mapped under the Bland LEP (refer Figure 3 of the BHR). A small portion of this vegetation is mapped as Vegetation Category 1, which is considered to be the highest risk for bushfire.

The predominant vegetation of the site is grassland in the north and east with woodland vegetation further east and in the south, which continues outside of the site. Using the methodology noted in the PBP (RFS 2019), the slope is 0.57 degrees downslope to the east and upslope to the south, which is relatively flat. A conservative approach has therefore been applied to slope, which has included a 0−5 degree downslope to the east.

6.3.3 Predicted impacts

i Bushfire attack level

The BAL measures the ability of a building to withstand attack from bushfire. The form of bushfire attack and the severity will vary according to various factors, including vegetation, slope, building materials and overall nearby fuel load. Buildings with a BAL of 12.5 are considered to have a low risk of attack from a bushfire. Buildings with a BAL of 19 are considered to have moderate risk of attack from a bushfire, mostly due to embers and burning debris. Buildings with a BAL of 29 are considered to have a high risk of attack from a bushfire due to embers, burning debris and heat.

Based upon the steps listed in section 6.3.1 and shown in Figure 7 of the BHR (refer Appendix F), all of the sites have a BAL of 12.5. A small strip of land along the southern boundary of the site has a BAL of 19 and 29 (Figure 7). This land is located between the southern accommodation modules and the APZ and will remain vacant.

To maintain a BAL of 12.5, and to ensure bushfire risks are limited and controlled, APZs outlined in Table 6.3 will be implemented on-site. The APZs are also displayed on Figure 6 and Figure 7 of the BHA (refer Appendix F).

Table 6.3 Asset protection zones

Site boundary	Vegetation within 140 m	Effective slope of the land	Required APZ (m)	Provided APZ (m)
North	Grassland	Flat	10 m	Less than 17 m
East	Road verge then woodland	0.57 downslope	Grassland – 10 m Woodland – 13 m	Grassland – less than 32 m Woodland – less than 36 to 55 m
South	Woodland	0.57 downslope	11 m	11 m
West	Residential development	NA	NA	NA

6.3.4 Mitigation measures

A range of protection and mitigation measures can be implemented to ensure bushfire risks are appropriately managed. The following bushfire protection measures are recommended in the BHA to maintain a BAL of 12.5:

- APZs are established at the site (refer Table 6.3) which are:
  - regularly maintained and mowed;

- kept clear of fuels (such as bark, leaves and twigs), trees, shrubs and understorey vegetation;
- continuous tree canopies are managed and are at least 2 m to 5 m between a dwelling and overhanging canopy;
- separation of tree crowns by 2 m to 5 m; and
- not covered by clumps or islands of native vegetation of more than 20% of the APZ.

Further, Evolution will ensure that:

- the proposed modules, amenity buildings, fences and gates are built with non-flammable materials which minimise the spread of fire;
- village access roads and APZs are wide enough so that firefighting vehicles are provided with safe, all weather access to structures and hazard zones;
- appropriate access to water for firefighting purposes is provided, including the provision of fire hydrants and water tanks in accordance with the relevant standards;
- the location of electricity or gas services limits the possibility of ignition of surrounding bushland or the fabric of buildings; and
- a bushfire emergency management and evacuation plan will be prepared for the project.

6.4 Aboriginal heritage

6.4.1 Overview

This section provides a summary of the AHDD assessment completed by EMM (2020c) for the project, which is provided in full in Appendix G.

The AHDD assessment provides a detailed review of the existing environment and archaeological context of the site. From this, an initial investigation of constraints and opportunities has been completed by identifying existing and potential Aboriginal heritage sites and places on, and in, the immediate vicinity of the site. Based upon the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010), the methodology of the assessment involved:

- a search of the Aboriginal Heritage Information System (AHIMS) and National Native Title Tribunal (NNTT) databases;
- consideration of existing Aboriginal cultural heritage studies in the area and region for the presence of Aboriginal objects or places;
- consideration of the environmental context for the presence of Aboriginal objects or places;
- an inspection of the study area, undertaken by an EMM archaeologist to identify any Aboriginal objects or areas of potential archaeological deposit (PAD); and
- determination of whether further heritage investigation and impact assessment is required prior to the project going ahead.

The AHDD concluded that the site is considered to have a low likelihood of the presence of Aboriginal objects.

6.4.2 Existing environment

i Database analysis

a Aboriginal Heritage Information Management System

A search of the AHIMS database was completed on 10 July 2020, which identified two Aboriginal sites within a 10 km x 10 km area centred on the site (refer Figure 2.1 of the AHDD). AHIMS data best reflects the extent of previous archaeological assessments having the opportunity to identify Aboriginal sites, as opposed to the extent/presence of Aboriginal objects in a given search area. The results provided by the AHIMS database are regarded as a predictive modelling tool to assist in assessing the potential for Aboriginal objects and places to occur within certain landforms and features within the overall landscape.

The two AHIMS sites that were identified in the search are both culturally modified. AHIMS #43-4-0038 is located 5 km north of the study area and situated within a paddock in the context of an open plain landscape. It has been listed as partially destroyed. AHIMS #43-4-0006 is situated 6 km north of the study area in paddock adjacent to Gagies Creek. There are no AHIMS sites located within the site itself.

b National Native Title Tribunal

A search of the NNTT Register of Native Title Applications, Registration Decisions and Determinations completed on 1 January 2021, identified a native title claim (NN2020/007) was lodged on 21 August 2020 by the West Wyalong LALC over part of the site, which remains active, however no determination had been made at time of writing. The study area is situated within the jurisdiction of the West Wyalong LALC.

A search of the NNTT Register of Indigenous Land Use Agreements (ILUAs) completed on 1 January 2021 identified no ILUAs over the study area.

ii Environmental context

The site is in the traditional country of the Wiradjuri peoples, which is the largest language group in NSW. It extends from the Great Dividing Range in the east, to Hay in the west, Nyngan in the north and Albury in the south.

The site is within the NSW South Western Slopes (NSS) Bioregion, which is characterised by gently undulating slopes, plains and drainage lines. The geology of the site is predominately highly weathered granite. This type of landscape would have restricted several archaeological site types, such as rock shelter and rock engravings and therefore, if any types of archaeological site are to occur, exposed surface artefact scatters are likely to be the most common. Nevertheless, the site has been subject to high levels of ground disturbance from past construction, operation and removal of an accommodation village.

There are no watercourses within 200 m of the site. The closest established waterways to the site are Yiddah Creek and Gagies Creek, which are 1.8 km south and 6.2 km north of the site.

6.4.3 Predictive model

A predictive model of the potential for archaeological sites in, and around, the site was formulated as part of the assessment. The predictive model was based on previous archaeological assessments and results of the database searches. The predictive model was then verified by the site inspection.

It can be concluded that the site likely once contained Aboriginal artefacts demonstrating the transient use of the area by Aboriginal people. However, the high levels of disturbance from the previous use of the site as an accommodation village has significantly decreased the potential for undisturbed evidence of Aboriginal cultural heritage. Despite this, there is potential for the site to contain low densities of isolated heritage values on the ground surface.

6.4.4 Predicted impacts

The site is considered to have a low likelihood of the presence of Aboriginal objects. This is due to several reasons:

- the results of the site inspection were consistent with the predictive model, which did not identify any new Aboriginal objects or areas of potential archaeology sensitivity;
- the highly disturbed nature of the site due to the previous land use; and
- the topography and hydrology of the site, consisting of a flat plain landform and over 200 m from a watercourse which typically only features sporadic and isolated Aboriginal objects in undisturbed contexts.

Therefore, the project is unlikely to harm Aboriginal objects and can proceed in consideration of mitigation measures outlined in section 6.4.5.

Although no new Aboriginal objects were identified during the site inspection, a quandong tree cluster was identified by a member of the West Wyalong LALC during the site inspection which is unique to the area (refer Figure 4.1 of the AHDD). The project will avoid disturbance to this cluster of quandong trees and will make a feature of these as part of the central outdoor recreational area.

6.4.5 Mitigation measures

As the site is considered to have a low likelihood of the presence of Aboriginal objects, no site-specific mitigation measures are required to be implemented during construction of the project. The following unexpected finds protocols for Aboriginal heritage objects and Aboriginal burials or human skeletal remains will be in place during construction of the project:

- Unexpected finds protocol for Aboriginal heritage objects:
  - If Aboriginal objects are found at any stage of the life of the project all works in the immediate vicinity must cease immediately and the find will be reported to the work supervisor who will immediately advise the environmental manager or other nominated senior staff member of its discovery.
- Unexpected finds protocol for Aboriginal burials or human skeletal remains:
  - In the event that Aboriginal burials or skeletal material is uncovered during construction all work in the immediate vicinity will cease and the find will be reported to the work supervisor who will advise the site supervisor or other nominated senior staff member. The site supervisor or other nominated senior staff member will promptly notify the police and the State coroner (as required for all human remains discoveries).

