# Bowdens Silver Project
## Impact Assessment Outcomes

Project Information Sheet

No.3 June 2019

This information sheet provides further detail in relation to the Bowdens Silver Project and a summary of the preliminary findings of a number of the environmental and social assessment studies, that have been undertaken to inform the preparation of the Environmental Impact Statement (EIS). The environmental and social studies will be finalised and published as part of the EIS that will be placed on public exhibition in the coming months.

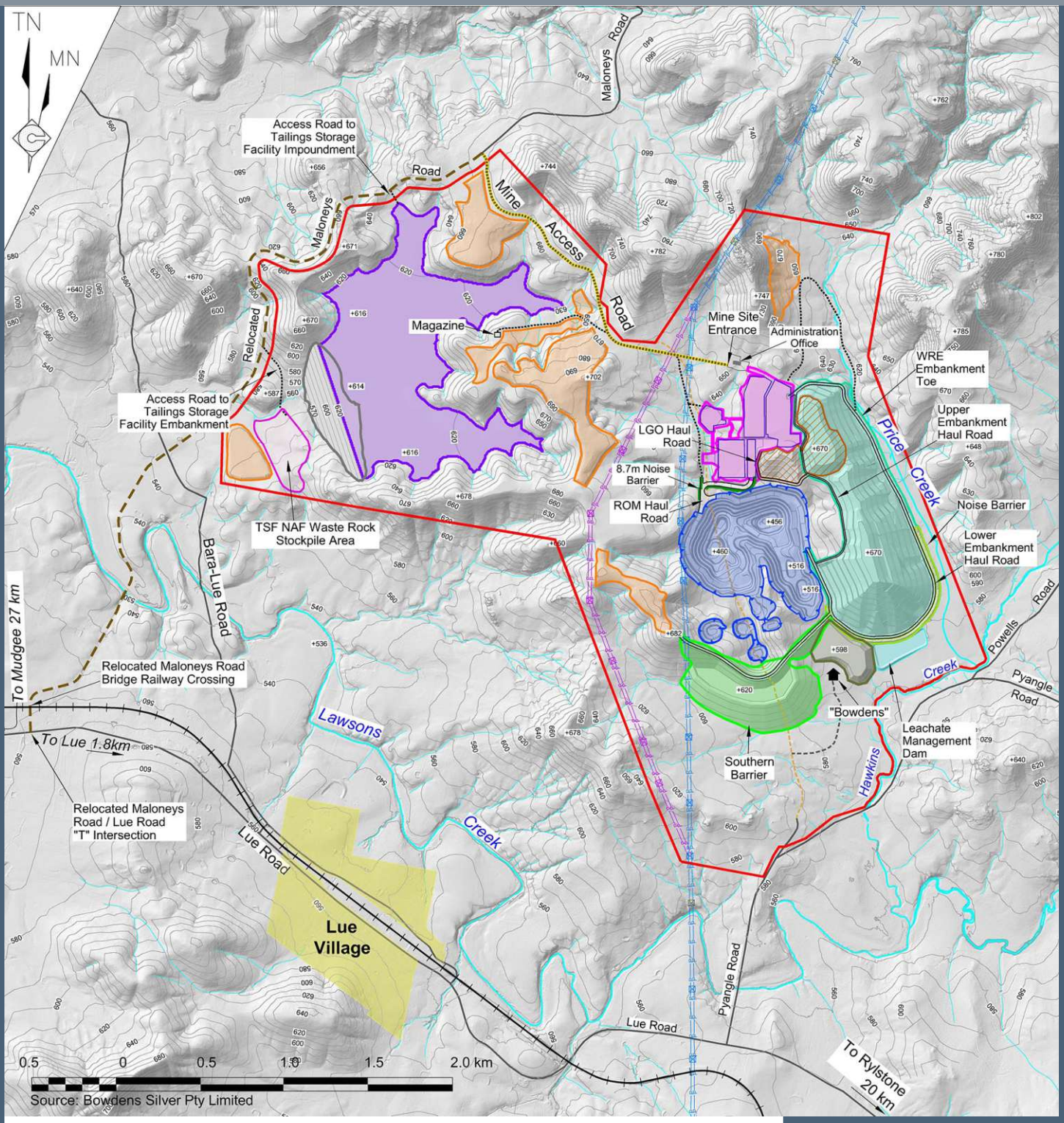
## What is the Project?

Bowdens Silver Pty Ltd (Bowdens Silver or the company) is a wholly owned subsidiary of Silver Mines Limited which is publicly listed on the Australian Securities Exchange. The company is proposing to develop and operate an open cut mine approximately 26km east of Mudgee and 2km northeast of the Lue village to recover principally silver, with a proportion of accompanying zinc and lead.

In summary, the project involves:

- The development of an open cut mine
- Processing of up to 2.0 million tonnes of ore per year to produce a silver/lead concentrate and a zinc concentrate
- No smelting on site
- Project life of 17 years
- Initial capital investment ~$250 million
- Peak workforce of up to 320 during construction and 230 during operations
- A water supply pipeline, processing plant, tailings storage facility (TSF) and Waste Rock Emplacement (WRE)
- All administration and office facilities on site
- A new public road, railway bridge overpass and creek crossing to provide vehicle access to the Mine Site, west of Lue
- Progressive rehabilitation over the Project life

# Bowdens Silver Project Site Layout




REFERENCE
- Mine Site Boundary
- Contour (m AHD) (Interval = 10m)
- Spot Height (mAHD)
- Existing Watercourse / Drainage Line
- Road
- Closed Railway Line
- Existing Power Line (500kV) / Tower
- Maloneys Road (Section to be closed)

Note:
LGO = Low-grade Ore
NAF = Non-acid Forming
ROM = Run of Mine
TSF = Tailings Storage Facility
WRE = Waste Rock Emplacement

**Proposed Component**
- Re-aligned Power Line (500kV) / Tower
- Relocated Maloneys Road
- Mine Access Road
- Internal Road
- Haul Road / Indicative Haul Road
- Open Cut Pit
- Tailings Storage Facility
- Processing Plant/ROM Pad/Mining Facility Area
- Soil Stockpile Area
- Low-grade Ore Stockpile Area
- TSF NAF Waste Rock Stockpile Area
- Southern Barrier
- Waste Rock Emplacement
- Oxide Ore Stockpile
- Lower Embankment Noise Barrier
- Noise Barrier

