Appendix V

Agricultural Impact Statement – Pipeline Development

REGIS RESOURCES LTD

McPhillamys Gold Project

Agricultural impact statement - Pipeline development

August 2020

PREPARED FOR LFB RESOURCES NL

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McPhillamys Gold Project

Agricultural impact statement - Pipeline development

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25 August 2020	25 August 2020

Executive Summary

LFB Resources NL is seeking development consent for the construction and operation of the McPhillamys Gold Project (the project), a greenfield open cut gold mine and water supply pipeline in the Central West of New South Wales (NSW). The project comprises two key components:

- the mine site where the ore will be extracted, processed and gold produced for distribution to the market (the mine development); and
- an associated water pipeline which will enable the supply of water from near Lithgow to the mine site (the pipeline development).

This Agricultural Impact Statement (AIS) provides an assessment of the impacts of the pipeline development on agricultural industries and resources and documents initiatives built into the amended design to avoid and minimise agricultural impacts. Due to the temporary nature of construction of the underground pipeline, and the minimal surface infrastructure associated with it, impacts to agriculture as a result of the pipeline development are anticipated to be negligible.

Key findings of this report include:

- The pipeline development passes through approximately 4.5 hectares (ha) of land mapped as Biophysical Strategic Agricultural Land (BSAL); however, impacts will be temporary and will be limited to the installation of the pipeline and supporting infrastructure.
- With the exception of the pumping station facilities and access tracks, no permanent changes to Land and Soil Capability (LSC) classes throughout the pipeline corridor are anticipated. Pumping station facilities will occupy a total maximum area of approximately 1.86 ha, of which less than 1.29 ha is suitable for agriculture. The change in LSC classes along the pipeline corridor will be negligible.
- Permanent impacts to agricultural resources within the pipeline corridor will be limited and will only occur on land where surface infrastructure, such as pumping station facilities and/or access tracks, is retained.
- It is anticipated that any reduction in the gross value of agricultural production within the Blayney, Lithgow and Bathurst local government areas (LGAs) will be negligible and there are not expected to be any constraints on the current or potential agricultural uses of neighbouring land.
- No impacts on groundwater availability or quality at private bores are anticipated and therefore the pipeline development is unlikely to impact agricultural groundwater use in the vicinity of the pipeline development.
- The majority of the construction workforce will be non-local hires and are anticipated to be sourced from outside the Central West Region. It is therefore considered unlikely that the pipeline development will have any impact on the labour available for local agricultural enterprises.

A suite of mitigation measures will be implemented to minimise potential impacts on agricultural resources during the construction and operation of the pipeline development.

The development of tailored Property Management Plans (PMPs) and Rehabilitation Management Plans (RMPs) for each landholder will ensure adequate communication with landholders is undertaken and appropriate, tailored rehabilitation objectives are established along the pipeline route.

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1 Introduction

1.1 Background

LFB Resources NL is seeking development consent under Division 4.7 of Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) for the construction and operation of the McPhillamys Gold Project (the project), a greenfield open cut gold mine and water supply pipeline in the Central West of New South Wales (NSW). The project application area is illustrated at a regional scale in Figure 1.1. LFB Resources NL is a 100% owned subsidiary of Regis Resources Limited (herein referred to as Regis).

As shown in Figure 1.1, the McPhillamys Gold Project comprises two key components:

- the mine site where the ore will be extracted, processed and gold produced for distribution to the market (the mine development); and
- an associated water pipeline which will enable the supply of water from near Lithgow to the mine site (the pipeline development).

The mine development is approximately 8 kilometres (km) north-east of Blayney within the Blayney and Cabonne local government areas (LGAs). Water will be supplied to the mine via an approximate 90 km long pipeline, transferring surplus water from Centennial's Angus Place Colliery (Angus Place) and Springvale Coal Services Operations (SCSO), and Energy Australia's (EA) Mt Piper Power Station (MPPS) near Lithgow, to the mine. The supply of water from Angus Place, SCSO and MPPS will enable a beneficial use of otherwise surplus water and will provide a reliable water source for the project. The alignment of the water supply pipeline is illustrated in Figure 1.1. As shown, approval is sought for two options for a section of the alignment.

This agricultural impact statement (AIS) provides an assessment of the impacts of the pipeline development on agricultural industries and resources, and documents initiatives built into the project design to avoid and minimise impacts to agricultural resources and industries.

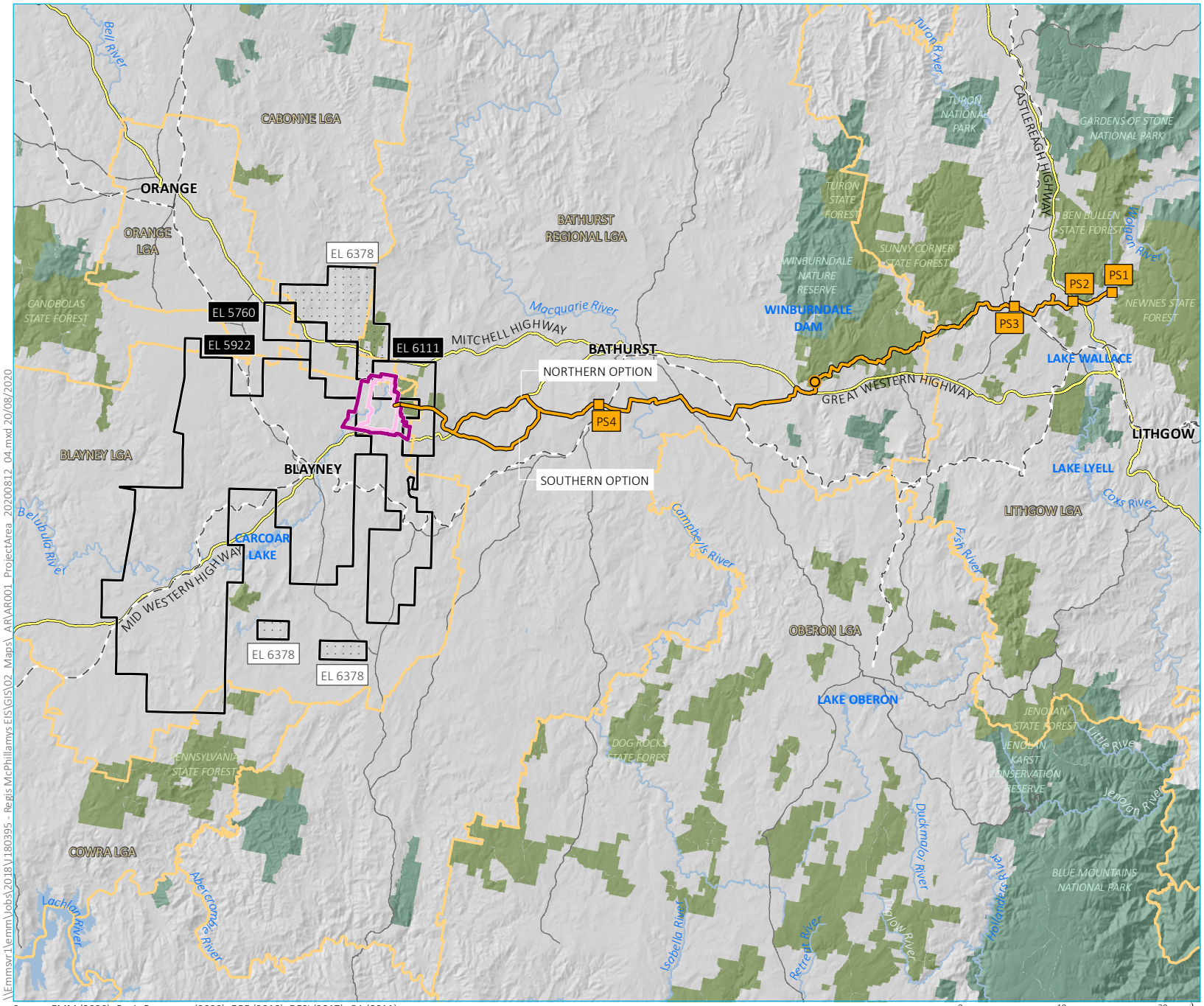
A separate AIS has been prepared by Sustainable Soil Management (SSM 2019) for the mine development component of the project (Appendix I of the environmental impact statement (EIS) (EMM 2019) and updated as part of the Amendment Report for the project (EMM 2020b)).

1.2 Pipeline development overview

The mine development will require water for a variety of purposes including product processing. The purpose of the pipeline development is to convey process water which is surplus to the operational requirements of Centennial and EA to the mine development to fulfil this water demand, in conjunction with other sources on-site (eg rainfall runoff and pit inflows). The pipeline development is illustrated in Appendix A. The key components include:

- a pipeline approximately 90 km in length, starting at Angus Place and finishing in the mine development project area;
- up to four pumping station facilities including water storage tanks;
- pressure reducing system(s); and
- a control system.

A more detailed description of the pipeline development is provided in Chapter 2.



KEY

Project application area
- Mine development project area (2,514.06 ha)
- Mining lease application area (1,806.17 ha) (Note: boundary offset for clarity)
- Pressure reducing system
- Pumping station facility
- Pipeline

Existing environment
- Rail line
- Primary road
- Arterial road
- River
- Waterbody
- NPWS reserve
- State forest
- Local government area

Exploration lease boundaries (of interest)
- Held by LFB Resources NL (Regis)
- Held by others

Source: EMM (2020); Regis Resources (2020); DPE (2018); DFSI (2017); GA (2011)

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Regional setting – project application area – amended project

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 1.1

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1.3 Report structure and terminology

This report is structured as follows:

- Chapter 1 – provides an introduction and overview of the amended project and outlines the scope and structure of this report;
- Chapter 2 – provides a detailed description of the pipeline development;
- Chapter 3 – provides a description of agricultural resources and production within the amended pipeline corridor;
- Chapter 4 – provides a description of agricultural resources within the locality (where required);
- Chapter 5 – identifies and assesses the impacts of the pipeline development on agricultural resources and industries;
- Chapter 6 – describes the mitigation, management and monitoring measures to be undertaken to address the impact of the pipeline development on agricultural resources; and
- Chapter 7 – describes the consultation that has been undertaken since the public exhibition of the EIS (with respect to the pipeline development's potential impacts on agricultural resources).

The following terms were used throughout the EIS to describe the McPhillamys Gold Project and remain relevant for this assessment:

- **The project** – the project in its entirety; encompassing the mine development and the pipeline development.
- **Project application area** – the area in its entirety to which the development application (SSD-9505) relates; comprising the mine development project area and the pipeline corridor as illustrated in Figure 1.1.
- **Mine project area** – refers to the mine development project area as illustrated in Figure 1.1.
- **Pipeline corridor** – an approximate 20-m-wide, 90-km-long pipeline alignment to which the development application (SSD-9505) relates; from Centennial Coal Company Limited's (Centennial's) Angus Place Colliery (Angus Place) and Springvale Coal Services Operations (SCSO); and EA's MPPS near Lithgow to the mine development project area, as illustrated in the figures provided in Appendix A. Direct disturbance is not proposed across the entire 20-metre (m) corridor for construction of the pipeline. The anticipated disturbance footprint has been delineated based on the nature of the vegetation or existing disturbance the pipeline travels through.
- **Mine development** – construction and operation of the mine and associated mine infrastructure within the mine project area.
- **Pipeline development** – construction and operation of the pipeline and associated infrastructure to transfer water to the mine development within the pipeline corridor.

2 Pipeline development

This chapter provides an overview of the amended pipeline development, including:

- the pipeline corridor and disturbance footprint;
- pipeline components;
- water sources, availability and security;
- approvals required and infrastructure responsibility; and
- construction, operations and decommissioning.

2.1 Pipeline corridor and disturbance footprint

The corridor shown in the figures in Appendix A will accommodate all components of the pipeline development including pumping station facilities and associated pipeline infrastructure. The pipeline corridor also accommodates required construction ancillary areas such as compounds, laydown and stockpile areas as well as allowance for the movement of construction machinery, equipment delivery and personal vehicles along the corridor.

The pipeline corridor is approximately 20 m in width, excluding the four pumping stations facilities. At these facilities, the corridor width extends to an area of up to 75 m by 75 m to accommodate the construction and operation of these facilities.

Due to ongoing landholder negotiations, approval is sought for two options of the alignment for a section of the corridor west of Bathurst, with the option for either to be constructed dependent on the finalisation of access agreements with relevant landholders. As shown in Figure 1.1, the pipeline alignment splits into two options before re-joining. These two options for the pipeline route have therefore been included and assessed in this AIS (ie the northern option and the southern option).

The pipeline corridor has also been differentiated from the pipeline disturbance footprint, to better reflect the anticipated levels of disturbance within the corridor in consideration of biodiversity impacts, while maintaining flexibility for the detailed design within the corridor.

The pipeline corridor is approximately 20 m wide and is the total area that the development application is applicable to. The pipeline corridor will be either:

- approximately 213 ha – northern option; or
- approximately 194 ha – southern option.

Direct disturbance is not proposed across the entirety of these areas (ie the entire 20 m wide corridor). The anticipated disturbance footprint has been delineated based on the nature of the vegetation or existing disturbance the pipeline route travels through.

The area that will be directly impacted by construction activities within the pipeline corridor will range in width from 6–8 m, such as in areas of native vegetation and State Forest, to up to 20 m in open farmland, depending on a range of factors such as presence of significant vegetation, constructability, construction management and safety considerations, landform, slopes and anticipated sub-soil structures. As described in the EIS, wherever possible the pipeline route follows existing roads and tracks to avoid vegetation clearance.

By utilising existing road reserves and easements as much as possible, the alignment of the pipeline corridor minimises the need for excessive clearing or easement acquisition over private land. The corridor traverses across land owned by 28 stakeholders (including 17 privately owned properties). Access agreements are in place between Regis and these landholders.

2.2 Pipeline components

The components of the pipeline development are described in detail in Appendix B (project description) of the Amendment Report (EMM 2020b) and include:

- **Water supply pipeline** – The pipeline will have a nominal diameter of between 300 millimetres (mm) and 650 mm and the majority of it will be laid underground in a trench ranging from 1.3 m to 2 m deep with a minimum cover of 800 mm. Where underboring of roadways, rail lines or watercourses is required, the specific engineering design for that location will dictate the depth of the pipeline. The pipeline material will be confirmed during detailed design, but may be ductile iron, heavy duty polyethylene, steel or glass reinforced plastic, or a combination of these. Ancillary pipeline infrastructure may include: isolation, scour or air release valves; tapping points; cleaning (or 'pigging') stations; and anchor or thrust blocks.

- **Pumping station facilities** – Four pumping station facilities will be required to ensure efficient transfer of water through the pipeline and will be located at or in proximity to:

  - Angus Place – pumping station facility No. 1;
  - SCSO – pumping station facility No. 2;
  - Pipers Flat Road – pumping station facility No. 3; and
  - Bathurst Bike Park – pumping station facility No. 4.

  Each pumping station facility will occupy a maximum area of approximately 0.56 ha or 75 m x 75 m with the exception of pumping station facility No.4 which will have a maximum area of approximately 35 m x 50 m or 0.17 ha. Pumping station facilities will be fenced for public safety and security purposes.

- **Pressure reducing system/s** – pressure reducing systems may be required at locations along the pipeline corridor. The location and number of pressure reducing systems will be confirmed during detailed engineering design. Construction works and infrastructure (predominantly below ground) associated with pressure reducing system/s (if required) will be accommodated within the defined pipeline corridor.

- **Power supply infrastructure** - Power required for the pipeline development, particularly the pumping station facilities and pressure reducing system, will be sourced from the relevant electricity network distributor (either Endeavour Energy or Essential Energy). Applications will be made to the distributor for the new network connections when the detailed power requirements are understood.

- **Communications system** – An end-to-end communications system will be required to control the operation of the pumps and pressure reducing system. The communications system will either be a fibre optic system, a radio telemetry or 4G mobile connection or a combination of these.

2.3 Construction

2.3.1 Overview

The construction of the pipeline development is described in detail in Appendix B of the Amendment Report, including:

- construction methodology, comprising:
  - trenched pipeline installation;
  - underboring pipeline installation; and
  - pumping station facilities and pressure reducing system;
- construction timing and staging;
- construction workforce;
- proposed construction traffic access arrangements;
- construction equipment;
- utility adjustments; and
- pipeline commissioning.

No significant changes to the proposed construction methodology are required as part of the amendments to the project.

2.3.2 Construction stages

The key stages in the construction of the pipeline development will be:

1. Clearing of vegetation and topsoil.
2. Establishment of temporary fencing and gateways (if required).
3. Trenching, earthworks and pipe laying.
4. Pipeline pressure testing/commissioning.
5. Revegetation and rehabilitation.
6. Erosion and sediment control.

2.3.3 Construction duration and hours

Construction is estimated to take approximately 9 to 12 months, subject to arrangements made between Regis and the contractor. It is anticipated that construction will commence upon the required approvals being obtained.

Standard construction hours will be from 7 am to 6 pm Monday to Friday and 8 am to 1 pm on Saturdays, although some out of hours works may be required at the request of Transport for NSW (TfNSW), NSW Police (ie trenched

road crossings) or property owners to minimise specific impacts. Any variations to the nominated construction hours will be communicated to relevant neighbouring land owners.

2.3.4 Construction access

The pipeline development will require access agreements along the pipeline corridor prior to the commencement of construction activities to enable the necessary surveys and construction works to be undertaken. Permissions from easement holders of existing services will be obtained for traversing public and private easements and land.

Access to the proposed pipeline corridor will be via various routes, including public roads and State Forest tracks and private land including within Angus Place, SCSO and MPPS. Any fencing taken down to permit access to the corridor will be replaced with a gate, in consultation with the landholder. The majority of the pipeline will be constructed along the alignment of existing roads or tracks and therefore limited additional tracks will be required.

Individual property management plans (PMPs) will be developed in consultation with individual landowners with respect to property access arrangements and rehabilitation of the construction corridor (Section 6.3.1).

2.4 Commissioning

During commissioning, the pipeline will be pressure tested and monitored for any leaks. Emptying of the pipeline will occur at scour valves at intermediate low points along the alignment and water will be removed via suction tanker truck and taken to the mine site or to an appropriately licensed wastewater treatment facility such as Bathurst Council's sewage treatment plant.

2.5 Rehabilitation

Practical and achievable rehabilitation objectives will be agreed with each landowner through the development of tailored Rehabilitation Management Plans (RMPs) for each property. These plans will document agreed rehabilitation outcomes and objectives for individual properties will be incorporated into PMPs, which will be developed prior to construction starting on the relevant property (Section 6.3.1).

One of the primary aims of rehabilitation activities will be to rapidly stabilise disturbed areas. The reinstatement of disturbed areas will take place as soon as possible after construction has been completed. These activities will include:

- reinstatement or replacement of gates and fences;
- spreading topsoil and ground cover seeding;
- treatment of new ground cover to retain moisture and accelerate regrowth;
- installing sediment and erosion control measures to provide an optimal environment for regrowth;
- return of all disturbed land, waterways and riparian zones to a stable condition; and
- monitoring and approval of rapid reinstatement work by the environmental representative and project manager.

Following stabilisation of disturbed areas, rehabilitation activities will focus on the establishment of a permanent cover of vegetation that reflects the:

- original vegetation;

- findings and recommendations of the terrestrial ecology assessment; and
- requirements of maintaining an ongoing easement (for land subject to the easement).

Regis will continue to monitor the construction corridor and if issues arise, will take action in consultation with the landowner.

More information about the proposed rehabilitation process is provided in Section 6.4.

2.6 Maintenance

During operations, Regis will periodically inspect the pipeline development, undertaking routine maintenance to ensure that the pipeline is functioning adequately. Fault detection systems will be incorporated within the pipeline design. If a pipeline leak occurs, the fault detection systems will shut down the water transfer and notify the operator that an inspection of the system is required. The maintenance team will undertake any repairs and will remain in the cleared pipeline easement to avoid disturbance to the natural environment.

Operation (opening) of the scour valves will allow dewatering of the pipeline for emergency repairs and maintenance. Dewatering will involve release of water to scour pits via the scour valves. Scour water will be transferred from the pits via a suction tanker truck and taken to the mine site or to an appropriately licensed wastewater treatment facility such as Bathurst Council's sewage treatment plant or pumped to the nearest pumping station or the next appropriate pipeline section.

Cleaning stations may be required to facilitate cleaning of the pipeline during operations. If required, water from this cleaning process will contain chlorine and material scoured from the wall of the pipe. As described above, water will be transferred from the scour pits via a suction tanker truck to the mine site or to an appropriately licensed wastewater treatment facility.

During operations, staff from the mine development will be responsible for routine maintenance and inspections and therefore impacts on local and regional employment will be negligible.

2.7 Easement

The final easement will be confirmed during detailed design. It is likely that the final easement will be, on average, 6–10 m wide. However, the easement may need to be wider in some areas, depending on the location, local conditions, and the presence of other infrastructure. The easement will remain as a cleared landscape to facilitate maintenance during operations.

During operations, usage restrictions will apply to private land within the easement to protect the pipeline development. These restrictions will be included in the easement agreement entered into between Regis and landowners. Acquisition and compensation payable will be consistent with the NSW *Land Acquisition (Just Terms Compensation) Act 1991.*

Restrictions that may potentially limit the extent of agricultural production activities may include:

- no earthworks, excavation, drilling or related works within the easement area below 300 mm;
- no construction of any buildings or structures over or under the easement area; and
- no planting trees or shrubs within the easement area.