6.5 Non-Aboriginal heritage

6.5.1 Overview

This section provides a summary of the HHDD assessment completed by EMM (2020d) for the project, which is provided in full in Appendix H. The assessment was prepared in consideration of the EP&A Act and Heritage Act. It describes the historical heritage context of the site, identifies relevant items listed on all relevant statutory and non-statutory heritage databases and inventories and assesses the impact of project on historical heritage items.

The HHDD assessment included the following steps:

- a review of historical heritage registers relevant to the site;

- a site inspection undertaken by an EMM archaeologist to investigate if any previously unrecorded heritage items or areas of archaeological potential are visually conspicuous in the site; and
- impact assessment and management recommendations.

The HHDD concluded that the site is considered to have a low likelihood of the presence of historical heritage items.

6.5.2 Existing environment

i Database analysis

A number of historical heritage databases were searched for the site on 14 January 2021, the results of which are summarised in Table 6.4. No statutory or non-statutory historical heritage items were identified within the site.

Table 6.4 Historical register search for items within the site

Register	Register listings relevant to the site
National Heritage List (NHL)	No listings
Commonwealth Heritage List (CHL)	No listings
State Heritage Register (SHR)	No listings
Schedule 5 of the Bland LEP	No listings
Register of the National Estate (RNE)	No listings
Register of the National Estate (RNE) – Non-statutory	No listings

ii Historical context

The establishment of Wyalong commenced in 1894 after a gold discovery in the district. However, planning efforts dwindled as miners had already migrated and created a settlement 5 km to the west called 'Main Camp', which eventually became known as West Wyalong. Planning of West Wyalong commenced in 1895, with the town officially becoming a municipality in 1899 with the erection of a council chambers, a courthouse, police station, post office and a school of arts (West Wyalong 2020). It predominately included pastoral holdings of mixed farming methods.

The site is situated on the eastern fringes of the early layout of West Wyalong in 1880. Based on a preliminary review of Parish plans from 1880, with several editions in the 1920s-30s, no buildings or other structures were identified within the site.

Recently, the site has been subject to high levels of ground disturbance from past construction, operation and removal of an accommodation village.

6.5.3 Predicted impacts

The presence of historical heritage items on the site is unlikely due to the following reasons:

- the results of the site inspection, which did not identify any previously unidentified relics or cultural landscapes;
- the results of the database searches, which identified no known statutory or non-statutory historical heritage items recorded within the site; and

- the highly disturbed nature of the site due to the previous land use.

Therefore, the project is unlikely to harm historical heritage items and can proceed in consideration of mitigation measures outlined in section 6.5.4.

6.5.4 Mitigation measures

As the site is considered to have a low likelihood of the presence of historical heritage items, no site-specific mitigation measures are required to be implemented during construction of the project. The following unexpected finds protocols for historical heritage items should be implemented as part of the CEMP for the project:

> If any potential historical relics are uncovered, a suitably qualified archaeologist must be contacted to determine the nature and significance of the find. If the find is assessed to not be a relic, works may proceed with caution. If the find is determined to be a relic under the Heritage Act, the NSW Heritage Council must be contacted and notified of the find. Works must not proceed in the area of the find until necessary approvals and permits are sought.

6.6 Visual

6.6.1 Overview

This section provides a summary of the VIA completed by EMM (2021e) for the project, which has been provided in full in Appendix I. The VIA provides an assessment of the project's impact upon the visual character of the surrounding landscape. The VIA considers the extent to which the project integrates with the local landscape, in addition to the impacts upon sensitive receptors in vicinity of the site. It has been completed in general accordance with *Guidelines for landscape and visual impact assessment* (Landscape Institute and Institute of Environmental Management & Assessment 2013).

The method of the VIA included the following steps:

- a desktop study to assess the visual character of the surrounding local area;
- photography of the site and surrounds;
- assessment of the impact of the village on nearby sensitive receptors (residences); and
- identification oof mitigation measures to alleviate impacts, where necessary.

The VIA found that the project will not visually impact tourist destinations or heritage sites. The project will have a moderate visual impact to one residential sensitive receptor (14 Hyde Street) and low visual impact to two other residential receptors (1 Hyde Lane and 26 Cedar Street). The project will be obscured from the primary view line of most sensitive receptors due to local existing mature vegetation and structures. Visual impacts will be further mitigated by proposed site landscaping and new fencing.

6.6.2 Existing environment

i Landscape setting

The site and the immediate locality are on the periphery of the residential areas of West Wyalong. To the immediate north and west of the site there is low density residential development. To the east and south there is vacant land, which has a relatively flat topography with fragmented vegetation.

ii Sensitive receptors

The VIA considers the impact of the project upon sensitive receptors, including several residences surrounding the site. As shown in Figure 4.1 of the VIA, the assessment viewpoints were selected to consider the viewsheds of these sensitive receptors in consideration of the site. The following sensitive receptors are located near the site and were considered in the VIA:

- 14 Hyde Street;
- 25 Cedar Street;
- 26 Cedar Street;
- 1 Hyde Lane; and
- Boundary Street.

There is no urban development on the northern side of Hyde Street which faces the northern boundary of the site. There is also no urban development on the adjacent eastern and southern land. As such, there are no identified potential sensitive receptors to the east or south of the site, other than users of Boundary Street. There are no tourist destinations or heritage sites within close proximity to the site that could be visually impacted by the project.

6.6.3 Predicted impacts

i Construction phase

During the eight-month construction period of the project, the visual impact of the project will be similar to that of other construction activities which may occur in the area. Sensitive receptors may have views of construction crews working and materials being delivered to site. During the construction phase, the visual impact of the project on all sensitive receptors at all locations is anticipated to be low with the implementation of mitigation measures.

ii Operation phase

The project is being developed adjacent to an established residential area, located to the north and west of the site. As such, it may result in some visual impact to adjacent residents, mainly because it will be a new element in the landscape. The visual impacts to the south and east of the site will be minor to negligible due to the absence of residences in that direction.

The project will have a moderate visual impact on the residence at 14 Hyde Street and a low visual impact on the residences at 1 Hyde Lane and 26 Cedar Street. The garden of 14 Hyde Street will share the western boundary of the site. The visual impact of the project from this garden will be minimised by the implementation of mitigation measure to obscure this view. The residences at 1 Hyde Lane and 26 Cedar Street are located further away from the site and will have partially obscured views of the project.

There is a moderate visual effect from Boundary Street, however this is not likely to be trafficked very often by people who are not connected to the project.

6.6.4 Mitigation measures

The project is considered to be moderately integrated with the existing residential development and the visual impacts of the project are not expected to be significant. The proposed impacts to sensitive receptors will be mitigated by intervening existing vegetation and structures, by proposed fencing and site landscaping and the provision of screening trees and shrubs along the perimeter of the site.

The project has been designed in consideration of the objectives of the Bland DCP, including the appropriate setbacks and buildings height as identified in the DCP. Additionally, the project will incorporate appropriate urban design and environmentally sustainable features. The visual impacts will be mitigated through a range of design features within the site, including:

- restricting the modules and main/administration buildings to single storey construction;
- use of muted tones on the colour pallet to blend structures into the surroundings;
- locating the village on a site which is on the urban fringe and is which is not densely populated, giving the opportunity for sympathetic placement of structures on the site;
- using the existing vegetation on the site to shield structures where possible; and
- landscaping other areas of the site to provide a pleasant view from outside of the site.

6.7 Surface water

6.7.1 Overview

A soil and water management plan (SWMP) has been prepared for the project by Calibre (2021) and is provided in full in Appendix J. The SWMP considers relevant government and industry guidelines and provides details of:

- the basis of design for stormwater management;
- proposed conceptual stormwater drainage design;
- proposed on-site detention measures; and
- proposed erosion and sediment control measures.

This section summarises the key findings of the SWMP as they relate to the SEE, with further assessment provided of the potential environmental impacts, proposed mitigation measures and residual impacts, with mitigation measures applied.

6.7.2 Existing environment

i Local hydrology and drainage

There is no existing stormwater drainage infrastructure within the site and there are limited pipe drainage systems located on land near the site. Runoff from the site drains to the roads surrounding the site, where it is conveyed via kerb and gutters along both sides of Boundary Street and Hyde Street and an informal swale along the western side of Hyde Lane. Dish drains are present across the intersections between Boundary Street and the site's internal loop road, which allows runoff to flow along the gutters. Runoff drains to the West Wyalong urban stormwater drain which lies approximately 400 m north of the site boundary. This drain then transmits water east towards Wyalong into Back Creek, which flows into Bland Creek and then Lake Cowal, approximately 35 km north-east of the site.

ii Flooding mechanisms

BSC is currently undertaking a flood study for the townships of Wyalong and West Wyalong. Available preliminary flood modelling results obtained from BSC (2021) for the 1% annual exceedance probability (AEP) event indicate flooding extending south along Boundary Street and Hyde Lane up to the site's southern boundary. The 1% AEP flood map presents flooding adjacent to the site up to approximately 300 mm in depth; however, no encroachment onto the site is predicted.