# Key Components of the Project

| Project Component | Summary of the Project |
|---|---|
| **Mining Method** | Open Cut mining in a main pit and two small satellite pits covering up to approximately **52ha**. |
| **Resource** | Mining of mineralised rock (ore) containing silver and small percentages of zinc and lead to depths of at least **180m**. |
| **Disturbance Area** | Disturbance of approximately **420ha** (excludes water supply pipeline and transmission line). |
| **Ore Reserves** | Approximately **29.9 million** tonnes of primary and low-grade ore. |
| **Mining** | Mining of approximately **2 million** tonnes per year of ore and between **3 and 4.5 million** tonnes per year of waste rock. |
| **Mine Life** | Construction stage of approximately **18 months** and mining / processing for **16 years**. |
| **Processing** | Crushing, grinding, flotation and filtration to yield two concentrates, a silver/lead concentrate and a zinc concentrate totalling between **20 000** and **30 000 tonnes** of concentrates per year for sale off site. There would be no smelting operations on site. |
| **Production** | Life of Mine production of approximately **53 million ounces** of silver, **116 000 tonnes** of zinc and **83 000 tonnes** of lead. |
| **Management of Waste Rock and Process Residue** | Waste rock would be used to construct the embankment of the Tailings Storage Facility (TSF) (in stages) and other site infrastructure (e.g. run-of-mine (ROM) pad). All remaining waste rock would be incorporated in either a waste rock emplacement or the southern barrier, a stockpile of rock to be used to rehabilitate the TSF and waste rock emplacement. All tailings would be contained in a single storage facility. |
| **General Infrastructure** | A new site access road would be constructed from west of Lue to the Mine Site. On-site infrastructure would include electricity supply and distribution, fuel storage, administration, workshop, stores and amenities buildings. |
| **Product Transport** | Silver/lead concentrates would be transported by road and rail in sealed containers to Port Pirie, South Australia for smelting or the Port of Newcastle for export and smelting off-shore. Zinc concentrates would be transported by road or road and rail in sealed containers to the Port of Botany for export and smelting off-shore.<br><br>All concentrates would be transported via the relocated Maloneys Road to Lue Road (west of Lue Village) and would not be transported through Lue or Rylstone. |
| **Water Management and Use** | Annual water usage would be approximately **2,000 ML** for processing and dust suppression. No ground water would be extracted via bores. Water is proposed to be sourced from:<br><br>• Approximately **950 ML** per year recycled from the TSF;<br>• Up to **530 ML** per year from open cut pit dewatering;<br>• Up to **250 ML** per year from on-site sediment-laden surface water collection); and<br>• In excess of **300 ML** per year of surplus mine water would be sourced from the Ulan Coal Mine and/or Moolarben Coal Mine via a buried water supply pipeline.<br><br>The approximate 56km pipeline would be constructed and commissioned during the construction phase of the Project and would be approximately 0.45m in diameter and be constructed of a high density polyethene pipe.<br><br>Initial drawdown from the pipeline in the first 6 months of operations is estimated to be approximately 1000 ML. Once the return water system from the TSF is fully operational, annual quantities decrease. |
| **Workforce** | Construction: approximately **320**<br>Operational: approximately **190 - 230** |
| **Hours of Operation** | Mining initially **day time only**, increasing to evening then night-time once sufficiently deep in the open cut pit. A number of the processing steps would be undertaken 24hrs/day, seven days a week. |
| **Key Distances (to Lue Village)** | Closest activity (southern barrier) – **1.9km**<br>Open Cut Pit – **2.1km**<br>Primary Jaw Crusher – **2.9km**<br>Grinding Mill – **3.3km**<br>Tailings Storage Facility (TSF) – **1.9km** |
| **Key Potential Environmental Impacts** | Key potential environmental impacts include acid rock drainage; noise; air quality; surface water; and traffic on local roads. |
| **Key Social Impacts** | Key social impacts include impacts on sense of community, culture, way of life, access and use of services, opportunities for local employment and procurement. |
| **Initial Capital Investment** | Approximately **$250 million** |

Considerable changes have been made to the Project design since the commencement of the Project in 2012 (by Kingsgate Bowdens Pty Ltd), to address a number of community issues and to reduce Project impacts. The main changes to Project design are outlined below.

| Previous Design | Current Design |
|---|---|
| Extraction of **53 million tonnes** of ore and **79 million tonnes** of waste rock | Mining of **30 million tonnes** of ore and **47 million tonnes** of waste rock |
| Processing of **4 million tonnes** per annum of ore | Processing of **2 million tonnes** per annum of ore |
| Water requirements averaging **3.5 GL** per year | Lower water requirements averaging **2.0 GL** per year |
| Water sourced from local groundwater, surface water capture and other sources (including Cudgegong River) | New water supply pipeline from Ulan and/or Moolarben Coal mines |
| Large water storage dams for water capture | No major water storage required |
| Infrastructure located closer to Lue village | Relocation of processing plant further north |
| Construction workers accommodation on site | No worker accommodation on site |
| Tailings Storage Facility located to the east, capacity **46 million tonnes** | Tailings Storage Facility located to the west, capacity **30 million tonnes** |
| Use of existing site access to east of Lue village via Pyangle Road | New road access to the west of Lue village, no product transport through Lue or Rylstone |

## Project Assessment and Engagement

An EIS is being prepared which details the potential environmental and social impacts that may be experienced during both construction and operation of the Project. Importantly, the EIS outlines a range of measures to address community input and recommendations from various specialist consultant studies in order to minimise and manage potential impacts.

The Bowdens Silver Project is being assessed as a State Significant Development (SSD), as defined under State Environmental Planning Policy (State and Regional Development) 2011 and will require development consent under Divisions 4.1 and 4.7 of Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The NSW Department of Planning and Environment (DPE) has issued Secretary's Environmental Assessment Requirements (SEARs), outlining the matters that need to be addressed in the EIS. Engagement with the community and key stakeholders has been a key component in the development of the EIS and through the Social Impact Assessment (SIA). Engagement mechanisms have included:

- Personal interviews, meetings, phone calls, emails and mailouts
- Telephone and online Surveys
- Community Information Sessions / Open Days / Displays
- Community Consultative Committee Meetings
- Project Briefings
- Regional Town Forums
- Community Information Sheets and Newsletters
- Community investment initiatives

The EIS is planned to be lodged with DPE in Q3 2019, and the public will be invited to provide comments and make submissions following this time. The EIS will be available on the DPE website and hard copies will be made available for viewing at selected locations.

We will continue to keep the community informed about the progress of the EIS, closer to lodgement, including details of the locations of where and when the document will be publicly available.

# Technical Studies Update

**The Bowdens Silver Project team is currently finalising technical studies in various areas to understand the potential impacts of the Project. The results of these studies will be detailed in the EIS however the preliminary findings are being presented to the community through individual and group meetings and a community information session, prior to lodgement with DPE.**

**Summaries of the preliminary findings of the technical studies that have been completed are provided as part of this community information sheet.**

## Noise

Noise from mining operations was a key concern raised by stakeholders during consultation.

***"Noise is what drives people out of communities"***

*"You can hear a cow sneeze at night it's so quiet."*

Bowdens Silver has worked hard to design all operations within the Mine Site to minimise impacts from all potential noise sources and have recently completed a detailed noise impact assessment for the Project in accordance with the NSW EPA's Noise Policy for Industry. As part of the Project design and planning process, the Project description has been modified on a number of occasions, to optimise the location and equipment utilised. A key aspect in this regard has been the proposed relocation of the processing plant further north on the Mine Site, further away from the Lue village and placement at a lower elevation. The construction of a noise and visual bund/barrier, in the southern part of the Mine Site, is also proposed to further reduce noise impacts, with other barrier walls to be located in close proximity to noise sources at various locations around the Mine Site.

### PRELIMINARY ASSESSMENT

Noise has been modelled over four stages of the Project representing the progression of operations over the proposed life of mine. The stages nominally relate to the site establishment and construction stage and Years 3, 8 and 10. The noise modelling methodology accounts for the effects of noise enhancing meteorological conditions during the daytime, evening and night-time periods.