2.8 Decommissioning

While it is anticipated that the pipeline will remain in the ground at the end of the project's operations, there may be an opportunity for the pipeline infrastructure to continue to provide future public benefit by enhancing water security and supply to the region, subject to obtaining the necessary approvals.

For the purposes of this report, it is assumed that the pipeline will remain in the ground at the end of mining operations. If the pipeline is removed, it is assumed that the post-construction rehabilitation process would be repeated to rehabilitate land to its pre-existing condition.

All above ground components of the pipeline development will be removed, if after a reasonable time period, no additional users for the water or pipeline are identified.

Final rehabilitation and closure requirements will ultimately be developed as part of a detailed closure plan, which will be produced within five years of closure in consideration of input from key government agencies and relevant stakeholders at the time.

Access tracks developed for the purposes of the pipeline development may be retained for use by landowners (eg if considered useful for ongoing property management).

3 Agricultural resources and production within amended pipeline corridor

3.1 Biophysical strategic agricultural land

Biophysical strategic agricultural land (BSAL) is land with a rare combination of natural resources highly suitable for agriculture. The pipeline corridor passes through approximately 4.5 ha of land mapped as BSAL (Figure 3.1e to Figure 3.1h). This BSAL coincides with areas of the:

- Macquarie Soil Landscape around Saltwater Creek at Tarana Road;
- Macquarie River; and
- Queen Charlottes (Vale) Creek near Orton Park.

It is mapped as land and soil capability (LSC) Class 2 (very high capability land) (Figure 3.1). It is noted also that while the defined pipeline corridor passes through around 4.5 ha, assuming a 20 m wide corridor, as described in Section 2.1, disturbance is not proposed across the whole corridor width.

Impacts on BSAL will be temporary and will be limited to the installation of the pipeline and supporting infrastructure. No long-term impacts on the agricultural capability of this land are anticipated.

A site verification certificate or gateway certificate is not required because the pipeline development is wholly outside of the proposed mining lease application area for the mine development.

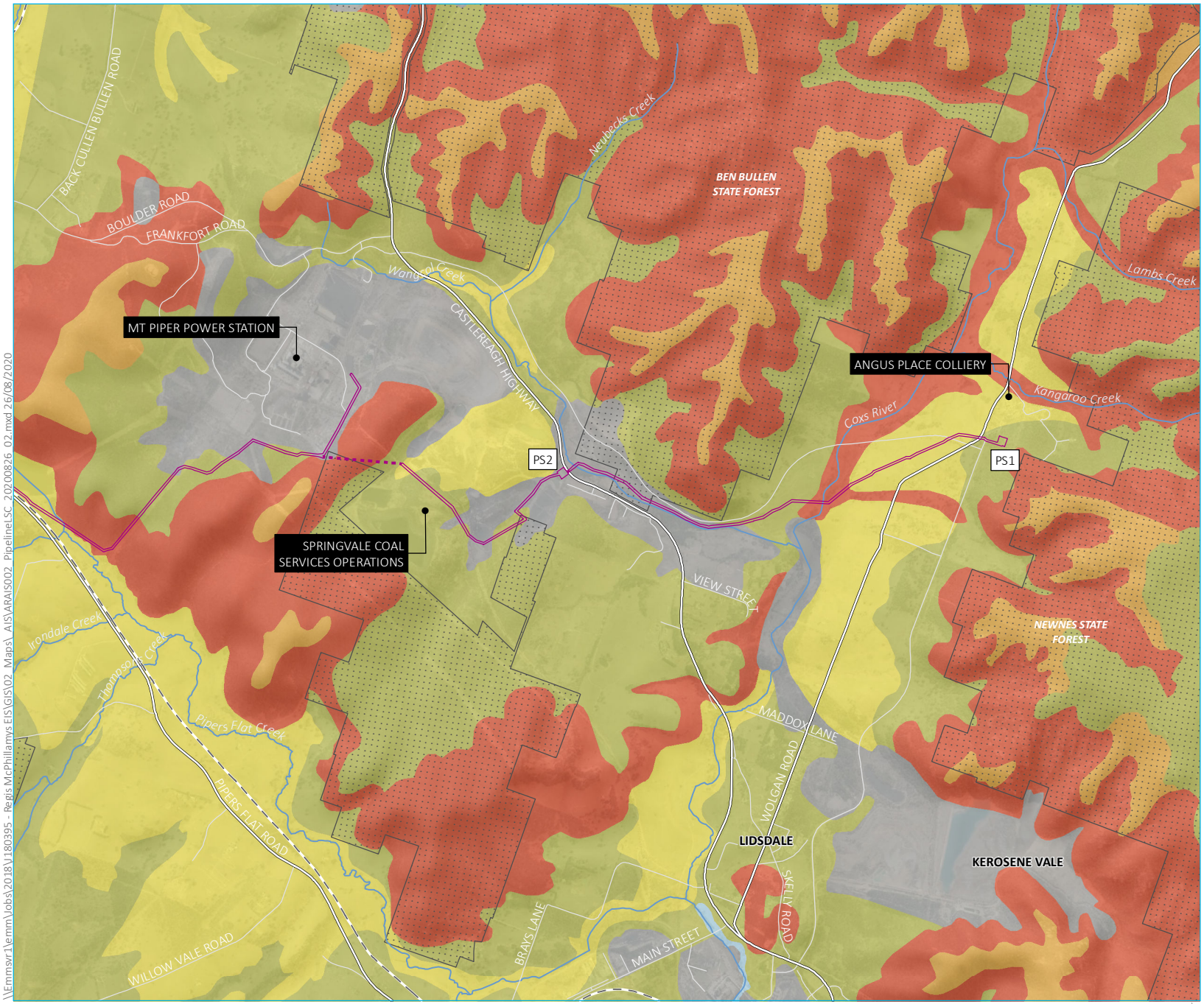
3.2 Soil and land capability assessment

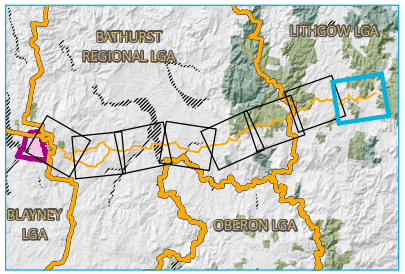
The LSC mapping for the pipeline corridor has been identified based on regional scale mapping (ie *Land and Soil Capability Mapping for NSW* (OEH 2017)). LSC classes mapped within the pipeline corridor are shown on Figure 3.1 and listed in Table 3.1.

Table 3.1 Land and soil capability class – Pipeline development

Land and soil capability class	Capability	Area (ha) – inclusive of the northern option	Area (ha) – inclusive of the southern option
Land with a wide range of uses (cropping, grazing, horticulture, nature conservation)			
1	Extremely high	0	0
2	Very high	6.17	6.17
3	High	20.11	20.11
Land with a variety of uses (cropping with restricted cultivation, pasture cropping, grazing, some horticulture, forestry, nature conservation)			
4	Moderate	25.07	25.07
5	Moderate-low	140.82	122.06
Land with a limited range of uses (grazing, forestry and nature conservation			
6	Low	5.74	5.74
Land generally unable to support agriculture (selective forestry and nature conservation)			
7	Very low	4.55	4.19
8	Extremely low	2.48	2.48

1. 8.2 ha of both the northern and southern options is mapped as disturbed terrain.





KEY

- Rail line
- Major road
- Minor road
- Named watercourse
- State forest
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land and soil capability class

- 4
- 5
- 6
- 8
- Disturbed Terrain
- Water

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2017)

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Land and soil capability

McPhillamys Gold Project
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Figure 3.1a

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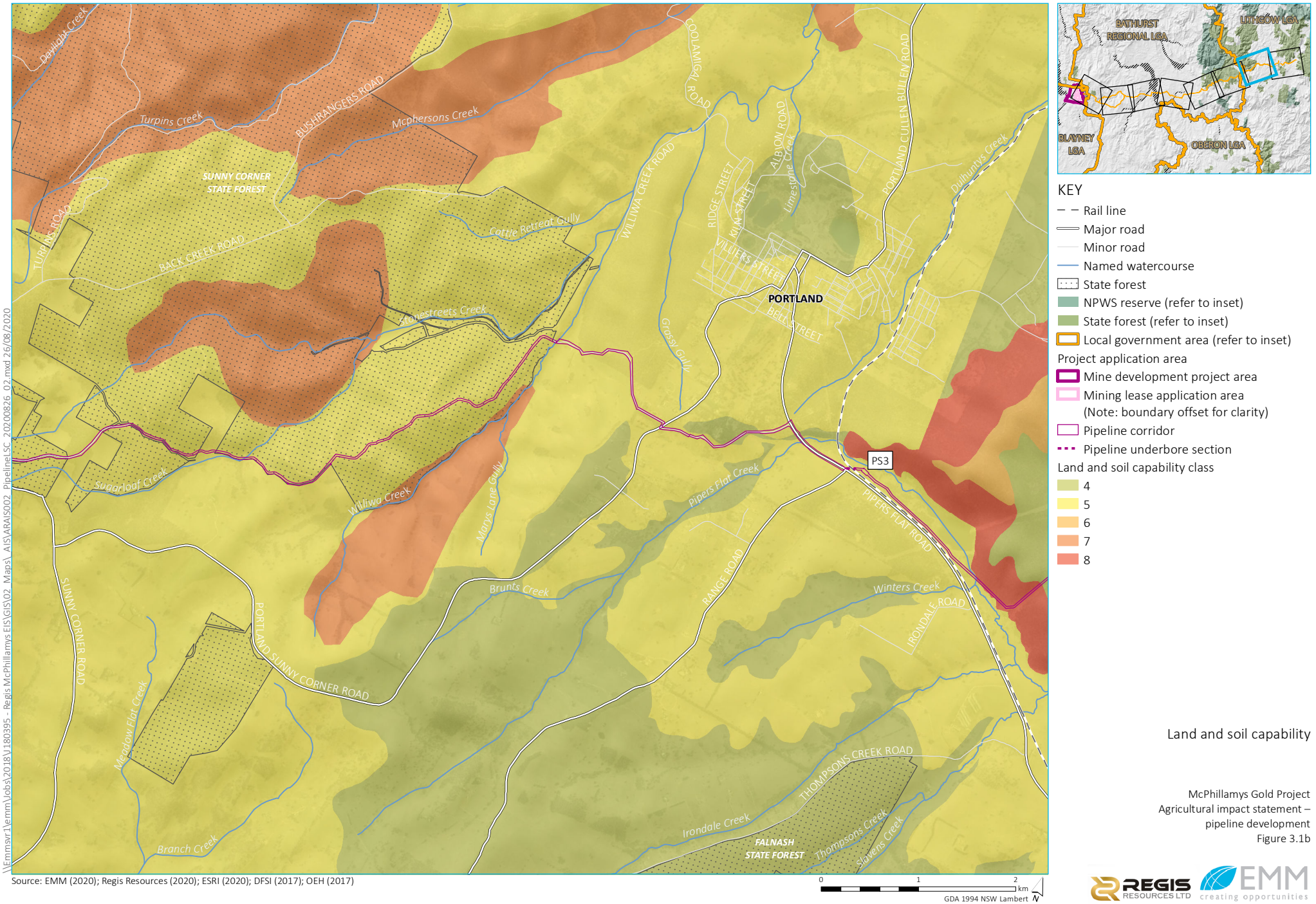
BATHURST REGIONAL LGA
LITHGOW LGA
BLAYNEY LGA
OBERON LGA
KEY
Rail line
Major road
Minor road
Named watercourse
State forest
NPWS reserve (refer to inset)
State forest (refer to inset)
Local government area (refer to inset)
Project application area
Mine development project area
Mining lease application area
(Note: boundary offset for clarity)
Pipeline corridor
Pipeline underbore section
Land and soil capability class
4
5
6
7
8
SUNNY CORNER STATE FOREST
FALNASH STATE FOREST
PORTLAND
PS3
BUSHRANGERS ROAD
BACK CREEK ROAD
TURPINS ROAD
COOLAMIGAL ROAD
WILLIWA CREEK ROAD
RIDGE STREET
KILN STREET
ALBION ROAD
VILLIERS STREET
BELL STREET
PORTLAND CULLEN BULLEN ROAD
PIPERS FLAT ROAD
RANGE ROAD
IRONDALE ROAD
THOMPSONS CREEK ROAD
PORTLAND SUNNY CORNER ROAD
SUNNY CORNER ROAD
Davidia Creek
Turpins Creek
Mcphersons Creek
Cottle Retreat Gully
Stonestreets Creek
Sugarloaf Creek
Williwa Creek
Marys Lane Gully
Grassy Gully
Limestone Creek
Dullmurrys Creek
Pipers Flat Creek
Brunts Creek
Winters Creek
Meadow Flat Creek
Branch Creek
Irondale Creek
Thompsons Creek
Stevens Creek
Land and soil capability
McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.1b
Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2017)
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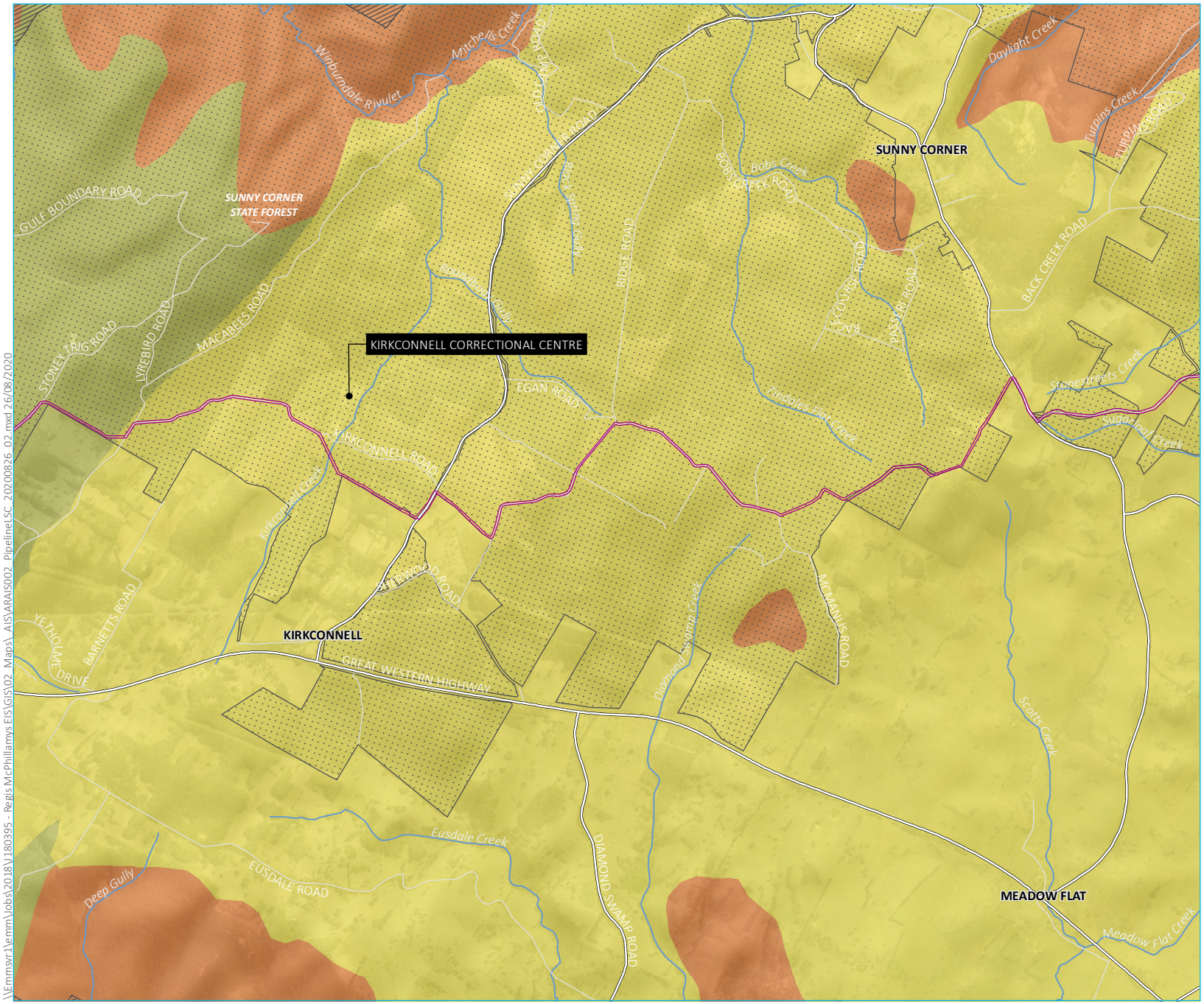

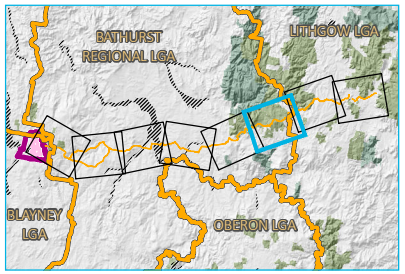

KEY

- Major road
- Minor road
- Named watercourse
- NPWS reserve
- State forest
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor

Land and soil capability class

- 4
- 5
- 7

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2017)

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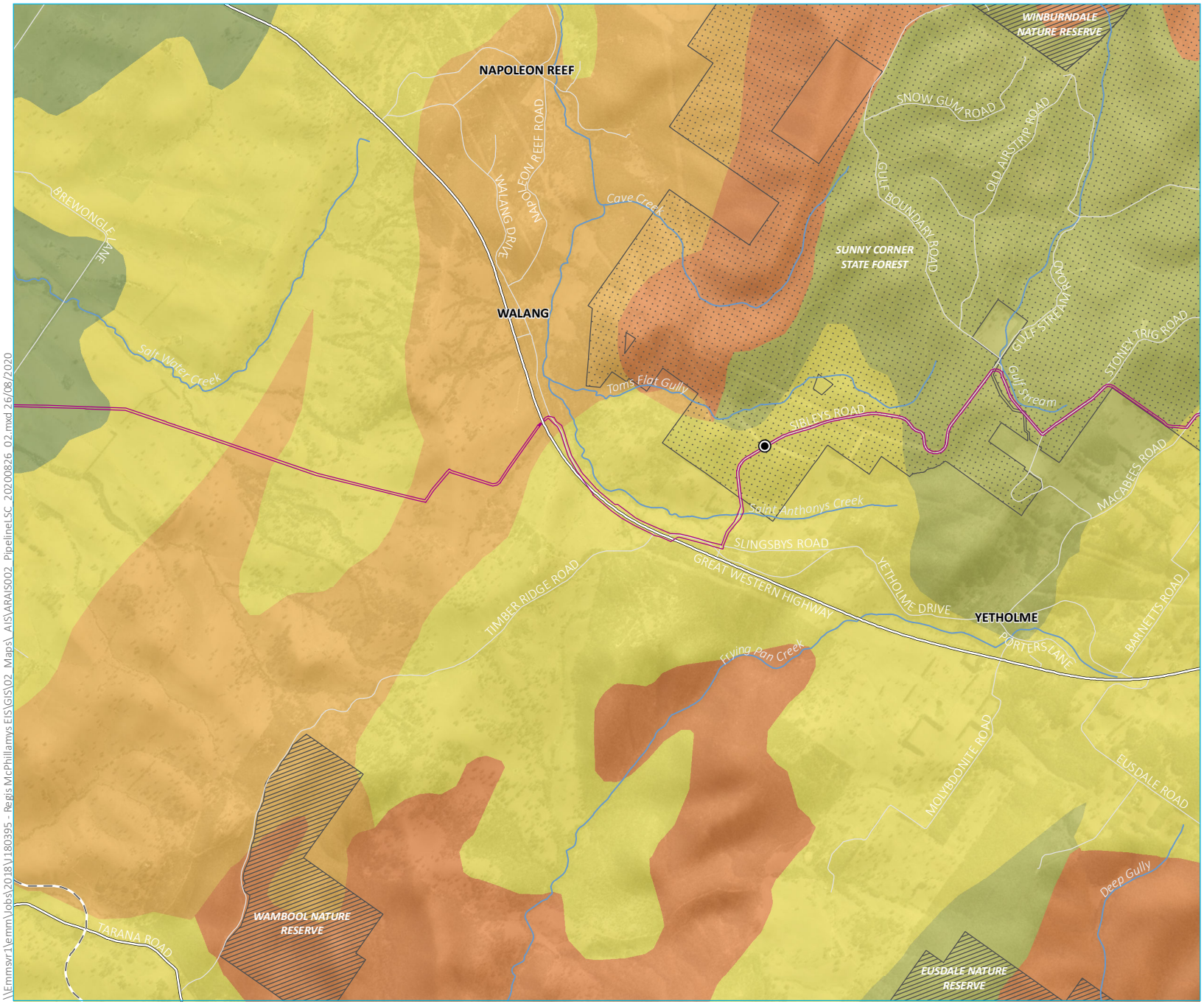
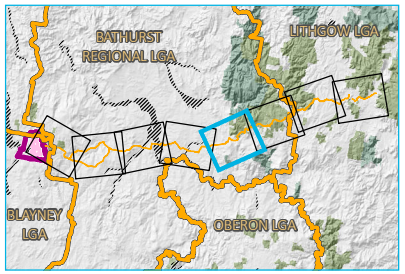
Land and soil capability