It should be noted that the BSC (2021) flood modelling results are preliminary and have only been used to inform an understanding of the hydrologic context of the site.

6.7.3 Proposed stormwater management system

The conceptual stormwater management system for the project is presented in Figure 3.2 and described in section 3.1.1iv.

6.7.4 Potential impacts

i Construction

During construction, surface soils in the development footprint will be stripped and compacted, with vegetative cover removed, thereby increasing erosion risk. Exposed soils have the potential to generate highly turbid runoff during rainfall, which has the potential to increase suspended sediment and nutrient levels in downstream receiving waterways and may have ecological and water quality impacts.

ii Operation

a Stormwater quantity

Development of the site includes bulk earthworks and changing the existing pervious surfaces across the development footprint to largely impervious surfaces associated with the proposed buildings, courtyards, landscaping, footpaths and access roads. This will reduce the permeation of water into the soil and concentrate flow of water from rooftops into drains with increased flow velocities from the site.

b Flooding

Based on preliminary flood modelling results for the 1% AEP event obtained from BSC (2021), flooding is expected to occur on Boundary Street and Hyde Lane and may result in shallow overland flooding on the site.

The development of the project is not expected to change flow paths or the severity of flooding on surrounding properties.

c Stormwater quality

Pollutant loads within stormwater runoff is expected to be typical of semi-urban environment. There is potential for elevated level of hydrocarbons within stormwater runoff from car and bus parking areas.

6.7.5 Mitigation measures

During the construction and operational phases, surface water run-off will be managed in accordance with the proposed stormwater management system, as described in Appendix J. The stormwater management system is a modern design and will be built to contemporary standards.

Potential surface water impacts will be further mitigated through the implementation of the CEMP for the project, as described in Appendix J.

6.8 Noise and vibration

6.8.1 Overview

This section provides a summary of the NVIA completed by EMM (2021g) for the project, which has been provided in full in Appendix K. The NVIA provides an assessment of the noise and vibration impacts associated with the construction and operational phases of the project and has been completed in accordance with the relevant guidelines.

The NVIA documents the existing noise environment, applicable impact assessment criteria, sources of noise and vibration, noise modelling of operational and construction activities and the assessment of predicted noise and vibration impacts in relation to criteria.

The NVIA concluded that construction noise management levels (NMLs) at twelve of the assessment locations will be exceeded by project-related construction noise. The project has incorporated design initiatives to avoid and minimise potential noise and vibration impacts. The NVIA proposes additional mitigation and management measures to address any residual impacts that cannot be feasibly and reasonably avoided.

6.8.2 Noise and vibration assessment locations

Noise and vibration assessment locations have been identified for the purpose of assessing potential noise and vibration impacts resulting from the project. These locations were selected to represent receivers potentially exposed to a range of impacts from the site and are provided in Table 3.1 and Figure 3.1 of the NVIA. The noise and vibration assessment locations include a mixture of residential, industrial and commercial land uses.

6.8.3 Assessment criteria

i Construction noise and vibration

The construction NMLs for the project have been determined based upon the recommendations of the ICNG (DECC 2009). For the purposes of the noise impact assessment, the NMLs as summarised in Table 4.3 of the NVIA have be applied to all assessment locations.

The criteria for vibration have been established for human and structural disturbance. This has been based upon *Environmental Noise Management – Assessing vibration: a technical guideline* (DEC 2006) and Australian Standard AS 2187.2 – 2006. The acceptable intermittent vibration doses to prevent human disturbance are summarised in Table 4.6 of the NVIA. The transient vibration guide values to ensure minimal risk of cosmetic damage to structures are summarised in Table 4.7 of the NVIA.

As recommended in British Standard BS 7385/BS 6472-1 and summarised in Table 5.2 of the NVIA, the safe working distances to prevent human and structural disturbance from vibration intensive plant have also been applied to the project's construction vibration impact assessment.

ii Operational noise

The operational noise criteria have been established in accordance with Noise Policy for Industry (NPfI) (EPA 2017). It includes intrusiveness noise levels and amenity noise levels as summarised in Table 4.8 and Table 4.9 of the NVIA. On the basis of the intrusiveness noise levels and the amenity noise levels, the project noise trigger levels (PNTL) for the operational phase of the project have been established as summarised in Table 4.10 of the NVIA.

iii Sleep disturbance

The sleep disturbance criterion for residences have been established in accordance with the NPfI and is summarised in Table 4.12 of the NVIA.

iv Road traffic noise

The road traffic criterion for residences have been established in accordance with the Road Noise Policy (RNP) (DECCW 2011). As summarised in Table 4.13 of the NVIA, the criterion has been applied to residences for construction and operational road traffic noise from the Mid Western Highway and Boundary Street. Additionally, the RNP states that where existing road traffic noise criteria are already exceeded, any additional increase in total traffic noise level should be limited to an increase of up to 2 dB.

6.8.4 Predicted impacts

i Construction noise and vibration

The predicted NMLs for the construction phase of the project consider a worst-case scenario, ie all plant and equipment operating concurrently. As summarised in Table 6.1 of the NVIA, the NMLs at twelve noise assessment locations (R1 to R12) will be exceeded by project-related construction noise during the standard construction hours within all construction phases (refer section 5.3.1 of the NVIA). At some assessment locations, exceedances are predicted to be greater than 10 dB above the NML.

The closest residence (R5) is located approximately 25 m to the closest proposed construction activity. With regards to project-related construction vibration, this is beyond the recommended safe working distances to prevent disturbance to human health or structures. Therefore, vibration related impacts to structures or human health at nearby residences is considered highly unlikely.

ii Operational noise

The predicted NMLs for the operational phase of the project are summarised in Table 6.2 of the NVIA. The predicted NMLs will be consistent with the PNTLs at all assessment locations during day, evening and night time periods of operation.

Operational noise modelling also considered intermittent maximum noise events during the night time period, including the use of buses at the onsite parking area. The results confirm compliance with the sleep disturbance criterion at all assessment locations (refer Table 4.12 of the NVIA).

iii Road traffic noise

The assessment of the road traffic noise levels considered peak 1 hr day and night traffic generation from the site. The proposed project-related construction and operational traffic numbers that have informed this assessment are provided in Table 5.6 of the NVIA.

The road traffic noise calculations for the day time period (7 am to 10 pm) and night time period (10 pm to 7 am) are summarised in Table 6.4 and Table 6.5 of the NVIA.

Existing day time traffic noise levels for the Mid Western Highway already exceed the road traffic noise criterion. The noise level increase from construction and operational traffic on the Mid Western Highway is predicted to comply with the <2 dB allowance criterion. For the day time period, the predicted construction and operational traffic on Boundary Street will comply with the road traffic noise criterion. Similarly, construction and operational traffic during the night time period on the Mid Western Highway and Boundary Street will comply with the <2 dB allowance criterion and road traffic noise criterion respectively.

6.8.5 Mitigation measures

i Noise

As noted above, worst-case project-related construction noise will exceed the NMLs at twelve noise assessment locations if all equipment on-site is operating simultaneously. As such, all feasible and reasonable noise mitigation and management measures should be considered. Accordingly, it is recommended that residents are notified prior to construction works commencing. Mitigation and management measures are provided in section 7.1.2 and 7.1.3 of the NVIA, including work practices and plant and equipment management methods to ameliorate predicted construction noise impacts. As summarised in Table 7.1 of the NVIA, the implementation of mitigation and management measures can result in measurable reductions in the NMLs.

Prior and during the construction phase of the project, aspects of the project like the location of plant and equipment will be continuously reviewed to further prevent exceedance of NMLs.

ii Vibration

Project-related vibration impacts on human health and structures are predicted to be highly unlikely for the construction phase. The NVIA recommends that the recommended safe working distances for structural damage should be monitored throughout the construction phase. If construction is within 25 m of sensitive structures, then work practices should be reviewed so that the recommended safe working distances are followed.

6.9 Air quality

6.9.1 Overview

This section provides a summary of the AQIA completed by EMM (2021h) for the project, which has been provided in full in Appendix L. The AQIA provides an assessment of the dust impacts associated with construction of the project and has been completed in consideration of *Guidance of the Assessment of Dust from Demolition and Construction* (IAQM 2014) (IAQM Guidelines).