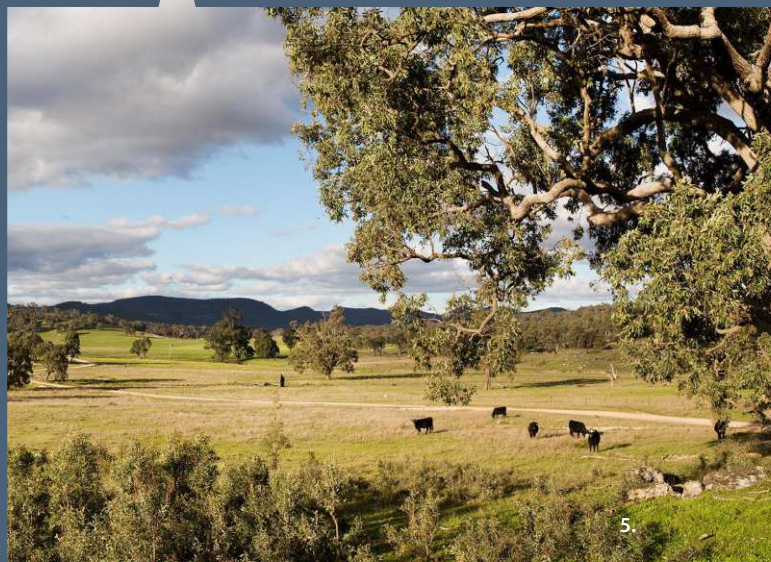
### RESULTS & PROPOSED MITIGATION AND MANAGEMENT

Preliminary modelling results indicate that four landholders would experience significant noise exceedances during the evening/night-time criteria of 35dB(A) over 15 minutes by more than 5 dB(A) during some stages of the Project, with some moderate exceedances predicted in the day. Bowdens Silver has approached these stakeholders to inform them of the technical noise study outcomes and to outline potential management measures, including voluntary acquisition rights as outlined in the government's Voluntary Land Acquisition and Mitigation Policy (VLAMP, 2018) or the opportunity to enter into a Negotiated Agreement with mutually agreed compensation. The VLAMP sets out Government policy with respect to negotiated agreements and explains how acquisition and mitigation rights are assigned to landholders in relation to SSD in NSW when the modelling of potential noise (or dust) indicates that the Project is expected to cause material exceedances at private residences.

There are a further four residences, where the project trigger noise level may be exceeded at various times by between 3dB(A) and 5dB(A), and Bowdens Silver has also approached these landholders to discuss the predicted noise levels and a number of acoustic treatments to reduce noise inside their residence which may include air conditioning, double glazing and other facade and roof upgrades etc.

A total of seven residences are predicted to receive noise levels of 1dB(A) or 2dB(A) above the project trigger noise level. Bowdens Silver has also approached the owners of these residences to discuss the predicted noise levels and similarly would offer a number of acoustic treatments to their residences.

It is likely that a number of residents of Lue and the area around the Mine Site would hear Project operations within the Mine Site when adverse weather conditions (light winds and/or temperature inversions) prevail, although those levels would be within the EPA's Noise Policy for Industry criteria and therefore comparatively low.



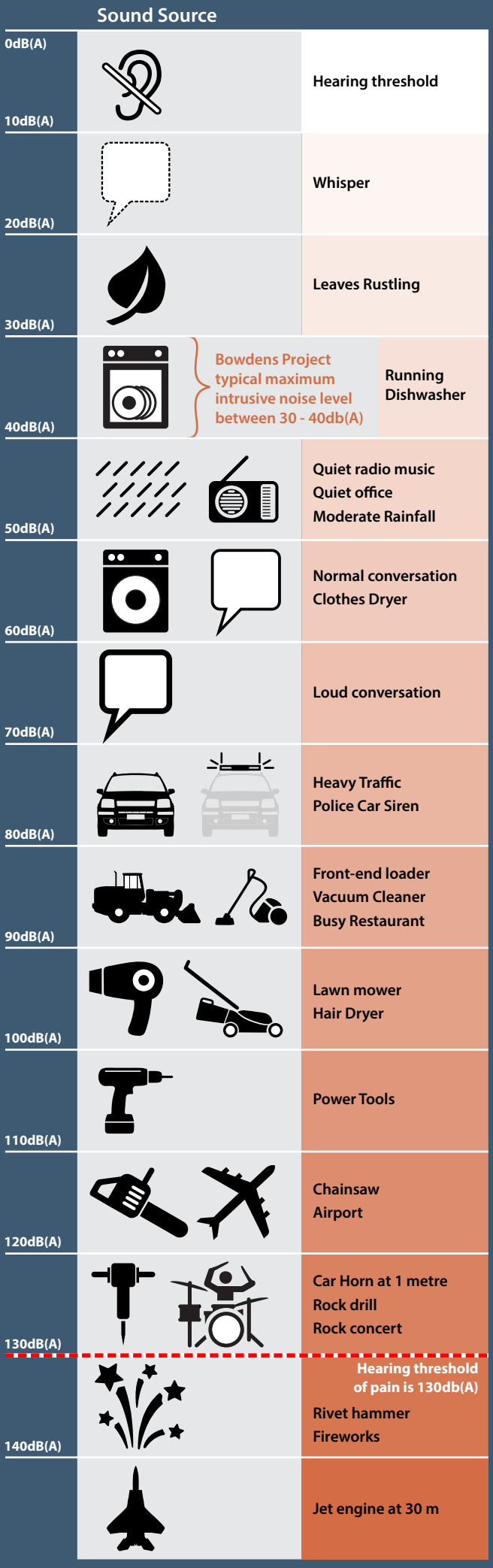
# Noise (cont.)

In order to minimise noise during Project operations, Bowdens Silver would prepare a Noise Management Plan that affords:

- Adoption of a range of noise controls, including noise attenuation on most items of fixed plant and equipment and the entire mobile mining fleet;
- Flexibility in mine operations in noise enhancing weather conditions;
- Monitoring noise in real-time (24 hours / 7 days a week), with alarms to identify elevated noise levels and the restricting/shutting down of equipment if required;
- Adjustments to the mining schedule to reduce truck movements at night; and
- Provision of monitoring results.

The noise attributed to the proposed additional traffic volumes on the local road network during both the site establishment and construction stage and operations would not exceed the relevant traffic noise criteria.

Field assessment




**Source:** Safework Australia (2018)

# Air Quality

## PRELIMINARY ASSESSMENT

During consultation, community stakeholders told us that air quality was a key issue and to address this we have completed a detailed air quality impact assessment in accordance with the NSW Environment Protection Authority (EPA) prescribed methods and guidance for the modelling and assessment of air pollutants in NSW. This assessment includes collation of meteorological data in the Lue area and background emissions from the existing environment. We have modelled Total Suspended Particulates (TSP), PM10, PM2.5 and depositional dust for the Project and compared these to relevant government criteria. The impacts of dust on health, given the potential for lead content, was also frequently raised.

***"Dust after you blast is my only concern from a health point of view"***

*"We're concerned about prevailing winds and potential for lead contaminated dust in soil and tank waters"*

## RESULTS & PROPOSED MITIGATION AND MANAGEMENT

The air quality modelling for the Project established that the impact criteria for annual average PM10 concentrations, PM2.5 concentrations, total suspended particles (TSP) or dust deposition would not be exceeded at any stage of the Project.

Furthermore, no exceedances of the impact assessment criteria are predicted at private residences for metal dust concentrations and respirable crystalline silica. In relation to the analyses of metals, health risks to the Lue and district community from the proposed operations are considered negligible.

The predicted 24-hour average PM10 concentrations would exceed the impact assessment criteria at three residences within or close to the Mine Site. No exceedances of the 24-hour average PM2.5 concentrations is predicted at any residence.

Bowdens Silver is committed to the development and implementation of mitigation measures to minimise dust that is generated by the Project. Air quality impacts would be managed in accordance with an approved Air Quality Management Plan that would include:

- Controlling dust on haul roads by using water trucks
- Progressive rehabilitation - stabilising and partially revegetating exposed areas to minimise wind erosion
- Sealing the section of the relocated Maloneys Road
- Implementing a proactive air quality management system that utilises meteorological forecasts and real-time meteorological and air quality monitoring, to modify operations (if required) such as stopping operations during adverse dust conditions and rescheduling of blasts in adverse weather conditions or high winds
- Provision of monitoring results.