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.1c

REGIS RESOURCES LTD

EMM creating opportunities





KEY

- Rail line
- Major road
- Minor road
- Named watercourse
- NPWS reserve
- State forest
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section
- Pressure reducing system

Land and soil capability class

- 3
- 4
- 5
- 6
- 7

Land and soil capability

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.1d

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2017)

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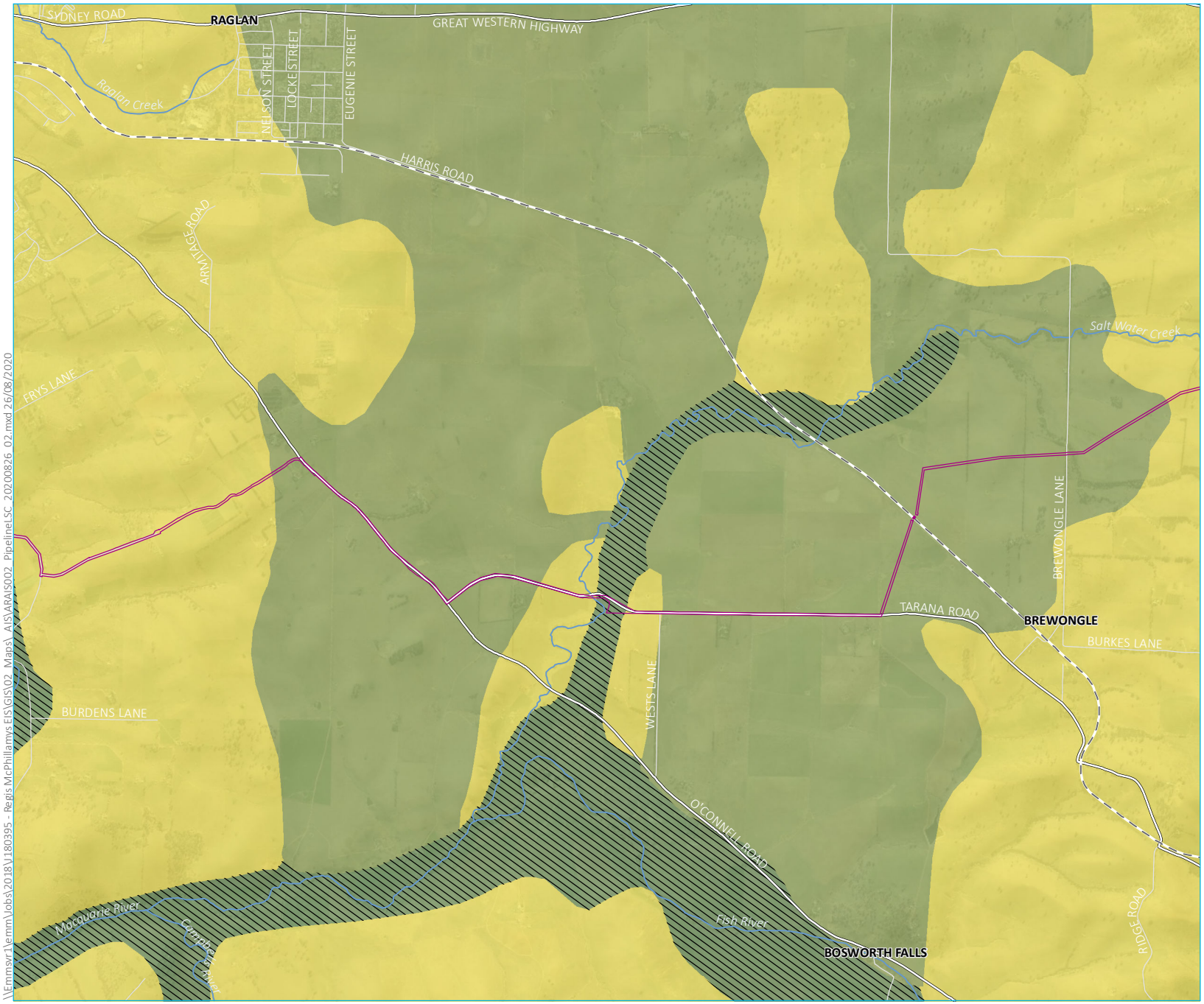

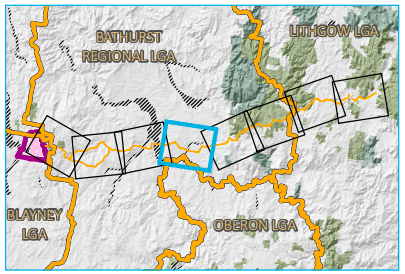

KEY

- Rail line
- Major road
- Minor road
- Named watercourse
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Biophysical strategic agricultural land
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land and soil capability class

- 2
- 3
- 5

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2017)

0 1 2 km

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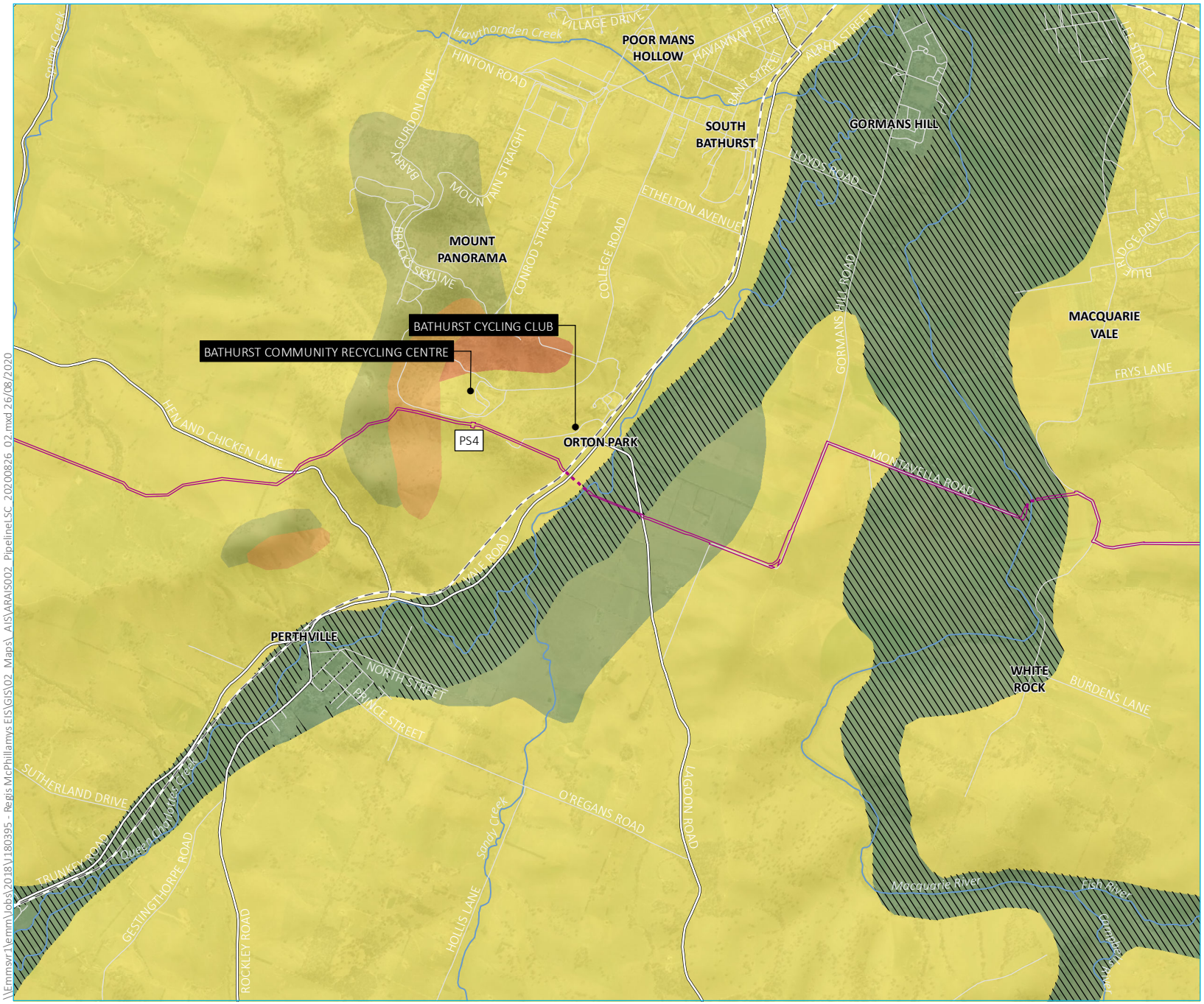
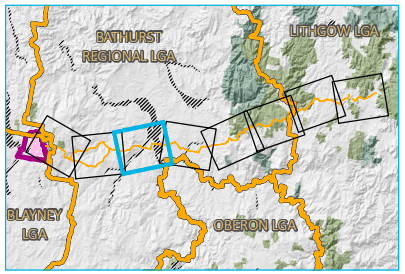
Land and soil capability

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.1e

REGIS RESOURCES LTD

EMM creating opportunities





KEY

- Rail line
- Major road
- Minor road
- Named watercourse
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Biophysical strategic agricultural land
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land and soil capability class

- 2
- 3
- 4
- 5
- 6
- 7

Land and soil capability

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.1f

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2017)

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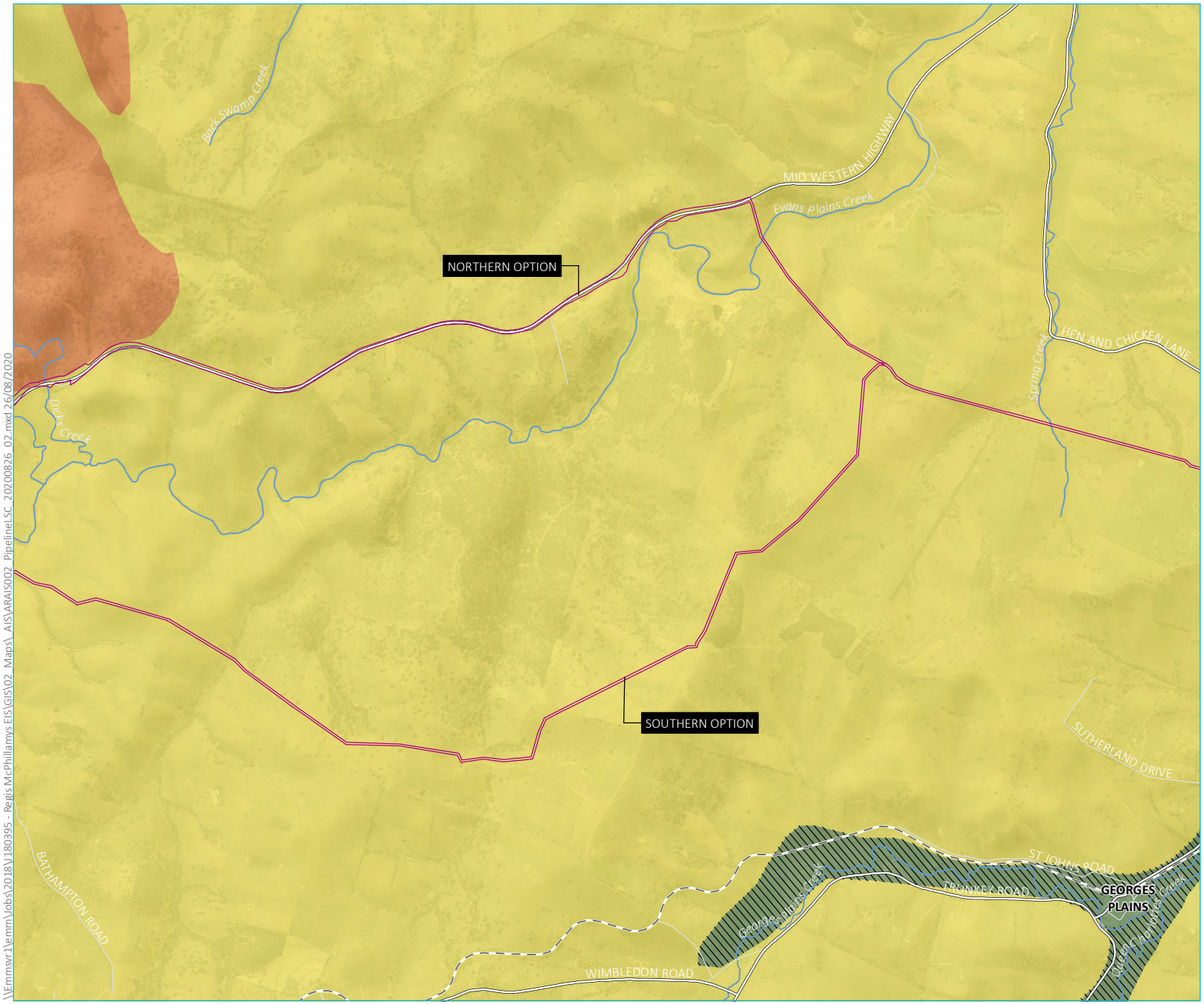

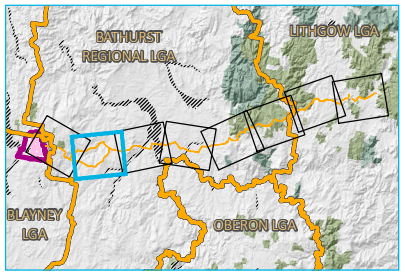

KEY

- Rail line
- Major road
- Minor road
- Named watercourse
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Biophysical strategic agricultural land
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor

Land and soil capability class

- 2
- 5
- 7

Land and soil capability

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.1g

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2017)

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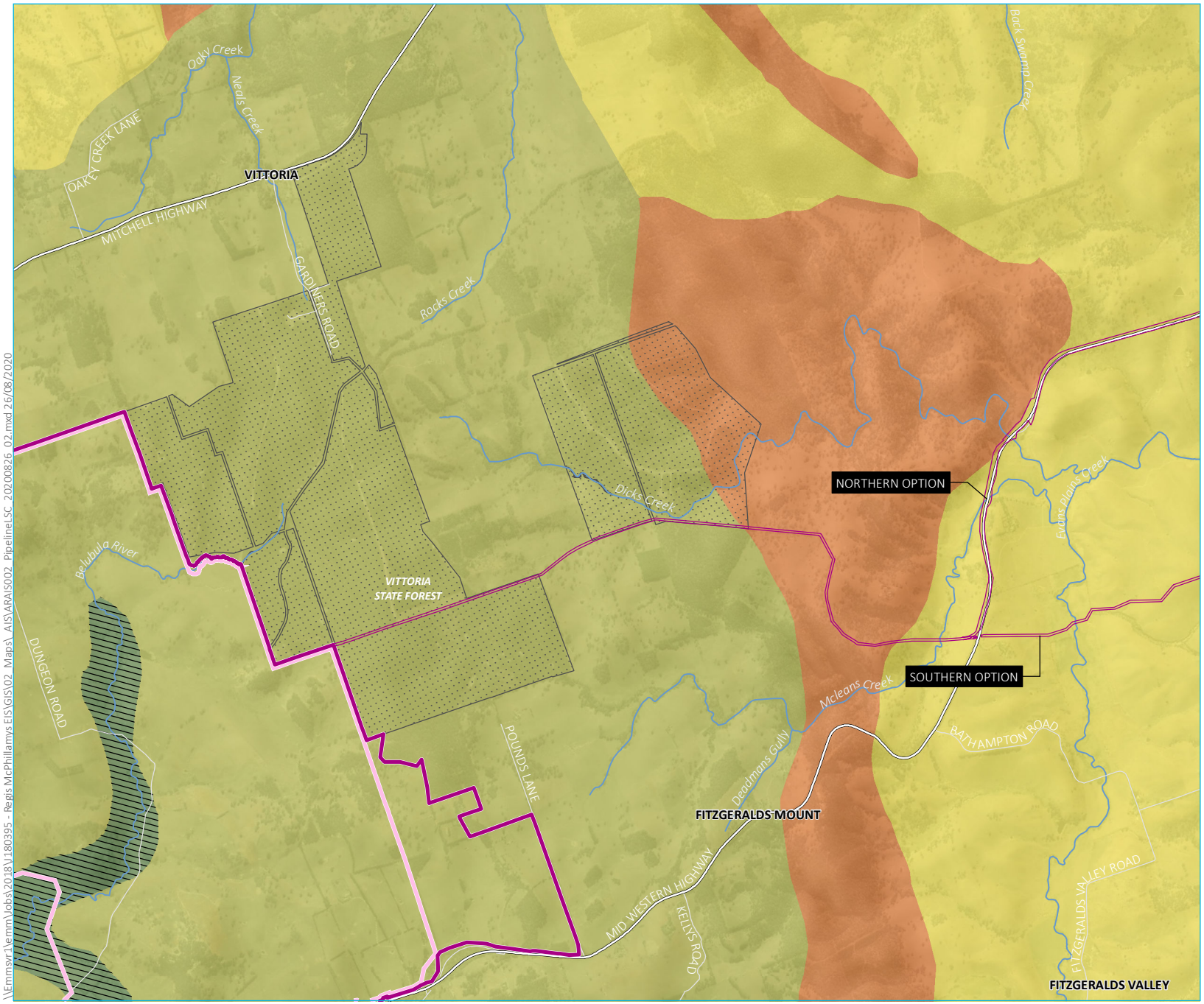
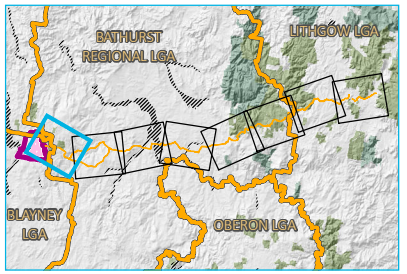
REGIS RESOURCES LTD

EMM creating opportunities





KEY

- Major road
- Minor road
- Named watercourse
- State forest
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Biophysical strategic agricultural land
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land and soil capability class

- 2
- 4
- 5
- 6
- 7

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2017)

0 1 2 km

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Land and soil capability

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.1h

REGIS RESOURCES LTD

EMM creating opportunities

As shown in Table 3.1, the pipeline corridor is predominantly:

- Class 5 (moderately low): 141 ha or 66% (northern option) and 122 ha or 63% (southern option);
- Class 4 (moderate): 25 ha or 12% (northern option) and 25 ha or 13% (southern option); and
- Class 3 (high): 20 ha or 9% (northern option) and 20 ha or 10% (southern option).

These LSC Classes are typically considered moderately low (Class 5) to high (Class 3) capability land and are generally consistent with livestock grazing with improved pastures, with possible regular cultivation in Class 3 land.

There are also small areas of Class 2, Class 6, Class 7 and Class 8 land (Table 3.1).

Further information on soils within the pipeline corridor is provided in Section 6.2 of the Amendment Report (EMM 2020a) and Chapter 23 of the EIS (EMM 2019).

3.3 History of agricultural enterprises

The pipeline corridor traverses land within the Blayney, Bathurst and Lithgow LGAs. Each of these LGAs form part of the Central West region of NSW, which covers a total area of 7 million hectares (ha). Of this, approximately 81% or 5.7 million ha is considered agricultural land with the most common land use being grazing on improved pastures, which occupies 3.8 million ha or 54% of the region (DAWE 2020).

Land uses in, and in the vicinity of the pipeline corridor are illustrated in Figure 3.2. The majority of the pipeline corridor traverses cleared agricultural land, consisting of mostly cleared open paddocks utilised for cattle grazing and cropping. The highest value agricultural land is found around the Macquarie River and Queen Charlottes Creek.

Given that the direct impact of the pipeline development on agricultural enterprises within the pipeline corridor will predominantly be limited to construction only and the minor extent of total disturbance at each property, investigations into the historical agricultural uses of each individual property within and adjoining the pipeline corridor have not been undertaken.

At the completion of construction, all agricultural land will be rehabilitated to achieve the pre-disturbance LSC class, where possible. Grassland areas will be rehabilitated so that they can continue to support grazing activities.

3.4 Land to be temporarily removed from agriculture

As discussed in Section 2.1, the pipeline corridor will encompass either 213 ha (northern option) or 194 ha (southern option). Direct disturbance is not proposed across these areas (ie the entire 20 m wide corridor).

Land uses within the pipeline corridor and surrounds are identified on Figure 3.2 and summarised in Table 3.2.

Table 3.2 Land uses – pipeline development

Land use	Area (ha) – Northern option	Area (ha) – southern option
1.3.0 Other minimal use	5.69	5.69
2.1.0 Grazing native vegetation*	59.98	41.58
2.2.0 Production native forestry	47.17	47.17
3.1.0 Plantation forests	0.04	0.04
3.2.0 Grazing modified pastures*	25.70	41.30

Table 3.2 Land uses – pipeline development

Land use	Area (ha) – Northern option	Area (ha) – southern option
3.3.0 Cropping*	19.93	20.58
3.4.0 Perennial horticulture*	0.05	0.05
4.2.0 Grazing irrigated modified pastures*	0.13	0.13
5.2.0 Intensive animal production*	2.59	2.59
5.4.0 Residential and farm infrastructure*	0.90	0.89
5.5.0 Services	1.81	1.81
5.6.0 Utilities	1.63	1.63
5.7.0 Transport and communication	36.81	20.29
5.8.0 Mining	7.67	7.67
6.3.0 River	2.70	2.25
6.5.0 Marsh/wetland	0.35	0.35

2. Source: DPIE 2017, *NSW Land Use* 2017.
3. Land use classifications are consistent with the Australian Land Use and Management Classification.
4. *Considered to be an agricultural land use for the purposes of this assessment.

