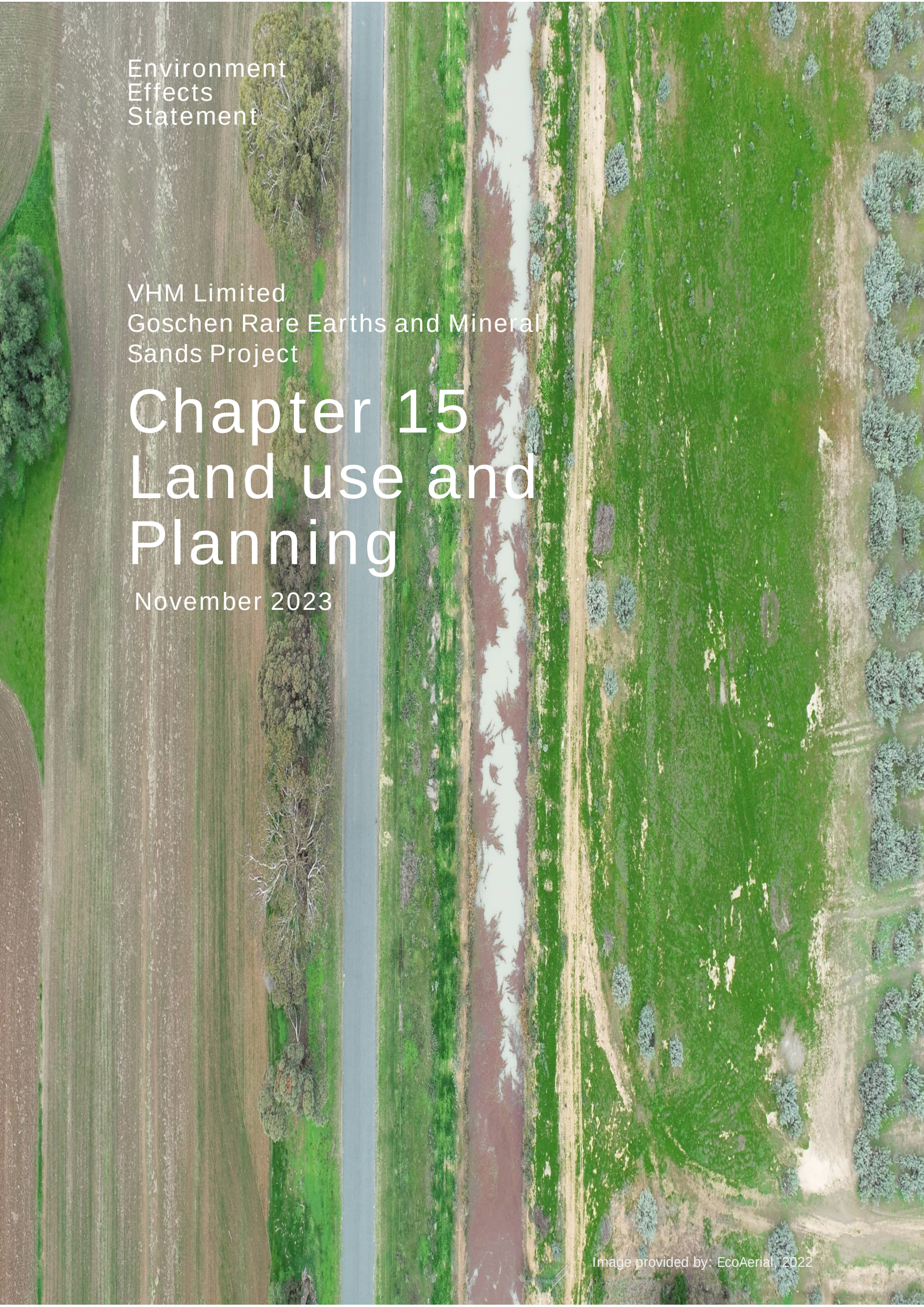
Environment
Effects
Statement

VHM Limited
Goschen Rare Earths and Mineral Sands Project

Chapter 15 Land use and Planning

November 2023



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15. Land use and planning

This chapter provides an assessment of the potential impacts to land use and planning associated with the construction and operation of the Goschen Rare Earths and Mineral Sands Project (the Project).

More detailed information is provided in EES Technical Report K: Land use Planning prepared in support of the Environment Effects Statement (EES).

Overview

Land use refers to the economic and cultural activities (for example, agricultural, residential, industrial, mining and recreational uses) that are undertaken at a given place. Generally, land use is regulated to avoid future and existing land use conflicts pursuant to the planning controls that apply to the land. Land use conflicts occur when a land use is perceived to infringe upon the rights, values or amenity of other surrounding land uses.

Project activities during the construction, operation, decommissioning, rehabilitation and closure phases have the potential to impact existing and future land uses or land use policies. These impacts can occur when a new or altered use or development, has an effect on the existing land use, form, function, amenity or appearance of its environment and/or the surrounding character of the area.

During construction, aspects of the Project that have been identified as potential land use impacts include:

- Land would be temporarily used in a manner that may interfere with established land management, land use practices and planning policies that apply to land within the Mining Study Area (MSA), Water Pipeline Study Area (WPSA) and Transport Study Area (TSA). Construction activities may result in:
  - Temporary land use change that is inconsistent with land use policy and/or conflict with established land uses.
  - The permanent loss of native vegetation within road reserves, contrary to established land use policies.
  - Impacts to land access and access routes of surrounding land uses as a result of increased construction traffic on surrounding roads and temporary road closures to facilitate road infrastructure upgrades.

There is the potential for temporary amenity impacts to occur, including increased dust and noise impacts, that would conflict with existing and reasonably foreseeable land use and policy within the MSA, WPSA and TSA.

During operation, aspects of the Project that have been identified as potential land use impacts include:

- The proposed siting and operation of the Project would result in the temporary loss of approximately 0.0045% of the total agricultural land within the municipality (land zoned FZ).
- The proposed siting and operation of the Project would result in land use and access impacts that are inconsistent with existing or reasonably foreseeable land uses and policy.
- It is possible that mine operations and associated pipeline infrastructure could result in amenity impacts including visual, noise, social, dust and vibration, that result in impacts to surrounding agricultural operations, recreational use of Kangaroo Lake and sensitive receptors.

There is also the potential during decommissioning and rehabilitation activities, for amenity impacts including visual, noise, social, dust and vibration, that have impacts to surrounding agricultural operations and sensitive receptors.

Relevant mitigation and monitoring measures are set out in other specialist technical studies as part of the Environmental Management Framework (EMF) and would be addressed through the implementation of a variety of regulatory documents and management plans including (but not limited to) a Work Plan, Incorporated Document, Construction Environment Management Plan, Transport Management Plan, Bushfire Management Plan (BMP), and Rehabilitation Environment Management Plan. The mitigation measures set out in the EMF includes one mitigation measure that is recommended by the land use assessment. Bushfire risk associated with the mine itself will be addressed through the Work Plan and a mitigation measure is proposed to address State and local policies relating to the Project's location within a Designated Bushfire Prone Area.

