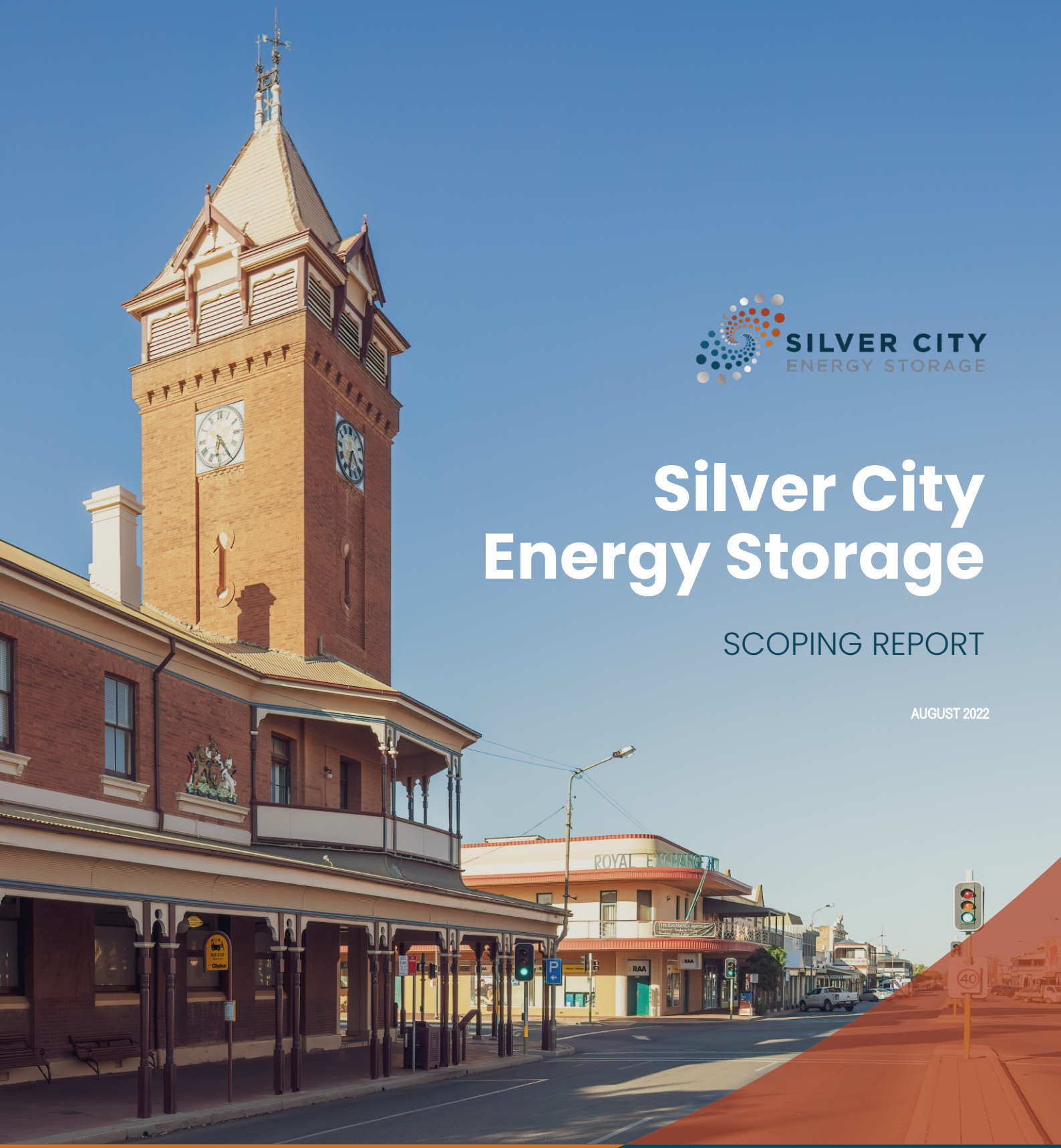

SILVER CITY
ENERGY STORAGE

Silver City Energy Storage

SCOPING REPORT

AUGUST 2022

energy estate

HYDROSTOR

umwelt
Environmental & Social Consultants

SILVER CITY ENERGY STORAGE FACILITY

Scoping Report

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
A-CAES NSW Pty Ltd

Project Director:	John Merrell
Project Manager:	Penelope Williams
Report No.	21982/R01
Date:	August 2022

Environmental & Social Consultants

This report was prepared using Umwelt's ISO 9001 certified Quality Management System.

Acknowledgement of Country

Umwelt and A-CAES NSW Pty Ltd would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
Final	John Merrell	02/08/22	John Merrell	02/08/22

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1.0 Introduction

A-CAES NSW Pty Ltd., as a joint venture between Energy Estate Pty Ltd and Hydrostor Australia Holdings Pty Ltd, are proposing the Silver City Energy Storage (SCES) Project (the Project) which uses Hydrostor's proprietary advanced compressed air energy storage (A-CAES) technology to provide large-scale long duration energy storage for Broken Hill and the wider NSW region.

A-CAES technology uses energy from the gird when it is plentiful to compress air from the atmosphere and recovers and stores the heat of compression while injecting the compressed air into an underground cavern. The air remains in the cavern, sealed under pressure from the water in the reservoir. When needed to generate electricity, the compressed air stored in the cavern is then released and combined with the stored heat recovered from the compression process and discharged through an air turbine which generates the required electricity. The technology is designed to provide a long-term clean energy storage solution that does not use fossil fuels or hazardous materials.

The SCES Facility is proposed to be co-located on the Potosi Mine site approximately 3 kilometres (km) northeast of Broken Hill providing for another valuable use for this current mining land. The Project also includes a proposed 220kV electricity transmission line which is approximately 16 km long around the southern boundary of the City of Broken Hill to connect to an existing Transgrid substation to the southwest of the city. The Project Area encompasses all aspects of the Project (refer to **Figure 1.1**).