### Particulate Sizes

- TSP – total suspended particulate matter - all suspended particles in the air. The upper size range is typically 30µm – 50µm.
- PM10 –particles with equivalent aerodynamic diameters of less than 10µm.
- PM2.5 –particles with equivalent aerodynamic diameters of less than 2.5µm diameter (a subset of PM10). Often referred to as the fine particles.
- We also consider dust deposition – the dust that may fall on an area and cause nuisance impacts.

## Health

Potential impacts to health and well being were of concern to community stakeholders, particularly the potential for exposure to lead in the air, soil and water.

> ***"The health and welfare of the entire community surrounding the proposed mine site will be irrevocably affected by long term exposure to lead particles released into the atmosphere by the mining process."***

> *"There is no safe level of exposure to lead."*

> ***"If I had a child at a school with a mine 2.5km away I would have serious concerns."***

### PRELIMINARY ASSESSMENT

The Human Health Risk Assessment is being prepared in accordance with the enHealth ***"Guidelines for assessing Human Health Risks from Environmental Hazards"*** (2012) and DPE's assessment requirements. The assessment has involved:

- A comprehensive air, soil and water monitoring program, including analysis of metals; and
- Detailed testing of soil material to determine how much lead may come off the soil and be available to be absorbed by humans, where exposure occurs.

Consideration and assessment have also been undertaken in relation to:

- Emissions of dust to air including lead and other metals;
- Noise emissions; and
- Impacts on water quality.

### RESULTS & PROPOSED MITIGATION AND MANAGEMENT

Almost all noise levels during the day, evening and night are below the health based thresholds for any adverse health effects. Some minor exceedances during worst-case meteorological conditions may occur at four properties. These properties have been identified in the noise assessment, and mitigation measures would be offered to these households to reduce noise levels to below the relevant thresholds.

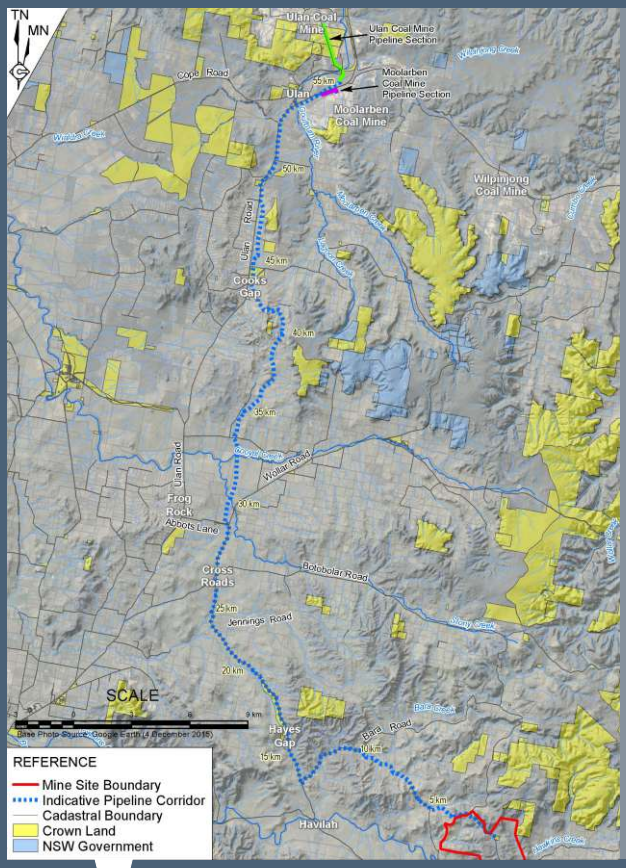
In relation to the analysis for metals (including lead), risks to the community from the proposed operations are considered negligible.

## Access to Water

*"Where will the water [for the Project] be sourced from?"*

> ***"I'm concerned that the options they have put forward [for water supply] won't be enough."***

Access to, and use of, water was a key issue for many local residents and landholders. Bowdens Silver recognises that water is a key resource for the whole community, and in response is proposing to source between approximately 70% and 85% of its water requirements from water recycled from tailings, groundwater inflows to the open cut pit and sediment-laden runoff collected on site. In order to maintain a regular water supply, it is also proposed to source water for the Project from the Ulan Coal Mine and/or the Moolarben Coal Mine, which would be conveyed to the Mine Site via a dedicated water supply pipeline (shown below). Approximately 0.75 ML to 1.75 ML per day would be sourced on a regular basis from licensed inflows to these mining operations. As a result, the Project would place no additional demand on local and regional water resources.




Indicative Pipeline Corridor

Ecology and Aboriginal Cultural Heritage Surveys have been conducted along the proposed water supply pipeline route. It has been designed with an intermediate pumping station and provision for off-takes for firefighting supply along the route.

## Surface Water

Concerns regarding surface water impacts resulted in community stakeholders expressing a desire to see rigorous assessment of surface water impacts, appropriate water management and monitoring.

*"We are worried about impacts to the creek"*

### PRELIMINARY ASSESSMENT

The surface water assessment has been undertaken in accordance with the DPE's assessment requirements and includes:

- Development of a water balance model that has been calibrated to local conditions;
- Development of hydrologic and hydraulic models that have been calibrated to local conditions, to identify the magnitude and extent of potential impacts; and
- A peer review of the study by an independent expert.

### RESULTS & PROPOSED MITIGATION AND MANAGEMENT

In response, Bowdens Silver would sample and monitor local surface water; collect any seepage from the TSF and a lined waste rock emplacement for recycling and reuse in processing; and would ensure that as much surface water as practical is diverted around the Project components and/or appropriately captured for recycling or treatment and discharge so as to help maintain flows in Hawkins and Lawsons Creeks.

## Groundwater

Potential impacts to groundwater sources is a concern to some stakeholders, in particular the potential for health and livelihood impacts from water loss and/or contamination.

*"What will happen to the underground aquifer? Loss of water would mean the end of my livelihood."*

***"We are dependent on our bore."***

### PRELIMINARY ASSESSMENT

A comprehensive assessment of potential groundwater impacts has been undertaken for the Project using a numerical groundwater model, in accordance with the NSW Aquifer Interference Policy. The numerical model is based on extensive testing in and around the Mine Site and has been calibrated to local and regional groundwater levels. The assessment has also been subject to an independent peer review to ensure that the study meets the criteria of the Australian Groundwater Modelling Guidelines.

### RESULTS & PROPOSED MITIGATION AND MANAGEMENT

The outputs of the modelling show that there are limited impacts to groundwater as a result of the Project. Bowdens Silver would continue to sample and monitor the local and regional groundwater system, building on the extensive historic dataset relating to the site and surrounds. The TSF would also be designed in accordance with the design standards set out by both the Australian National Committee on Large Dams and the New South Wales Dam Safety Committee. In order to control seepage through the embankment and floor, the TSF would include the following design features:

- A low permeability, compacted clay liner that would limit seepage from the floor of the TSF impoundment area;
- A low permeability, bituminous geomembrane liner on the upstream face of the TSF embankment; and
- A low permeability grout curtain, to a depth of 40m beneath the TSF embankment and tied into the bituminous geomembrane liner.

Vibrating wire piezometers and standpipe piezometers would provide data which would be used to assess the effectiveness of the design.

Water sampling


The TSF and the waste rock emplacement would also have a capping and closure cover, designed to create a stable and vegetated landform to shed clean runoff. Mining operations would involve pit dewatering, and as previously noted, the development of the water supply pipeline negates the need to source groundwater beyond the open cut pits, in line with community expectations.

Given community concerns regarding impacts to groundwater, Bowdens Silver would also monitor local bores for landholders, as part of a Groundwater Management and Monitoring Plan, to establish that no or negligible impacts are experienced.