Based on the land use data presented in Table 3.2, if it is conservatively assumed that the pipeline development would result in the direct disturbance of all agricultural land within the pipeline corridor, the pipeline development would temporarily remove up to 109.3 ha (northern option) or 107.1 ha (southern option) from agriculture during construction.

At the completion of construction, all agricultural land (except for the pumping station facilities and access tracks) will be rehabilitated to achieve the pre-disturbance LSC class, where possible. Grassland areas will be rehabilitated so that they can continue to support grazing activities.

It is anticipated that the pipeline will remain in the ground at the end of mining operations. However, there may be an opportunity for the pipeline infrastructure to continue to provide future public benefit by enhancing water security and supply to the region, subject to obtaining the necessary approvals. If the pipeline is removed, it is assumed that the post-construction rehabilitation process would be repeated to rehabilitate land to its pre-existing condition.

All above ground components of the pipeline development will be removed, if after a reasonable time period, no additional users for the water or pipeline are identified.

Final rehabilitation and closure requirements will ultimately be developed as part of a detailed closure plan, which will be produced within five years of closure in consideration of input from key government agencies and relevant stakeholders at the time.

3.5 Land to be returned to agriculture

At the completion of construction, all agricultural land (with the exception of the pumping station facilities and access tracks) will be rehabilitated to achieve the pre-disturbance LSC class, where possible. Grassland areas will be rehabilitated so that they can continue to support grazing activities.

As described above, it is anticipated that the pipeline will remain in the ground at the end of mining operations. However, there may be an opportunity for the pipeline infrastructure to continue to provide future public benefit by enhancing water security and supply to the region, subject to obtaining the necessary approvals. If the pipeline is removed, it is assumed that the post-construction rehabilitation process would be repeated to rehabilitate land to its pre-existing condition.

All above ground components of the pipeline development will be removed, if after a reasonable time period, no additional users for the water or pipeline are identified.

3.6 Land that will not be returned to agriculture

All agricultural land within the pipeline corridor (with the exception of the pumping station facilities and access tracks) will be rehabilitated and returned to agricultural use (subject to consultation with relevant landholders at the time).

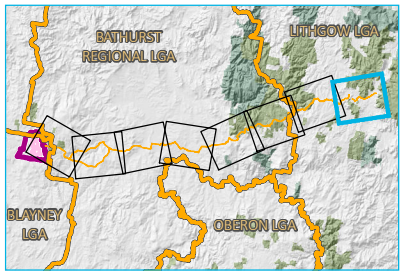
If the above ground components of the pipeline development are not removed (ie an additional user for the water or pipeline is identified), land that will not be returned to agriculture will be limited to:

- 0.56 ha of LSC Class 4 land (ie pumping station facility No. 1); however, it is acknowledged that the majority of this land is not currently used for agriculture and is associated with mining activities at Angus Place (Figure 3.2); and
- 0.73 ha of LSC Class 5 land (ie pumping station facility No. 3 and 4).

Pumping station facility No. 2 is on land mapped as rock or disturbed terrain and is not suitable for agricultural production.

It is also possible that some of the buildings associated with the pumping station facilities may be retained on private properties for agricultural or other purposes (at the request of relevant landowners at the time).

Access tracks may be retained for use by landowners.



KEY

- Sensitive receiver
- Rail line
- Major road
- Minor road
- Named watercourse
- Waterbody
- Cadastral boundary
- State forest
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land use classification

- 1.3 Other minimal use
- 2.1 Grazing native vegetation
- 2.2 Production native forestry
- 3.1 Plantation forests
- 3.2 Grazing modified pastures
- 3.3 Cropping
- 5.2 Intensive animal production
- 5.3 Manufacturing and industrial
- 5.4 Residential and farm infrastructure
- 5.5 Services
- 5.6 Utilities
- 5.7 Transport and communication
- 5.8 Mining
- 5.9 Waste treatment and disposal
- 6.2 Reservoir/dam
- 6.3 River
- 6.5 Marsh/wetland

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2020)

0 1 2 km

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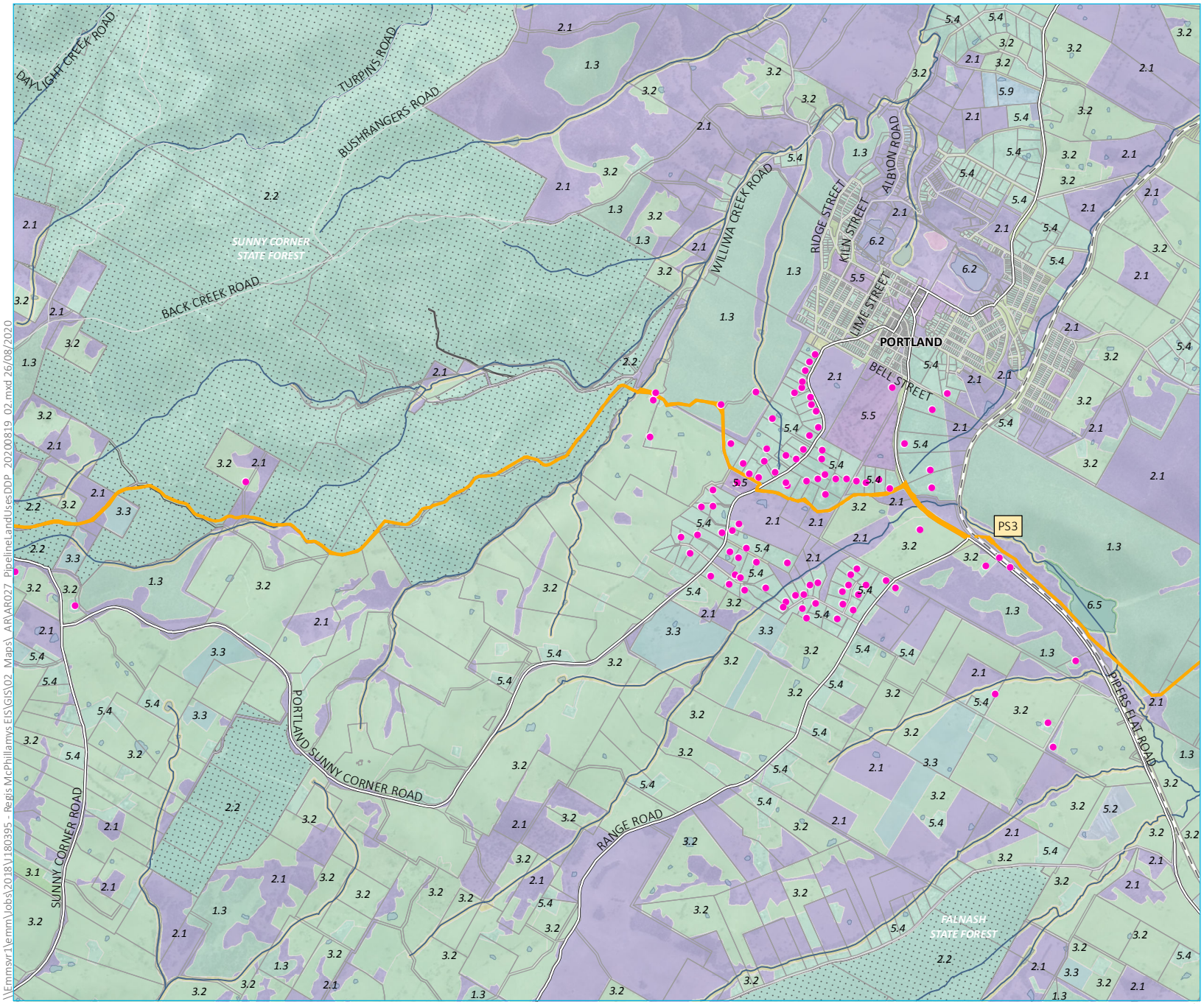
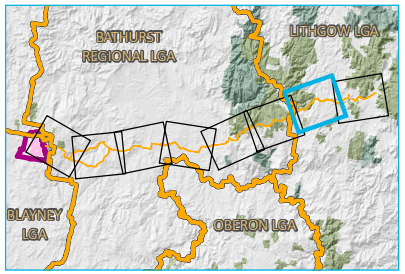
Land use

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.2a

REGIS RESOURCES LTD

EMM creating opportunities





KEY

- Sensitive receiver
- Rail line
- Major road
- Minor road
- Named watercourse
- Waterbody
- Cadastral boundary
- State forest
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land use classification

- 1.2 Managed resource protection
- 1.3 Other minimal use
- 2.1 Grazing native vegetation
- 2.2 Production native forestry
- 3.1 Plantation forests
- 3.2 Grazing modified pastures
- 3.3 Cropping
- 3.4 Perennial horticulture
- 5.2 Intensive animal production
- 5.3 Manufacturing and industrial
- 5.4 Residential and farm infrastructure
- 5.5 Services
- 5.6 Utilities
- 5.7 Transport and communication
- 5.9 Waste treatment and disposal
- 6.2 Reservoir/dam
- 6.3 River
- 6.5 Marsh/wetland

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2020)

0 1 2 km

GDA 1994 NSW Lambert

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Land use

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.2b

REGIS RESOURCES LTD

EMM creating opportunities

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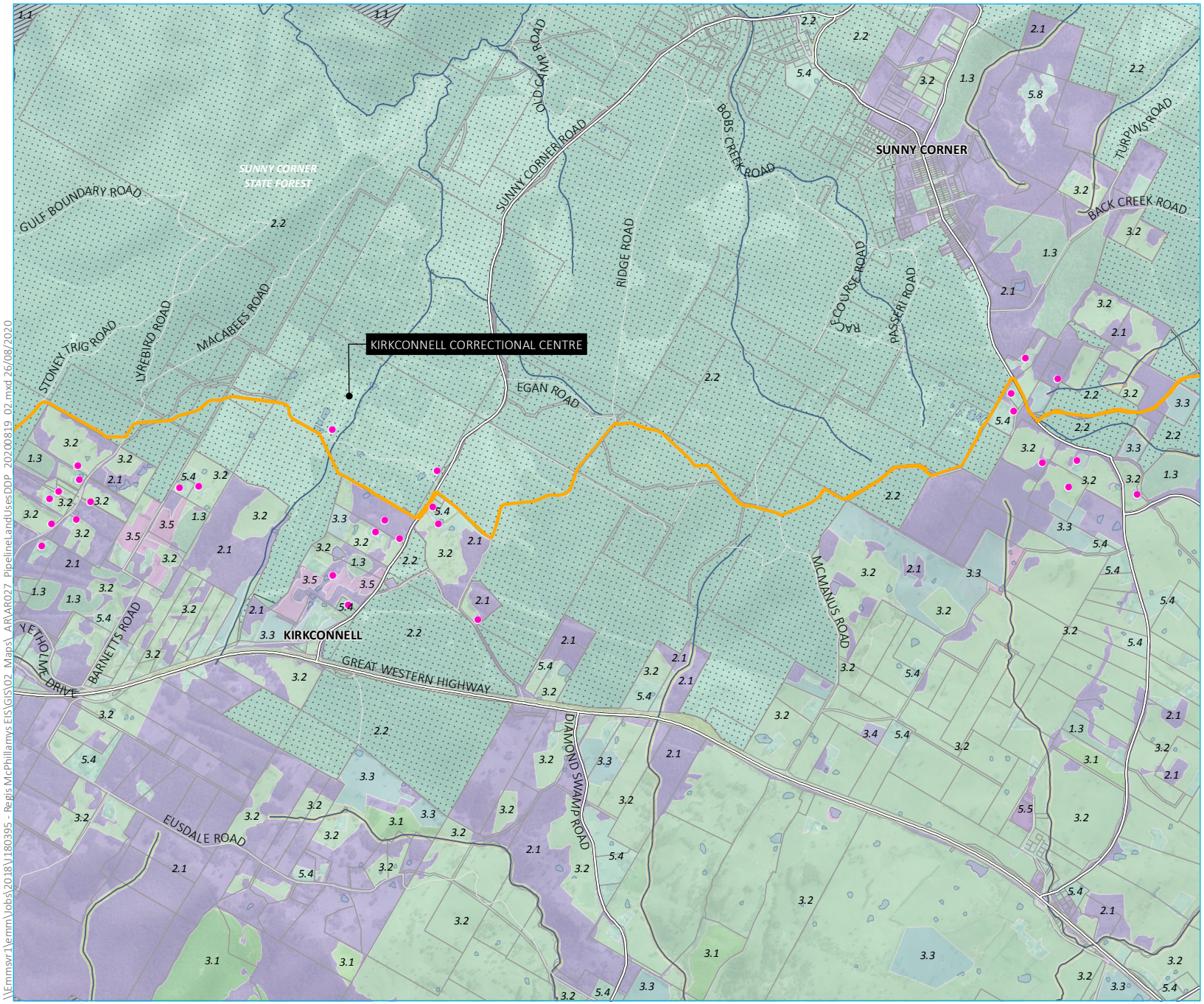

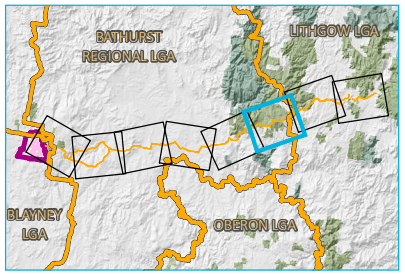

KEY

- Sensitive receiver
- Major road
- Minor road
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land use classification

- 1.1 Nature conservation
- 1.2 Managed resource protection
- 1.3 Other minimal use
- 2.1 Grazing native vegetation
- 2.2 Production native forestry
- 3.1 Plantation forests
- 3.2 Grazing modified pastures
- 3.3 Cropping
- 3.4 Perennial horticulture
- 3.5 Seasonal horticulture
- 5.4 Residential and farm infrastructure
- 5.5 Services
- 5.7 Transport and communication
- 5.8 Mining
- 6.2 Reservoir/dam
- 6.3 River

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2020)

0 1 2 km

GDA 1994 NSW Lambert

N

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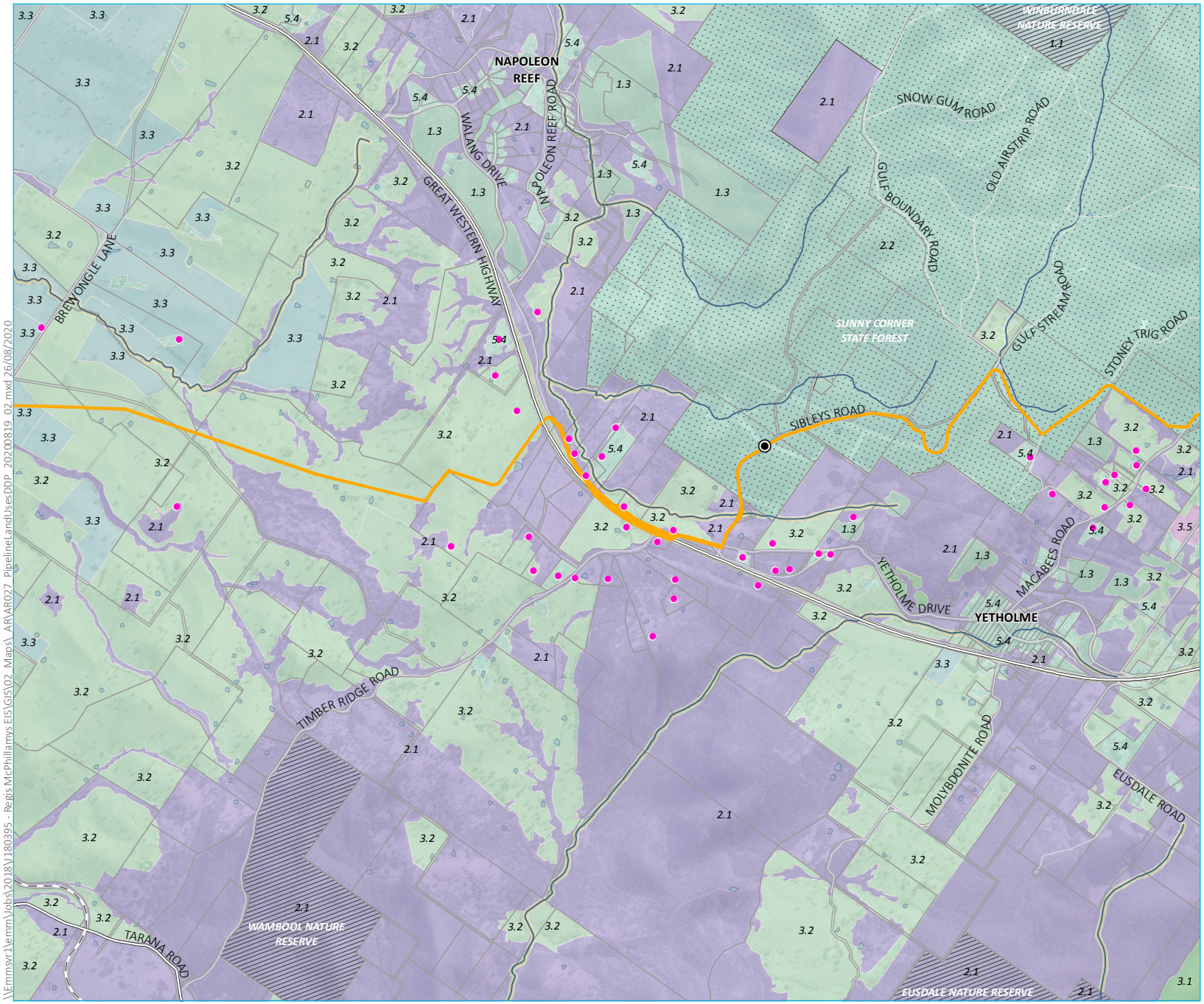
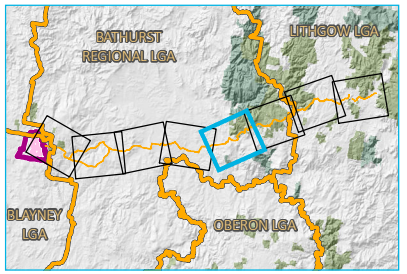
Land use

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.2c

REGIS RESOURCES LTD

EMM creating opportunities





KEY

- Sensitive receiver
- Rail line
- Major road
- Minor road
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section
- Pressure reducing system

Land use classification

- 1.1 Nature conservation
- 1.3 Other minimal use
- 2.1 Grazing native vegetation
- 2.2 Production native forestry
- 3.1 Plantation forests
- 3.2 Grazing modified pastures
- 3.3 Cropping
- 3.4 Perennial horticulture
- 3.5 Seasonal horticulture
- 5.4 Residential and farm infrastructure
- 5.7 Transport and communication
- 6.3 River

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2020)

0 1 2 km

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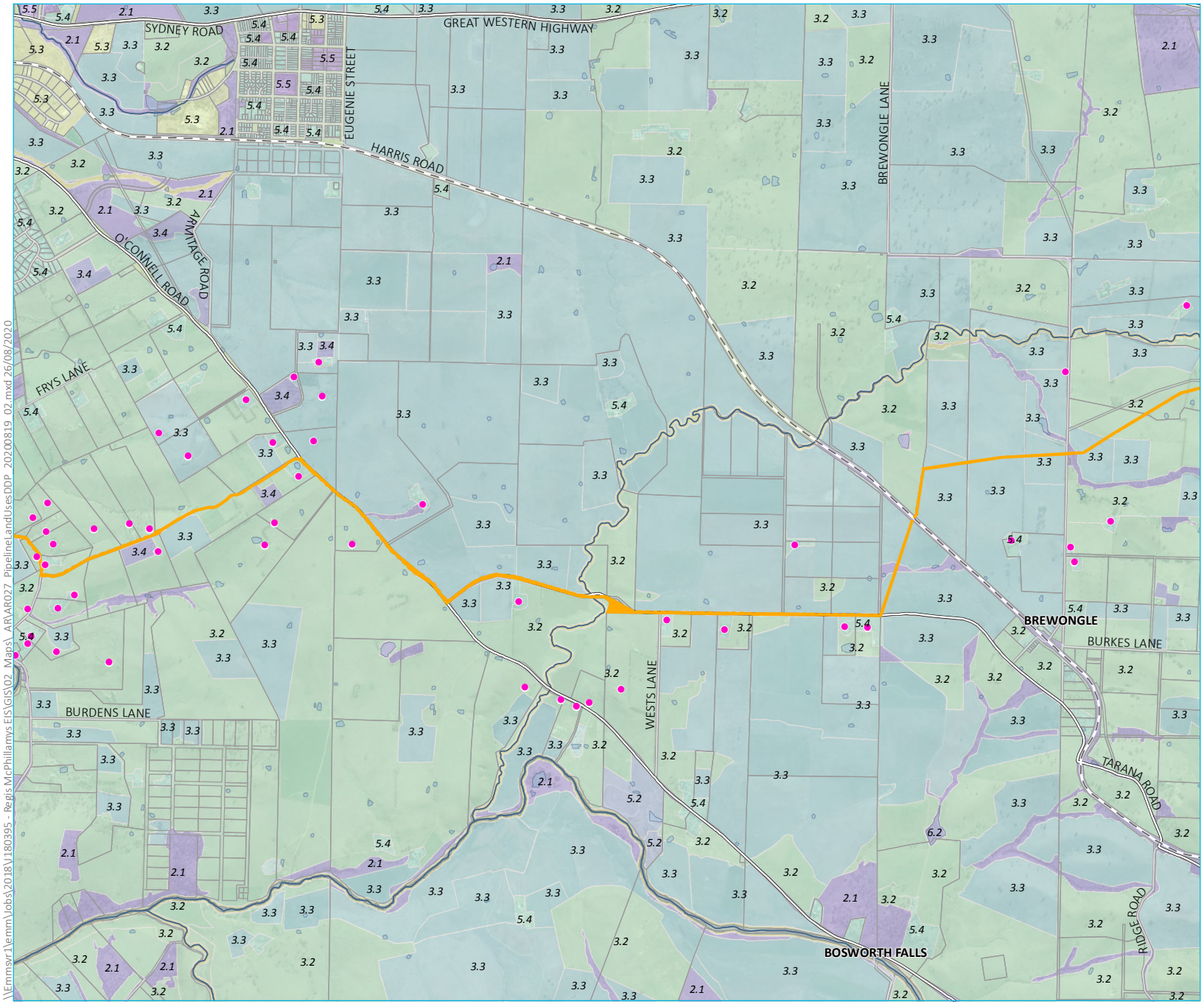
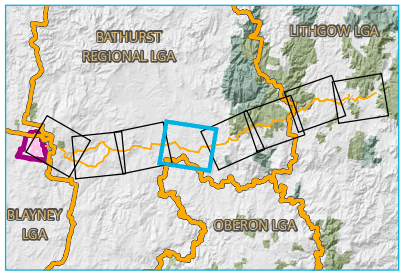
Land use