The NSW Governments Electricity Strategy and Electricity Infrastructure Roadmap (Electricity Strategy) identifies Broken Hill and the surrounding region as suitable for both solar and wind energy production zones. These renewable energy zones are intended to provide a vital role in delivering affordable, reliable energy to help replace the State's existing power stations as they come to their scheduled end of operational life. Over 250 MW of variable renewable energy generation, which has connected to the grid in the Broken Hill area in recent years, is currently being curtailed and subject to significant revenue reductions as a result of local electricity network reliability issues. Broken Hill is also currently supported by two back-up diesel fired turbines which operate during both planned and un-planned outages. These diesel fired turbines are approaching the end of their operational life.

Transgrid has sought to address energy reliability supply issues to Broken Hill through the Regulatory Investment Test for Transmission (RIT-T) process. In the report issued May 26, 2022 Transgrid identified the project as the best option for addressing the RIT-T issue in Broken Hill. The summary report identified the Project as the preferred approach to addressing the current reliability issues through providing the lowest cost reliability options, significantly enhancing system strength and network operation, while transitioning to a renewable resource. The Project will replace the existing diesel fired turbines and also enable greater renewable energy connection improving the economics of renewable energy development and encouraging future renewable energy projects in the region.

The Project was also selected as one of only six projects in the Pre-investment study category of the NSW Emerging Energy Program (EEP). The project has received funding from the EEP as well as private investment and is supported by the Australian Renewable Energy Agency (ARENA).

The SCES facility includes the construction of an approximately 300 ML water reservoir and approximately 250,000 cubic metre underground cavern approximately 600 m below the surface with air and water shafts that will connect the cavern to the topside infrastructure. The geology of the Potosi Mine site is well

understood and preliminary geotechnical investigations indicate the geological conditions are suited to the Project. The existing Potosi underground entrance and underground workings will be utilised to provide access to the proposed underground cavern reducing the level of excavation required.

The Project will provide peak power of 200 MW and approximately 1600 MWhr of energy storage capacity. Through consultation with TransGrid a reserve capacity of 50MW will be built into the system, able to deliver 6 hours of uninterrupted dispatchable power, available at all times, to address reliability issues at Broken Hill. The Project will also dispatch energy into the National Energy Market (NEM).

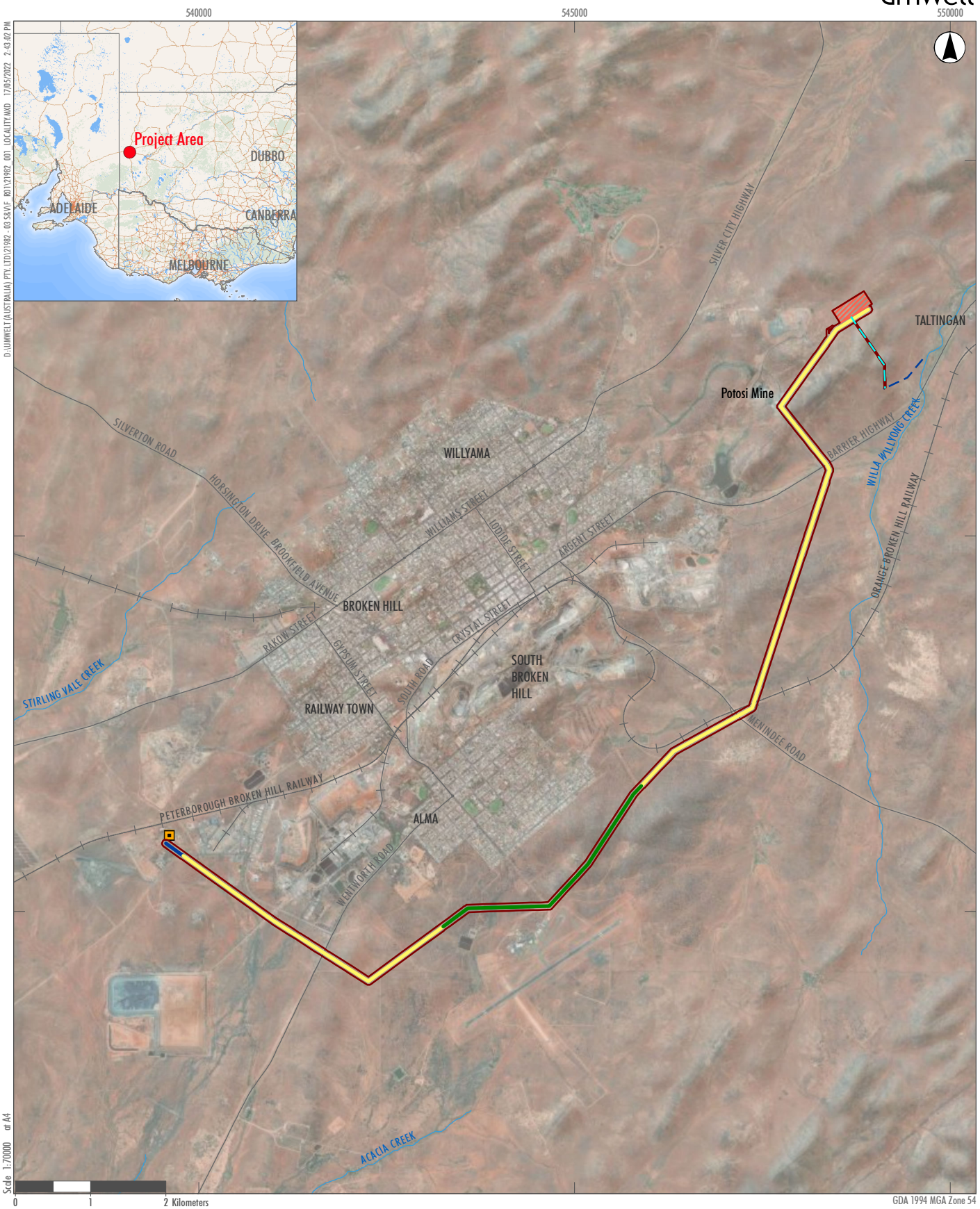
The Project will be co-located on the Potosi Mine site and while the Project will interact with the existing mining operations, no change is proposed to any existing development consents applicable to the existing mining operation as part of the Project. All associated excavation works to establish the underground cavern will be undertaken as part of this Project. The Project will benefit from a long-term land agreement with Perilya which will cover the full operational life. This agreement will also cover the use of mining machinery and personnel to construct the Project.