# Final Landform and Rehabilitation

*"Regenerate the area - trees, topsoil and seed it."*

***"Rehab - has to happen. Make a national park or reserve out of it."***

*"Rehabilitate better than it was; no footprint."*

Whilst many components on the Mine Site would not be able to be rehabilitated until near the end of the Project life, wherever practical, areas disturbed as part of the Project would be progressively rehabilitated following the completion of disturbance. Rehabilitation would be completed using natural landform design principles and revegetation techniques that are recognised as leading industry practice.

In this regard, community stakeholders wanted to see progressive rehabilitation, and identified a range of possible land uses post mining such as regeneration of the area to its natural state, pastoral grazing, recreation and tourism development.

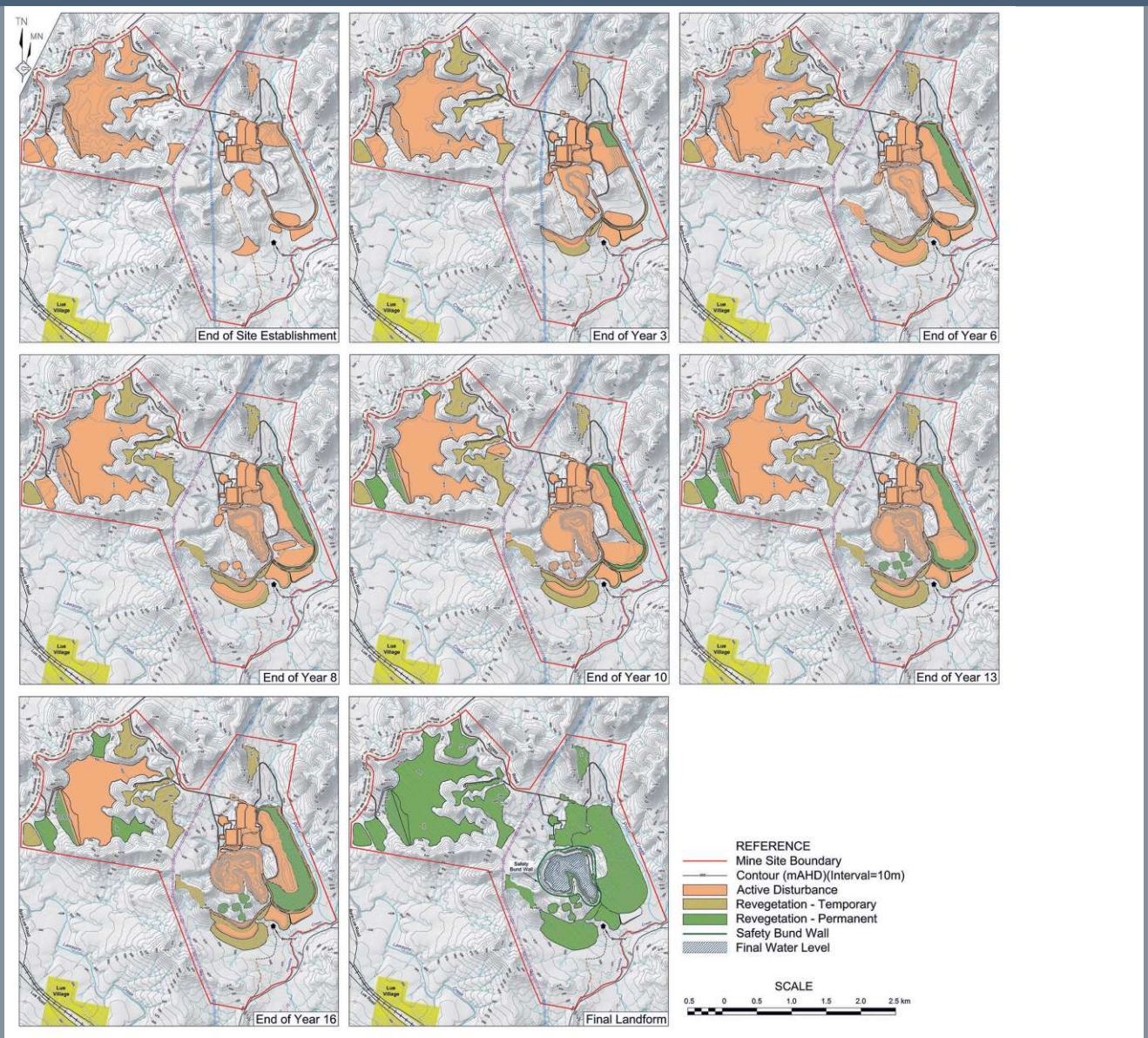
## REHABILITATION DESIGN

Rehabilitation of disturbed land has been designed with the objective of returning much of the Mine Site to native vegetation, comprising either trees, shrubs and ground covers or only ground covers. Some areas of the Mine Site would be returned to agricultural productions. Rehabilitation would involve landform construction and either temporary or permanent revegetation. Final slopes would be designed to be stable with watercourses re-instated.

## PROPOSED MANAGEMENT

Bowdens Silver plans to continue to harvest seed from native vegetation on site to add to its substantial seed bank. A dedicated nursery to propagate the seed is planned.

Revegetation would either be temporary or permanent. Temporary revegetation would focus on the use of exotic pastures, to ensure rapid growth, whereas emphasis would be placed upon native vegetation (trees, shrubs and ground covers) on all permanently vegetated areas. Both temporary and permanent revegetation would be undertaken progressively.



# Ecology and Offsets

***"Research is needed on the impact on flora and fauna"***

The biodiversity impacts of the Project have been assessed in accordance with the NSW Biodiversity Offsets Policy for Major Projects and the Framework for Biodiversity Assessment, with the Project referred to the Commonwealth Department of Environment and Energy.

## PRELIMINARY ASSESSMENT

The assessment has involved comprehensive terrestrial ecology studies with outputs used to inform the Mine Site layout and the route for the water supply pipeline to minimise impacts to areas of high biodiversity value.

Aquatic Ecology studies have also been undertaken that include a survey of Hawkins and Lawsons Creeks; Inspections and assessment of Walkers Creek, Blackmans Gully and Price Creek; inspection and assessment of nine springs; and sampling of 24 groundwater bores for stygofauna.