EES evaluation objective

The scoping requirements for the EES ('scoping requirements') by the Minister for Planning, set out the specific environmental matters the Project must address in order to satisfy the Victorian assessment and approval requirements.

The scoping requirements include a set of evaluation objectives. These objectives identify the desired outcomes to be achieved in managing the potential impacts of constructing and operating the Project in accordance with the Ministerial guidelines for assessment of environmental effects under the EE Act. The following evaluation objective is relevant to the Land Use and Planning Assessment:

To minimise potential adverse social and land use effects, including on agriculture and transport infrastructure.

The aspects from the scoping requirements relevant to the evaluation objective are shown in Table 1 of EES Technical Report K: Land use Planning.

15.1 Assessment Method

The land use and planning impact assessment as presented in EES Technical Report K: Land use Planning, involved the following key tasks:

- Establishment of a study area and characterisation of the existing environment.
- Review of the Project description, comprising the key Project components (including locations and form), proposed construction and operation activities (in the context of existing environment), decommissioning, rehabilitation and closure activities to determine the location, type, timing, intensity, duration and spatial distribution of potential Project interactions with sensitive receptors.
- An initial risk based analysis to evaluate the potential effects of proposed Project activities and their likelihood of occurring (considering initial mitigation measures) to determine the relative importance of environmental impacts associated with the Project and therefore prioritise issues for attention in the subsequent assessment of impacts. Initial mitigation measures would include measures that are common industry practice or required to meet legislation.
- An assessment of impacts that examines the severity, extent, and duration of the potential impacts and considers the sensitivity and significance of the affected receptors.
- Evaluation of predicted outcomes against benchmarks and criteria such as those described in applicable legislation, policy and standards.
- Evaluation of the potential for cumulative impacts (where relevant) caused by impacts of the Project in combination with impacts of other existing and proposed Projects that may have an overall significant impact on the same environmental asset.
- Identification of additional mitigation measures where necessary to address potentially significant environmental impacts.
- Evaluation and reporting of the residual environmental impacts including magnitude, duration and extent, taking into account the proposed mitigation measures and their likely effectiveness.

Based on the findings of the environmental assessments, an EMF has been prepared to monitor and control environmental performance during Project implementation. The EMF has specified the committed mitigation measures to avoid, minimise and manage impacts, proposed contingency measures and offset commitments, and describe the roles and responsibilities for implementation throughout Project construction, operation, decommissioning, rehabilitation and closure.

The specific methods adopted during the key steps are described in Section 6.0 of EES Technical Report K: Land use Planning.

15.2 Study area

The study area for the Land Use Impact Assessment (LUIA) has been divided into the Mining Study Area (MSA), Water Pipeline Study Area (WPSA) and Transport Study Area (TSA) to help assess the potential land use effects. A distinction has been made between the two areas as the extent of their potential land use impacts during construction, operation and rehabilitation differ significantly. A more detailed description is provided below:

- The MSA comprises the Project area and land within a five kilometre (km) radius of the Project area boundary. This area is considered appropriate as:
  - The construction, operation, decommissioning, rehabilitation and closure of the mining activities are expected to be consistent across the entire Project Area.
  - The rural context and large landholdings typical of the locality.
  - Beyond the study area, it is anticipated that the effect of the Project on land use and planning is likely to be negligible.
- The WPSA follows the two most likely options of the proposed water pipeline route and land within one km of these proposed routes. This area is considered appropriate as key land use impacts, which are expected to occur during the construction phase of the pipeline are anticipated to be more localised in nature and within the immediate vicinity of the pipeline. In considering the two options that the pipeline would follow, the impacts would not be dissimilar and were therefore considered together. Notwithstanding, the planning provisions to be introduced under the proposed Planning Scheme Amendment to allow the use and development of the water pipeline will only include the preferred pipeline route, not the alternative route option.
- The TSA follows the routes that have been identified for transportation of material to the intermodal terminal in Ultima and land within one km of the routes. The TSA is considered appropriate as key land use impacts are expected to be associated with roadworks during the construction phases of the project.

The extent of Study area for the land use planning impact assessment is illustrated in Figure 15-1.

15.3 Existing environment

15.3.1 Planning policies and guidelines

The relevant planning framework that informs Technical Report K: Land use Planning is outlined in Table 15-1 below.

Table 15-1 Planning Policies and Guidelines

Planning Framework	Where addressed
Planning Policy Framework (PPF) of Gannawarra Shire Council and Swan Hill Rural City Council	The Project, including the pipeline are proposed to be located within the Avoca Ward of Gannawarra Shire Council, just south of the municipality's boundary with Swan Hill Rural City Council. Road upgrades and transport routes are also proposed in the Rural City of Swan Hill. The following planning schemes have therefore been considered: • Gannawarra Planning Scheme (GP Scheme) which provides context for the LUIA and approval requirements associated with the water pipeline, road upgrades and associated works. • Swan Hill Planning Scheme (SHPS) which applies to land within the study area north of the proposed mine site and provides context for the LUIA and approval requirements for road upgrades and associated works. The PPF seeks to ensure that land use and development in Victoria meet the objectives of planning as set out in the *Planning and Environment Act 1987* (P&E Act). The PPF is set out in Clauses 10-19 of all planning schemes, is general in nature and informs Municipal Planning Strategy (MPS) specific to each municipality. The PPF clauses that are most relevant to the Project are: • Clause 11 (Settlement) • Clause 12 (Environmental Landscape Values)