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.2d

REGIS RESOURCES LTD

EMM creating opportunities





KEY

- Sensitive receiver
- Rail line
- Major road
- Minor road
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land use classification

- 1.2 Managed resource protection
- 2.1 Grazing native vegetation
- 3.2 Grazing modified pastures
- 3.3 Cropping
- 3.4 Perennial horticulture
- 5.2 Intensive animal production
- 5.3 Manufacturing and industrial
- 5.4 Residential and farm infrastructure
- 5.5 Services
- 5.6 Utilities
- 5.7 Transport and communication
- 5.8 Mining
- 6.2 Reservoir/dam
- 6.3 River

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2020)

0 1 2 km

GDA 1994 NSW Lambert

N

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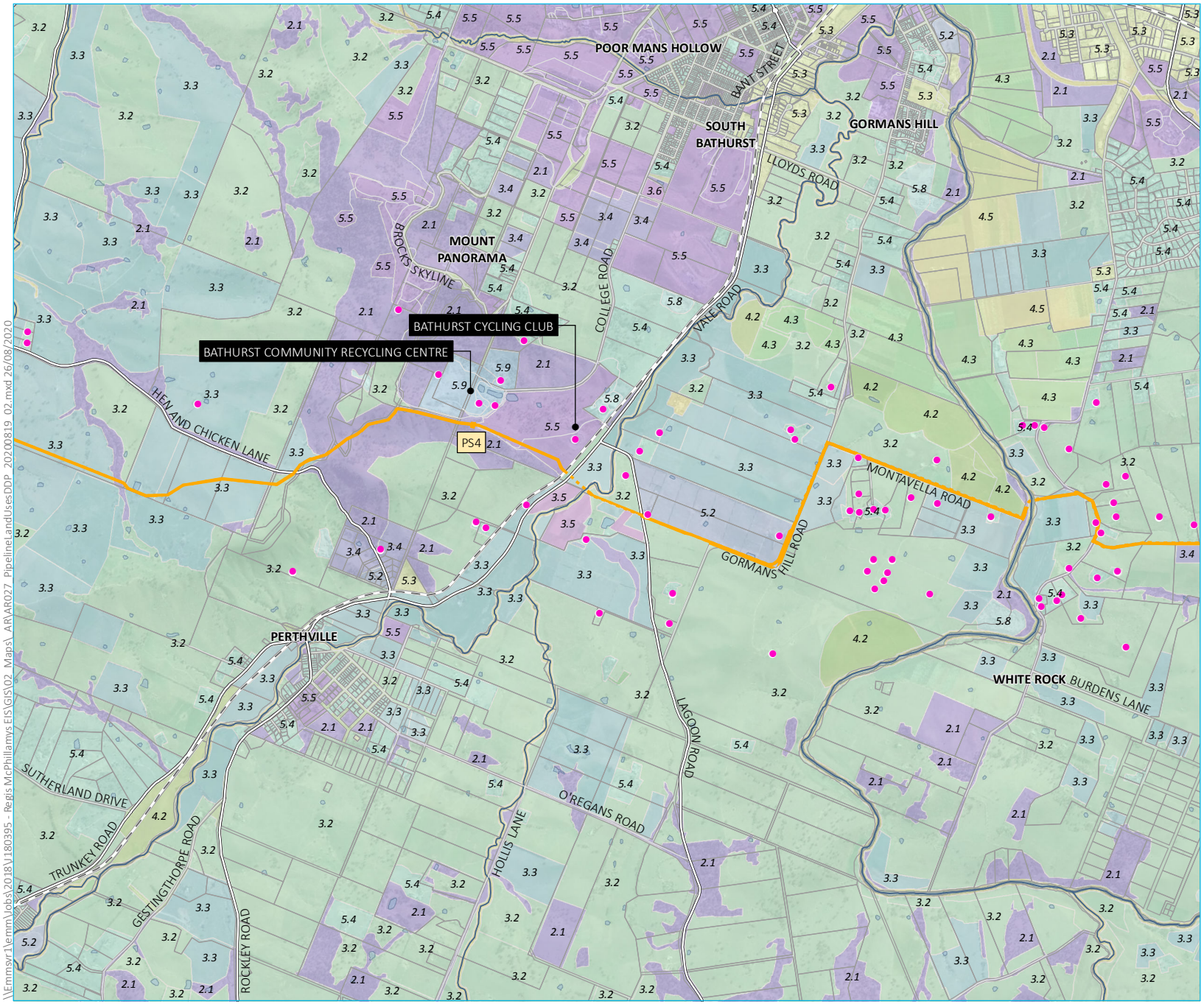
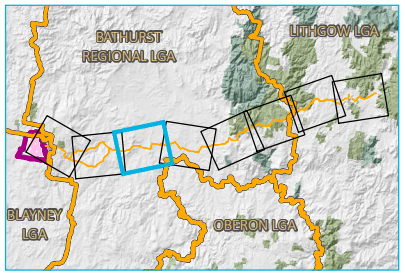
Land use

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.2e

REGIS RESOURCES LTD

EMM creating opportunities





KEY

- Sensitive receiver
- Rail line
- Major road
- Minor road
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land use classification

- 2.1 Grazing native vegetation
- 3.1 Plantation forests
- 3.2 Grazing modified pastures
- 3.3 Cropping
- 3.4 Perennial horticulture
- 3.5 Seasonal horticulture
- 3.6 Land in transition
- 4.2 Grazing irrigated modified pastures
- 4.3 Irrigated cropping
- 4.5 Irrigated seasonal horticulture
- 5.1 Intensive horticulture
- 5.2 Intensive animal production
- 5.3 Manufacturing and industrial
- 5.4 Residential and farm infrastructure
- 5.5 Services
- 5.6 Utilities
- 5.7 Transport and communication
- 5.8 Mining
- 5.9 Waste treatment and disposal
- 6.3 River

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2020)

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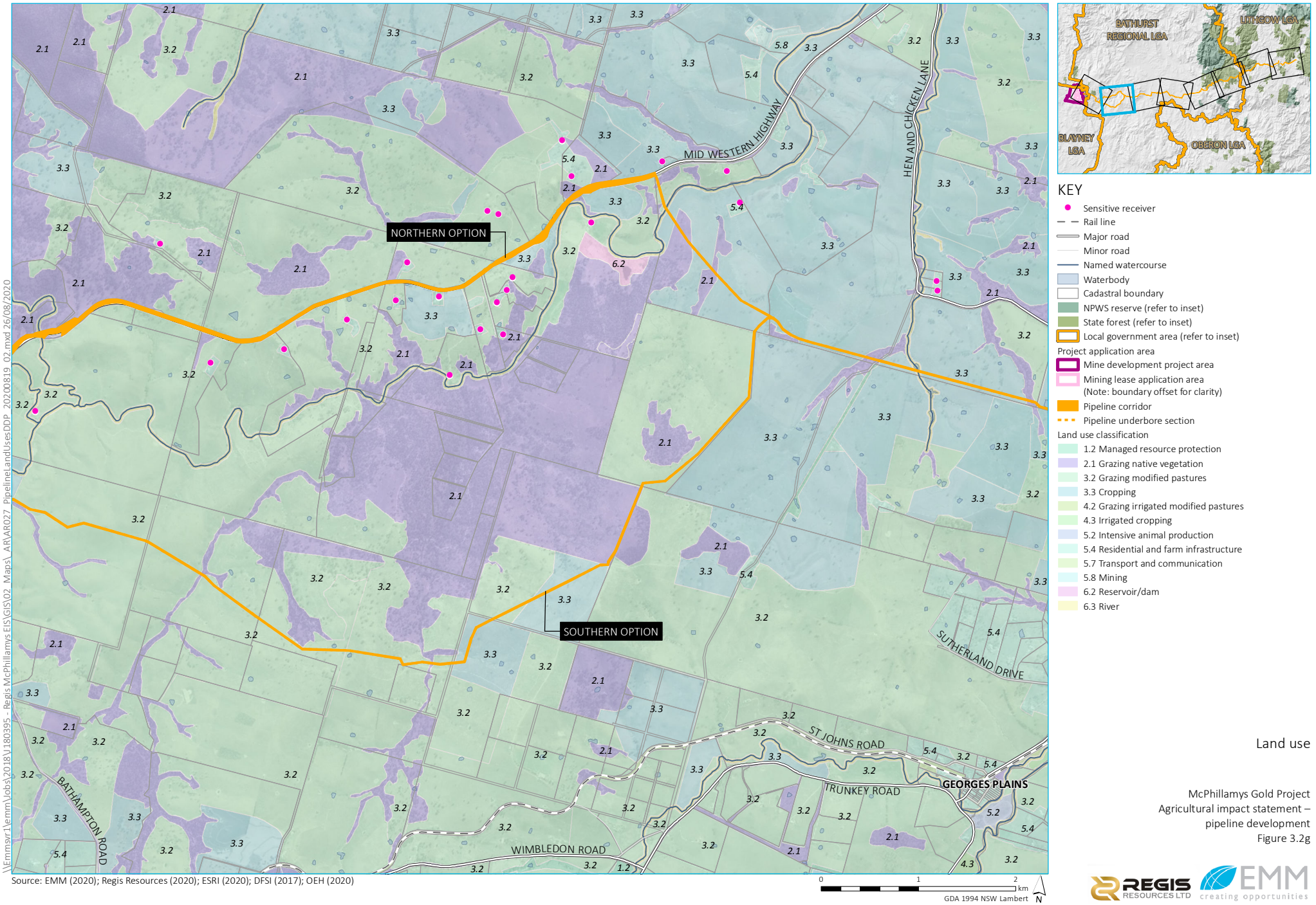
Land use

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.2f

REGIS RESOURCES LTD

EMM creating opportunities



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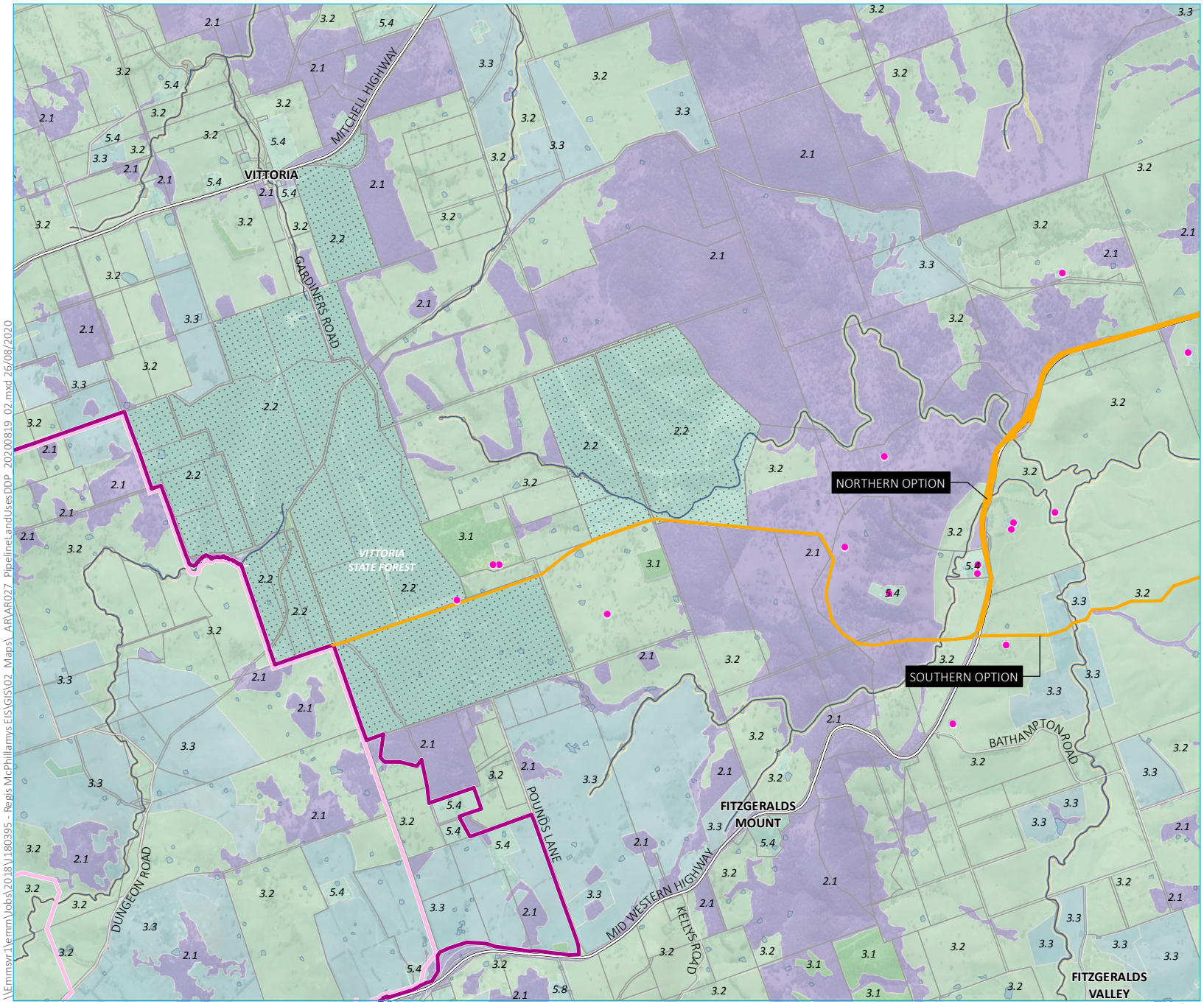
Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2020)

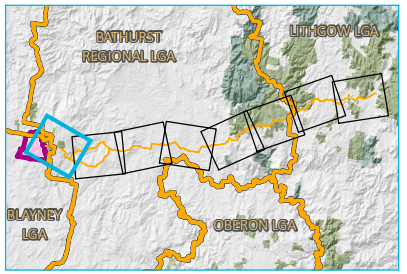
Land use

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.2g

REGIS RESOURCES LTD

EMM creating opportunities





KEY

- Sensitive receiver
- Major road
- Minor road
- Named watercourse
- Waterbody
- Cadastral boundary
- State forest
- NPWS reserve (refer to inset)
- State forest (refer to inset)
- Local government area (refer to inset)

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pipeline corridor
- Pipeline underbore section

Land use classification

- 1.2 Managed resource protection
- 2.1 Grazing native vegetation
- 2.2 Production native forestry
- 3.1 Plantation forests
- 3.2 Grazing modified pastures
- 3.3 Cropping
- 3.4 Perennial horticulture
- 5.4 Residential and farm infrastructure
- 5.7 Transport and communication
- 5.8 Mining
- 6.2 Reservoir/dam
- 6.3 River

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); OEH (2020)

0 1 2 km

GDA 1994 NSW Lambert

\\Emmsvr1\emm\Jobs\2018\V180395 - Regis McPhillamys EIS\GIS\02 Maps\ ARVAR027 PipelineLandUsesDDP 20200819 02.mxd 26/08/2020

Land use

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure 3.2h

REGIS RESOURCES LTD

EMM creating opportunities

4 Existing regional agricultural resources

As discussed in Section 3.3, the pipeline corridor traverses land within the Blayney, Bathurst and Lithgow LGAs. Each of these LGAs form part of the Central West region of NSW, which covers a total area of 7 million ha. Of this, approximately 81% or 5.7 million ha is considered agricultural land with the most common land use being grazing on modified pastures, which occupies 3.8 million ha or 54% of the region (DAWE 2020). The dominant rural land uses within the Blayney, Bathurst and Lithgow LGAs include:

- Blayney – agriculture and mining;
- Bathurst – timber production and agriculture (particularly sheep and cattle grazing with some orcharding, crop farming and market gardening); and
- Lithgow – farming, grazing and mining (particularly coal mining).

The Central West region has a diverse agricultural sector, with the most important commodities being cattle and calves, wool, sheep and lambs (DAWE 2020). The gross value of agricultural production in the Central West region for 2018-2019 was $1.4 billion (ie 12% of total gross value of agricultural production in NSW) and the region contains 16% of all farm businesses in NSW (DAWE 2020).

A detailed investigation of existing regional agricultural resources in accordance with the *Strategic Regional Land Use Policy – Guideline for Agricultural Impact Statements* (NSW Government 2012) is not considered warranted because:

- the pipeline corridor traverses more than 90 km and three LGAs making it difficult to describe localised conditions (eg soil characteristics, topography, vegetation and climate) at a regional scale;
- the direct impact of the pipeline development on agricultural enterprises within and adjacent to the pipeline corridor will predominantly be limited to construction only; and
- less than 1.29 ha of land will not be rehabilitated and returned to agriculture at the completion of the pipeline's construction (associated with pumping station facilities 1, 3 and 4), noting that 0.56 ha of this is not currently used for agriculture, but is associated with mining activities.

The pipeline development's impacts on agricultural support infrastructure, water resources, and agricultural enterprises within the surrounding locality, have been assessed in sections 5.3.1, 5.2 and 5.1, respectively.

5 Agricultural impact assessment

5.1 Impacts on agricultural resources or industries

5.1.1 Effects on agricultural resources

i Land and soil capability

With the exception of the pumping station facilities and access tracks, no permanent changes to LSC classes throughout the pipeline corridor are anticipated. Pumping station facilities will occupy a total maximum area of approximately 1.86 ha, of which less than 1.29 ha is suitable for agriculture.

The change in LSC classes along the pipeline corridor will be negligible.

ii Agriculture production values

Permanent impacts to agricultural resources within the pipeline corridor will be limited and will only occur on land where surface infrastructure, such as pumping station facilities and/or access tracks, is retained.

Given the temporary nature of the construction impacts of the pipeline, any reduction in the gross value of agricultural production within the Blayney, Lithgow and Bathurst LGAs will be negligible.

Once constructed and during operations, it is anticipated that cropping and grazing (ie the dominant agricultural production activities in the area surrounding the pipeline corridor) will be able to continue within the pipeline easement area provided that the area remains accessible to Regis (and/or its contractors).

During operation, some limited usage restrictions will apply to private land within the pipeline easement in order to protect the pipeline infrastructure. Restrictions that may potentially limit the extent of agricultural production activities are likely to include:

- no earthworks, deep ripping, excavation, drilling or related works within the easement area below 300 mm;
- no construction of any buildings or structures over or under the easement area; and
- no planting trees or shrubs within the easement area.

These restrictions will be included in the easement agreement entered into between Regis and landowners. Acquisition and compensation payable will be consistent with the NSW *Land Acquisition (Just Terms Compensation) Act 1991*. Compensation will include consideration of potential impacts on agricultural production during the construction and operation of the pipeline development.

There are not expected to be any constraints on the current or potential agricultural uses of neighbouring land.

At the end of the project's operational life, it is anticipated that the pipeline will remain in the ground. There may be an opportunity for the pipeline infrastructure to continue to provide future public benefit by enhancing water security and supply to the region.

iii Property and land use

The focus of the pipeline corridor alignment selection process has been the minimisation of social and environmental effects (including minimising impacts on agricultural production activities). The alignment of the pipeline corridor was selected to minimise disruption to land uses, which included aligning with existing easements and the use of roads and forestry tracks as much as possible. Discussions have been held with landowners and changes made to the alignment (where possible) based on their preferences (eg to reduce impacts to existing irrigation infrastructure). The pumping station facilities have also been sited to minimise impacts on adjacent or nearby residential properties.