As the Project is for the purpose of electricity generating works with a capital investment of more than $30 million it is therefore classified as State Significant Development (SSD) as defined under State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP) and will require development consent under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 Project Objectives

The objectives of the Project are to:

- provide a cost-effective, clean, reliable, long term energy storage solution to the Broken Hill and broader NSW Region
- provide a clean energy replacement option to the existing diesel fired combustion turbine backup system which is approaching the end of its operational life
- enable greater renewable energy connection and improve the economics of renewable energy development, encouraging future renewable energy projects in the region
- reduce disturbance associated with the development of the Project through siting within an existing mine site and utilisation of existing infrastructure and excavation areas
- provide both direct and in-direct employment and economic benefits through the use of local and regional goods and services, associated with the construction and operations phase
- provide significant revenue to the local Broken Hill community as well as the broader NSW Region.
- maintain positive long-term relationships with all stakeholders.



Legend

- Project Area
- Silver City Energy Storage Facility
- Transgrid Substation
- In ground power line with 20m easement, buried cable
- Overhead power line 20-25m high with 25m easement, monopoles
- Overhead power line 40-48m high with 50m easement, monopoles or steel towers
- Existing Stephens Creek Reservoir Water Pipeline (above ground section)
- Proposed Above Ground Water Pipeline
- Road
- Drainage Line
- Railway Line

FIGURE 1.1

Project Locality

Image Source: Nearmap (Oct 2021) Data source: DSFI (2021)

1.2 The Proponent

A-CAES NSW Pty Ltd is a joint venture between Energy Estate and Hydrostor Australia Holdings Pty Ltd.

Energy Estate is an Australian based company focused on accelerating the transformation of the global energy sector. Energy Estate has accelerated over 15GW of solar, wind, storage and hydrogen projects across Australia, NZ and Middle East/North Africa. Energy Estate has offices in Sydney, Canberra and Adelaide.

Hydrostor is the world's leading renewable energy developer specialising in large-scale compressed air energy storage facilities. Hydrostor is a private company founded in 2010 in Toronto, Canada and has developed the A-CAES technology that forms the basis of the Project. Large A-CAES projects are currently being developed across Australia and in the USA, United Kingdom, Canada and Chile.

Table 1.1 presents the key details of the Proponent.

Table 1.1 Proponent details

Requirement	Details
Full Name/s	A-CAES NSW Pty Ltd
Postal Address	Level 11 Constitution Avenue, Canberra ACT 2603
ABN	86 644 102 858
Nominated Contact	Dean A. Comand

1.3 Purpose of this Document

As a SSD project, an Environmental Impact Statement (EIS) will be prepared to accompany the development application for the Project. This Scoping Report has been prepared to provide a description of the Project to key regulatory agencies and to identify the key environmental and social matters of relevance to the Project to inform the preparation of the Secretary's Environmental Assessment Requirements (SEARs) for the EIS. The SEARs will identify specific assessment considerations relevant to the Project that must be addressed in the EIS.

1.4 Structure of this Report

This document has been prepared in consideration of the following guidelines:

- *State significant development guidelines – preparing a scoping report* (Appendix A to the state significant development guidelines), July 2021 (DPIE, 2021) and referred to hereafter as the DPE Scoping Guideline
- Social Impact Assessment Guideline for State Significant Projects, July 2021 (DPIE, 2021).

This report has the following sections:

- **Section 1.0** introduces the Project, the Proponent and provides an outline of the structure of the document.

- **Section 2.0** outlines the strategic context for the Project, including the justification for the Project, a summary of the locality in which the Project is undertaken and an overview of the environmental and social context.
- **Section 3.0** contains a description of the Project, including an overview of alternatives considered.
- **Section 4.0** summarises the relevant State and Commonwealth statutory context applicable to the approval process for the Project.
- **Section 5.0** describes the stakeholder engagement program for the Project and identifies the environmental and social matters identified during the scoping phase for further consideration in the EIS.
- **Section 6.0** contains an analysis of the environmental and social matters relevant to the Project and the assessments proposed to be completed as part of the EIS.
- **Section 7.0** provides a reference list.

2.0 Strategic Context

2.1 Project Justification

The development of renewable energy projects and supporting infrastructure aligns with both Commonwealth and NSW commitments to increase renewable energy generation and reduce carbon emissions across the NSW and Australian economies.

The project will operate as a vital stand-alone reliability solution for the electricity grid and Broken Hill that is both cost effective and scalable. Improving the energy supply security for the Broken Hill community and the industry within and surrounding Broken Hill is a high priority need and a significant benefit of the Project. The Project will also enhance the economics of both existing and future renewable energy projects in the region, as well as encourage the expansion and use of renewable energy into the future.

The project will play a key role in minimising power costs and reducing carbon intensity, both in Broken Hill and the wider NSW, responding to city, state and federal targets for Net Zero.

The Project will provide significant investment in the local and regional economy through the construction and operation phase and benefits to local and regional supply chains. Providing approximately $1 billion in investment over the 50-year project life and generation of approximately 750 direct and indirect jobs during the construction and 40 enduring jobs during the operations phase. Further details regarding Project benefits are provided in **Section 2.2**.

2.2 Strategic and Regional Context

2.2.1 Commonwealth Policy

Australia is one of the 192 countries from around the world signed to the international climate change agreement (The Paris Agreement). The Paris Agreement aims to:

- hold the increase in the global average temperature to below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels
- increase the ability (of nations) to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production
- make finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development.

The Paris Agreement seeks to meet its objectives by developing programs and mechanisms that:

- require participating Parties to prepare and communicate greenhouse gas mitigation contributions. Parties were expected to set mitigation targets for 2020, and then develop new targets every five years. Each successive target is expected to represent a larger mitigation effort than the previous target
- promote climate change resilience and adaptation

- provide mitigation and adaptation funding to developing countries
- foster mitigation and adaptation technology transfer between Parties
- require participating Parties to report progress towards their mitigation contributions on an annual basis.