Air quality impacts during the operational phase of the village are expected to be limited to emissions from infrequent vehicle movements associated with staff and contractors entering and exiting the site. These emissions are regarded as negligible and, as a result, have been excluded from the AQIA.

The assessment method for the AQIA uses a qualitative risk-based approach to consider amenity impacts due to dust soiling, health effects due to an increase of exposure to particulate matter less than 10 micrometres (µm) in aerodynamic diameter (PM_{10}) and harm to ecological receptors. It considers the magnitude and sensitivity of the surrounding area to these impacts.

The AQIA concludes that dust emissions from construction of the project is unlikely to represent a serious problem for adjoining residents. With the implementation of readily achievable mitigation measures, the risk of dust affecting those residents is not expected to be significant.

6.9.2 Predicted impacts

A summary of the risk assessment completed for the project has been provided in Table 6.5. This has been completed in consideration of the IAQM Guidelines, which requires that dust magnitude rating is combined with the sensitivity of the local area for four categories ie demolition, earthworks, construction and track-out.

Considering the project does not require the demolition of any structures, the risk of dust impact has been identified as negligible. During the construction phase of the project, dust could be generated from site earthworks, installation of the accommodation modules and use of construction vehicles. The magnitude of potential dust emissions from these activities is considered to be small to medium. The sensitivity of the surrounding area to these activities and impacts ranges from medium to high.

Considering the magnitude of the potential dust emissions and sensitivity of the surrounding area to potential dust impacts, the risk of dust impacts will range from a negligible to a medium risk if left unmitigated.

Table 6.5 Summary of risk assessment - unmitigated

Activity	Magnitude of dust emissions	Sensitivity of surrounding area			Risk of dust impacts		
		Dust soiling	Human health	Ecological	Dust soiling	Human health	Ecological
Demolition	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Earthworks	Medium	Medium	Medium	Medium	Medium risk	Medium risk	Medium risk
Construction	Medium	Medium	Medium	Medium	Medium risk	Medium risk	Medium risk
Use of construction vehicle	Small	High	High	Medium	Low risk	Low risk	Negligible

With the implementation of mitigation measures listed in Chapter 3 of the AQIA (refer Appendix L), construction dust is unlikely to result in any serious ongoing problem at the site. The residual risk impact on the surrounding area following implementation of the mitigation measures will be not significant.

6.9.3 Mitigation measures

Based on the project's potential dust impacts (refer Table 6.5), the AQIA has recommended mitigation measures to reduce the risk of these impacts on the surrounding area. These measures are routinely employed as 'good practice' on construction sites as part of a CEMP. Recommended mitigation measures include watering for dust suppression, logging dust complaints, carrying out regular inspections and recording results, and ensuring that loads entering and leaving sites are covered to prevent escape of materials during transport. The complete list of recommended mitigation measures is provided in Chapter 3 of the AQIA (refer Appendix L).

The proposed mitigation measures are considered sufficient to ensure off-site impacts from the construction phase of the project are effectively managed.

6.10 Traffic

6.10.1 Overview

This section provides a summary of the TIA (2021i) completed by EMM for the project, which is provided in full in Appendix M. The assessment was prepared in general accordance with *Guide to Traffic Generating Developments* (RTA 2002) and the relevant Austroads guidelines, and included a site inspection, intersection counts and traffic modelling.

Project-related traffic will be generated by:

- the **construction workforce** for the accommodation village, where workers will reside off-site; and

- the **habitation workforce**, which considers the initial construction workforce of the CGO Underground Development Project, and the eventual operational workforce, where workers will reside in the accommodation village.

The TIA has considered the impacts from both the construction and habitation phases of the village, thereby considering both short and medium-term impacts of the development.

The assessment focused on the Main Street/Boundary Street intersection, as this is the key intersection that will be used to access the site. A SIDRA analysis and intersection modelling was completed to determine the impact of project-related traffic on the intersection. A mid-block level assessment was completed on Boundary Street and Main Street to assess the capacity of these roads to accommodate the additional traffic resulting from construction and operation of the village.

The TIA concludes that the project will result in a minor amount of additional traffic being generated on local roads in West Wyalong. This traffic will be managed without any road upgrades being required and project-related traffic will not affect the current operation of any intersections or the performance of roads near the site.

6.10.2 Existing environment

i Study area

All traffic to and from the village will enter the site using the Boundary Street and Main Street intersection (refer Figure 1.2). Further details of the intersection are provided in Chapter 2 of the TIA (refer Appendix M).

Main Street and Boundary Street both have a speed limit of 60 kilometres per hour (km/h). Boundary Street is a 'no through road' which terminates around 100 m beyond an existing cul-de-sac (Gunters Close). There is currently an insignificant amount of traffic using Boundary Street as it intersects vacant land and with little development. Boundary Street is not serviced by public transport, pedestrian foot paths or cycle paths.

ii Intersection counts

Traffic counts were completed at the intersection of Boundary Street and Main Street during the site inspection. The results are shown in Figure 2.4 of the TIA, including results for the AM (5:00 am to 7:00 am) and PM (5:00 pm to 7:00 pm) peak periods. The counts show that at this intersection, most of the traffic travels on Main Street and a very small amount of traffic uses Boundary Street (both the north and south sections).

iii Crash data

During the period of 2015 to 2019, no crashes were reported on Boundary Street and six crashes were reported on the section of Newell Highway near to Boundary Street (which includes Main Street and Neeld Street).

6.10.3 Predicted impacts

i Development traffic

For the purposes of modelling the traffic movements, the development traffic was split into three scenarios:

- Scenario 1 – traffic for the **construction workforce** for the accommodation village (40 workers).
- Scenario 2 – traffic for the **habitation workforce** (construction workforce only) for the CGO Underground Development Project (100 workers).

- Scenario 3 – traffic for the combined **habitation workforce** (construction + operational workforces) for the CGO Underground Development Project (176 workers).

The daily and peak hour traffic generation assumptions for the construction and habitation phases of the village, along with the development traffic predictions, are provided in Chapter 3 of the TIA (refer Appendix M).

ii Car and bus parking

Due to the overlap of construction and operational stages of the CGO Underground Development Project, the accommodation village may have a peak habitation phase workforce of 176 workers at any one time. It is assumed that 25% of these workers will use light vehicles to travel to and from the mine. This equates to a parking demand for 44 car parking spaces. This demand is not expected to occur for extended periods. Some additional parking demand may be generated by staff working at the accommodation village. The provision of 85 parking spaces (excluding 8 visitor parking spaces) is therefore expected to satisfy car parking demands.

The accommodation village has provision for 2 bus layover areas designed for 12.5 m length buses. A maximum of 4 buses is expected to service the accommodation village during the peak demand period. The provision of 2 bus layover areas is therefore expected to satisfy bus parking demands.

The car parking spaces will be compliant with Australian Standards for Off-Street Parking (AS2890.1-2004) and Off-Street Parking for people with disabilities (AS2890.6-2009).

iii Mid-block level assessment

A mid-block level of service assessment, which assesses the capacity of the roads to accommodate traffic and is based upon a vehicle's average travel speed, was completed for Boundary Street and Main Street. Boundary Street and Main Street have existing mid-block capacities of 900 vehicles per hour per lane. During all the above scenarios, this capacity will remain at 900 vehicles per hour per lane.

The maximum assessed level of service standard (LOS) achieved is A for Boundary Street and LOS B for Main Street, which is considered good operation with limited delays and adequate surplus capacity. Detailed results of this assessment are provided in Chapter 4 of the TIA (refer Appendix M).

iv Intersection analysis

The intersection analysis modelled several factors, including degree of saturation (DOS), average delay (DEL), LOS and 95% queue length (Q95). Intersection analysis results are detailed in Chapter 4 of the TIA (refer Appendix M).

During the AM and PM peak periods, the average DEL of the intersection during scenarios 1 to 3 will increase by less than one second when compared to existing conditions.

The LOS for Boundary Street will remain at a rating of A, meaning the intersection will remain in good operation, during the AM and PM peak periods for all scenarios.

Currently, the intersection has a low DOS for both AM and PM peak periods. The DOS of the intersection will only slightly increase for Scenarios 1 to 3, however it will remain within acceptable limits.

For the AM peak period of 5:00 am to 6:00 am, the Q95 will increase by a marginal amount, ie 1 m for scenarios 1 and 3 approaching the intersection from west and south. There will be no change to the Q95 during 6:00 am to 7:00 am period (approaching the intersection from the north). Between 6:00 pm to 7:00 pm evening peak, the Q95 will increase from 0.2 m when approaching the intersection from the west to 2 m during scenario 2 and 3 m during scenario 3.

6.10.4 Mitigation measures

As project-related traffic during the construction and habitation phases is expected to have little impact on the surrounding road network, there are no specific engineered mitigation measures required to manage the traffic impacts resulting from the construction or operation of the village.