A number of concerns were raised during the consultation process with affected landholders about the potential for the pipeline development to disrupt agricultural operations. These concerns are listed below, along with a description of how these potential issues will be appropriately managed. Further information on monitoring and management of potential impacts is provided in Section 6.3.

a Potential disruption to cropping and sowing activities and the requirement for stock rotation to accommodate trenching activities

Construction activities associated with the pipeline will be temporary. It is expected that the pipeline will take approximately 9−12 months to construct and therefore at approximately 90 km long, activities will only occur across private properties for a very limited period. The time over which pipeline construction activities will cross any one property will be short-term with surface disturbance activities limited in any one location to up to a week (ie for conventional trenching pipeline installation) or up to six weeks (ie for underboring installation) as construction progresses along the corridor.

As part of the access agreements with each landholder and prior to construction starting on each property, PMPs will be developed in consultation with the landholder. These PMPs will ensure adequate notification is provided to landholders and will outline access arrangements to make sure that disruption to any activity within the pipeline corridor is minimised. Agreed rehabilitation requirements for individual properties will be included in the PMPs.

b Project-related traffic movements on station roads

A traffic and transport assessment (Appendix BB of the EIS) was prepared for the pipeline development. The assessment found that construction-related traffic generated during construction of the pipeline development will not have a significant impact on the operation or capacity of key regional, urban, local or unsealed roads and intersections providing access to each of the pipeline development construction sites.

The anticipated light vehicle generation is considered very moderate, estimated up to 30 vehicle trips (including minibuses) per day with heavy vehicle movements being 32 movements on average per day. All construction-related vehicles will use dedicated construction routes between the individual pipeline development construction sites and the regional road network.

During operations, intermittent light vehicle access will be required as part of routine maintenance and inspections.

c Development of additional access tracks to facilitate pipeline construction

The majority of the pipeline will be constructed along the alignment of existing roads or tracks, and therefore limited additional tracks will be required. Access tracks developed for the purposes of the pipeline development may be retained for use by landowners (eg if considered useful for ongoing property management).

d Potential for flow-on effects to scheduled agricultural activities, agricultural productivity and income

The mitigation measures detailed in Chapter 6 will minimise the potential for disruption of agricultural activities and potential flow-on effects. If the above ground components of the pipeline development are not removed (ie an additional user for the water or pipeline is identified at the completion of the project's operations), land that will not be returned to agriculture will be limited to:

- 0.56 ha of LSC Class 4 land (ie pumping station facility No. 1); however, it is acknowledged that the majority of this land is not currently used for agriculture and is associated with mining activities at Angus Place (Figure 3.2); and
- 0.73 ha of LSC Class 5 land (ie pumping station facility No. 3 and 4).

The majority of the direct disturbance footprint will be rehabilitated after construction so that it can sustain its pre-construction use.

e Potential for the spread of weeds by vehicles and machinery

Weed management measures will be implemented during construction (detailed in Section 6.3.2).

f Rehabilitation activities could lead to land degradation over time with resulting impacts to agricultural operations

A soil sampling program will be undertaken progressively along the pipeline corridor ahead of construction in areas which are anticipated to be dispersive. This is to ensure that appropriate construction and rehabilitation methods are identified and implemented to protect and maintain soil resources and to establish a long-term stable landform. This sampling plan will be documented in the construction environmental management plan (CEMP) for the pipeline

5.1.2 Consequential productivity effects on agricultural enterprises

As describe above, if the above ground components of the pipeline development are not removed (ie an additional user for the water or pipeline is identified at the completion of the project's operations), land that will not be returned to agriculture will be limited to 0.56 ha of LSC Class 4 land (ie pumping station facility No. 1 - not currently used for agriculture in any case); and 0.73 ha of LSC Class 5 land (ie pumping station facility No. 3 and 4).

At the completion of construction, all agricultural land (except for the pumping station facilities) will be rehabilitated to achieve the pre-disturbance LSC class, where possible. Grassland areas will be rehabilitated so that they can continue to support sustainable grazing activities.

Given that surface disturbance activities associated with the construction of the pipeline development will only occur across a small portion of each property and for a very limited period of time, no long-term impacts on the carrying capacity or agricultural productivity capability of land within the pipeline corridor are anticipated. Subsequently, the impact of the pipeline development on the gross value of agricultural production in the Blayney, Bathurst and Lithgow LGAs has not been calculated.

The pipeline development will not result in long-term reductions in agricultural productivity within the Blayney, Bathurst and Lithgow LGAs.

5.1.3 Uncertainty associated with predicted impacts and mitigation measures

Technical experts in relevant fields have undertaken the impact assessments that form the basis of the EIS and Amendment Report and upon which this AIS is based. Each remedial action, monitoring regime or management action proposed is based on these detailed assessments. The assumptions made and the levels of uncertainty are outlined in each of the technical assessments (where required).

5.1.4 Further risks

i Biosecurity

The pipeline development may contribute to an increase in weeds and pathogens. Mitigation measures will be implemented to prevent the introduction of weeds and/or disease into the pipeline corridor and prevent existing weeds and/or diseases from spreading between properties (Section 6.3.2).

ii Erosion and sedimentation

Stripping and stockpiling of soils has potential to expose soils to increased risks of wind and water erosion during the active construction period. Vehicle movements within, and to, the construction sites have potential to disturb soils with consequent possible erosion impacts.

Appendix W of the EIS identified that up to 52% of the pipeline corridor may have soils that are prone to tunnel and gully erosion due to their sodic and/or magnesic properties. These soils are likely to require amelioration with calcium sulfate to reduce their potential for dispersion.

Regis will progressively undertake sampling of topsoils and subsoils for erosion and agronomic constraints at a scale of approximately 1:25,000 as recommended by *Australian Soil and Land Survey Handbook* (CSIRO 2009) and the *Guidelines for Surveying Soil and Land Resources* (CSIRO 2008).

Sampling will be undertaken along the pipeline corridor prior to construction works commencing in each soil landscape to refine the boundaries of reactive soils and determine erosion and agronomic amelioration requirements. The details of the soil sampling plan will be documented in the CEMP to be prepared for the pipeline development, post determination.

iii Air quality

A risk assessment approach was applied to the assessment of potential air quality impacts from the pipeline development (Section 6.6.2 of the Amendment Report and Chapter 26 of the EIS). The assessment focused on the construction of the pipeline development. There will be no significant emission sources of air pollutants associated with the ongoing operation of the pipeline development and consequently there is negligible potential for air quality impacts to the surrounding environment.

The closest sensitive receptors to the pipeline corridor are around pumping station facility No.2, areas south of Portland, Sunny Corner Road near the Kirkconnell Correctional Centre, the Great Western Highway, Tarana Road, White Rock Road and Montavella Road (refer Appendix A).

The risk rating for dust impacts to human health and ecological receptors from the demolition, construction and truck track out phases of pipeline construction, prior to the application of dust mitigation measures, ranges between ‘negligible’ and ‘low’. An impact risk rating of ‘medium’ has been allocated for earthworks activities for dust soiling.

Mitigation measures will be implemented to alleviate the residual risk of dust soiling during earthworks (Section 6.3.4). The assessment concluded that proposed mitigation measures will adequately control emissions and potential dust-related impacts from this temporary activity.

iv Noise and vibration

A revised Noise and Vibration Impact Assessment (revised NVIA) was prepared by MAC (2020) to assess the potential impacts of the amended pipeline development on identified noise-sensitive receptors. The assessment was undertaken in accordance with the *Noise Policy for Industry* (EPA 2017) and supersedes the findings presented in the EIS NVIA (Appendix AA of the EIS).

The closest sensitive receptors to the pipeline corridor are around pumping station facility No.2, areas south of Portland, Sunny Corner Road near the Kirkconnell Correctional Centre, the Great Western Highway, Tarana Road, White Rock Road and Montavella Road (refer Appendix A).

The findings of the revised NVIA are consistent with the EIS NVIA, with the results predicting construction noise levels for most activities have the potential to be above the relevant noise criteria (referred to as management levels (NMLs)) at most receptors in close proximity to the pipeline corridor. However, for the most part, impacts are expected to be only for a very short duration (ie either one to two shifts or up to a few days). The highly affected $LAeq_{(15min)}$ noise management level of 75 dBA is expected to be satisfied at all receptors during all pipeline construction activities.

As the nearest receivers to the pipeline corridor are greater than 10 m away, human exposure to vibration is anticipated to be minimal. Furthermore, where the human response criteria are satisfied, the structural and cosmetic criteria for sensitive receivers will also be achieved. Therefore, vibration impacts are not considered to be a significant issue to the pipeline development.

Construction noise mitigation measures will be implemented to minimise noise impacts (Section 6.3.5). As no operational impacts are predicted, no operational measures are provided.

v Traffic

A traffic and transport assessment (Appendix BB of the EIS) was prepared for the pipeline development. Traffic impacts associated with the construction of the pipeline will be temporal and transitory. It is expected that crews working on the pipeline installation will be working on different sections along the 90 km pipeline corridor and therefore construction traffic generation is expected to spread geographically along the corridor with particular roads used as construction access routes for only a portion of the overall construction period.

Most of the construction workers will be transported in their crews through group transport, such as utility vehicles or mini-buses to specific work areas along the pipeline corridor. All light and heavy vehicle parking throughout construction will be provided off-road within or adjacent to pipeline development construction sites.

Construction access for the pumping station facilities will be utilised for a longer period albeit with lower expected traffic movements than pipeline installation works.

Construction vehicle routes will be documented in the Construction Traffic Management Plan (CTMP) and will be used by all construction vehicles travelling to and from the pipeline construction sites. They will be designed to provide the most efficient trips between subregional roads and the construction sites. Any oversized vehicles will require concurrence from TfNSW and/or the National Heavy Vehicle Register.

The CTMP will also include a rail safety procedure for access to pumping station facility No.3 and traffic control and construction access along the Mid Western highway route (ie if the northern option is constructed).

Scheduled maintenance for the operation of the pipeline will generate very little traffic as less than 4 vehicles trips are expected per day when these periodic events occur. Access for maintenance activities will utilise the same designated routes used during the construction phase. It is estimated the pumping station facilities will be visited approximately weekly; however, major maintenance will likely be limited to two to three times per year.

Ongoing access arrangements to the pipeline easement along the Mid Western Highway (if the northern option is constructed) and access to pumping station facility No.3 via the Gwabegar Railway Line level crossing will be documented in the overall Operational Environmental Management Plan (OEMP) for the project to ensure the safety of maintenance personnel.

5.2 Water resources

5.2.1 Overview

As part of the preparation of the EIS, a water assessment was prepared and included consideration of the pipeline development's potential to impact groundwater, surface water, geomorphology and flooding during construction and operations (Appendix X of the EIS). As part of the preparation of the Amendment Report, a Fluvial Geomorphology Addendum (Appendix I of the Amendment Report) has been prepared to assess the fluvial geomorphic impacts associated with new watercourses crossed by the revised pipeline alignment.

5.2.2 Construction

i Watercourses

The key risks to watercourses from the construction of the pipeline are associated with downstream knickpoints (longitudinally migrating bed level) and wide floodplains (laterally migrating channel position).These risks will be managed through further geotechnical assessment to assist with the selection of the most appropriate construction method or mitigation measures.

As per the EIS, the Macquarie River and Queen Charlottes Creek will be underbored to mitigate potential geomorphic impacts. The construction of the pipeline is expected to have negligible impacts on water flows due to the immediate backfill and rehabilitation of disturbed areas once the pipeline is laid.

The Fluvial Geomorphology Addendum (Appendix I of the Amendment Report) noted that trenched crossings present a low risk of geomorphic impact on most watercourses during the operational phase, provided the pipeline is buried a sufficient depth from the consolidated bed and sufficient distance from the watercourse banks. It will also be necessary to ensure:

- backfill is composed of the same material that was excavated (replaced in layers, as appropriate);
- backfill is compacted; and
- effective restoration of the disturbed area is undertaken.

Disturbance of the bank during and just after construction could expose channels to enhanced risk of erosion if a significant storm runoff event occurred before vegetation had time to establish good coverage. This impact would be more likely at sites with steep bed and banks and can be avoided by fortifying the banks with gabions or rip-rap.

Further geotechnical assessment will be carried out at crossings of 'high fragility' watercourses (Section 6.4.2 of the Amendment Report) as well as watercourses with geomorphic risks to assist with the selection of the most appropriate construction method and mitigation measures.

ii Groundwater

Construction activities are not expected to interfere with groundwater resources or quality as trenching will typically be relatively shallow (1.3–2 m) compared to the likely depth of the water table (generally greater than 10 metres below ground level (mbgl). It is therefore considered unlikely that pipeline construction works will intercept groundwater aquifers or their flow systems. The exception to this is the quaternary sandy alluvium associated with major river and creek crossings. The alluvium is unconsolidated and relatively thin (less than 15 m thick) but groundwater levels can be high with water tables generally 1.5–3 mbgl. Consequently, underboring of the pipeline is proposed at the Macquarie River and Queen Charlottes Creek to allow the pipeline to be specifically positioned at the base of the alluvium or into the weathered rock profile so as to not affect groundwater flows or water quality.

No impacts on groundwater availability or quality at private bores are anticipated and therefore the pipeline development is unlikely to impact agricultural groundwater use in the vicinity of the pipeline development.

5.2.3 Operations

During commissioning, the pipeline will be pressure tested and monitored for any leaks. To minimise the risk of uncontrolled discharge to the environment only high quality water will be used for pressure testing. Emptying of the pipeline will occur at scour valves at intermediate low points along the alignment. Water will be removed via tanker trucks and taken to an appropriate storage location within the pipeline corridor or to the mine development project area.

Periodic monitoring of water quality is proposed along the pipeline corridor at permanent stream crossings and will be described in the project's Water Management Plan (WMP). During operation, isolation or section valves will isolate the pipeline into discrete sections and allow individual sections to be dewatered for maintenance, or to provide security in an event such as a pipeline leak. Isolation valves will be installed on either side of major watercourse crossings.

Periodic inspections and leak detection monitoring will be part of ongoing operations and maintenance procedures.

5.2.4 Water transfer

The impacts of the works associated with the transfer of water from SCSS and Angus Place will be investigated in detail by Centennial in the required environmental assessments that will accompany those development applications. Nonetheless, a broad overview of potential impacts relating to the physical works required are presented in Appendix W of the Amendment Report (EMM 2020a).

Based on this investigation, the supply of water to pumping station facilities No. 1 and 2 is not expected to result in significant adverse impacts on local groundwater users, downstream waterways or downstream water users. Further, it is acknowledged that the transfer of water from SCSO to the mine development would have a beneficial impact by removing raw mine water discharges into Wangcol Creek.

5.3 Socio-economic impacts

5.3.1 Agricultural support services and processing and other value-adding industries

Permanent impacts to agricultural resources within the pipeline corridor will be limited and will only occur on land where surface infrastructure, such as pumping station facilities and/or access tracks, is retained. Any reduction in the gross value of agricultural production within the Blayney, Lithgow and Bathurst LGAs as a result of the pipeline development will be negligible. Further, there are not expected to be any constraints on the current or potential agricultural uses of neighbouring land. Subsequently, the potential for the pipeline development to adversely affect agricultural support services and processing and other value-adding industries is negligible.

5.3.2 Visual amenity, landscape values and tourism infrastructure

i Visual amenity and landscape values

Visual amenity impacts across the majority of the pipeline corridor will be short-term and will be experienced during construction only. Visual impacts during construction will be temporary within the pipeline corridor and will typically include construction vehicles, stockpiles and work zones; however, many of these areas will be away from public views and views from residences.

Where pipeline construction will be visible, potential visual impacts will be limited in any one location to up to a week (ie for conventional trenching pipeline installation) or up to six weeks (ie for underboring installation) as construction progresses along the corridor.

Construction of pumping station facilities will generally take between four and six months. Construction compounds and laydown areas will also move as construction progresses but may be in place in any one location for up to six months. These will be located to take advantage of existing screening as far as practicable.

Once constructed, the majority of the pipeline infrastructure will be below ground, with only the pumping station facilities, pressure reducing system and valves visible above ground during the operational phase. The pumping station facilities will be largely contained in a covered building. The compounds will be up to approximately 75 m by 75 m and will be surrounded by a 1.8 m high perimeter fence.

Mitigation measures will be implemented during detailed design and construction to minimise the potential visual amenity impacts of the pipeline development (Section 6.3.6).

ii Tourism infrastructure

Due to the short-term nature of construction activities, any impacts on tourism infrastructure will be temporary. It is anticipated that any temporary, localised impacts will be limited to local agricultural enterprises that have on-farm businesses (such as farm-stay accommodation). Subsequently, the pipeline development is unlikely to result in any significant loss of tourism earnings for any agricultural tourism businesses (ie through reductions in visits, accommodation availability or financial impacts).

A Construction Workforce Accommodation Strategy will be prepared in consultation with key stakeholders to enable the coordinated placement of the construction workforce in tourism accommodation throughout the local area and avoid adverse impacts during periods of high demand (such as during key regional events).

5.3.3 Local and regional employment

The pipeline development will result in the creation of a number of direct and indirect employment opportunities with a peak construction workforce of approximately 120 people.

As noted in the EIS, the construction of the pipeline development will require a labour force with specialised skills. It is therefore anticipated that the majority of the construction workforce for the pipeline development will be 'non-local' hires. The majority of these non-local hires are anticipated to be sourced from outside the Central West Region and it is therefore considered very unlikely that the pipeline development will have any impact on the labour available for local agricultural enterprises.

During operations, staff from the mine development will be responsible for routine maintenance and inspections and therefore impacts on local and regional employment will be negligible.

6 Mitigation measures

6.1 Project alternatives

The alternatives that were considered during the planning, design and environmental assessment of the project are discussed in detail in Chapter 6 of the EIS. Where relevant, this information has been updated in Chapter 2 of the Amendment Report.

The project requires a reliable and sustainable water supply, primarily for the proposed processing plant and for dust suppression requirements. Initial hydrogeological investigations indicated that the likelihood of sourcing such a supply from local groundwater was low. For this reason, an assessment of available water supply options was undertaken (EMM 2017) with options assessed up to a radius of approximately 100 km from the mine project area. From this assessment, various options were identified that provided potentially viable solutions and warranted further investigation. Four of these were:

- recycled waste water from Bathurst wastewater treatment plant;
- groundwater from one or more of the Lachlan alluvium zones;
- a hybrid solution sourcing water from local groundwater, surface water and the Belubula River downstream of Carcoar Dam; and
- surplus mine water from Centennial's operations in the Greater Lithgow area (ie the pipeline development).

The pipeline development was selected as it will result in the beneficial reuse of a reliable and sustainable water supply. It will also result in less impacts to other surface and groundwater users. Once the pipeline development became the preferred option for the project's operational water supply, a number of different alignments for the pipeline corridor were considered.

The focus of the pipeline corridor selection process has been the minimisation of social and environmental effects. The alignment of the pipeline corridor was selected to minimise disruption to land uses, which included aligning with some existing easements and the use of roads and forestry tracks. Discussions have been held with landowners and changes made to the alignment where possible based on their preferences (eg to reduce impacts to existing irrigation infrastructure). The pumping station facilities have also been sited to minimise impacts on adjacent or nearby residential properties.

More information on the pipeline corridor alignment refinement process is available in Section 6.10 of the EIS and Chapter 2 of the Amendment Report.

6.2 Property management plans

Regis has committed to the development of tailored PMPs for each property traversed by the pipeline and the preparation of a Landholder Communication Plan to ensure adequate notification of the construction phase is provided to all directly affected landowners. As part of the preparation of the PMPs, a representative from Regis will discuss the details of the pipeline development that relate to each property, particularly in relation to where the pipeline is proposed to be placed. A signpost will be placed at intervals of approximately 250 m along the pipeline route to ensure that the property owner can identify its location should it be necessary. As part of this engagement, Regis will also confirm:

- the current use of the land on each property along the proposed pipeline route;

- access points and protocols (that is, suitable times for entry and gate locking arrangements);
- types of grasses and fertilisers that are currently in use (or if the property has organic status) so that pasture rehabilitation can be successfully completed; and
- known existing infrastructure (eg irrigation, communication, roads, etc).

In addition to the PMP, a tailored Rehabilitation Management Plan (RMP) will be prepared for each individual property in consultation with the landholder.

6.3 Monitoring and management

6.3.1 Overview

The following mitigation measures will be implemented to minimise potential impacts on agricultural resources during construction and operation of the pipeline development:

- A CEMP and OEMP will be prepared and implemented and will address the procedures and management of all aspects of land disturbance, soils, erosion and sediment controls, rehabilitation, flooding, waste, weeds and pathogens, dust, construction noise and traffic. The CEMP and OEMP will be made available to individual landholders upon request and will also provide details of the formal complaints procedure (a community complaints and grievances system will be implemented for the pipeline development, with investigation, response and where required, management actions undertaken for all complaints).
- A CTMP will be prepared prior to construction of the pipeline as part of the CEMP. The CTMP will identify management strategies to be adopted during the pipeline construction to effectively manage traffic during construction so as to avoid impacts on the road network.
- To avoid impacts to surface water quality, erosion and sediment controls will be installed and maintained prior to the start of the construction activities in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom 2004) to protect local watercourses from impacts relating to erosion and the resulting sedimentation.