Planning Framework	Where addressed
	• Clause 13 (Environmental Risks and Amenity) • Clause 14 (Natural Resource Management) • Clause 15 (Built Environment and Heritage) • Clause 17 (Economic Development) • Clause 18 (Transport) • Clause 19 (Infrastructure). More information is presented in Appendix C of EES Technical Report K: Land use Planning.
MPS of Gannawarra Shire Council and Swan Hill Rural City Council	The MPS is set out in Clause 2 of both the GP Scheme and SHPS. Gannawarra Planning Scheme The Gannawarra Shire MPS is a statement of key strategic planning, land use and development objectives for the municipality and provides an overview of Gannawarra Shire's regional context. Clause 02.02 sets out the vision for the municipality which is *building upon our strengths of people, place and pride to inspire a positive future together'* Clause 02.03 sets out the Strategic Directions of the MPS. The following are considered relevant: • Clause 02.03-2 (Environmental and landscape values) • Clause 02.03-3 (Environmental risks and amenity) • Clause 02.03-4 (Natural resource management) • Clause 02.03-5 (Built environment and heritage) • Clause 02.03-7 (Economic Development) • Clause 02.03-8 (Transport) • Clause 02.03-9 (Infrastructure) Swan Hill Planning Scheme The Swan Hill Rural City Council MPS sets out the municipality's key strategic planning statement, land use and development objectives and provides an overview of the municipality's context. Clause 02.02 sets out the land use and development vision for the municipality, which seeks to 'encourage new business development, provide support for business expansion and continuously seek to help existing businesses prosper' and implement policies that reduce environmental impacts and protect the environment'. Clause 02.03 sets out the Strategic Directions of the MPS. The following are considered relevant: • Clause 02.03-2 (Environmental and landscape values) • Clause 02.03-4 (Natural resource management) • Clause 02.03-5 (Built environment and heritage) • Clause 02.03-6 (Economic Development) • Clause 02.03-7 (Transport) • Clause 02.03-8 (Infrastructure) More information is presented in Appendix C of EES Technical Report K: Land use Planning.
Other strategic plans and land use plans	Other strategic and land use plans relevant to the Project include the following: • Critical Minerals Strategy 2022 • Victoria's Regional Statement 2015 • Loddon Mallee North Regional Growth Plan 2014 • State of Discovery: Mineral Resources Strategy 2018-2023 • Gannawarra Shire Council Economic Development Strategy 2019-2024 • Gannawarra Shire Council 2021-2025 Council Plan • Gannawarra, Taking up the Challenge, 2025 Swan Hill Community Vision and Council Plan 2021-2025. • Swan Hill Region Economic Development Strategy 2017-2022. These plans are summarised in Section 4.2 of EES Technical Report K: Land use Planning.

Planning Framework	Where addressed
Relevant zones and overlays	The mining areas (Areas 1 and 3) of the Project are situated entirely on land within the Farming Zone (FZ) under the provisions of the GP Scheme. The land use activity within Areas 1 and 3 can be characterised using the Clause 73.03 (Land Use Terms) of the GP Scheme as a "Mining" land use associated with the Earth and energy resources industry. Mining: *Land used for mining as defined in the Mineral Resources (Sustainable Development) Act 1990.* The Mineral Resources (Sustainable Development) Act 1990 (MRSD Act) provides the following definition: *Mining means extracting minerals from land for the purpose of producing them commercially, and includes processing and treating ore.* The proposed water pipeline is defined as a “utility Installation” under Clause 73.03 (Land use terms) of the GP Scheme and would extend over a large area. Road is not specifically defined in the planning schemes and has its ordinary meaning. Part of the water pipeline route and roadworks are situated within land zoned as Public Conservation and Resource Zone (PCRZ). Other zones and overlays relevant to the Project include: • Transport Zone 1 – State Transport Infrastructure (TRZ1) • Transport Zone 2 – Principal Road Network (TRZ2) • Township Zone (TZ) • Public Park and Recreation Zone (PPRZ) • Public Use Zone (PUZ – Service and Utility) • Environmental Significance Overlay • Environmental Audit Overlay • Specific Controls Overlay • Bushfire Management Overlay • Land Subject to Inundation Overlay • Rural Floodway Overlay • Vegetation Protection Overlay Zones and overlays under the SHPS that apply to the road upgrades and transport routes required for the Project include: • Transport Zone 2 – Principal Road Network • Farming Zone • Public Park and Recreation Zone • Bushfire Management Overlay • Vegetation Protection Overlay • Heritage Overlay (HO) An overview of these relevant zone and overlay provisions is presented in Section 4.1, Appendix A and Appendix C of EES Technical Report K: Land use Planning.
Particular Provisions of the Gannawarra Planning Scheme	Particular provisions of the Gannawarra Planning Scheme that relate to the Project include the following: • Clause 52.02 (Easements, Restrictions and Reserves) • Clause 52.05 (Signs) • Clause 52.06 (Car parking) • Clause 52.08 (Earth and Energy Resources Industry) • Clause 52.17 (Native Vegetation) These are discussed in detail in Section 14.0 and Appendix C of EES Technical Report K: Land use Planning.
Current strategic planning and future planning scheme amendments	There are no current planning permits or strategic planning and future planning scheme amendments of relevance. More information is presented in Section 4.3 of EES Technical Report K: Land use Planning.