Australia signed The Paris Agreement on 22 April 2016. The obligations under The Paris Agreement are driving national greenhouse gas policy between 2020 and 2030. Australia's commitment to The Paris Agreement includes reducing greenhouse gas emissions by 26% to 28% on 2005 levels by 2030 (Commonwealth of Australia, 2021). Australia's Nationally Determined Contribution (NDC) prescribes an unconditional economy-wide target to reduce greenhouse gas emissions, and states that future policies will target emissions generated from energy use, industrial processes, agriculture, land-use, land-use change and forestry and waste.

The Project will support Australia's greenhouse gas emission reduction targets through providing a clean energy back up system to Broken Hill as well as encouraging future renewable energy projects and reducing emissions from energy production in NSW.

2.2.2 NSW Policy

NSW Climate Change Policy Framework

The NSW Government has developed its NSW Climate Change Policy Framework, which aims to deliver net zero emissions by 2050, and a State that is more resilient and responsive to climate change (NSW Government, 2016).

Under the NSW Climate Change Policy Framework, NSW has committed to both follow the Paris Agreement and to work to complement national action.

The policy framework is being delivered through:

- the Climate Change Fund
- developing an economic appraisal methodology to value greenhouse gas emissions mitigation
- embedding climate change mitigation and adaptation across government operations
- building on NSW's expansion of renewable energy
- developing action plans and strategies.

In 2013 the NSW Government released the Renewable Energy Action Plan (REAP) and the NSW Energy Efficiency Action Plan (EEAP).

The REAP aimed to increase the generation, storage and use of renewable energy in NSW, at least cost to customers and with maximum benefits to NSW. The three core goals of the REAP were to attract renewable energy investment, build community support for renewable energy and attract and grow expertise in renewable energy. Based on the implementation of the REAP, renewable energy is now well-placed to play a leading role in meeting NSW's energy needs into the future.

NSW Electricity Strategy and Electricity Infrastructure Roadmap

Current and future electricity development in NSW is supported though the NSW Government's Electricity Strategy (NSW Government, 2020a) and the NSW Electricity Infrastructure Roadmap which builds on the framework set out in the Electricity Strategy taking an integrated approach to all demand and supply options, including action by households and small businesses, demand management and investment in large-scale, affordable and reliable generation. The Project is consistent with the objectives of the Electricity Strategy and Infrastructure Road Map, in aiming to provide a large-scale reliability solution and electricity generation that is cost effective and emission free.

Broken Hill and the surrounding region have been identified as a significant solar and wind resource, refer to **Figure 2.1**. Although regional renewable development is progressing with the construction of the Silverton wind and solar farm and the Broken Hill Solar Plant, this existing and future renewable development is being curtailed and subject to revenue reductions as a result of grid network issues. The Project supports the implementation of the roadmap through assisting with addressing these network issues as well as providing an emission free alternative to the existing diesel-fired back up energy system for Broken Hill (refer to **Section 2.2.3.3**).

2.2.3 Regional and Local Plans

2.2.3.1 Far West Regional Plan 2036

The Far West Regional Plan 2036 presents a vision for 2036 for a unique part of Western NSW. The vision includes having a diverse economy, supported by the right infrastructure, an exceptional natural environment and resilient communities. The regional plan identifies growth in the renewable energy sector, including wind, solar and bioenergy generation to promote local jobs across smaller communities and provide opportunities for associated industries. The plan seeks to support the Far West to become a leader in renewable energy and climate change adaption, Direction 4 of the Plan is to *diversify energy supply through renewable energy generation*.

The Plan states that Broken Hill can capitalise on investment in renewable energy to develop generation and associated secondary industries including research, project management, installation and asset management. The specific actions of the plan in relation to renewable energy include:

- Identify areas and project sites with renewable energy potential, and infrastructure corridors with access to the electricity network, to inform land use planning.
- Promote best practice community engagement to realise community benefits for all utility-scale renewable energy projects.
- Facilitate small-scale renewable energy projects using bioenergy, solar, wind, small-scale hydro, geothermal or other innovative storage technologies through local environment plans.
- The Project is consistent with the vision of the Plan through direct economic benefit supporting future renewables development in the region. The Project is also implementing an extensive community engagement progress as part of the Project planning and development assessment process and Energy Estate and Hydrostor are focussed on maximising community benefits as part of the Project.

2.2.3.2 Broken Hill Local Strategic Planning Statement 2020-2040

The Broken Hill Local Strategic Planning Statement (LSPS) 2020-2040 acknowledges the potential for changes in population, business opportunities and in the environment and the need to plan now for growth and development. The LSPS focuses on the key land-use planning issues and actions required to be implemented into the future. The LSPS recognises that renewable energy resources are a key strength of the region given its arid climate, and that Broken Hill is becoming a hub for renewable energy lending itself to existing and planned large scale solar and wind developments.

A central objective of the LSPS is to support the existing industry base as well as emerging opportunities to grow and support Broken Hill City to become a more resilient regional centre. The LSPS identifies a number of key focus areas for action which includes utilities and connectivity. This action includes support to existing communities and catering for future growth with a focus on maintaining existing infrastructure as well as continued planning for new and improved facilities. Additionally, investigation of the electricity grid capacity is identified to support renewable energy investment.

The LSPS indicates Council will continue to encourage further industry research into options to supply more of the electricity supply needs of Broken Hill and the surrounding area from renewable energy. The Project will provide improved energy security for Broken Hill and support further renewable energy development in the area.

2.2.3.3 Transgrid RIT-T Project Assessment Draft Report

As discussed in **Section 1.0**, TransGrid has applied the RIT-T process to long-term options for maintaining reliable energy supply to Broken Hill. The RIT-T Project Assessment Conclusions Report (PACR), May 2022 (attached as **Appendix 1**), represents the final stage in the RIT-T process and follows the revised Project Assessment Draft Report (PACR) released in October 2021. The PACR updates the approach to assessing non-network options and presents the final preferred option of the RIT-T assessment.

The report concludes that the continued operation of the existing diesel-fired turbines as an interim measure, followed by network support provided by the Project is the top ranked option. Transgrid has confirmed it will acquire the existing diesel-powered turbines at Broken Hill from Essential Energy and temporarily use them to provide network support until the Project is operational, at which point the existing diesel-powered turbines will be decommissioned.