Further detail of mitigation measures to manage the pipeline development's impacts on biosecurity, erosion and sedimentation, air quality, noise and vibration, visual amenity and rehabilitation are provided below.

6.3.2 Biosecurity

The following measures will be implemented to mitigate the introduction and spread of significant weeds and pathogens during the construction and operation of the pipeline development:

- inspection and control of weeds in accordance with a Site Vegetation Management Plan and subject to requirements of the relevant local council;
- appropriate weed hygiene for machinery and vehicles during pipeline construction, rehabilitation and operation that may include inspection and wash-down prior to entry to the pipeline corridor, after working in areas of known weed infestation and prior to entry into different properties;
- any new fill brought onto the pipeline corridor will be certified, weed-free fill only to be used for on-site earthwork;
- herbicide spraying or scalping weeds prior to construction works;

- any herbicide use will be in accordance with the requirements on the label and any person carrying out herbicide application will be appropriately trained and competent in its use;
- rehabilitation inspections will be undertaken to identify potential weed infestations;
- biosecurity clean-down kits will be maintained in all contractor and company vehicles; and
- weeds at pump stations will be monitored annually during operations with controls implemented when necessary.

6.3.3 Erosion and sedimentation

In their submission on the EIS, DPI Agriculture noted that specific soil analysis across the identified soil landscapes and landscape features will assist in identifying soil limitations across the pipeline corridor and appropriate targeted management needs.

Appendix W of the EIS identified that 52% of the pipeline route may have soils that are prone to tunnel and gully erosion due to their sodic and/or magnesic properties. These soils are likely to require amelioration with calcium sulfate to reduce their potential for dispersion. Regis will progressively undertake some sampling of topsoils and subsoils for erosion and agronomic constraints at a scale of approximately 1:25,000 as recommended by *Australian Soil and Land Survey Handbook* (CSIRO 2009) and the *Guidelines for Surveying Soil and Land Resources* (CSIRO 2008).

Sampling will be undertaken along the corridor prior to construction works commencing in each soil landscape, focusing on the Kurosols and Sodosols (Cullen Bullen, Lithgow, Capertee, Sunny Corner, Yetholme, Mookerawa, Mullion Creek, Raglan and Rocks Soil Landscapes) to refine the boundaries of reactive soils and determine erosion and agronomic amelioration requirements. Samples will be taken in the main topographic features in each landscape.

The details of the soil sampling plan will be documented in the CEMP.

6.3.4 Air quality

An air quality management sub-plan will be prepared as part of the CEMP and will include dust mitigation and management measures, as well as a complaints register and complaints handling and escalation procedures. The following measures will be implemented throughout construction to reduce the residual risk of dust impacts to the surrounding area:

- prior to commencement of construction, appropriate communication channels will be developed to notify potentially impacted residences of the pipeline development (duration, types of works, etc) and relevant contact details for environmental complaints reporting will be provided;
- site inspections will be carried out and inspection results recorded;
- site fencing and barriers will be kept clean using wet methods;
- materials that have potential to produce dust will be removed from site as soon as possible (unless being re-used on-site);
- a maximum-speed-limit of 20 km/hr will be imposed in the vicinity of active work areas;
- vehicles entering and leaving sites will be covered to prevent escape of materials during transport;
- plant and equipment engines will be regularly maintained;

- an adequate water supply will be provided on construction sites for effective dust/particulate matter suppression/mitigation;
- drop heights from loading or handling equipment will be minimised as much as practicable; and
- vegetation/ground cover will be removed in small areas during work, as practicable.

6.3.5 Noise and vibration

A noise and vibration management sub-plan will be prepared as part of the CEMP and will include noise mitigation and management measures, as well as a complaints register and complaints handling and escalation procedures. The noise management sub-plan will include strategies to minimise noise impacts on sensitive noise receivers, including the following:

- ensuring that construction activities meet construction NMLs within the allowable hours of operation as far as practicable;
- where noise levels are above relevant NMLs, implementing reasonable and feasible best practice noise controls to minimise noise emissions and/or exposure duration at affected receivers; and
- where the use of best practice noise controls does not adequately address exceedance of NMLs, adopt alternative measures to minimise impacts on the community.

A management procedure will be put in place to deal with noise complaints that may arise from construction activities. Each complaint will be investigated, and appropriate noise amelioration measures put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits.

Community stakeholders and neighbouring landholders will be provided information such as total building time, what works are expected to be noisy, their duration, what is being done to minimise noise and when respite periods will occur. This will be provided through media such as letterbox drops, meetings, a dedicated website or individual contact. Good communication with residents in the vicinity of the construction sites will be established at the beginning of construction and maintained throughout. This will involve keeping people informed of progress and appropriately dealing with complaints. With respect to respite periods, liaison with affected residences to identify least affected periods and the best timing for implementing respite periods will be considered.

Ongoing noise monitoring, reporting and complaint handling will be implemented throughout construction.

6.3.6 Visual amenity

Mitigation measures that will be implemented to minimise visual amenity impacts include:

- where sites are not flat, pumping station facilities and the pressure reducing system will be cut into the site so that the infrastructure ‘sits’ within the landscape and has less visual bulk and any surplus material will be used for earth mounding and landscaping;
- screening vegetation will be planted at various heights to filter views to the structures from public viewpoints;
- finishes and materials will be selected to assist in blending into the surrounding landscape, with attention paid to reflectivity;
- lighting for the pumping station facilities will be in accordance with Australian Standard 4282 Control of Obtrusive Effects of Outdoor Lighting and will adopt the following principles:

- operational protocols for mobile lighting to direct it away from external private receptors;
- lighting sources will be directed below the horizontal to minimise potential light spill;
- light systems will be designed to minimise wastage;
- screening of lighting will occur where possible; and
- lighting of light coloured surfaces with greater reflectivity will be avoided;

- disturbed ground will be rehabilitated as quickly as possible to return the pipeline corridor to its original state;
- where vegetation is removed for pipeline construction and ongoing clearance requirements, consideration will be given to supplementary planting adjacent to the corridor to reduce visual amenity impacts in consultation with the landowners;
- where pipeline valves will be close to residences, screening by shrubs and grasses will be considered in consultation with the landowners; and
- site compounds will be in existing cleared areas and stockpiles, construction plant and access roads will be located as far away from sensitive receivers and recreational areas as practicable.

As part of ongoing maintenance, weed and erosion control and growth monitoring will be undertaken for all vegetation screening in accordance with the OEMP.

6.4 Rehabilitation

6.4.1 Overview

The rehabilitation and closure strategy for the pipeline development is to ultimately create safe, stable and non-polluting landforms that are consistent with agreed post development land uses. Regis will ensure land disturbed by the pipeline is rehabilitated to an appropriate standard and representative of surrounding vegetation communities (including pasture) and is compatible with pre-disturbance and surrounding land uses. Rehabilitation will occur progressively and as soon as practical following completion of pipeline construction. As described in Section 6.2, a RMP will be prepared in consultation with each landholder for each property the pipeline traverses, which will set out the rehabilitation objectives and commitments for that property.

Rehabilitation of the pipeline corridor will be undertaken in two phases; after completion of construction, and then upon decommissioning of the pipeline at the end of the project life:

- Phase 1 – Initial progressive rehabilitation immediately following construction where disturbed areas will be seeded with cover crop, introduced and/or native grass species to provide erosion protection and re-establish pre-disturbance land use such as grazing and cropping land-uses.
- Phase 2 – Removal and rehabilitation of surface infrastructure such as pump stations (unless the pipeline and infrastructure are retained by another party post-mining for beneficial re-use), followed by re-establishment of vegetation communities that reflect the original vegetation and/or forestry plantations. Phase 2 cannot be undertaken until the pipeline is no longer being used as deep rooting native and non-native tree species may damage the pipeline.

Agricultural post-disturbance land use will be able to be re-established relatively quickly, although the full capability may not be realised until one to two years post disturbance, to allow pasture species to go through a number of growing cycles and for soil microbiology to re-establish.

Native vegetation within the pipeline corridor generally occurs on privately-owned farming land and road reserves. The re-establishment of native vegetation will be undertaken with agreement from the landowners. Where it is agreed to re-establish native vegetation, local provenance seed will be collected from adjacent areas from the structurally dominant and threatened flora species and seeded using direct seeding techniques appropriate to access limitations, slope steepness and erosion risk.

6.4.2 Monitoring programs to assess predicted versus actual impacts

Rehabilitation monitoring will be undertaken to monitor progress against nominated completion criteria. The specific monitoring methods to be applied along the corridor will be determined in the Rehabilitation Management Plan (as part of the CEMP) and will be flexible in consideration of advancing technologies and changes to industry best practice. Rehabilitation monitoring will inform areas requiring maintenance and identify and address deviations from the expected outcomes. Rehabilitated areas will be assessed against performance indicators and will be regularly (at least on an annual basis) inspected for the following aspects:

- evidence of any erosion or sedimentation;
- success of initial establishment cover;
- natural regeneration of improved pasture;
- weed infestation (primarily noxious weeds, but also where rehabilitation areas are dominated by other weeds);
- integrity of graded banks, diversion drains, waterways and sediment control structures (where relevant); and
- general stability of the rehabilitation areas.

Where rehabilitation criteria have not been met, maintenance works will be undertaken. This may include the following:

- re-seeding and, where necessary, re-soiling and/or the application of specialised treatments;
- replacement of drainage controls if they are found to be inadequate for their intended purpose, or compromised by vegetation or wildlife; and
- de-silting or repair of sediment control structures.

6.4.3 Trigger response plans

A detailed rehabilitation risk assessment will be undertaken as part of the development of the Rehabilitation Management Plan for the pipeline development. A Trigger Action Response Plan (TARP) will be developed based on the key outcomes from the risk assessment. The TARP will identify key risks or threats to rehabilitation success for the pipeline corridor and will detail the risk treatment measures or contingency measures that will be undertaken to mitigate the identified risks. The triggers identified in the TARP will be reviewed and updated (if necessary) following implementation of the rehabilitation monitoring program.

6.4.4 Remedial actions

Anticipated contingency measures that will be implemented where rehabilitation monitoring results identify a requirement for maintenance or remedial works include:

- repair of erosion (ie regrading of eroded areas);
- repair of drainage structures and de-silting of sediment control structures;
- supplementary seeding or planting;
- application of fertiliser;
- application of gypsum or lime to control pH and improve soil structure;
- bushfire management activities; and
- implementation of weed and pest control measures.

The effectiveness of the remedial works will be monitored during regular maintenance inspections of the pipeline corridor and remedial measures identified and implemented, as necessary.

6.4.5 Rehabilitation capacity

Rehabilitation completion criteria will be used as the basis for assessing when rehabilitation of the corridor is complete. Indicators will be measured against the criteria, and are set for the six phases of rehabilitation, as follows:

- Phase 1 – Decommissioning (ie removal of equipment and infrastructure);
- Phase 2 – Landform establishment (ie land shaping);
- Phase 3 – Growth medium development (ie soil physical and chemical properties);
- Phase 4 – Ecosystem and land use establishment (ie vegetation establishment);
- Phase 5 – Ecosystem and land use sustainability (ie established vegetation supports land use); and
- Phase 6 – Land relinquishment.

Interim rehabilitation criteria for the pipeline development have been developed with the current knowledge of rehabilitation practices and success in similar project environments (Chapter 35 of the EIS). The rehabilitation criteria need to demonstrate that the rehabilitation objective has been achieved.

Grazing rehabilitation performance indicators and completion criteria are listed in Table 35.5 of the EIS.

6.4.6 Progressive rehabilitation

Regis is committed to the progressive stabilisation and rehabilitation of disturbed areas resulting from the construction of the pipeline and associated infrastructure.

As described in Section 35.4.2 of the EIS, rehabilitation of the pipeline and associated infrastructure will occur in two phases. Establishment of deep rooting native and forestry species cannot occur during the operational phase of the pipeline as tree roots may damage the structural integrity of the pipeline.

It is likely that areas of existing erosion and land degradation will be encountered during the construction of the pipeline and associated infrastructure. These areas will be stabilised and rehabilitated where they impact on the integrity of the infrastructure and/or the rehabilitation objectives for the pipeline.

7 Consultation

7.1 Overview

Extensive consultation has been undertaken with landholders along the pipeline route. Consultation with individual landholders have included discussions in relation to:

- including their property in the pipeline corridor;
- access to each property for the purpose of environmental assessment (such as ecology and heritage surveys);
- the provision of pipeline easement deeds for each property (it is noted that deeds have been issued to the majority of landholders along the route); and
- ongoing discussions and negotiations to develop PMPs and RMPs for each property.

Consultation has also been undertaken with the three councils through which the pipeline traverses, to inform them of the proposed development. In addition to this, consultation has been, and will continue to be, undertaken with the local community on the project throughout the environmental assessment, approval and design process.

7.2 Ongoing engagement

Regis will continue to maintain open lines of communication with the local community throughout the assessment process, which will continue to include:

- distribution of updates via the project mailing list, project website, Community Consultative Committee (CCC) and local print and electronic media (including the Blayney Chronicle); and
- ongoing one-on-one meetings with property owners and neighbouring landholders.

In response to concerns around the potential impacts of the project on Dicks Creek, Regis engaged EMM to prepare an additional impact assessment for a neighbouring landholder. The assessment concluded that there will be no risks to Dicks Creek following completion of pipeline construction. The pipeline will be monitored to ensure the area of impact on the landholder's property is appropriately rehabilitated and there are no material changes to the Dicks Creeks flow regime.

As discussed in Section 20.6 of the EIS, a Stakeholder Engagement Plan will be developed prior to the commencement of construction to manage potential social impacts and support the realisation of opportunities across the project life.

7.3 Community consultative committee

A CCC was established for the project in late 2018 in accordance with the SEARs and will continue to operate for the life of the project. The key role of the CCC will be to foster dialogue between Regis, the community and key stakeholders regarding the project. The CCC provides community members with a voice and gives Regis a structured process for addressing community interests and concerns.

The CCC includes residents, business people, community groups (including representatives from the Belubula Headwaters Protection Group), Regis and the Councils of Blayney, Bathurst and Cabonne. The Committee has an independent Chairman, David Johnson, appointed by DPIE. The community consultation committee consists of:

- six community members, including Kings Plains residents;
- representative from Belubula Headwaters Protection Group;
- representative from Orange and Regional Water Security Alliance Inc;
- representatives from Bathurst, Blayney and Cabonne Councils; and
- three Regis representatives.

The CCC generally meets every two months and minutes from these meetings are published in the project website.

7.4 Property management plans

As described in Section 6.1, Regis has committed to the development of tailored PMPs for each impacted property and the preparation of a Landholder Communication Plan to ensure adequate notification of the construction phase is provided to all directly affected landowners.

As part of the preparation of the PMPs, a representative from Regis will discuss the details of the pipeline development that relate to each property, particularly in relation to where the pipeline is proposed to be placed.

Consultation with landholders will be ongoing throughout the development of the PMPs, construction works and rehabilitation.

8 Conclusion

This AIS provides an assessment of the impacts of the amended pipeline development on agricultural industries and resources and documents initiatives built into the amended design to avoid and minimise agricultural impacts.

Key findings of this report include:

- Impacts of the underground pipeline construction will primarily be temporary. The pipeline will take approximately 9−12 months to construct, and land will be rehabilitated progressively as construction moves along the pipeline corridor.
- The pipeline will have minimal surface infrastructure; limited to four pumping station facilities.
- Pipeline easement deeds have been issued to all landholders along the pipeline route. Regis is in the process of developing tailored PMPs and RMPs for each property to ensure impacts are minimised and the construction footprint is rehabilitated to a standard that is to the satisfaction of the landholder.
- The pipeline development passes through approximately 4.5 ha of land mapped as BSAL; however, impacts will be temporary and will be limited to the installation of the pipeline and supporting infrastructure.
- With the exception of the pumping station facilities, no permanent changes to LSC classes throughout the pipeline corridor are anticipated. Pumping station facilities will occupy a total maximum area of approximately 1.86 ha. The change in LSC classes along the pipeline corridor will be negligible.
- Permanent impacts to agricultural resources within the pipeline corridor will be limited and will only occur on land where surface infrastructure, such as pumping station facilities and/or access tracks, is retained.
- It is anticipated that any reduction in the gross value of agricultural production within the Blayney, Lithgow and Bathurst LGAs will be negligible and there are not expected to be any constraints on the current or potential agricultural uses of neighbouring land.
- No impacts on groundwater availability or quality at private bores are anticipated and therefore the pipeline development is unlikely to impact agricultural groundwater use in the vicinity of the pipeline development.
- The majority of the construction workforce will be non-local hires and are anticipated to be sourced from outside the Central West Region. It is therefore considered unlikely that the pipeline development will have any impact on the labour available for local agricultural enterprises.

The pipeline development is therefore not anticipated to have any significant impacts on agricultural resources or activities.

A suite of mitigation measures will be implemented to minimise potential impacts on agricultural resources during the construction and operation of the pipeline development. For example, Regis will develop a soil sampling plan as part of the preparation of the CEMP for pipeline construction, which will target soils identified as potentially prone to tunnel and gully erosion, to ensure that appropriate targeted management measures are applied during construction.

The development of tailored PMPs and RMPs for each landholder will ensure adequate communication with landholders is undertaken and that appropriate, tailored rehabilitation outcomes are agreed to, and implemented, along the pipeline route.

References

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OEH 2017, *Land and Soil Capability Mapping for NSW*.

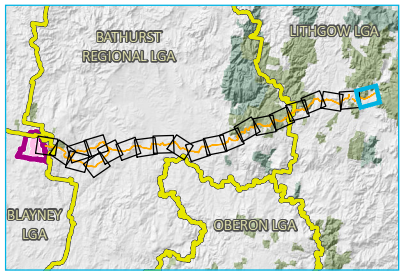
Abbreviations

AIS	agricultural impact statement
Angus Place	Angus Place Colliery
BSAL	biophysical strategic agricultural land
CCC	Community Consultative Committee
CEMP	construction environmental management plan
Centennial	Centennial Coal Company Limited
CTMP	construction traffic management plan
DPI Agriculture	NSW Department of Primary Industries – Agriculture
DPIE	NSW Department of Planning, Industry and Environment
EA	Energy Australia
EIS	environmental impact statement
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EP&A Regulation	NSW Environmental Planning and Assessment Regulation 2000
Km	kilometre
LDP	licensed discharge point
LGA	local government area
LSC	land and soil capability
m	metre
mbgl	metres below ground level
mm	millimetres
MPPS	Mount Piper Power Station
Mtpa	million tonnes per annum
NML	noise management level
NSW	New South Wales
NVIA	noise and vibration impact assessment
OEMP	operational environmental management plan
PMP	property management plan
Regis	Regis Resources Limited
RMP	rehabilitation management plan

SCSO	Springvale Coal Services Operations
SCSS	Springvale Coal Services Site
SEARs	Secretary's Environmental Assessment Requirements
TfNSW	Transport for NSW
TARP	Trigger Action Response Plan
TSF	tailings storage facility
WMP	water management plan

Appendix A

Pipeline development layout



KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option
- Pipeline underbore section

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1a

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EMM creating opportunities

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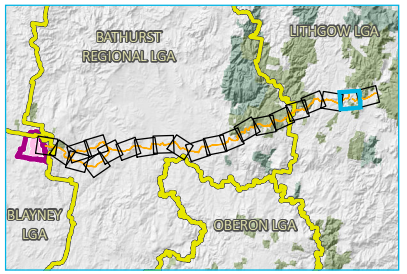

KEY

- Sensitive receiver
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Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

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Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1b

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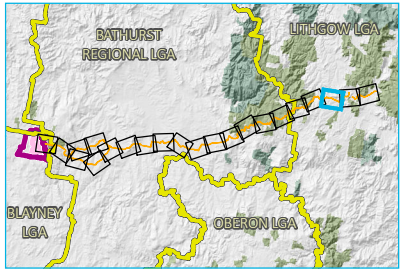
EMM creating opportunities



KEY

- Sensitive receiver
- Rail line
- Major road
- Minor road
- Vehicular track
- Named watercourse
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- Local government area

Project application area

- Mine development project area
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  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option
- Pipeline underbore section

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

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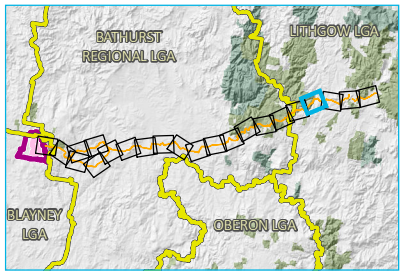
Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1c

REGIS RESOURCES LTD

EMM creating opportunities



KEY

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- Major road
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Project application area

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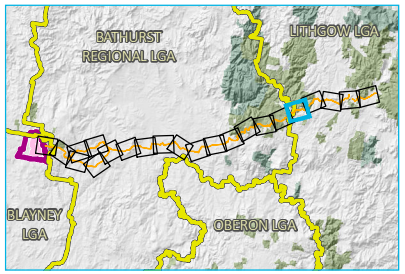
Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1d

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Sensitive receiver
- Major road
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- State forest
- Local government area

Project application area

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- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1e