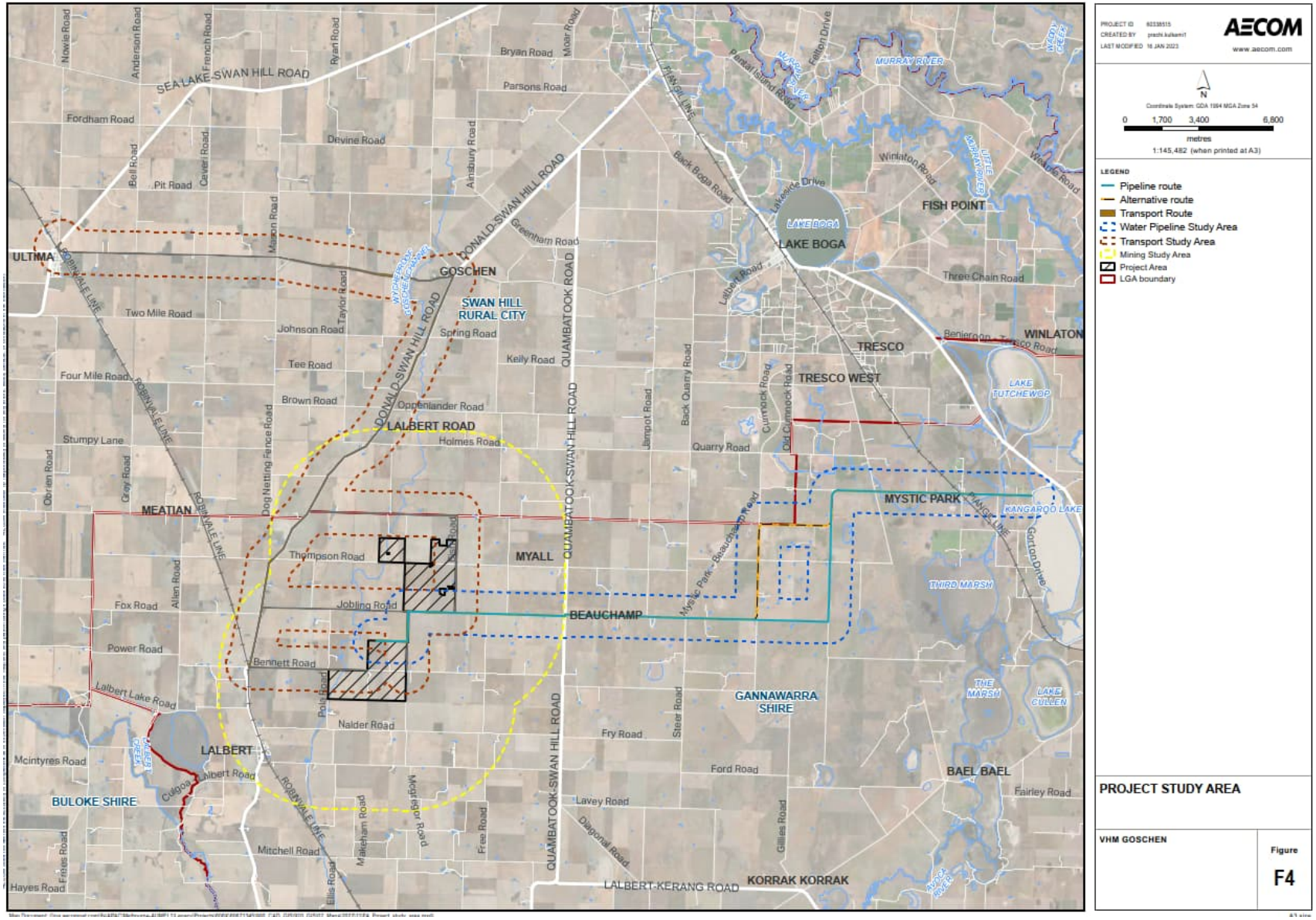

Figure 15-1 Land Use Planning Study Area

15.3.2 Regional Context

The Project is located within the Avoca Ward of Gannawarra Shire Council, just south of the municipality's boundary with Swan Hill Rural City Council. The proposed mine site is situated on the farmlands and paddocks between Donald-Swan Hill Road west of the site and Quambatook-Swan Hill Road east of the site. North of the site is Mystic Park-Meatian Road and south of the site is Nalder Road. The proposed water pipeline route options run entirely within the road reserve between the mine site and Kangaroo Lake.

The proposed water pipeline infrastructure would also be located entirely within Gannawarra Shire Council. The proposed water pipeline route options run entirely within the road reserve between the mine site and Kangaroo Lake. Materials mined from the site are proposed to be transported to an intermodal terminal in Ultima, which is situated within Swan Hill Rural City Council municipal area.

Gannawarra Shire Council has an area of 3,725 square kilometres and is located approximately 280 km northwest of Melbourne and 30 km south of Swan Hill. The municipality is located within the Loddon Mallee Region, in the northwest of Victoria. It borders New South Wales (NSW) along its north-eastern border and is surrounded by the municipalities of Swan Hill Rural City Council, Buloke Shire, Loddon Shire and Campaspe Shire. The municipality contains the regional centre of Kerang and the small towns of Murrabit, Mystic Park, Lake Charm, Lalbert, Quambatook, Macorna, Leitchville, Cohuna and Koondrook. The closest town to the mine site is Lalbert, which is approximately three km southwest. The water pipeline also runs through the town of Mystic Park.

Swan Hill Rural City Council covers 6,116 square kilometres and sits just north of the Gannawarra Shire Council. While the proposed Goschen mine and water supply pipeline fall within Gannawarra Shire Council, the study areas for land use planning, including some proposed road upgrades, extends into the municipality of Swan Hill Rural City. Towns of note located close to the Project are Swan Hill, Lake Boga and Ultima.

The populations of both Gannawarra Shire and Swan Hill Rural City Council have remained constant over the past 10 years. However, a review of key policy documents has made it evident that there is a consistent flow of people moving away from the smaller towns into the regional centres such as Kerang, Swan Hill and around the Lakes.

Topography

The Project area is characterised by a gently undulating topography, with small depressions in the landscape. The Cannie Ridge is located on the east side of the Project area, trending from north to south, and is the peak in the topography at 123.05 metres AHD. The lowest point is 53.04 metres AHD, which is characterised by Lake Lalbert, located four km from the Project area. There are no outstanding features located within or near the Project area.

Natural assets

Natural assets surrounding the Gannawarra Shire include the Murray River, Gunbower National Park and the Kerang Lakes. There are also several smaller creeks and waterways that feed wetlands and lagoons among the Redgum forests, Black Box swamps and floodplains. The Kerang lakes comprises 23 lakes, swamps and waterways of varying size, permanence, depth, salinity and vegetation type. They are a designated Ramsar wetlands and includes wetland types such as permanent open freshwater, deep freshwater marshes, tree-dominated wetlands, and permanent and semi-permanent saline wetlands. The wetlands are part of the Murray-Darling drainage basin and sit on the floodplains associated with the Murray, Avoca and Loddon Rivers.

The broader catchment is managed by the North Central Catchment Management Authority (NCCMA) and water volumes of many of the lakes are managed by GMW, which uses the lakes as part of the irrigation distribution system for the Torrumbarry Irrigation Area. The NCCMA and GMW work together on the management of a number of the lakes.

Kangaroo Lake is well known for fishing and water sports. The north end of the lake is popular for day visitors and contains a caravan park on the lake foreshore. Land to the south-west of the lake contains several residences and is also used for water sports, fishing and swimming. In addition to the Lake's recreational value, water from Kangaroo Lake is a key resource to surrounding agricultural land and many sections of its banks are characterised by water channel and pumping infrastructure that facilitates the distribution of water to agricultural land in the broader region. Agriculture is the largest source of employment in the region. Local municipal policies and strategies recognise that the outputs and means of farming are continually evolving in response to external influences such as market conditions, water access, drought and climate change. Policies therefore identify the need to use the land strategically to ensure continuous investment into the region.

Transport and access

The Murray Valley Highway and Loddon Valley Highway are the two major arterial roads that service the region from the south, west and north. Kerang acts as a confluence for many of the arterial roads servicing the region, including: The Murray Valley Highway, Kerang-Murrabit Road, Kerang-Koondrook Road, Loddon Valley Highway,

Boort-Kerang Road, and Kerang-Quambatook Road. Other arterial roads within the Gannawarra Shire municipality include Cohuna-Koondrook Road, Dumosa-Quambatook Road and Donald-Swan Hill Road.

The Bendigo regional passenger and freight rail line services the region, moving people and goods from Kerang to Swan Hill, Bendigo and Melbourne. There are three small airports within the region, the Swan Hill Airport, Kerang Airport and the Quambatook Airport. All airports service the private sector, small planes and emergency services.

Power Infrastructure

Power to the region is supplied by a 220kV transmission line, supplied to the Kerang Terminal Station located in Kerang. Several solar farms are located within the region, with more proposed due to the favourable conditions. Solar farms have been constructed for: Cohuna Solar Farm – 34MW capacity; and Gannawarra Solar Farm and Storage System - 60MW capacity and 25MW/50Mwh storage (with stage 2 of this Project to include another 300MW).