Evolution intends to operate a worker bus shuttle to transport workers between the village and the CGO mine during the construction and operation of the Underground Development Project. This will restrict the number of car trips to and from the village and increase safety for other road users. Evolution will also regularly remind its workers of their safety responsibilities when driving on local roads. These initiatives will ensure that traffic impacts do not present a problem for the local community into the future.

6.11 Contamination

6.11.1 Overview

The site was previously used as the original Barrick Gold accommodation village, which was decommissioned in 2005-2006. Therefore, a site contamination assessment was undertaken to assess whether there are any site contamination risks during construction and operation of the village.

This section provides a summary of the Preliminary Site Investigation (PSI) report completed by the EMM (2021j) for the project, which is provided in full in Appendix N. The PSI report addresses contamination issues that could impact the project and recommends remediation or mitigation measures to address these issues.

The PSI reviewed various factors to gain an understanding of the existing environment and included a site inspection and searches of relevant databases and potential sources of contamination identified during the inspection.

From this, a preliminary conceptual site model (CSM) was developed based upon available information to identify sources of contamination, sensitive receptors and subsequent linkage pathways in the context of the proposed future use of the site as an accommodation village.

The PSI concluded that potential sources of contamination at the site are primarily associated with the presence of stockpiled material of unknown origin, historical mining activities and potential for associated filled voids underlying the site.

6.11.2 Existing environment

i Database searches

Several databases were searched to gain an understanding of existing or potential contamination sources at the site. Results of the databases searches show that:

- the site is not on the NSW Environment Protection Authority (EPA) contaminated land record of notices or sites notified as contaminated to the EPA;
- no sites listed on the NSW Government Per- and polyfluoroalkyl substances (PFAS) Investigation Program, the Department of Defence (Defence) PFAS Investigation and Management Program, Regional Contamination Investigation Program, or Airservices Australia National PFAS Management Program, were identified at the site or in the surrounding area;
- there are no environmental protection licences (EPLs) attached to the site;
- BSC has no records of significant contamination of the site;

- the site is not within a declared mine subsidence district under the *Coal Mine Subsidence Compensation Act*;
- two national liquid fuel facilities were identified within a 1 km radius of the site:
  - BP Mid Western (Petrol station) – 503 m to the north-west of the site; and
  - West Wyalong (Fuel depot) – 786 m to the south of the site;
- there is one current mining and exploration title held on the site, including Weddarla Pty Ltd (title no. EL8815) for group 1 minerals which expires 14 January 2022;
- several historical mining and exploration titles held on or within a 1 km radius of the site for group 1 minerals, silver, gold, copper, lead, zinc, and tin; and
- business directory records show the following properties located within a 500 m radius of the site:
  - service station – 475 m north-west of the site; and
  - several dry cleaners, garages, and service stations along Main Street – 133 m north of the site.

ii Site investigation results

Potential sources of contamination and contaminants of potential concern (CoPC) were identified during the site inspection. These are provided in Table 6.6 and have informed the preliminary CSM.

The site is a largely underdeveloped area of land. The south-eastern portion of the site was used for the Barrick Gold temporary accommodation village. Several soil and construction waste stockpiles were identified across the site. A potential asbestos containing material (ACM) fragment was observed within one of the smaller stockpiles. The investigation also concluded that the site may be subject to subsidence and historical filling of voids from mining activities.

Table 6.6 Potential contaminant sources and CoPC

Source	CoPC	Likelihood of contamination/release mechanism
On-site: stockpiling, potential historical filling of voids	Asbestos, petroleum hydrocarbons, polychlorinated biphenyls (PCB), heavy metals, pesticides	Soil stockpiles were observed in the 2020 dated aerial photograph and confirmed during the site inspection. This includes one large stockpile in the central portion of the site, and smaller stockpiles mostly located within the south-western portion of the site. Material observed included building waste (bricks, concrete, PVC pipes and potential ACM). Previous reports indicate the site may be subject to subsidence as a result of historical mining activities beneath the site and some filling of voids may have occurred.
Former Barrick Gold accommodation village	Petroleum hydrocarbons, pesticides	A large number of demountable buildings were constructed in 2004 within the south-eastern portion of the site, understood to be the former Barrick Gold accommodation village. As the land use was a temporary residential village, which was demolished/dismantled between 2005-2006, the introduction of contamination sources is considered to have been unlikely.
On and off-site: pesticide and herbicide use	OCP/OPP	The site and surrounding land to the east and south are mostly vacant grasslands. The potential use of pesticides and herbicides across the site, including organochlorine and organophosphorus pesticides (OCP/OPPs), cannot be precluded.

6.11.3 Predicted impacts

Based on the findings of this PSI, potential sources of contamination at the site are considered to be limited to the presence of stockpiled material, potential historical mining activities and associated potential filling of voids underlying the site.

The preliminary CSM is provided in Table 6.7. This includes an assessment of the completeness of linkages between contaminant sources, pathways and sensitive receptors. Potentially complete contaminant Source-Pathway-Receptor (S-P-R) linkages were identified for construction and maintenance workers associated with development of the site and future site users (workers and visitors to the site). Down gradient users of surface and groundwater were also identified to have potentially complete S-P-R linkages, as were terrestrial and aquatic ecosystems. Mitigation measures provided in section 6.11.3 will further define and mitigate any potential on-site contamination.

Table 6.7 Source-pathway-receptor linkages

Source	Pathway(s)	Receptors (s)	Source-pathway-receptor linkages, potentially complete without mitigation/management measures
On-site: stockpiling, potential historical filling of voids underlying the site	Direct contact with or ingestion of impacted soil or surface water	Construction and maintenance workers	Yes
		Future site users (residential)	Yes
		Adjacent site users	Yes (surface water)
	Direct contact with or incidental ingestion of impacted groundwater	Construction and maintenance workers	Yes
	Inhalation of windblown dust/fibres	Construction and maintenance workers	Yes
		Future site users (residential)	Yes
		Adjacent site users	Yes
	Inhalation of soil vapour	Construction and maintenance workers	Yes
		Future site users (residential)	Yes
		Adjacent site users	Unlikely
	Infiltration to regional aquifer	On-site and down gradient users of regional groundwater	Yes
	Uptake or ingestion of contaminated surface water	Terrestrial ecology	Yes
		Aquatic ecology	Yes
	Surface water flow overland	Downgradient users of surface water	Yes
		Aquatic ecology	Yes
		Terrestrial ecology	Yes

6.11.4 Mitigation measures

The PSI report recommends the following further actions and mitigation measures:

- Intrusive site investigations should be undertaken to evaluate ground conditions associated with potential historical filling and the presence of waste stockpiles. The work could be conducted in conjunction with a geotechnical investigation to evaluate potential ground subsidence issues and further inform the development plans for the site.

- A CEMP, including an unexpected finds protocol, should be prepared and implemented to manage any contamination which may be encountered during development works at the site.

In general, Evolution will take steps to ensure that appropriate controls are in place during construction and operation of the site so that the risk of site contamination is not an issue for the community. This will include removing any waste material to a licensed facility.

6.12 Social

6.12.1 Overview

A social impact assessment (SIA) was prepared by Elton Consulting Group Pty Limited (Elton) to assess social impacts associated with the CGO Underground Development Project. The SIA considers all aspects of the CGO Underground Development Project, including the accommodation village.

The SIA was prepared in accordance with the *Social Impact Assessment Guidelines for State Significant Mining, Petroleum and Industry Development* (DPE 2017) (the SIA guidelines). The assessment identified the potential impacts and opportunities associated with both the construction and operational phases of the CGO Underground Development Project, as well as appropriate measures for managing adverse social impacts and enhancing potential benefits.

The study method applied for the SIA comprised:

- determining the area of social influence;

- compiling demographic and socio-economic characteristics of affected communities with the Bland, Forbes and Lachlan shires;

- review of literature and strategic planning context;

- targeted consultation with local communities, councils and key project stakeholders;

- analysis of social impacts and evaluation of their significance; and

- development of a mitigation and enhancement strategy to address impacts and opportunities.

A range of engagement activities were undertaken with multiple stakeholders to inform the SIA, including semi-structured interviews, community information forums, one-on-one meetings or briefings, and a public survey. Although a range of social impact matters were raised during engagement activities, it was found that the local community generally support the CGO Underground Development Project due to several potential social and economic benefits.

6.12.2 Existing environment

A summary of the baseline analysis is provided below, which considers communities within the LGAs of Bland Shire, Forbes Shire and Lachlan Shire. The accommodation village is located within West Wyalong, which is in the Bland Shire LGA.