The report concludes the Project is preferred due to:

- a greater expected net benefit
- use of clean energy consistent with the general transition of the electricity sector to low emission technologies
- support of the use of innovative solutions to meeting network needs, which may provide an example that can be adopted more widely
- ability to efficiently accommodate future additional mining load at Broken Hill (should it eventuate)
- a lower level of unavailability due to outages (reducing the risk of disruption to customer supply in Broken Hill).

In June 2022 Transgrid notified the Project that there had been no disputes lodged on the outcomes of the Broken Hill PACR. Since the dispute period has been completed, Transgrid has commenced the next phase of communications with the Australian Energy Regulator in order to complete the PACR.

2.3 Project Location Context

Pasminco commenced mining at the Potosi Mine in 1996, with the mine acquired by Perilya in 2002. Operations in the Potosi Pit are currently expected to cease in 2022/23. Originally established as an open pit, the operations converted to underground to follow the deposit to depth. Further north from the Potosi Pit the Flying Doctor Deposit is located nearer to the surface. The current mining operations will move to this deposit once operations cease at the Potosi Pit.

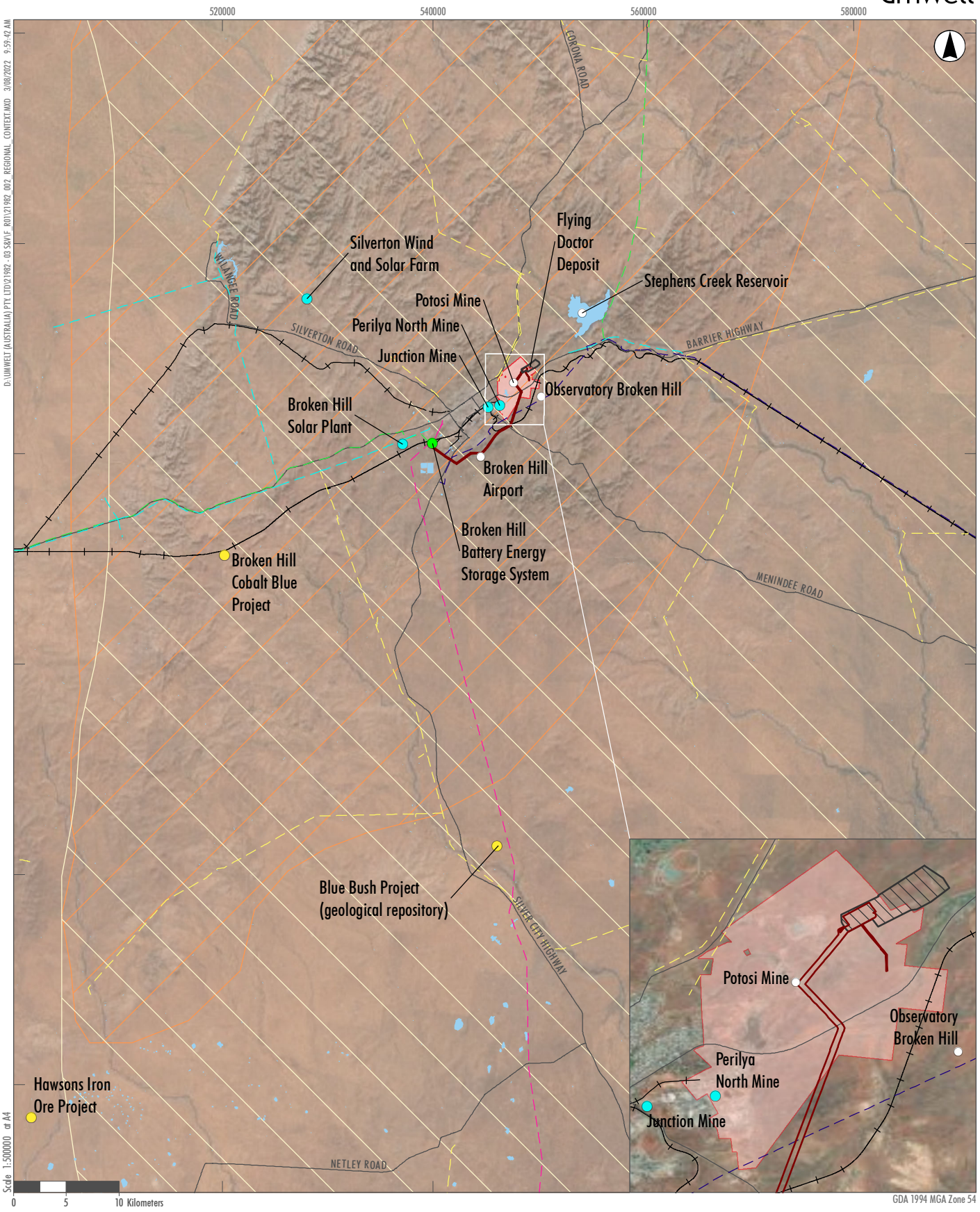
Mining operations within the Potosi Pit are subject to Development Consent 448/2004, issued by Broken Hill City Council, which provides for mining including development of infrastructure to provide for underground mining. Mining within the Flying Doctor Deposit is subject to Development Consent 336/2008, issued by Broken Hill City Council and allows for extraction of ore and waste rock by open cut mining methods and construction of associated infrastructure. Works associated with DA 336/2008 have been commenced, however, mining within the Flying Doctor deposit is yet to commence.

The Potosi mine site is located on a combination of land owned by Perilya and on Crown Land over which Perilya holds a lease. The proposed SCES facility will be located partially on Perilya owned land and partially on Crown Land, within an area subject to Perilya Mining Lease (CML5), refer to **Figure 2.1**. The proposed SCES facility will be located on Lot 7320, DP1201053 and Lot 2 DP757268, and overlaps with the approved Flying Doctor Project Area, refer to **Appendix 2** (schedule of land) for further detail.

There are currently two portals providing access to the underground workings at the Potosi Mine (refer to **Figure 3.1**). The Potosi Mine has an original portal to the underground within the Potosi Open Pit. As mining extended further north from the Potosi Pit, a second portal was created (the Silver Peak portal). These two features comprise access to the Potosi underground workings. Underground mining at Potosi Mine has existing tunnels and drives on 21 levels down to between 500 and 600 m below ground level. As the mining operation moves into the Flying Doctor deposit, the existing portals and workings at the Potosi Pit and underground workings will no longer be in use.