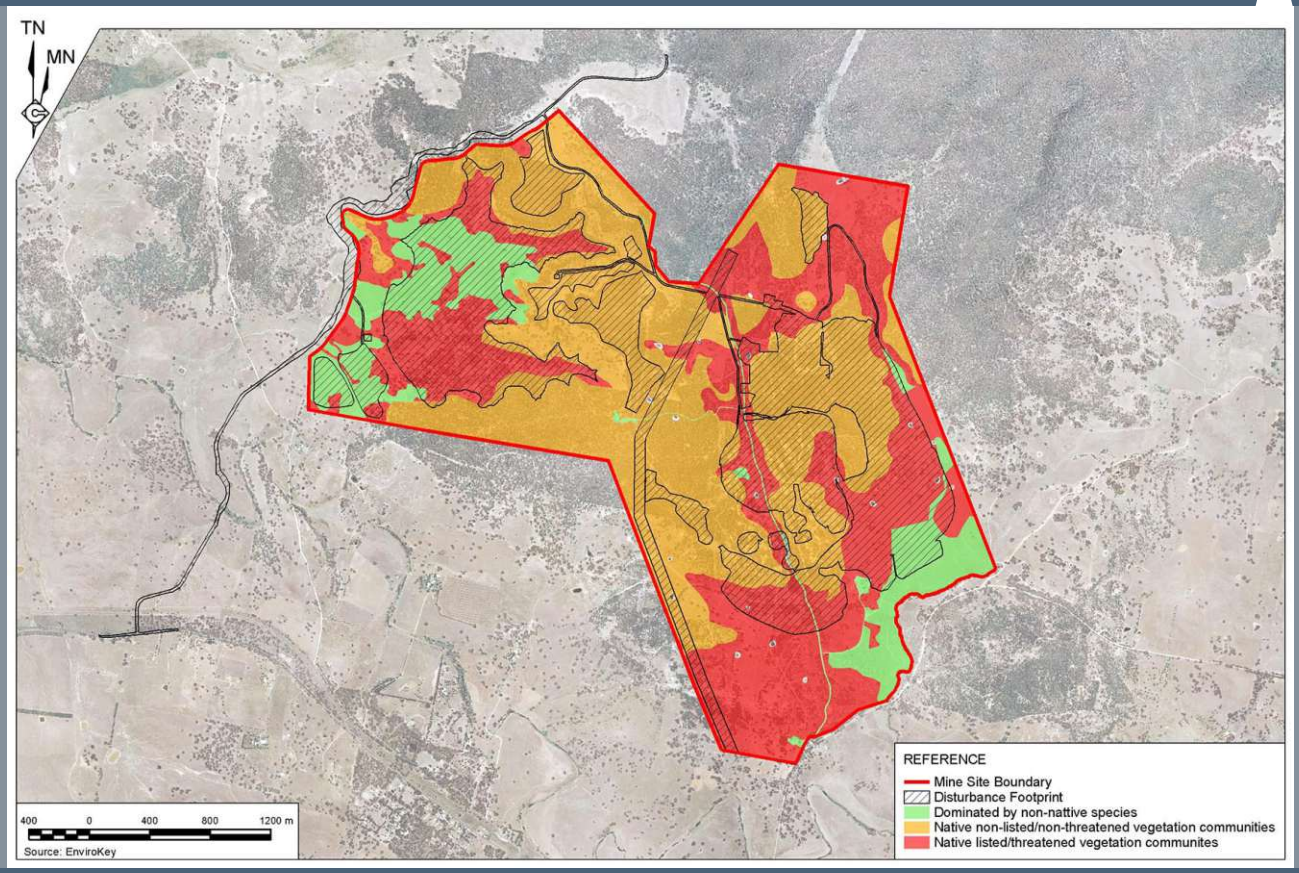
## RESULTS & PROPOSED MITIGATION AND MANAGEMENT

The Project would impact in excess of 300 hectares of native vegetation and fauna habitat. The terrestrial studies have identified that the Mine Site has 11 biometric vegetation types of which three are State and Commonwealth listed and include: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and the Derived Native Grassland Community; 370 flora species of which two are threatened; and 168 fauna species of which fourteen are threatened.

The aquatic ecology studies identified that the watercourses in the Lue area have four native fish species and three introduced species, none of which are threatened; and has shown there would be no impacts to key fish habitat and/or species in either Hawkins or Lawsons Creeks. Limited stygofauna were identified in the groundwater within or surrounding the Mine Site.

Bowdens Silver is committed to delivering a biodiversity offset strategy that appropriately compensates for the loss of all ecological values as a result of the Project, which would be developed in accordance with the NSW Framework for Biodiversity Assessment, with potential offset sites within and adjacent to the Mine Site and potentially within other nearby areas.

Vegetation Communities



## Aboriginal Cultural Heritage

Through consultation for the Aboriginal Cultural Heritage Assessment, Aboriginal community members have expressed a desire and cultural responsibility to preserve and promote their Aboriginal history.

> ***"We need to try and save our Culture – we need to save what we can"***

> *"If I can teach even one Wiradjuri word – it will stick – no language equals no culture – language is culture"*

### PRELIMINARY ASSESSMENT

The Aboriginal and cultural heritage assessment has been undertaken in accordance with:

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

Using a predictive model of Aboriginal cultural heritage site locations, surveys have been undertaken across the Mine Site and along the water supply pipeline corridor, in consultation with registered Aboriginal parties, including those who are traditional owners and knowledge holders. This has included involvement in site surveys, to identify items of Aboriginal cultural heritage significance; and discussions regarding the recovery, management and return of artefacts that may require salvage.

### RESULTS & PROPOSED MITIGATION AND MANAGEMENT

Approximately 75 sites of Aboriginal cultural heritage significance were identified within the Mine Site and the water supply pipeline corridor, including scatter locations of stone artefacts, culturally modified trees, stone tools and a rock shelter with artefacts. Approximately 25 of the sites are located within areas to be disturbed during the Project life and would be salvaged. Approximately 50 of the sites are located outside the areas to be disturbed during the Project life and would be protected.

At the request of the Aboriginal stakeholders, Bowdens Silver would provide a 'Keeping Place' for salvaged artefacts so that these can be returned to the final landform post mining in recognition of the importance of appropriate management of items of cultural heritage significance, in collaboration with the Aboriginal community. An Aboriginal Cultural Heritage Management Plan would also be developed to guide these activities.

## European Heritage

A detailed Historic Heritage Assessment has been undertaken for the Project and no heritage items listed on National, State or local Heritage Registers are located within the Mine Site. Further, none of the potential historical heritage items, elements or sites identified in the preparation of the Historic Heritage Assessment were assessed to be of heritage significance, resulting in no adverse direct historical heritage impacts as a result of the Project.

The Mine Site is located approximately 2km from Lue which has a number of State-listed buildings of significance such as the Lue railway building.

Field Assessment

## Blasting

A Blasting Assessment for the Project has been undertaken in accordance with Australian and New Zealand Environment and Conservation Council Guidelines and the Australian and British Standards. The assessment addresses the impact of the Project in terms of ground vibration, overpressure and fly rock on the surrounding environment, including private residential receivers, cultural heritage sites and infrastructure, particularly the 500kV power transmission line that traverses the Mine Site.

The assessment established that during blast events the effects would be minimal including occasionally being heard in Lue as a distant rumble but rarely felt. The assessment demonstrates that the blasting proposed for the Project can be effectively managed to meet the relevant criteria and would be managed in accordance with an approved Blast Management Plan.

Bowdens Silver would establish a blast notification protocol to inform Lue and district residents of the proposed blast times.