Mining

Both Gannawarra Shire Council and Swan Hill Rural City Council have several mining and quarry operations. Most of these are for smaller operations and some of the land that is covered by work authorities has not been developed. There is a mix of mines and quarries in the region extracting a variety of materials including clay, gravel, sand, mineral sands, gypsum and limestone.

Fire management

Broadacre farming faces increased risk of bushfire during droughts and heat waves. Crops and other flammable vegetation can be ignited by a variety of natural and man-made sources, from lightening to farming machinery and equipment. As a result of this risk, the Project area is situated within a designated bushfire prone area and there are small sections of the MSA and WPSA and TSA, that are heavily vegetated, are affected by the Bushfire Management Overlay. Bushfire is a significant risk to broadacre farming operations and regional communities. The risk of fire and bushfire is managed via local farming operations and supported by brigades at Goschen, Ultima, Lalbert, Beauchamp, Quambatook, Lake Charm and Kerang.

15.3.3 Land uses and typologies

The Study area has been divided into three areas, the MSA, WPSA and TSA, to help assess the potential adverse land use effects. A distinction has been made between the three areas as the extent of their potential land use impacts during construction, operation and rehabilitation differ significantly.

The sections below explore the existing environment within both study areas and the land use typologies summarised in Table 15-2.

Table 15-2 Land use typologies within the MSA and WPSA

Typology	Description
Agricultural	A range of production-based land uses focused around broadacre farming with associated infrastructure including farm dwellings.
Conservation and recreation	Areas of high policy and planning control protection reflecting a particular conservation or ecological significance.
Transport	Established road reserves and railway corridors.
Residential	Residential land uses typically comprise low density lots within established Township Zones
Service, utilities and infrastructure	Public land uses comprising community services and public infrastructure. Public land uses generally include local government services and public utilities.

Mine study area

The MSA stretches from the town of Goschen on its northern boundary past Lalbert on its southern boundary. The eastern boundary of the MSA stretches from Quambatook-Swan Hill Road to just past Donald-Swan Hill Road on its western boundary.

Most of the land within the MSA is within a Farming Zone. The existing land use for the majority of the MSA is generally broadacre farming consisting of dryland cropping and the production of wheat, barley, pulses, legumes,

sheep and lambs. These farms commonly consist of land that has been significantly modified or cleared for use as farming. VHM hold the rights to tenements across most of the study area.

There are several small expanses spread across the MSA zoned Public Conservation and Resource Zone (PCRZ). The land use within these zones consists of local Reserves, including: Talgitcha Bushland Reserve, White Gate Bushland Reserve, Magpie Tank Bushland Reserve, and Lalbert Recreation Reserve. The reserves contain land where the remnant bushland is protected, or the use is protected for public use. Given the highly vegetated nature of these sites, they are often covered by a Bushfire Management Overlay (BMO). The tenure of the reserves would usually be Crown land.

The town of Lalbert is located on the southwestern border of the MSA, the town is zoned Township Zone. Land use within the town includes residential properties, a grain silo, the Country Fire Authority (CFA), a train station, a post office, playgrounds, sports fields, a church, a service station, a pub, and a general store.

Located on the Lalbert-Kerang Road is an area zoned Public Use Zone, which is used for a water reserve and pumping station. The following disused water channels crossed the mine site: Main Connie Channel, Connie Branch Channel, Goschen High Level Channel and the Wycheproof Goschen Channel. The water channels and associated dams found crossing over the mine site are redundant and have been decommissioned.

Donald-Swan Hill road is the only arterial road within the study area. It is zoned Transport Zone 2 (TRZ2) and forms part of Victoria's Principal Road Network. Donald-Swan Hill Road is a sealed two-way carriageway with unsealed shoulders. It serves the small towns between Swan Hill and Donald. There are numerous other sealed and unsealed roads within the study area. There is also a train line that runs through the MSA which is zoned Transport Zone 1 (TRZ1) for State transport infrastructure. The train line within the TSA (west of the mine site) is a freight line servicing towns between Robinvale in the north and Bendigo.

Water pipeline study area

The WPSA follows the two most likely options of the proposed water supply pipeline route and land within 1 km of these proposed routes. This area is considered appropriate as key land use impacts are expected to occur during the construction phase of the Project and limited to direct land use and built form impacts within the immediate vicinity of the pipeline.

The location of the water pump station is proposed to sit on the northern edge of Kangaroo Lake, in a quiet enclave that is not used for boating activity. Kangaroo Lake is one of the largest freshwater lakes supplied by the Torrumbarry Irrigation System. The zoning of the location is a mix of FZ and PCRZ. There is also existing pump equipment at this site used to feed water into Channel No 4-7.

Mystic Park is located within the WPSA. The land use includes residential, a hotel, a pub, sports fields and a former train station (now closed). There are several roads, both sealed and unsealed which would intersect the pipeline. None of the roads are arterial routes. The WPSA also intersects the Swan-Hill Kerang railway line which is a passenger and freight rail line. The rail line is zoned TRZ1, State transport infrastructure.

The pipeline intersects with the following water channels: Main Connie Channel, Connie-Branch Channel, Talgitcha Channel, Karrack Channel, Channel No 4/7, Channel 2/4/7 and 3/4/7.

Transport study area

The TSA stretches from the mine site to Ultima and follows the proposed transport route. Key local access roads proposed to be used during construction and operation of the Project may require upgrades to facilitate safe movements of vehicles to and from the Mine Site. Road upgrades may include widening, re-surfacing, acceleration, deceleration and turning lanes and expanding intersections for increased turning circles. Appropriate signage and road marking would also be installed as required by the relevant road manager.

The provisions of the *Mineral Resources (Sustainable Development) Act 1990* (MRSD Act) do not extend to permit requirements associated with roadworks (including potentially native vegetation removal) that would be constructed outside of the proposed Mining Licence boundary.

The proposed transport route seeks to utilise the existing principal transport network as much as possible and includes road reserves within the TRZ2 and FZ:

- Sea Lake-Swan Hill Road, Ultima
- David Street, Ultima
- Lake Boga-Ultima Road, Ultima / Ultima East / Goschen
- Donald-Swan Hill Road, Goschen / Meatian / Lalbert
- Mystic Park-Meatian Road, Goschen / Meatian / Lalbert
- Jobling Road, Lalbert
- Bennett Road, Lalbert

- Shepherd Road, Lalbert
- Bish Road, Lalbert.

Except where the proposed transport route passes by Goschen and Clear Tank Bushland Reserves (both zoned PCRZ) and through Goschen and Ultima, the land use surrounding the transport route is generally characterised by broadacre farming and zoned FZ. Other zones that are also contained within the TSA include TRZ1, TRZ2, PCRZ, PUZ1 and TZ.

15.3.4 Land ownership and management

Mining area

The majority of land comprising the proposed mine site (Area 1 and Area 3) is freehold land and VHM has entered into contracts to purchase it.