The geotechnical conditions at the Potosi Mine are characterized by strong competent rocks with few joints. The dominant lithologies are tightly packed and have a high metamorphic grade which provides low rock mass porosity and permeability. These geotechnical conditions are suitable to support the A-CAES technology.

The topography of the Potosi Mine site is predominately gently undulating with areas of steeper slopes associated with the overburden emplacement areas. The Potosi Mine is located within the Stephens Creek Catchment, a number of small unnamed tributaries cross the site to either imperial lake and/or Willa Willyong Creek which subsequently drains into the Stephens Creek Reservoir (refer to **Figure 6.1**). All water courses within and surrounding the Potosi Mine site are ephemeral with the main water source being run off from the city of Broken Hill and surrounding catchment during rainfall.



Legend

- Project Area
- Flying Doctor Project Area
- Mining Lease Boundary (CML5)
- Waterbody
- Road
- Railway

Indicative Location of NSW Renewable Energy Zones

- Solar Energy Zone
- Wind Energy Zone

Existing Electricity Transmission Lines

- 19.1kV
- 220kV
- 22kV
- 33kV
- 66kV

SSD Development

- Approved
- Operational
- Proposed

FIGURE 2.1

Regional Context

Image Source: ESRI Basemap (2022) Data source: DFSI (2021); MinView (2022)

The Potosi Mine site is located approximately 3 km north-east of the city of Broken Hill providing significant separation distance between the proposed SCES facility and the residential areas associated with Broken Hill. The proposed transmission line will skirt the southern side of the city traversing predominately industrial areas.

2.4 Cumulative Impact Considerations

A key component of environmental impact assessment is the consideration of cumulative impacts. The Project will be assessed in accordance with the requirements of the *Cumulative Impact Assessment Guidelines for State Significant Project* (DPIE, 2021b), which sets clear expectations and requirements for assessing project-level cumulative impacts related to SSD projects. The EIS will consider relevant other construction, industrial and employment generating projects within the locality.

The Project is located within a brownfield mine site and will utilise existing infrastructure where appropriate supporting the ongoing operations at the Potosi Mine through reliable energy supply, as well as providing future grid capacity, energy storage and generation. The Project has been appropriately sited to reduce associated environmental and social impacts which will also reduce any potential cumulative impacts associated with the operation phase of the Project. The design of the transmission line has also been subject to detailed site analysis to avoid adverse impacts to existing land uses particularly the Broken Hill Airport. The construction phase of the Project has the potential to result in cumulative impacts particularly associated with traffic, noise and demand for services. It is noted that current Projects under assessment including the Hawthorn Iron Ore and Broken Hill Cobalt Projects are located southwest of the Project Area and unlikely to interact with the Project, however there may be future projects which are not publicly known at the time of producing this report.

Interactions with the existing Perilya mining operations represent a key potential cumulative impact consideration for the Project. Separation distance to other operational projects in the region indicate operational aspects of the Project are unlikely to result in significant cumulative impact, however, potential cumulative impacts will be further assessed in the EIS. A preliminary cumulative impact summary table is attached as **Appendix 3**, providing context for the approach to further assessment of cumulative impacts as part of the EIS.

2.5 Planning and Other Agreements

Should the Project be approved, the Proponent will enter into a voluntary planning agreement (VPA) in accordance with the requirements of the EP&A Act. Discussions regarding a VPA with Council have commenced, with further consultation with Council to be undertaken during the development of the EIS.

As discussed in **Section 2.2.3.3**, the Project has been identified as the preferred energy supply option for Broken Hill through the RIT-T process. As part of this process the Project will commit to providing a reserve capacity of 50MW, which will be built into the system, able to deliver 5-8 hours of uninterrupted dispatchable power, available at all times, to address reliability issues at Broken Hill. This commitment will be formalised through a network support agreement with Transgrid.

2.6 Project Benefits

The Project will provide long-term, strategic benefits to the state of NSW, including:

- Enhanced energy security (up to 6 hours of uninterruptable power supply to Broken Hill) providing a clean energy replacement for the existing diesel-powered backup combustion turbine generators which are approaching the end of their operational life.
- $250m invested in the regional economy.
- Commitment of approximately $1 billion investment over the 50-year life of the Project.
- Generation of approximately 750 direct (520) and indirect (230) jobs during the construction phase.
- Generation of approximately 40 (6 direct and 34 indirect) enduring jobs during the operation and maintenance phase.
- Repurpose of the existing Potosi Mine infrastructure to provide an ongoing use of these existing resources and diversify the use of the existing mining land.
- Accelerate the opportunity for and support the development of future renewable energy projects in the Broken Hill region.
- Provide a clean energy solution for new major energy users such as the proposed mining developments and processing facilities in the region.
- Minimising rising electricity costs and carbon intensity both in Broken Hill and across NSW.
- Opportunities for skills training and benefits to the local supply chain.