The social baseline analysis found that the region's communities primarily depend on mining and agriculture, followed by healthcare, social assistance, education and training industries. Residents predominately do not travel outside of their LGA for work indicating a dependency on local industries. There is limited industry diversification and job opportunities, which has motivated many job seekers to move elsewhere and as a result, the Bland Shire LGA is expected to experience population decrease.

The population in the region is disproportionately older which is reflected in the low number of skilled working age residents compared to the number of aged residents. This suggests a small labour pool. Regardless, the population of the region is relatively stable with high rates of volunteering indicating a strong sense of community and social cohesion.

The housing market in West Wyalong is tight with little to no rental housing available. In addition, there is also a lack of available and affordable childcare services in West Wyalong. This creates an employment barrier for residents with young children, particularly experienced by women and Aboriginal households. There is also a lack of health and education services for young people in West Wyalong and the broader region.

6.12.3 Social risks

The SIA included a risk focused assessment of several social impact matters raised during engagement activities. The risk assessment included a description of the risk, the likelihood of occurrence without any mitigation and a rating for the significance of the impact and consequence to the surrounding community. A risk assessment of social impact matters relevant to the accommodation village has been summarised in Table 6.8. This includes a risk rating for the nature of the impact without mitigation and the resulting significance of the impact. The likelihood and consequence of the impact has also been predicted.

The SIA identified various positive and negative impacts associated with the accommodation village. Examples of potentially positive social impacts include the accommodation village will minimise impacts relating to housing availability and inflation of housing prices. A further benefit will be the economic opportunities from the use of local contractors and services during construction. An accommodation village will also reduce pressure on local facilities and services.

Examples of potentially negative social impacts associated with the accommodation village include a potential increase in demand for services at nearby airports. The incoming workforce in West Wyalong could also increase alcohol-related recreation in the local community, which could potentially impact the local community's character, and household compositions (ie it will be likely that a significant proportion of the incoming workforce will be single males).

Table 6.8 Summary of potential social risks of the accommodation village

Impact	Description of social risk without mitigation	Nature of potential impact without mitigation	Likelihood of occurrence	Significance	Consequence
Housing	Decrease in availability and increase of cost of rental properties.	Negative	Unlikely	Low	Minor
Access to recreational activities and social interactions	Strain on the capacity of existing recreational facilities.	Negative	Unlikely	Low	Minor
	Increased alcohol-related recreation.	Negative	Possible	Low	Minimal
Community composition and character	Diversification of the existing population from new and skilled persons of working age.	Positive	Likely	High	Moderate
	Demographic of the additional workforce (ie mostly male and single) and the existing community's character, localised gender relations and household compositions.	Negative	Possible	Moderate	Minor
Community cohesion and functionality	Decreased level of community cohesion or public safety.	Negative	Unlikely	Low	Minor
Social infrastructure and services	Demand for health services, recreational facilities and commercial services resulting in under-supply or strain of these facilities and services.	Negative	Unlikely	Moderate	Moderate
	Increased spending on local services which will stimulate the local economy and expand service.	Positive	Likely	High	Moderate
Air transport	Increased demand for existing flight services and reducing capacity for existing residences.	Negative	Possible	High	Moderate
	Increase demand for existing flight services increasing connectivity and mobility of existing regional communities.	Positive	Possible	High	Moderate
Personal and property rights	Local economic inflation of goods and services, causing unaffordability for vulnerable community groups.	Negative	Unlikely	Low	Minor

6.12.4 Mitigation measures

The SIA provides a range of mitigation measures to further ameliorate negative social impacts, as demonstrated in the improved significance rating for some of the impacts, and enhance positive impacts resulting from the CGO Underground Development Project.

The mitigation measures summarised in Table 6.9 will further improve the residual risk rating of those social impacts.

Table 6.9 Summary of mitigation measures

Impact category	Significance and nature of impact before mitigation	Mitigation measures	Residual significance and nature of impact
Housing	Low (negative)	• Evolution Mining to encourage accommodation village contractor to engage local contractors and services and to jointly plan the facility with local stakeholders, with the aim of ensuring local and long-term socio-economic development opportunities are realised. • Coordinated approach for future planning of workforce housing requirements and residential transition with Bland Shire Council, Lachlan Shire Council and Forbes Shire Council and other key stakeholders including short-stay accommodation business owners, local business chambers, property and real estate agents.	Low (negative)
Access to recreational activities and social interactions	Low (negative)	• Provide targeted support to local recreational facilities, groups or activities and collaborate with Bland Shire Council and local service providers to deliver shared value programs.	Low (negative)
Community composition and character	Moderate (negative)	• Ensure Workforce Code of Conduct incorporates required standards of behaviour at the workforce accommodation village. • Coordinated approach for future planning of workforce housing requirements and residential transition with Bland Shire Council, Lachlan Shire Council and Forbes Shire Council. • Monitor changing gender relations in West Wyalong. • Provide relocation support or incentives for workers to relocate with their dependents or families.	Low (negative)
Community cohesion and functionality	Low (negative)	• Introduce penalties or disciplinary measures for off-site anti-social behaviour within Workforce Code of Conduct.	Low (negative)

Table 6.9 Summary of mitigation measures

Impact category	Significance and nature of impact before mitigation	Mitigation measures	Residual significance and nature of impact
Social infrastructure and services	Moderate (negative)	• Consider partnering with local health and emergency services to facilitate training and capacity-building to appropriately respond to mine-specific health and safety risks. • Explore opportunities to sponsor or support medical professionals to take up positions in the Bland LGA such as through the Bland Shire Council-run doctor's surgery. • Explore opportunities with West Wyalong Local Aboriginal Land Council (LALC) to deliver a childcare centre for Aboriginal and mine worker families. • Continue to ensure that CGO traffic flows utilise a standard road route as determined jointly with councils to reduce impacts on local road users, ensure all road works or traffic changes associated with the project are effectively communicated with local landholders and other major road users (eg school bus) prior to the commencement of works. • Continue to utilise CGO buses for daily transport of workers to and from site. • Continue to consult with Bland, Lachlan and Forbes councils to jointly plan and implement road maintenance and upgrades in the project locality, ensuring a continued local road funding scheme. • Consult with Parkes Airport, other major projects with FIFO workforce requirements, Parkes Shire Council, as well as Forbes, Lachlan and Bland councils to strategically plan for FIFO requirements for both construction and operations, aiming to ensure the FIFO workforce brings long-term benefit for regional infrastructure and air transport networks.	Low (negative)
Personal and property rights	Low (negative)	• Develop local procurement strategy to encourage local businesses and industry to participate and optimise local benefit (as above).	Low (negative)

6.13 Economic

6.13.1 Overview

An economic impact assessment (EIA) was prepared by AEC Group Pty Ltd (AEC) (2020) to assess economic impacts associated with the CGO Underground Development Project. The EIA holistically considered the economic effects of establishing the underground mine, which also considered the effects of housing the construction and operations workforces in West Wyalong.

The EIA was prepared in accordance with the *Guidelines for Economic Assessment of Mining and Coal Seam Gas Proposals* (DPE 2015). The methodology included two types of analysis, a local effects analysis (LEA) and cost benefit analysis (CBA).

The LEA assessed the impacts of the CGO Underground Development Project in the locality, and in particular the impacts on local employment and non-labour expenditure. It also considered potential social impacts on the local community in relation to the source of labour and accommodating the workforce for the CGO Underground Development Project. The CBA focused on the CGO Underground Development Project and did not single out the workers accommodation village for separate analysis.

6.13.2 Predicted impacts

i Local effects analysis

The LEA identified several beneficial and adverse economic impacts associated with the CGO Underground Development Project:

- beneficial economic impacts for the region:
    - economic growth;
    - employment and income;
    - support for local businesses; and
    - government revenue;
- adverse economic impacts:
    - impacts on local businesses from competition for resources; and
    - impacts on local property values.

Therefore, to offset the potential adverse economic impacts, the construction and operation of the accommodation village will provide opportunity for localised economic growth within West Wyalong, as local businesses will be supported through the use of local contractors and services during construction in addition to increased spending on local services which will stimulate the local economy and expand services. The accommodation village will reduce impacts relating to housing availability and inflation of housing prices.

The CGO Underground Development Project will contribute to the economy and employment and wages in addition to increasing industry outputs of primarily the mining and construction sectors. Contributions to the economy will occur directly through construction activity including construction of the accommodation village. It will indirectly contribute to the economy through additional demands for goods and services within West Wyalong and household consumption effects as a result of additional wages and salaries paid.

During the construction of the CGO Underground Development Project, Evolution's contribution to the economy is expected to average $66.2 million in Gross State Product (GSP) and $35.5 million in Gross Regional Product (GRP). During the operational period, the contribution to the economy is expected to average $141.10 million in GSP and $89.3 million in GRP. This will result in increase in the GRP by 4.5% between peak construction and operational phases of 2023 to 2024 and 2027 to 2036. It will gradually decrease to 4% from 2035 to 2036. The GSP and GRP is expected to significantly decrease towards the end of the operational period from 2036 to 2038.