However, the mine site also encompasses a number of local roads as well as two separate crown land parcels, namely:

- Crown allotment 61A Parish of Gnarwee (Volume 11737 Folio 712), which is a narrow ribbon of land within Area 1 on which the decommissioned Wycheproof Goschen channel is located. The Crown land administrator is listed on the Crown folio as the Secretary to DELWP but this function would now lie with the Secretary to DEECA. The address of the parcel is Pola Road, Lalbert.
- Crown allotment 9B Parish of Gnarwee (Volume 11737 Folio 708), which is a small parcel of land within Area 3 on which the GWM Water pump station is located. This land is administered by GWM Water. The address of the parcel is 513 Thompson Road, Lalbert.

VHM will need to obtain the consent of the relevant Crown land administrator before it can carry out any works on either of these Crown land parcels.

Area 1 includes a section of Bennett Road, whereas Area 3 includes a section of Thompson Road, and mining activities are proposed on both these sections of road. In addition, VHM will require exclusive access over the part of Thompson Road that links land within Area 3 (e.g. between Shepherd Road/CA 9A and CA 11A) and possibly the part of Shepherd Road that links Area 1 and Area 3 at various times over the life of the mine, together with a services corridor. These roads are all municipal roads managed by Gannawarra Shire Council. VHM intends to ask Gannawarra Shire Council to obstruct or temporarily close the required sections of the roads and grant tenure to VHM to allow it to carry out the proposed mining and infrastructure activities and provide the required access. Prior to commencement of any such activities and access, VHM and Gannawarra Shire Council would need to enter into an agreement that requires VHM to prepare an appropriate traffic management plan and reinstate the roads at the conclusion of relevant activities

Water pipeline alignment

The water pipeline alignment is proposed within local road reserves within Gannawarra. The legislation framework for road reserves is established under the *Road Management Act 2004* and Gannawarra Shire Council is responsible for the provision of maintenance of local roads infrastructure, including road reserves. Prior to approval of works in the road reserve, an agreement would be required to be entered into by VHM with the Council which may include inspection and maintenance requirements, and matters relating to public liability insurance. The water pipeline alignment may also cross or run parallel to other infrastructure (pipeline, irrigation, power etc.) in the road reserve.

Transport Route

The proposed transport route between the mine site and Ultima includes roads that are part of Victoria's principal transport network and managed by the DTP, as well as local roads managed by Gannawarra and Swan Hill Councils.

Kangaroo Lake

The following government bodies are responsible for management of Kangaroo Lake:

- Gannawarra Shire Council - manages a committee of management for the western and northern sides of the lake and is responsible for recreational activities such as boating, fishing and water skiing in accordance with the provisions of the Marine Safety Act 2010.
- NCCMA - responsible for the integrated planning and coordination of land, water and biodiversity management at Kangaroo Lake. The NCCMA is the responsible authority for works on waterway approvals

under the Water Act 1989 and is also required to advise on matters of flood mitigation and provide support to flood responses.

- DTP - the overarching land manager for land surrounding the lake. It is anticipated that a land agreement would need to be entered into by VHM for the pump station on the bank of Kangaroo Lake. Further consultation with DTP is required to determine the details of this land agreement.
- GMW - a statutory Corporation constituted by Ministerial Order under the provisions of the *Water Act 1989*. They manage 24 water storages that can hold approximately 11 million megalitres of water, including water storage at Kangaroo Lake. In addition, GMW are responsible for managing more than 100,000 hectares of public land surrounding the storages and responsible for providing approval for pump operation and water allocation.

15.3.5 Likely future development patterns

Over time the study area has seen a change in farming practices. Farmers have and continue to modify farming practices to ensure the best yield from their farms. Meetings with Gannawarra Shire Council and Swan Hill Rural City Council confirmed that there are no current planning scheme amendments or planning permits which would alter the future land use and development patterns around the Project.

15.3.6 Sensitive receptors

Sensitive receptors have been identified within the MSA and WPSA. The sensitive receptors include several rural residences surrounding the proposed mine and along the proposed pipeline route, water channels which the mine and pipeline intercept, Kangaroo Lake, and several reserves. Table 15-3 below summarises the distances to existing dwellings from the proposed mine and are identified specifically due to their proximity to future mining operations. Figure 15-2 shows the receptors location from both the MSA and WPSA. It should be noted that Receptor R14 is not considered a sensitive receptor as the property will not be occupied during any phase of the Project. Impacts predicted at this location would therefore be of little consequence. Furthermore, Receptor R9 will not be considered a sensitive receptor during the Project once operations commence in Area 3.

Table 15-3 Distances of dwellings from the mine boundary

ID	Description	Distance and Direction from the mine boundary (distance and direction)
R1	Residence	4.9km E (Area 3)
R2	Residence	3.2km E (Area 1)
R3	Residence	2.0km S (Area 1)
R4	Residence	5.0km NNE (Area 3)
R5	Residence	4.0km NNE (Area 3)
R6	Residence	4.0km NE (Area 3)
R7	Residence	1.6km NE (Area 3)
R8	Residence	2.3km NW (Area 3)
R9	Residence	0.0km (Area 3)
R10	Residence	3.0km WNW (Area 1)
R11	Residence	2.6km WNW (Area 1)
R12	Residence	1.0km S (Area 1)
R13	Residence	0.6km NW (Area 1)
R14	Residence	0.2km SW (Area 1)
R15	Residence	1.0km SW (Area 1)
R16	Residence	4.2km SWS (Area 1)
R17	Residence	3.1km SE (Area 1)
R18	Residence	4.3km N (Area 3)
R19	Residence	3.2km S (Area 1)

ID	Description	Distance and Direction from the mine boundary (distance and direction)
R20	Residence	3.2km S (Area 1)
R21	Residence	4.7km SE (Area 1)
R22	Residence	4.8km N (Area 3)
R23	Residence	4.6km SE (Area 1)
R24	Residence	4.8km SW (Area 1)