REGIS RESOURCES LTD

EMM creating opportunities

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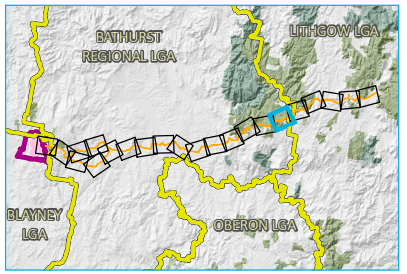

KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option

\\Emmsvr1\emm\Jobs\2018\J180395 - Regis McPhillamys EIS\GIS\02_Maps_AIS\ARA\IS003_PipelineDevelopmentDDP_20200817_02.mxd 26/08/2020

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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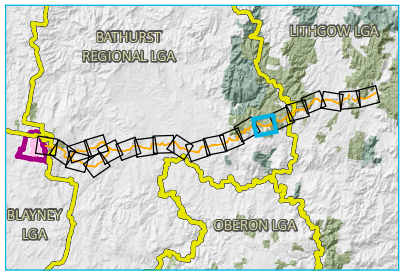
Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1f

REGIS RESOURCES LTD

EMM creating opportunities



KEY

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  (Note: boundary offset for clarity)

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Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

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GDA 1994 NSW Lambert

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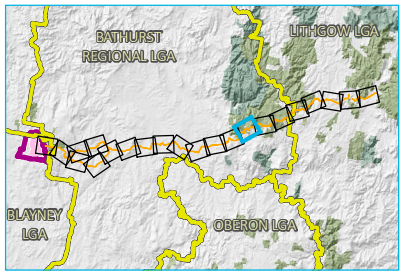
\\Emmsvr1\emm\Jobs\2018\V180395 - Regis McPhillamys EIS\GIS\02_Maps_AIS\ARA\IS003_PipelineDevelopmentDDP_20200817_02.mxd 26/08/2020

Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1g

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1h

REGIS RESOURCES LTD

EMM creating opportunities

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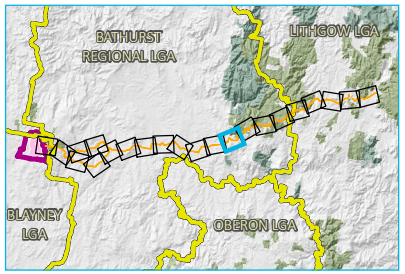

KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)
- Pressure reducing valve

Pipeline corridor

- Shared northern and southern option
- Pipeline underbore section

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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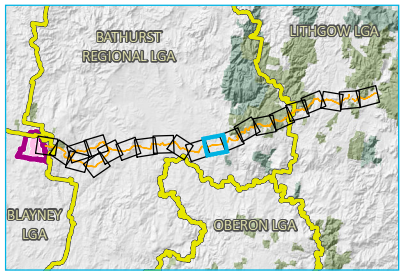
Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1i

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Sensitive receiver
- Minor road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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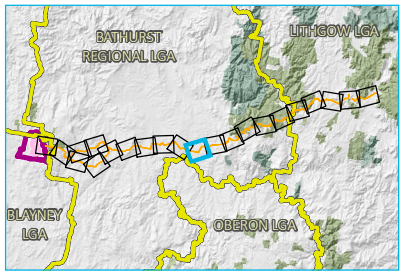
Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1j

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Sensitive receiver
- Rail line
- Major road
- Minor road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option
- Pipeline underbore section

Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1k

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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REGIS RESOURCES LTD

EMM creating opportunities

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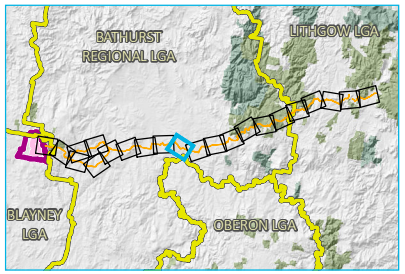


KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option

\\Emmsvr1\emm\jobs\2018\I180395 - Regis McPhillamys EIS\GIS\02_Maps_AIS\ARAISO03_PipelineDevelopmentDDP_20200817_02.mxd 26/08/2020

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

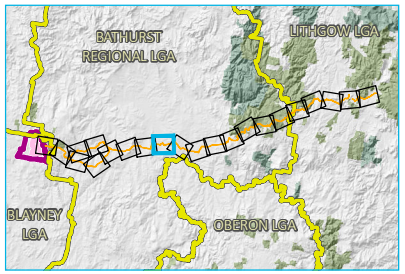
GDA 1994 NSW Lambert

Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1l

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option
- Pipeline underbore section

Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1m

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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REGIS RESOURCES LTD

EMM creating opportunities

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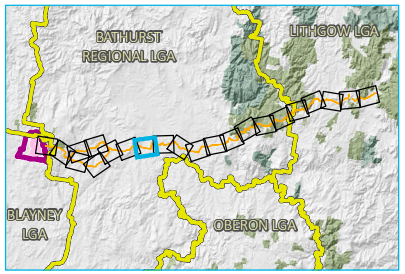

KEY

- Sensitive receiver
- Rail line
- Major road
- Minor road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option
- Pipeline underbore section

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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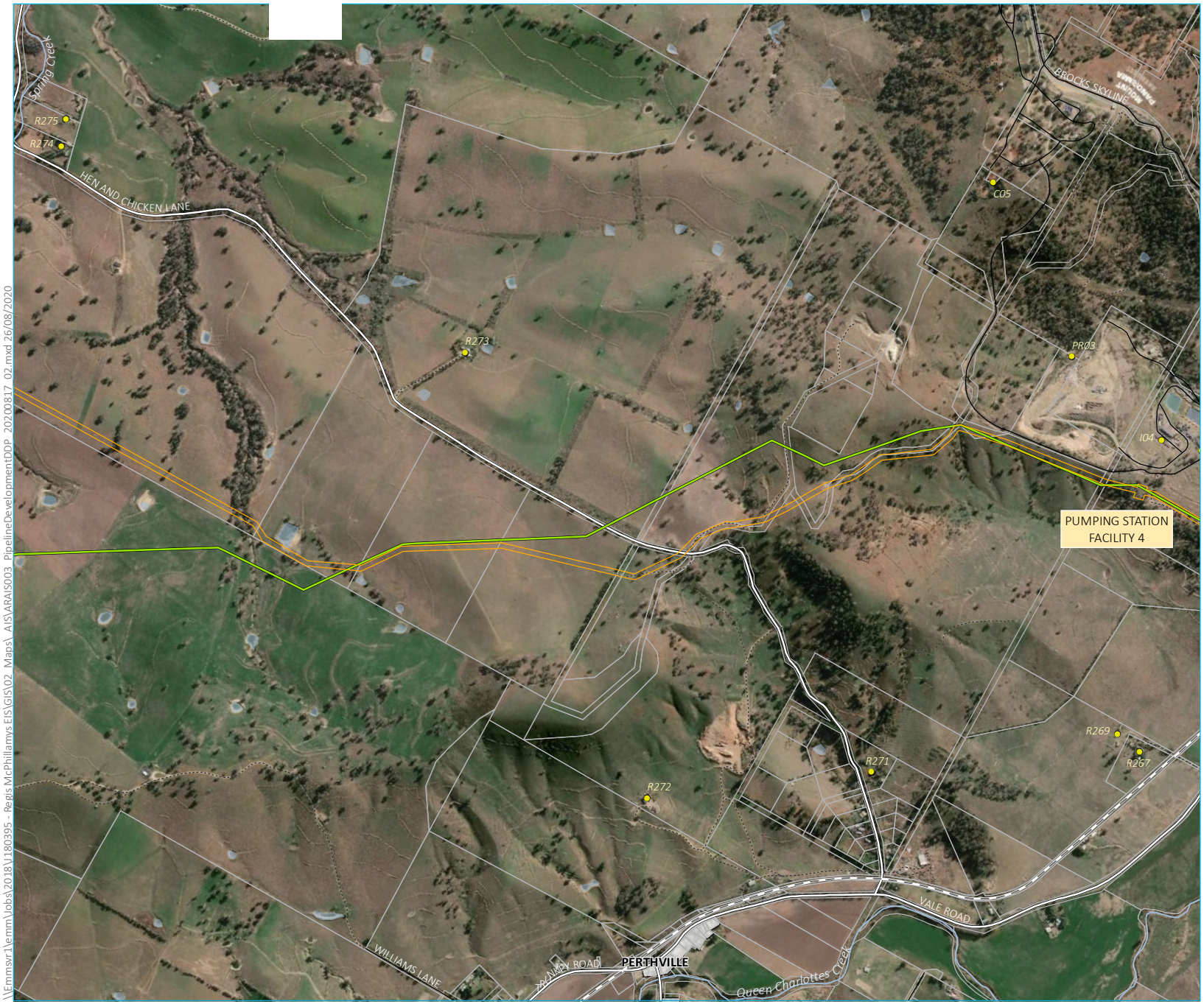
Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1n

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Sensitive receiver
- Rail line
- Major road
- Minor road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Built up area
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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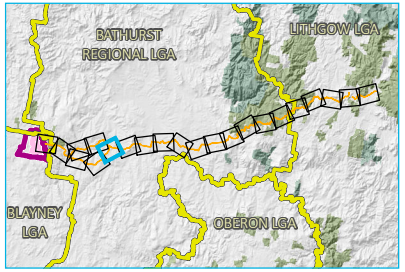
\\Emmsvr1\emm\Jobs\2018\V180395 - Regis McPhillamys EIS\GIS\02_Maps_AIS\ARA\S003_PipelineDevelopmentDDP_20200817_02.mxd 26/08/2020

Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1o

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Sensitive receiver
- Major road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option
- Northern option only
- Southern option only

\\Emmsvr1\emm\Jobs\2018\V180395 - Regis McPhillamys EIS\GIS\02_Maps_AIS\ARAISO03_PipelineDevelopmentDDP_20200817_02.mxd 26/08/2020

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

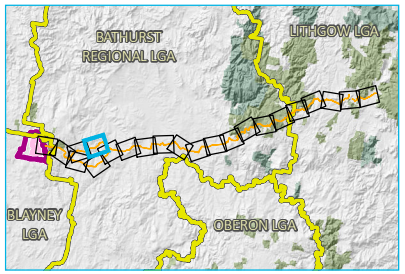
GDA 1994 NSW Lambert

Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement –
pipeline development
Figure A.1p

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Northern option only

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

N

Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1q

REGIS RESOURCES LTD

EMM creating opportunities

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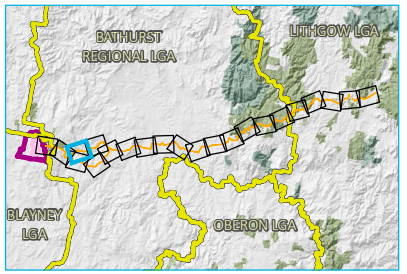

KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Northern option only
- Southern option only

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

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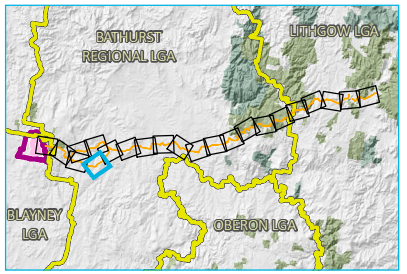
\\Emmsvr1\emm\Jobs\2018\J180395 - Regis McPhillamys EIS\GIS\02_Maps_AIS\ARAISO03_PipelineDevelopmentDDP_20200817_02.mxd 26/08/2020

Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1r

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Rail line
- Major road
- Vehicular track
- Gas pipeline
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Southern option only

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

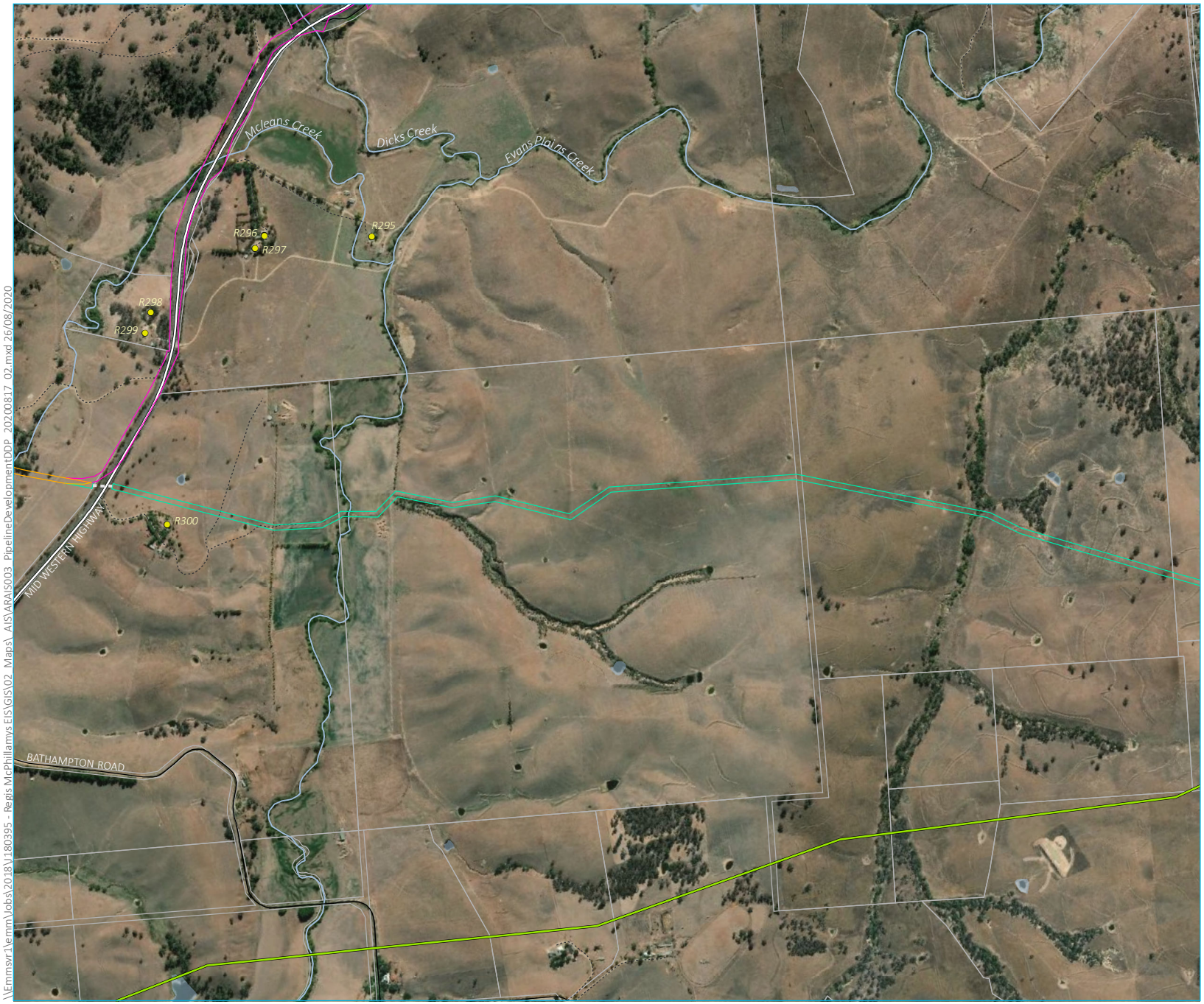
\\Emmsvr1\emm\Jobs\2018\I180395 - Regis McPhillamys EIS\GIS\02 Maps\ AIS\ARAIS003 PipelineDevelopmentDDP 20200817 02.mxd 26/08/2020

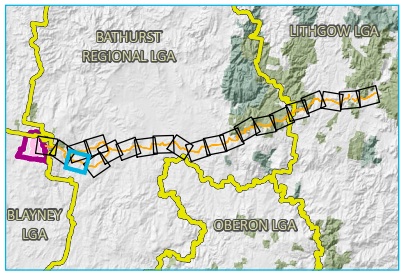
Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement –
pipeline development
Figure A.1s

REGIS RESOURCES LTD

EMM creating opportunities





KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Gas pipeline
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option
- Northern option only
- Southern option only
- Pipeline underbore section

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

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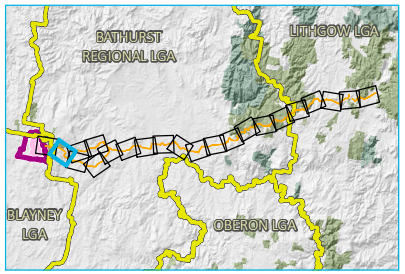
Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1t

REGIS RESOURCES LTD

EMM creating opportunities



KEY

- Sensitive receiver
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option
- Northern option only
- Southern option only
- Pipeline underbore section

\\Emmsvr1\emm\Jobs\2018\I180395 - Regis McPhillamys EIS\GIS\02_Maps_AIS\ARA\IS003_PipelineDevelopmentDDP_20200817_02.mxd 26/08/2020

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

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Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1u

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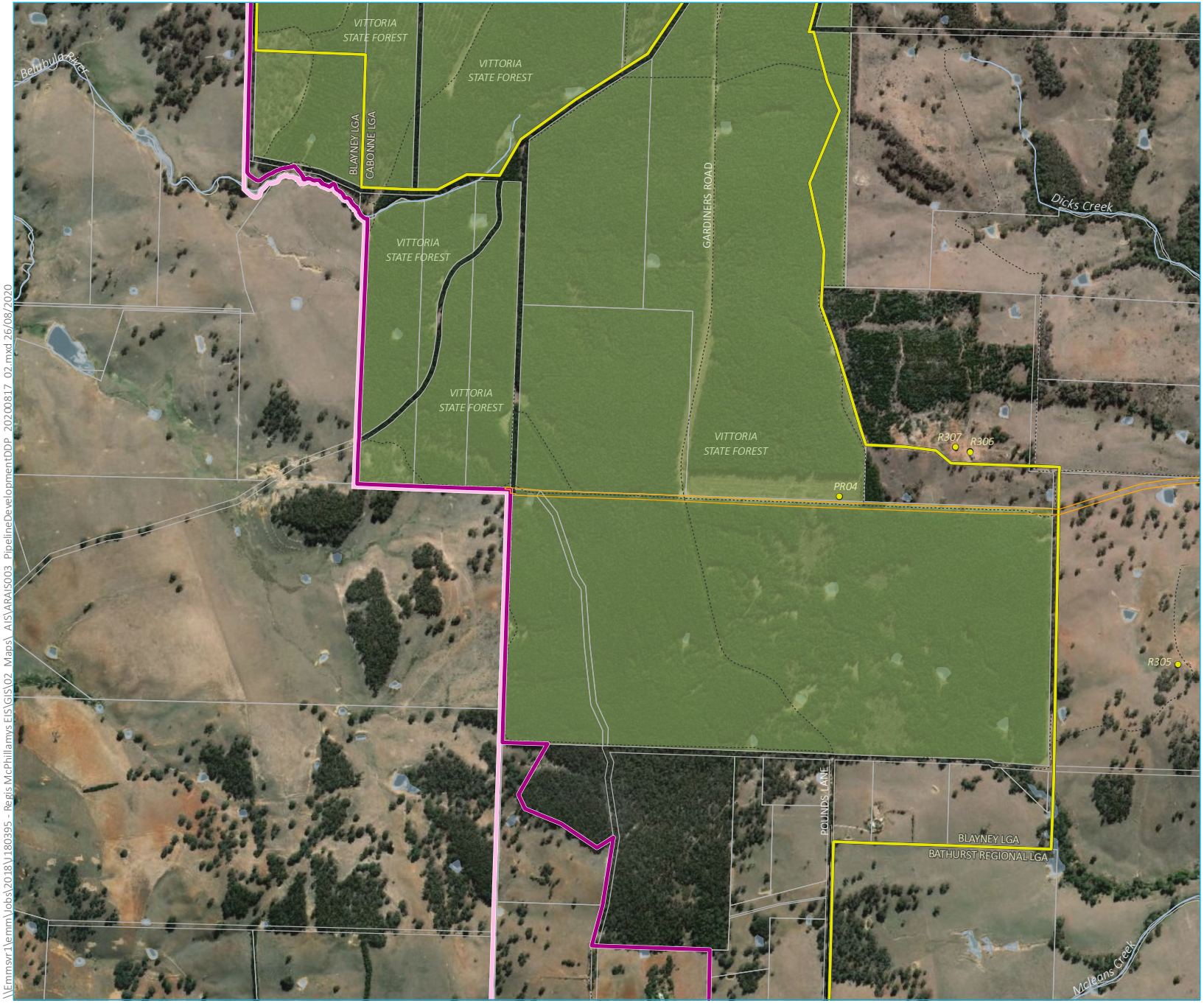
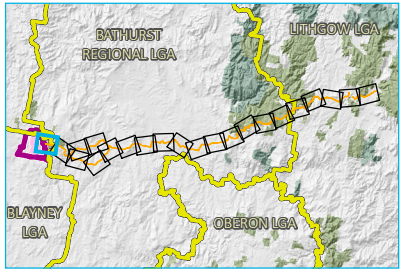
EMM creating opportunities





KEY

- Sensitive receiver
- Minor road
- Vehicular track
- Named watercourse
- Waterbody
- Cadastral boundary
- NPWS reserve
- State forest
- Local government area

Project application area

- Mine development project area
- Mining lease application area
  (Note: boundary offset for clarity)

Pipeline corridor

- Shared northern and southern option

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006); GA (2011)

0 0.5 1 km

GDA 1994 NSW Lambert

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Pipeline development overview

McPhillamys Gold Project
Agricultural impact statement – pipeline development
Figure A.1v

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