During the construction and operational phases of the CGO Underground Development Project, approximately 54% and 63% of the GSP, respectively, will be captured locally in the West Wyalong Catchment.

6.13.3 Mitigation measures

Mitigation measures noted in the EIA and relevant to the project are:

- the village will continue Evolution's support for local business by utilising established supply networks and providing sufficient opportunities and information for local business to secure new supply contracts; and
- the village will provide sufficient and suitable accommodation for the non-local workforce to minimise impacts on the local property market and housing affordability.

CGO has long-standing relationships with local businesses and an established supply chain in the region for its existing activities. To maximise local benefits derived from the CGO Underground Development Project, Evolution (and contractors engaged by Evolution) will continue to support local business by using established supply networks and providing sufficient opportunities and information to local business to secure new supply contracts where they are competitive in cost and meet the standards of service required by CGO. This includes for the construction of the accommodation village.

The CGO Underground Development Project is likely to yield some inward migration to West Wyalong to take up jobs generated by the CGO Underground Development Project either directly or indirectly. Without mitigation, namely the development of the accommodation village, this is expected to have a high risk of constraining supply and increasing housing rental and purchase prices.

6.14 Geotechnical

6.14.1 Overview

A Geotechnical Report was prepared by Xtract (2021) for the project and provided in full in Appendix O.

Eighteen test pits were completed to identify the geotechnical features of the site. Test pits were excavated at different locations to a depth of 2.5 m below ground level (refer Figure A1 of Appendix O). Laboratory testing was completed on sediment samples from each test pit to discern various physical characteristics (refer Table 4 of Appendix O).

A geophysical study was then completed by GBG Group (2021) to discern evidence of subsidence in light of the proposed construction works. This included an electromagnetic survey and ground penetrating radar.

The Geotechnical Report identifies the site to be geotechnically suitable to host the project, however the geophysics study identified three potential anomalies in the underlying bedrock. Boreholes should be completed prior to construction to investigate the nature of these anomalies and the associated subsidence risk.

6.14.2 Existing environment

The site is underlain by highly weathered granite with scattered ferruginous lag derived from mottled saprolite, colluvial sediments on plains and rises. Subsurface conditions are consistent across the site and include clays and sands in addition to extremely weathered rock. A thin layer of fill exists on top of subsurface sediments, which consists of gravel, clay and sand. The top soil across the site ranges from a depth of 50 to 200 mm.

Groundwater was not intersected in any of the test pits.

Underground service corridors for water, sewer, power reticulation and communications reticulation are located beneath the site.

6.14.3 Predicted impacts

Based on the results of the sediment sampling of the test pits and geophysical study, the site is suitable for the proposed earthworks and construction works assuming the mitigation measures are implemented. The in-situ natural sediments are geotechnically suitable for re-use as structural fill of excavations. Environmental suitability of the sediments is discussed further in section 6.11, with reference to the PSI findings.

The ground conditions of the site are suitable to support conventional shallow foundations or pier foundations as footings beneath the modules.

As noted above, five potential anomalies were identified beneath the site. These anomalies are located near the centre of the site and are likely between 5 to 9 m below ground level (refer to Appendix A of the Geotechnical Report for the location of anomalies). The identified anomalies could be the result of voids or cavities in the bedrock or potentially due to the existing underground service corridors. The report noted that the remaining two anomalies are likely from surface air wave reflection and therefore could be disregarded.

6.14.4 Mitigation measures

The Geotechnical Report has concluded that the site is deemed suitable for construction, assuming the following mitigation measures are implemented:

- anomalies should be compared to the location of underground services on-site to ensure the geophysics study is not picking up areas of disturbance associated with underground services;
- shallow boreholes to a depth of 10 m below ground level should be completed prior to construction to confirm whether voids are present at the identified locations;
- site preparation measures as outlined in sections 7.4.2 to 7.4.6 of Appendix O, including:
    - clearing and topsoil stripping;
    - subgrade preparation;
    - fill placement;
    - footing preparation; and
    - compaction requirements;
- footing design parameters as outlined in sections 7.7.3 to 7.7.4 of Appendix O, including:

- allowable pressure bearings and estimated settlements for pad and strip footings; and
- estimated axial pile design geotechnical strength for bored piles and axile piles;

• pavement design parameters as outlined in section 7.8 of Appendix O, including:

- California bearing ratio (CBR) values for the relevant sediment type at the site.

6.15 Other matters

6.15.1 Rehabilitation

The construction modules in the south of the site will be removed following the completion of construction of the underground mine. The southern portion of the site will then be partially re-developed with recreation facilities including a multi-purpose outdoor court. The remainder of the southern portion of the site will be rehabilitated with landscaped areas containing native plant species.

The operations modules are expected to remain at the site for much of the CGO Underground Development Project or until Evolution no longer requires accommodating its workforce at the site. When the site is no longer required, Evolution will discuss the future use of the site and any rehabilitation requirements with the landowner and Council. It is considered that the site may be able to be used in the future for ongoing accommodation purposes. If it is not proposed to be used for accommodation following Evolution's exit from the site, then Evolution will remove all built structures in consultation with the landowner and in accordance with Council requirements to ensure the site is safe and non-polluting. Reticulated services will remain on-site to service potential future land uses.

6.15.2 Greenhouse gas

i Overview

The greenhouse gas (GHG) emissions associated with the project are expected to be extremely low, as they are related to diesel consumption for the worker buses and indirectly, through electricity use at the site. The estimate of the project's (GHG) emissions has been undertaken in accordance with the National Greenhouse Accounts Factors (NGAF) workbook (DoEE 2019) and the *National Greenhouse Energy Reporting Act 2007* (the NGER Act). It considers Scope 1 and Scope 2 emissions, as defined below in Table 6.10. It does not consider scope 3 emissions.

Table 6.10 Emissions overview

Type of emission	Overview
Scope 1	Scope 1 emissions are direct emissions which occur within the boundary of an organisation because of that organisation's activities and include direct emissions from fuel combustion and explosive usage. The assessment considers GHG emissions from the project's diesel consumption during the construction phase. This has been estimated at 220 litres per day (L/day).
Scope 2	Scope 2 emissions are indirect emissions which are generated from that organisation's activities but are physically produced by the activities of another organisation. They include the consumption of purchased electricity. The assessment considers GHG emissions from the project's purchased electricity consumption during the operational phase.
Scope 3	Scope 3 emissions are also indirect emissions which are generated from that organisation's activities but are physically produced by the activities of another organisation. They include indirect upstream emissions from diesel production and lost electricity. This assessment does not consider Scope 3 emissions.

ii Greenhouse gas estimation

The applicable emissions factors for diesel and purchased electricity consumption included in the NGAF workbook (DoEE 2019) were used to determine the predicted annual average of scope 1 and 2 emissions.

Based on 220 L/day of diesel, the predicted annual average of Scope 1 emissions is estimated to be 216.7 t CO_2-e/year. Annual Scope 1 emissions will account for 0.0002% of total annual GHG emissions for NSW and 0.00004% of total annual GHG emissions for Australia, based on the National Greenhouse Gas Inventory for 2017.

The accommodation village will be connected to the electricity supply network. Annual electricity consumption is estimated based on an average per capita electricity consumption rate of 8,550 kWh per annum (derived from the electricity consumption for NSW in 2019 divided by the population) and multiplied by the total accommodation capacity of 176 people. The predicted annual average of Scope 2 emissions from purchased electricity consumption during the operations phase is estimated to be 180.6 t CO_2-e/year. Annual Scope 2 emissions will account for 0.0001% of total annual GHG emissions for NSW and 0.00003% of total annual GHG emissions for Australia, based on the National Greenhouse Gas Inventory for 2017.

Evolution will consider where possible the installation of energy efficient technologies at the site, including lighting systems and passive solar design and placement of the modules, and the purchase of green power from the grid to minimise its greenhouse gas emissions during the construction and operation of the project.

6.15.3 Hazards

During construction and operation of the project, certain chemicals will be used and stored on-site including cleaning products, paints, degreasers and pesticides. Diesel fuel may also be used and stored on-site. This presents a potential hazard to the surrounding environment, the public and public property if a spillage or leakage event occurs.

Any chemicals or fuel used on-site will be handled by appropriately qualified personnel. Chemicals and fuels will be stored appropriately in bunded containers in designated areas. An Emergency Response Plan will be prepared for the site, and any hazardous wastes or chemicals will be managed consistent with Evolution's current management protocols for hazards, public safety and health under existing management plans in place at the mine.