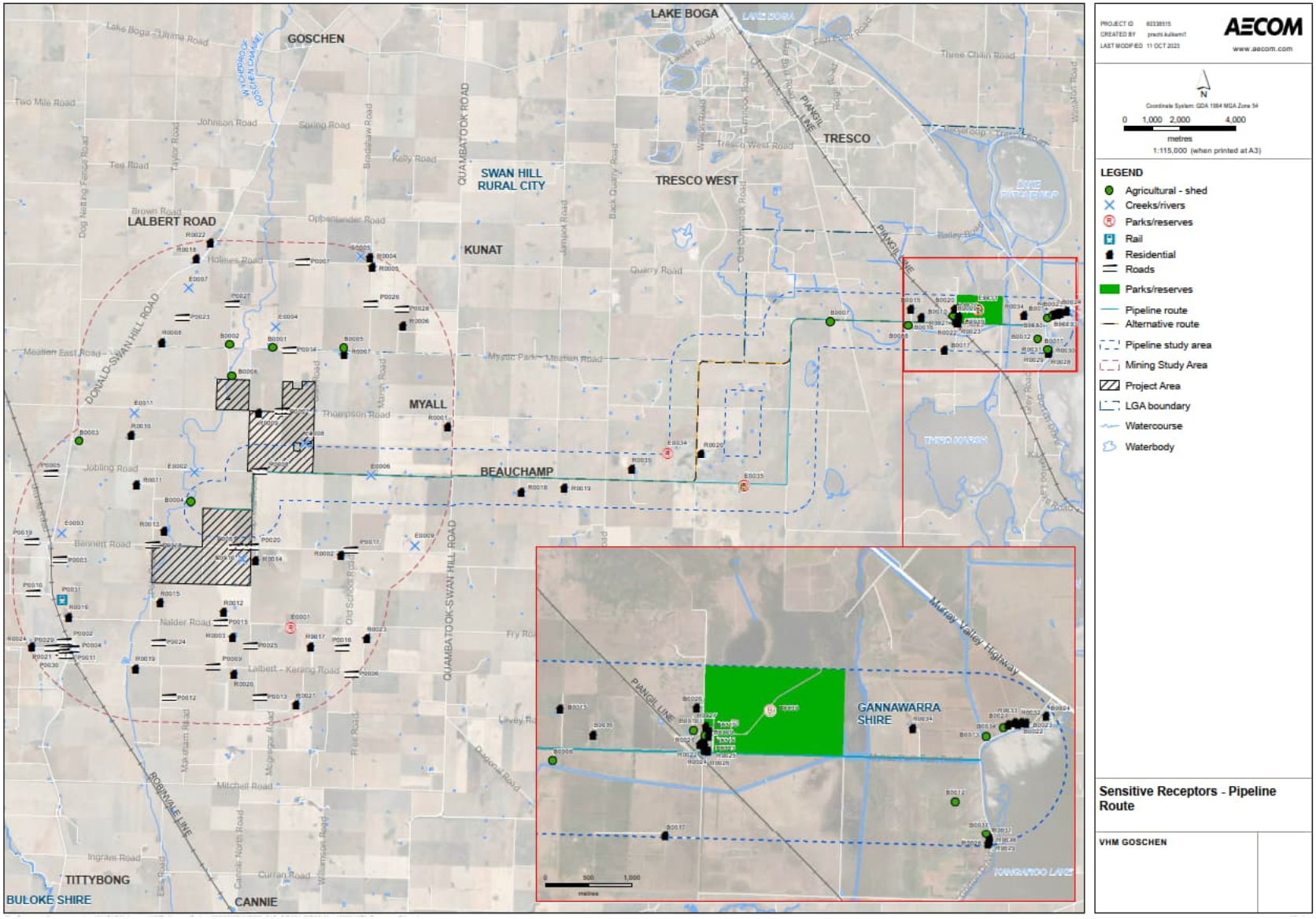

Figure 15-2 Sensitive receptors within the MSA and WPSA

15.4 Construction impact assessment

15.4.1 Temporary land use and access impacts

During periods of construction, land could be temporarily used in a manner that may interfere with established land management, land use practices and planning policies that apply to land within the MSA, WPSA and TSA. The proposed construction activities could result in temporary land use and access impacts that are inconsistent with existing or reasonably foreseeable land use and policy:

- Temporary land use change that is inconsistent with land use policy and/or conflict with established land uses, such as:
  - The temporary loss of agricultural land due to the construction footprint.
  - Temporary disruptions to existing infrastructure such as rail, roads, irrigation and water channels, and power lines.
  - An increased risk of fire due to increased use of construction plant and equipment.
- The permanent loss of native vegetation within road reserves, contrary to the following established land use policies:
  - Local policies in Clause 12.01-1L (Flora and fauna protection) of the GP Scheme which encourages development '*to retain and enhance roadside vegetation as wildlife corridor and repository for flora species'.*
  - Objectives of VPO1 which seek 'to protect and preserve indigenous vegetation and rare and endangered flora and fauna species on linear reserves'.
- Impacts to land access and access routes of surrounding land uses because of:
  - Increased construction traffic on roads surrounding the site.
  - Temporary road closures and/or restrictions to facilitate road infrastructure upgrades.

It is not anticipated that land use agreements associated with the construction of the water pipeline or road upgrades would result in permanent changes of land use as land use change would be limited to the duration of construction.

15.4.2 Temporary amenity impacts

During periods of construction, temporary amenity impacts may occur that would conflict with existing and reasonably foreseeable land use and policy within the MSA, WPSA and TSA. The proposed construction activities could result in temporary amenity impacts that are inconsistent with existing or reasonably foreseeable land use and policy. If not managed correctly, construction activities may result in:

- Unacceptable levels of dust, which could:
  - Impact sensitive land uses surrounding/on Kangaroo Lake.
  - Lead to a drop in crop yields, impact farming practices and use of land for agriculture.
- Noise and vibration impacts, which may have an impact on sensitive receptors within the MSA, WPSA or TSA.

15.5 Operation impact assessment

15.5.1 Land use and access impacts

Despite the Project strongly aligning with Commonwealth, State and local policy, the proposed siting and operation of the Project could result in land use and access impacts that are inconsistent with existing or reasonably foreseeable land uses and policy.

The proposed siting and operation of the Project would result in the temporary loss of approximately 0.0045% of the total agricultural land within the municipality (land zoned FZ) and the proposed siting and operation of the Project could result in the following land use and access impacts:

- A cumulative loss of agricultural land in the region, which would occur if there are multiple proposals approved to use agricultural land for non-farming purposes or permanent impacts to irrigation and water channel infrastructure.
- Impacts to landscape dominated by agricultural and farming land uses and more broadly, internationally recognised Ramsar wetlands and associated high-value natural features.
- Access issues resulting from increased mining traffic impacting the condition of the local road network and creating congestion and delays to the transportation of agricultural goods. This impact would be more apparent during sowing and cropping seasons, when large trucks and semi-trailers transport agricultural produce to distribution centres in the region.
- Changes to flood patterns as a result of pump station infrastructure displacing surface water during episodes of flooding.
- An increased risk of fire associated with operation of the mine and pump station infrastructure.

15.5.2 Amenity impacts

The proposed siting and operation of the Project could result in amenity impacts that are inconsistent with existing or reasonably foreseeable land uses and policy.

Land use conflicts occur when a land use is perceived to infringe upon the rights, values or amenity of other surrounding land uses. In rural areas, amenity issues are the most common land use conflict. Rural amenity issues include impacts that affect the use and enjoyment of neighbouring land, including air quality, noise, traffic, and visual amenity. Direct impacts from neighbouring land uses in a rural setting can also cause conflict such as soil erosion, visual impact as a result of the clearing of native vegetation or new infrastructure, restricting access to waterways, and changes in stormwater flows or water availability.