3.0 The Project

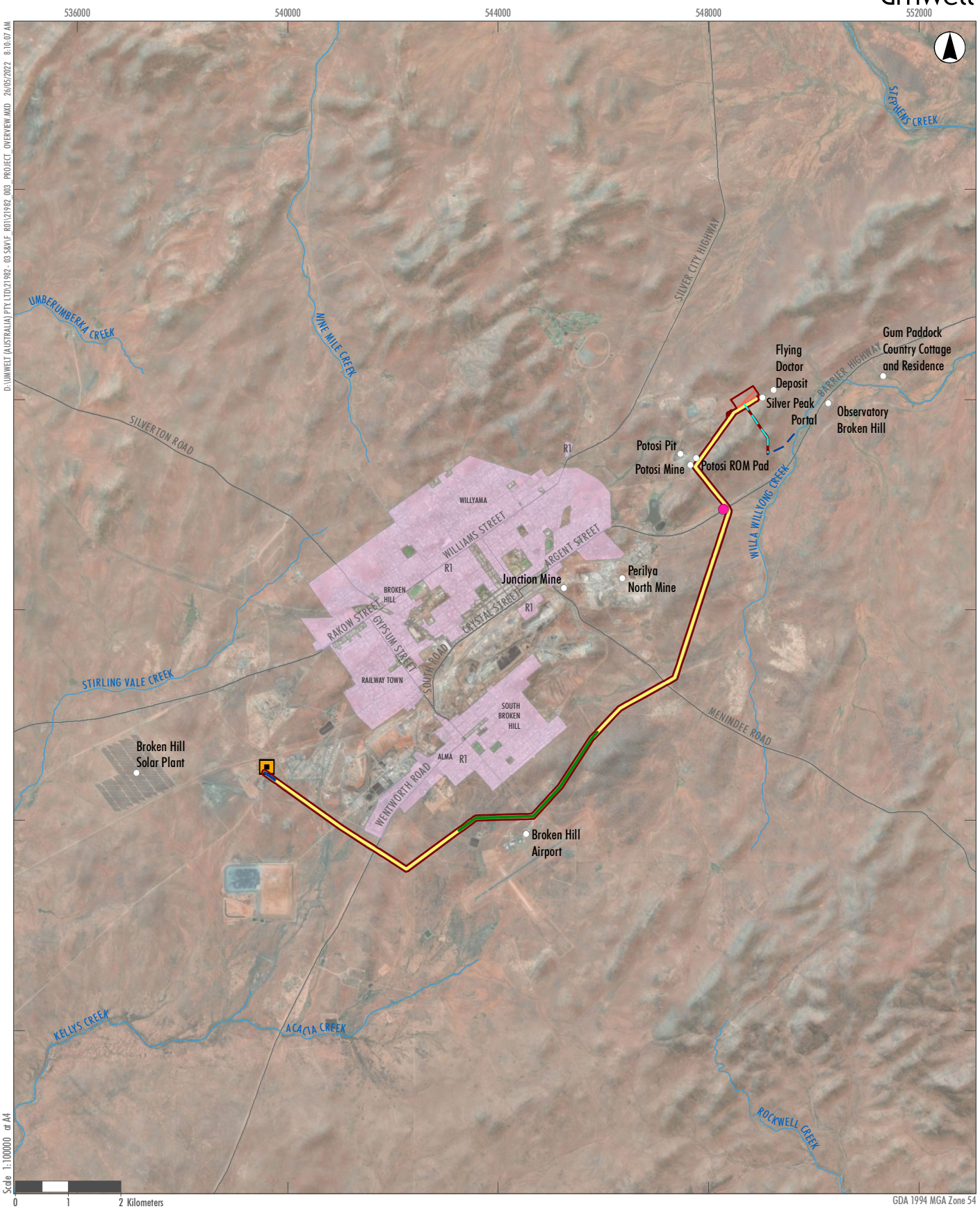
The Project includes the installation, operation and maintenance of the SCES Facility and ancillary infrastructure associated with the construction and operation of the Project. The key project components include:

- SCES Surface Facility (two 100MW Turbine/Generator Trains, switchyard, office/warehouse/guardhouse and utilities (fuel and water storage)
- 300 ML above ground water reservoir
- 250,000 cubic metre underground cavern with air and water shaft
- approximately 16 km high voltage transmission line.

The conceptual Project layout is shown on **Figure 3.1**. The indicative Project components are provided in **Table 3.1**, noting that these will be subject to further design and refinement as part of the ongoing design and EIS process.

Table 3.1 Indicative Project components and approximate dimensions

Project component(s) / infrastructure	Quantity/Approximate dimensions
Surface Infrastructure	
100MW Turbine/Generator trains	2 turbines (15 m x 7 m) 2 compressors (10 m x 7 m)
Reservoir	1 (200 m x 300 m) approx. 300 ML
Switchyard	1 (100 m x 100 m)
Office, warehouse and guardhouse	1
Utilities (fuel/water storage)	subject to further design
Underground Cavern	
250,000 m^3 cavern (approx. 600 m below ground level)	Approx. 200 m x 400 m
Air and Water shaft	2
Transmission Line	
Transmission line (overhead and underground)	In ground line with 20 m easement (buried cable) approx. 300 m
	Overhead line 20-25 m high with 50 m easement (monopoles or steel towers) approx. 3.5 km
	Overhead line 40-48 m high with 50 m easement (monopoles or steel towers) approx. 12.2 km
Temporary Construction Facilities	
Laydown/construction area – SCES Facility	5 hectares
Laydown/construction area – Transmission line	1 hectare
Temporary site compound and office	1



Legend

- Project Area
- Silver City Energy Storage Facility
- Transgrid Substation
- In ground power line with 20m easement, buried cable
- Overhead power line 20-25m high with 25m easement, monopoles
- Overhead power line 40-48m high with 50m easement, monopoles or steel towers
- Existing Stephens Creek Reservoir Water Pipeline (above ground section)
- Proposed Above Ground Water Pipeline
- Road
- Drainage Line
- Site Access Point

EPI Land Zoning

- Broken Hill Residential Area (zoned R1 General Residential Broken Hill LEP)

FIGURE 3.1

Project Overview

Image Source: Nearmap (Oct 2021) Data source: DSFI (2021)

3.1 A-CAES Technology Overview

Using only water and compressed air, A-CAES technology integrates proven technologies and construction approaches in an innovative way to produce a superior long-duration grid-scale energy storage solution. The A-CAES technology uses energy from the grid when it is plentiful to compress air from the atmosphere and injects it into the underground cavern. The air remains in the cavern, sealed under pressure from the water reservoir above the cavern. The compressed air is then released from the cavern and generates electricity through an air turbine refer to **Figure 3.2**.

Off-peak surplus electricity from the grid or from a direct renewable energy resource Is used to compress air from the atmosphere and recovers and stores the heat of compression while injecting the compressed air into an underground cavern.

This process increases overall efficiency and eliminates the need for assistance from other energy sources such as fossil fuels in demand periods where renewable energy generation is lower (e.g. at night time when solar generation is not occurring).