These plans will provide detail on the appropriate transport, storage and use of chemicals and fuels on-site, provide details on the appropriate emergency response procedures in the event of spillages, and outline the sites compliance with the relevant statutory considerations and Australian Standards.

6.15.4 Waste

Waste will be managed in accordance with the general waste hierarchy of reduce, reuse and recycle with aims to minimise the quantity of waste disposal required off site.

The site currently has a number of small waste stockpiles of varying size which are indicative of minor waste disposal activities. Preparation of the site for construction of the accommodation village will include clearing and grubbing, during which the existing waste stockpiles will be disposed of appropriately in a local licensed facility.

The project will likely produce the following waste streams during the construction and operational phases:

- general construction waste;
- office and packaging waste;
- domestic waste;
- pesticides/herbicide containers; and
- liquid waste from the sewerage system.

A WMP will be prepared for the project in consideration of relevant legislation, policies and strategies. Waste will be separated into the appropriate streams and stored on-site in an enclosed area. Waste will be collected from the site frequently and recycled where possible in line with the available recycling facilities in West Wyalong.

7 Conclusion

Evolution proposes to construct and operate an accommodation village on vacant land to the west of Boundary Street, West Wyalong, NSW. The village, once constructed, will accommodate the workforce associated with the construction and operation of the proposed CGO Underground Development Project, which will be located approximately 38 km north-east of West Wyalong.

The project is being considered as a multi-dwelling residential development under the Bland LEP and therefore the relevant provisions of the Bland DCP relating to multi-dwelling residential development have been applied to the design of the village.

The project is proposed to be developed on the same site which previously housed an accommodation village when the CGO was first developed in the early 2000s by Barrick Gold. However, the accommodation village proposed by Evolution will be vastly different to the previous accommodation village, with greater focus on urban design and integration into the surrounding area, both visually and functionally.

The project conceptually comprises accommodation capacity for up to 176 people. Key components include accommodation modules and common buildings, including dining, administration, kitchen, waste, laundry, multipurpose function space, outdoor eating and quiet areas. The village components will be modular in design with different accommodation module layouts dependent on the workforce type and length of tenure. Appropriate security measures such as fencing, gates, cameras and night lighting will be installed. Site landscaping with native species will be undertaken to increase visual amenity consistent with the surrounding neighbourhood and will incorporate water sensitive urban design practices. This includes maintaining existing native vegetation wherever possible.

The development of the project will be staged, with approximate staging as follows:

- **Stage 1:** operational workforce accommodation modules to house 50 construction personnel initially and construction of enabling infrastructure and amenities sufficient for the operation of Stage 1. Eight of these accommodation modules will be accessible and DDA compliant should Evolution maintain an accessible workforce.
- **Stage 2:** remaining operational workforce accommodation modules in addition to construction workforce accommodation modules to house 46 people.
- **Stage 3:** construction workforce accommodation modules to house 80 people.
- **Stage 4:** gymnasium and multipurpose court.

This application for development seeks approval for all stages of the project. Construction of the accommodation modules is expected to take approximately eight months in total. Construction of additional amenities and facilities may take up to a further three years, post removal of the construction accommodation modules.

Evolution has been actively engaging with and supporting the surrounding community since the commencement of operations at CGO in 2005. As part of the CGO Underground Development Project, a range of stakeholders were consulted, including members of the local community, neighbouring landowners, Bland Shire Council, Forbes Shire Council, Lachlan Shire Council and CGO's existing CEMCC. Conceptual information about the accommodation village was included in engagement actions completed for the CGO Underground Development Project. Additional targeted engagement has been completed for the accommodation village since this time.

To assess potential environmental impacts of the project, various specialist technical assessments were undertaken, including biodiversity (terrestrial flora and fauna), bushfire hazard, heritage (Aboriginal and non-Aboriginal), visual impact, surface water, noise and vibration impact, air quality impact, traffic impact, contamination, socio-economic impacts and geotechnical.

Appropriate control and management measures to mitigate potential environmental impacts have been developed and are described in this SEE. The technical assessments concluded that, with appropriate mitigation and management measures in place, there will be no significant environmental impact as a result of the operation of the project, while a CEMP will be developed specifically to manage the potential impacts associated with the construction phase of the project.

The project is critical to addressing potential social impacts relating to the proposed CGO Underground Development Project as it will providing housing to support workers involved in the construction and operational phases of that project. Additionally, the proposed development will provide indirect economic benefits to the local area during both the construction and operational phases.

The proposed development is considered appropriate for the site and conforms with the relevant provisions of Bland Shire Council. The assessment of the proposed multi-dwelling residential development against the relevant provisions of the Bland LEP and DCP demonstrates its compliance with the land use activities and form of development considered appropriate for the site, and location more generally, in accordance with requirements of the R1 General Residential zone.

In conclusion, the proposed development, when considered both in isolation and in relation to the development of underground mining at CGOs, merits the granting of development consent.

Abbreviations

µm	micrometres
ABN	Australian Business Number
ACM	Asbestos containing material
ACN	Australian Company Name
AEC	AEC Group Pty Ltd
AHD	Australian Height Datum
AHDD	Aboriginal Heritage Due Diligence Assessment
AHIMS	Aboriginal Heritage Information System
APZ	Asset Protection Zone
AQIA	Air Quality Impact Assessment
ASS	Acid Sulfate Soils
BAL	Bushfire Attack Level
BAM	Biodiversity Assessment Method
BC Act	NSW *Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
BHR	Bushfire Hazard Report
Blackash	Blackash Bushfire Consulting
CBA	Cost benefit analysis
CEMP	Construction Environmental Management Plan
CEMCC	Community Environmental Monitoring & Consultative Committee
CGO	Cowal Gold Operation
CoPC	Contaminants of potential concern
CSM	Conceptual site model
DA	Development application
dB	Decibel
DCP	*Bland Shire Development Control Plan 2012*
DDA	Commonwealth *Disability Discrimination Act 1992*
DEL	Average delay
DOS	Degree of saturation

DPIE	NSW Department of Planning, Industry and Environment
EIA	Economic impact assessment
EIS	Environmental Impact Statement
Elton	Elton Consulting Group Pty Limited
EMM	EMM Consulting Pty Limited
EPA	NSW Environment Protection Authority
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPBC Act	Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*
EPL	Environment protection licence
ESD	Ecological Sustainable Development
Evolution	Evolution Mining (Cowal) Pty Limited
FFDI	Forest Fire Danger Index
FTE	Full-time equivalent
GDE	Groundwater dependent ecosystems
GHG	Greenhouse gas
HHDD	Historical Heritage Due Diligence Assessment
Heritage Act	NSW *Heritage Act 1977*
ILUAs	Indigenous Land Use Agreements
Infrastructure SEPP	State Environmental Planning Policy (Infrastructure) 2007
LALC	Local Aboriginal Land Council
LEA	Local effects analysis
LEP	Local Environmental Plan
LGA	Local Government Area
Local Government Act	NSW *Local Government Act 1993*
LOS	Level of service standard
LPG	Liquified petroleum gas
Km	Kilometre
m bgl	Metres below ground level
MNES	Matters of national environmental significance
NGAF	National Greenhouse Accounts Factors workbook (DoEE 2019)
NGER Act	*National Greenhouse Energy Reporting Act 2007*

NMLs	Noise Management Levels
NNTT	National Native Title Tribunal
NPfI	Noise Policy for Industry (EPA 2017)
NPW Act	NSW *National Parks and Wildlife Act 1974*
NT Act	Commonwealth *Native Title Act 1993*
NVIA	Noise and Vibration Impact Assessment
PAD	Potential archaeological deposit
PBP	Planning for Bushfire Protection (Rural Fire Service 2019)
PCB	Polychlorinated biphenyls
PCT	Plant Community Type
PFAS	Per- and polyfluoroalkyl substances
PM_{10}	particulate matter 10 micrometres or less in aerodynamic diameter
PMST	Protected Matters Search Tool
POEO Act	NSW *Protection of the Environment Operations Act 1979*
PSI	Preliminary Site Investigation
Q95	Queue length
QLD	Queensland
RF Act	NSW *Rural Fires Act 1997*
RMR Plan	The Riverina Murray Regional Plan 2036
RMS	Roads and Maritime Services
SEE	Statement of Environmental Effects
SEPP 55	State Environmental Planning Policy No. 55 – Remediation of Land
SIA	Social impact assessment
SIA Guidelines	*Social Impact Assessment Guidelines for State Significant Mining, Petroleum and Industry Development* (DPE 2017)
SPR	Source-Pathway-Receptor
SSD	State Significant Development
Strategic Plan	The Bland Shire Community Strategic Plan 2017-2027
SWL	Standing water level
TIA	Traffic Impact Assessment
WA	Western Australia
WMP	Waste management plan

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