## Traffic

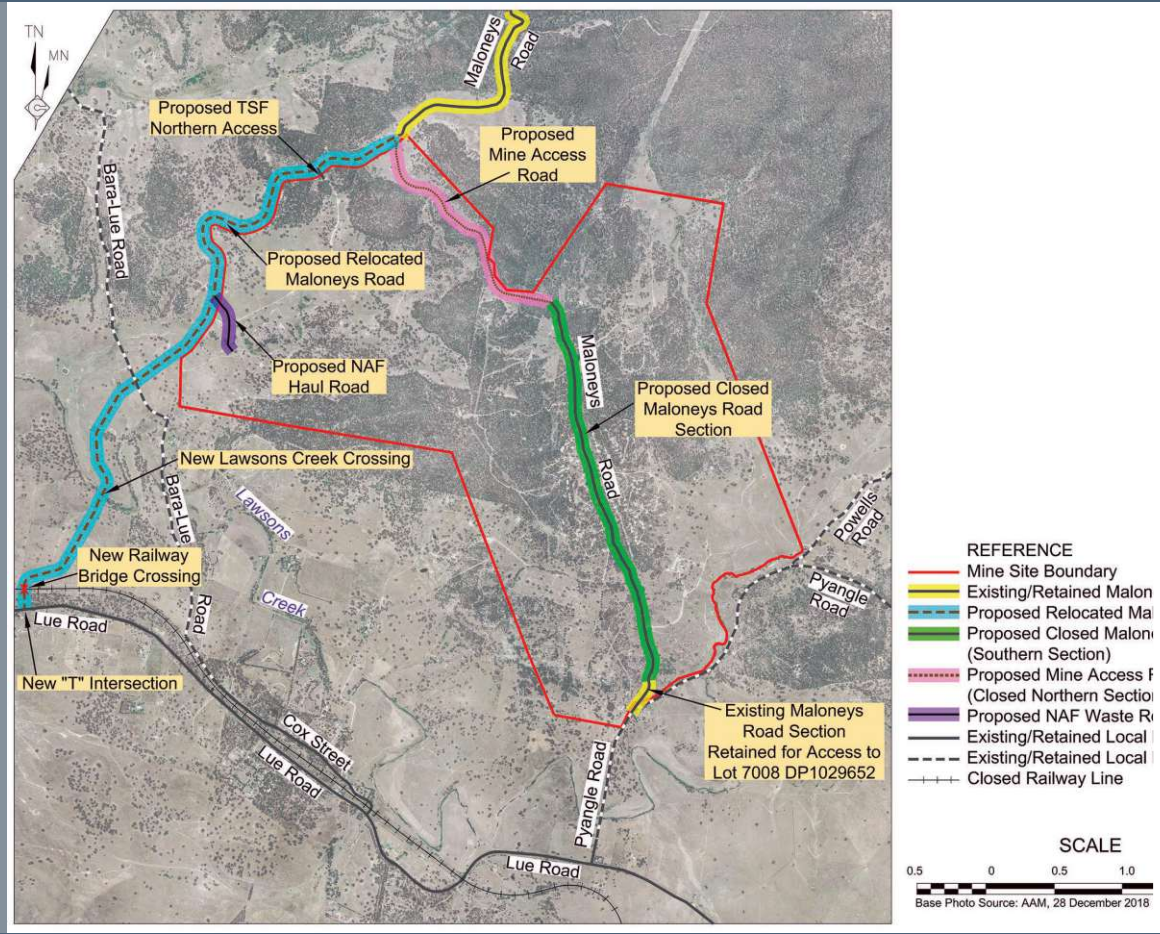
An assessment has been undertaken to understand the impacts on traffic as a result of the Project in accordance with the DPE's assessment requirements, including an assessment of the existing local and regional road network and conditions, including traffic counts, and impacts to local and regional road users as a result of Project-related traffic.

Community members consulted expressed that roads in the area were a concern and need maintenance, that the Project had the potential to cause traffic disruptions and that residents did not want to see trucks through Lue village. There was a request that Bowdens Silver consider an alternative transport route and good access and signage to the Mine Site.

In response, Bowdens Silver has commissioned the design of a new road that would be constructed to provide access to the Mine Site from the west of Lue. Whilst it is recognised that some mine personnel would reside in areas to the east of Lue, during operations the new road would remove the need for much of the light vehicle traffic, and almost all of the truck traffic through the village and past the Lue Primary School. The new road would also include a new intersection (with full safety measures e.g. turning lanes), a new railway bridge overpass; and a new crossing at Lawsons Creek. The new road would effectively relocate a section of Maloneys Road.

Mine traffic would also be minimised at peak times, with **no concentrate** truck movements through Lue or Rylstone at any time. There is also the potential to relocate the existing waste transfer facility off Lue Road, onto a site accessible from the relocated Maloneys Road. This activity would be discussed with the Mid-Western Regional Council in the event the Project is approved.





## Sense of Community / Sustainability of Lue Village

The village of Lue is considered by Lue residents, consulted as part of the SIA, to be a quiet, peaceful and tranquil place, with a strong sense of community.

*"A good lifestyle, fresh air, and natural beauty"*

***"We enjoy the tranquility and privacy of Lue"***

*"It's a good community and it's good knowing everyone"*

***"If push comes to shove you can rely on people"***

*"We pull together when we need to. We can call anyone if we need a chat or help"*

*"A good community where everyone pitches in to help people. Although we're close, I also enjoy that we mind our own business"*

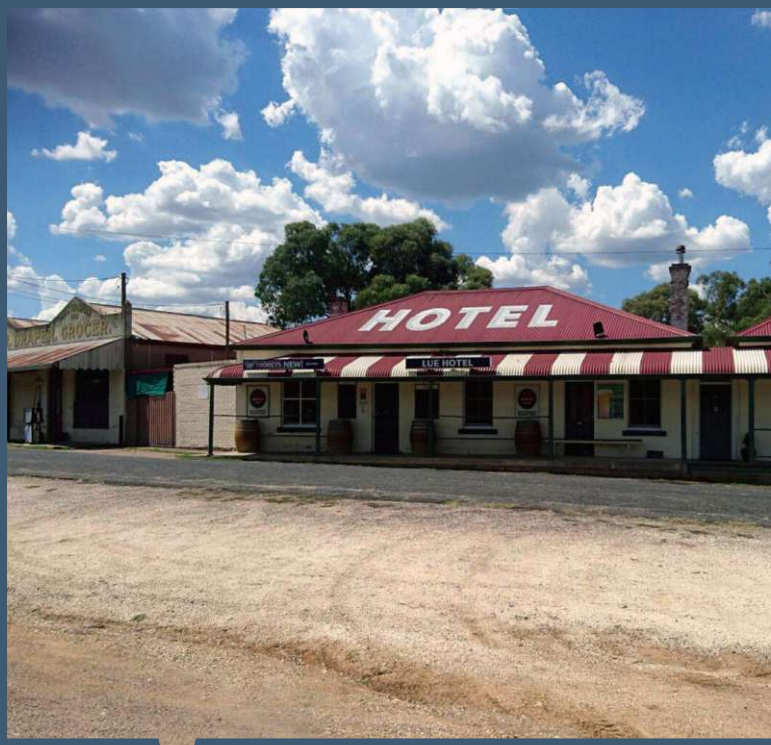
In relation to the impacts of the Project on sense of community, sustainability of Lue was a key social impact theme. Some residents believed that the project would inject a boost to the village, through new population, that would assist in keeping the school and small businesses going and may result in further development of the village. Others however, felt that the Project would result in a loss of population, as people moved out, threatening the village's sustainability and sense of place.

*"The project should inject people and money to keep the pub and school going."*

***"Residents will withdraw children if mine goes ahead"***

***"Boost to the village"***

Lue sits within the broader Mid-Western Regional Council (MWRC) area, which is characterised by high rates of unemployment across particular towns/villages; a decreasing skilled employee base, due to an ageing population; a higher percentage of the population receiving a pension; lower levels of secondary education; and median weekly incomes below the NSW average.




Lue Hotel

Key industries of employment in the MRWC area include mining, retail trade, health care and social assistance, agriculture, forestry and construction. With the presence of a strong and growing tourism sector, and around fourteen small village communities serviced by the regional centre of Mudgee, the area is considered one of NSW's most diverse regional economies, rich in both mineral resources, agricultural land and historic character. This diversity, however, has the potential to generate conflicts in land use and challenges relating to environmental management. Service providers, consulted as part of the SIA, expressed that although in some sector's, capacity may be stretched, that the Project would be good for the region and would bring a range of social and economic benefits. The Project has the potential to:

- Provide secure, locally based, employment for up to 230 people at peak operations over 17 years and around 320 in Project construction;
- Create opportunities to develop new skills through traineeships, apprenticeships and scholarships;
- "Keep it Local" through the utilisation of local suppliers and contractors;
- Contribute directly and indirectly to local and regional economies through wages, procurement and community investment (through a Voluntary Planning Agreement [VPA] and other community investment initiatives);
- Improve and maintain local roads relied upon for the Project (through a VPA);
- Improve local infrastructure (e.g. powerlines and water supply pipeline); and
- Contribute to community sustainability.

However, at the same time, some local Lue residents and landholders, perceive that the traditional culture and sense of community of Lue would be lost, should the Project proceed.