State planning policy sets out broad principles for use and development. This includes consideration of encroachment and land use compatibility. Clause 13.07-1S (Land use compatibility) of the PPF, aims to protect community amenity, human health and safety while facilitating appropriate commercial, industrial, or other uses with potential adverse off-site impacts.

The Project has the potential to result in two land use compatibility impacts:

- Amenity impacts generated by the location and operation of the Project adjacent to existing or newly established land uses, particularly sensitive uses, and rural land for productive rural activities.
- Reverse amenity impacts due to the encroachment of sensitive uses into the 'buffer' around the Project area which may impact or restrict Project construction or operations in order to mitigate the impacts at the source. These additional or unforeseen mitigation measures may place unreasonable constraints on the ongoing operation of the Project.

Mine operations and associated pipeline infrastructure may result in amenity impacts including visual, noise, social, dust and vibration, that result in impacts to surrounding agricultural operations, recreational use of Kangaroo Lake and sensitive receptors.

15.6 Decommissioning and rehabilitation impact assessment

The proposed decommissioning and rehabilitation activities could result in land use, access and amenity impacts that are inconsistent with existing or reasonably foreseeable land uses and policy.

Decommissioning and rehabilitation activities could result in amenity impacts including visual, noise, social, dust and vibration, that have impacts to surrounding agricultural operations and sensitive receptors. Furthermore, poor rehabilitation of the mine could result in soil contamination and radiation levels that make the Project area and surrounding land inappropriate for use in accordance with existing or future land use policy.

Permanent loss of agricultural land may have a significant impact for landowners of the site and adjacent properties but would only result in a total loss of 0.0045% of the total agricultural land for the municipality (land zoned FZ), which is a small loss to the region.

Ensuring that the loss of agricultural land is temporary and limited to the duration of the mine's operation is important to minimising land use impacts. Potential impacts to land use and amenity would be appropriately managed through the Rehabilitation Plan.

15.7 Residual impacts

Residual impacts are those that remain once mitigation and management measures have been implemented. This section describes potential residual impacts once mitigation and management measures have been considered and applied.

By implementing mitigation measures set out in the EMF as presented in EES Chapter 21, the severity, extent and magnitude of impacts to land use resulting from construction, operation, decommissioning and rehabilitation activities would only be temporary in nature. Specifically, the mitigation measures would provide pathways to ensure that residual impacts are avoided, minimised and, in the instance that they do arise, can be quickly addressed so that any land use impacts are temporary. For example, implementation of the Traffic Management Plan (TMP) in accordance with mitigation measures set out in the EMF would ensure proposed road closures and roadworks consult with potentially affected users prior to the works, seek to avoid and minimise land use impacts associated with the road closures and provide solutions to ensure that residual impacts are temporary.

Implementation of a BMP in consultation with the CFA would help to ensure that potential fire risks are considered in advance, with solutions seeking to avoid fires and ensure they can be quickly extinguished to protect life and land use.

The residual impacts on flora and native vegetation indicate a loss of 14.36 hectares of native vegetation, including 568 large trees. In accordance with Victoria's Guidelines for the removal, destruction or lopping of native vegetation, the offset target for the proposed removal of native vegetation for this project totals 4.819 general habitat units (GHU) plus 568 large trees (mallee trees), in an area with a strategic biodiversity value score of at least 0.179 in the North Central CMA region and/or Gannawarra Shire. Available offset credit options were found as part of the flora ecology impact assessment and are detailed in Technical Report A – Flora Ecology.

The implementation of mitigation measures relating to air quality, noise pollution and vibration through the requirements of the EMF during construction would minimise amenity impacts to surrounding land use and provide a pathway to ensure that their impacts are temporary. For example, compliance with mitigation measures set out in the EMF for both construction and operation relating to dust suppression would ensure that impacts to air quality would be appropriately managed and provide a pathway to ensure that where impacts do occur, they are temporary in nature.

Although there would be an initial loss of land that contains high value native vegetation, mitigation measures would reduce the extent of loss and requires measures for rehabilitation in accordance with relevant planning policy.

The implementation of mitigation measures set out in the EMF in relation to rehabilitation would ensure that there is no permanent loss of agriculture and appropriately manage any identified soil contamination or amenity impacts associated with decommissioning and rehabilitation such as noise and dust.

15.8 Mitigation and monitoring measures

The land use planning impacts identified during this assessment would be addressed through mitigation measures identified by specialist technical studies set out in the EMF. The mitigation measures set out in the EMF includes one mitigation measure that is recommended by the land use assessment. Bushfire risk associated with the mine itself will be addressed through the Work Plan and a mitigation measure shown in Table 15-4 below is proposed to address State and local policies relating to the Project's location within a Designated Bushfire Prone Area.

Table 15-4 Distances of dwellings from the mine boundary

Measure ID	Mitigation Measure	Project Phase
MM-LU01	Bushfire Management Plan A Fire Management Plan must be prepared to ensure that construction outside of the mining licence area is undertaken safely and any infrastructure maintained in consultation with the relevant authorities such as the Country Fire Authority and relevant asset owners.	All phases

It is anticipated that the mitigation measures of the EMF as detailed in EES Chapter 21 would be implemented through regulatory documents and management plans such as a Work Plan and the EMP as set out in the Incorporated Document.

The Incorporated Document provides a draft condition that requires the EMP to include *environmental mitigation measures which set the environmental outcomes that must be achieved during the design, construction, operation and rehabilitation of the Project, informed by the findings and conclusions of the EES and environmental risk assessment*.

There are no specific land use planning monitoring measures proposed to mitigate potential land use planning impacts. Relevant monitoring measures are set out in other specialist technical studies identified in the EMF. It is anticipated that these measures would be implemented through the combination of management procedures within the Work Plan and under the EMP (as required by the Incorporated Document). Furthermore, the Incorporated Document provides a condition that requires the EMP to include:

Performance monitoring and reporting processes, including auditing to ensure environmental and amenity effects are managed in accordance with mitigation measures during construction and operation of infrastructure works required to support the Project on land outside the area subject to the mining licence.

The relevant technical assessment reports in support of the EES are considered to provide sufficient mitigation and monitoring measures to appropriately reduce the potential for amenity impacts caused by the Project.

15.9 Conclusion

Based on the assessment of land use impacts, this assessment concludes, on balance, that the Project is consistent with and is supported by State and local planning policies. In particular, policy supports appropriate use of natural resources and the associated economic and social benefits.

The assessment found that the Project is consistent with the long-term vision for growth and land use planning in the broader region and that provided all amenity management and mitigation controls identified in the EES are implemented and monitored, the Project would not result in unacceptable or long term land use planning impacts.