## Sense of Community / Sustainability of Lue Village (cont.)

Bowdens Silver is committed to ensuring the sustainability of the Lue village and would commit to the development of a Community Enhancement Program, that involves local residents and key stakeholders, in further developing Lue's community assets. Needs and aspirations of the Lue and district community that have been documented through the SIA in this regard include the following:

- Industry / Business diversification– "*there is a diverse mix of industry types in the area*"; "*we need to support local businesses*" and "*Keep it in the region*";
- Tourism e.g. mine based tourism - "*we need to bring tourists to the area*"; "*tourists could easily stop and spend money if they had a chance and somewhere to go*";
- Preservation and restoration of local heritage buildings and documentation of heritage values;
- Developing education pathways for young people – indigenous and non-indigenous – "*look at employing locally*";
- Establishment of local community events that bring people together - "*we would love to see more activities at the Hall*" ;
- Upkeep and maintenance of local infrastructure – "*(Lue Hall) it is in dire need of restoration*"; and
- Ongoing support for the Lue Public School – "*it's a fantastic school*", "*it's central to the community, if we lose it, we lose the town*"

## Visual

During consultation, community stakeholders outlined that they value the 'great views' and rural outlook around Lue and were concerned about the potential visual impacts of the proposed Project, particularly at night. There was a request to see tree planting, screening of operations through the construction of bunds or barriers and consideration of how lighting (at night) from the operations could be reduced.

**PRELIMINARY ASSESSMENT**

The visual impact assessment has involved undertaking observations of the Mine Site from 53 private and public viewing locations and assessment of cross-sections from a number of these locations. A 3-dimensional interactive model has been developed and photo montages will be included to illustrate sequential visual changes throughout the Project life. A night glow assessment has also been undertaken.

**RESULTS & PROPOSED MITIGATION AND MANAGEMENT**

The topography of the area around the Mine Site provides a considerable visual barrier and the outcomes of the visual assessment indicate that activities on the mine site:

- Would not be visible from Lue village;
- Would only be visible from sections of Pyangle Road and Powells Road and distant sections of Lue Road; and
- Would be directly visible from six non Project related residences located within 5km of the Mine Site.

The residences with a direct view towards the Mine Site are located to the East of the WRE at a distance of approximately 4.5km, southeast of the WRE at a distant of approximately 0.8km, south of the WRE at a distance of approximately 2km (three residences) and south-soutwest of the TSF embankment at a distance of approximately 2km. The most visible features will be the light coloured rock exposed on the waste rock emplacement (sometimes up to 60m above natural ground level), the southern barrier and the tailings storage facility embankment – to be minimized by progressive revegetation. To reduce visual impacts of the Project, the following strategies are proposed:

- Setting back the waste rock emplacement, north of Hawkins Creek ;
- Designing the waste rock emplacement to resemble a natural landform;
- Progressively revegetating interim and final landform areas;
- Undertaking further tree planting, adjacent to Pyangle Road and Powells Road;
- Ensuring that lighting used on site has the least impact through colour (luminance), orientation and shielding; and
- Selecting a suitable colour for all infrastructure e.g. buildings and noise and visual barriers.

## Economics

The Bowdens Silver Project would result in revenue generation through the extraction of resources and provision of ongoing employment opportunities through the operating life of the Project. The costs and benefits associated with the Project are currently being assessed and will be presented in the EIS. The potential benefits of the project were raised by a number of stakeholders, particularly given high levels of unemployment in particular communities / towns across the region:

*"Employment for locals and opportunity to get skilled up"*

***"Employment, not much work going on here - especially use locals for the Project"***

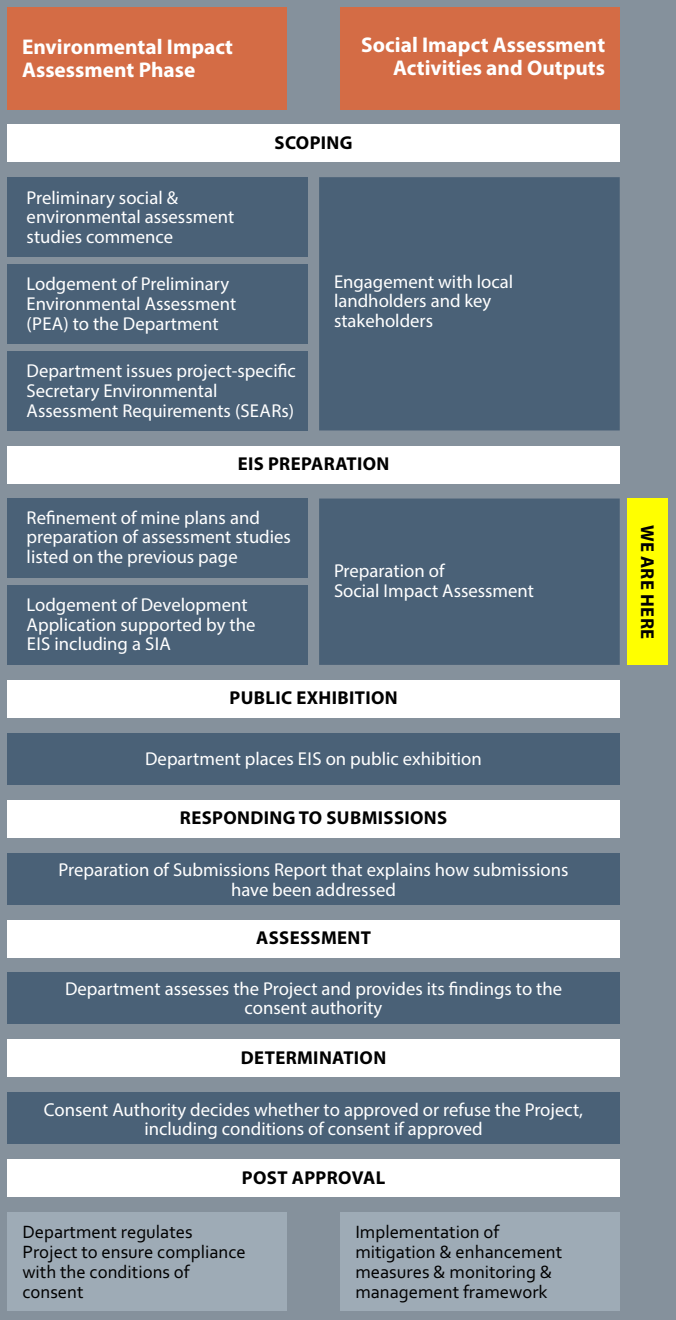
Bowdens Silver is committed to local employment and procurement, to ensure that benefits are maximised locally and regionally through the development of relationships with local employment providers and agencies, business chambers, and local contractors; provision of local apprenticeships and traineeships; and community investment targeted to meet local and regional needs e.g. education and employment pathways.

# Next Steps in the Assessment Process

Consulting with the community continues to be a key component of the environmental and social assessment for the Project, and over the next month we will be meeting with our near neighbours and key stakeholders again to discuss the outcomes of the environmental assessments in detail, specifically to:

- provide further details on the outcomes of the assessment studies and how potential impacts are predicted to be experienced;
- consider the views of potentially affected and interested people and use these insights to further inform mitigation and enhancement measures for the Project as well as monitoring and management frameworks; and
- ensure people know how their input and views have been considered in project planning and assessment.

The feedback from this next round of consultation will inform the finalisation of the relevant environmental assessments and the social impact assessment. The development application will then be submitted to the DPE, supported by the EIS and specialist consultant studies.




# Further Information

We hope that you have found this Information Sheet useful and we welcome your feedback on the preliminary results of the environmental assessments for consideration as part of the detailed assessment process.

If you would like more information, or would like to schedule a meeting with us to discuss the Project, please contact:

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*Thank you for your involvement in the Project to date.*