The air remains in the cavern, sealed under pressure from the water in the reservoir. When needed to generate electricity the pressure from the water reservoir is used to force the compressed air to the surface where it is recombined with the stored heat and expanded through a turbine to generate electricity. The combined compressed air, underground cavern and water storage is designed to provide a long-term clean energy storage solution that does not use fossil fuels or hazardous materials to store energy.

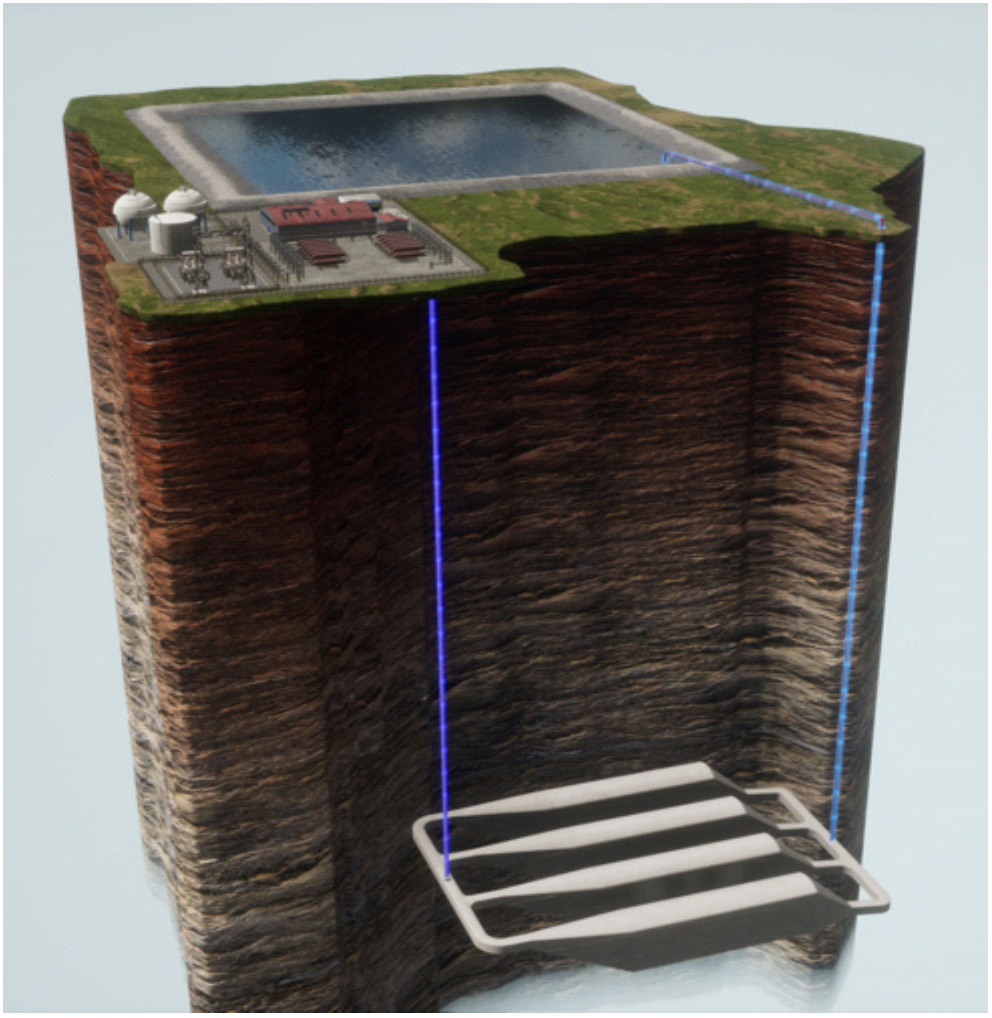
In addition to the storage of electricity the SCES Facility will maintain a reserve capacity of 50MW to provide back-up electricity generation for a ~6-8 hour duration to Broken Hill during times of planned and unplanned outages. This will replace the existing back-up diesel-powered combustion turbines which are approaching the end of their operational life.

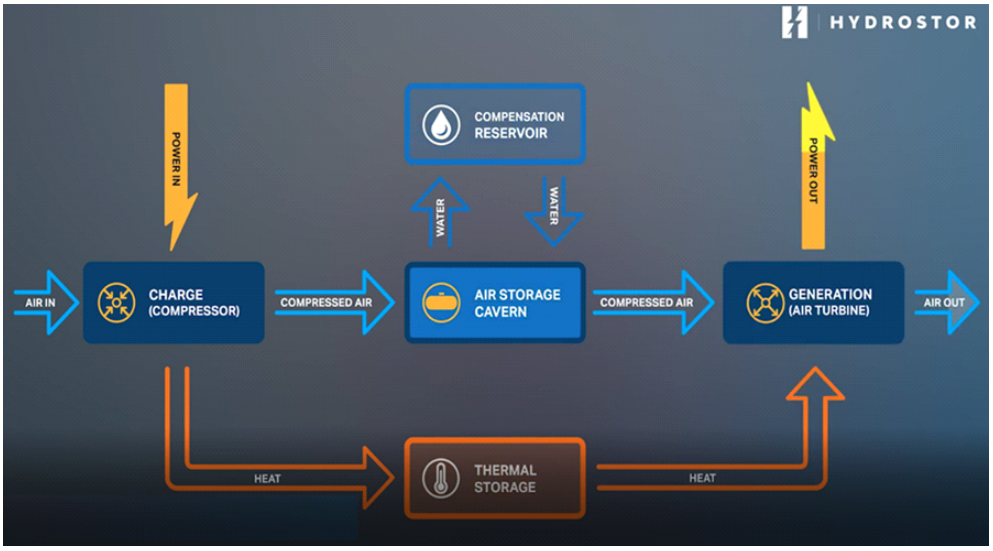
3.1.1 Proposed Infrastructure

The SCES includes the following infrastructure:

- Surface Facilities - (two 100MW Turbine/Generator/Compressor Trains, switchyard, office/warehouse/guardhouse, utilities (fuel and water storage) and access road.
- Approximately 300 ML above ground water reservoir.
- Approximately 250,000 cubic metre underground cavern with air and water shafts.
- Approximately 16 km high voltage transmission line.

An indicative layout of the proposed surface facilities is provided in **Figure 3.3**, this will be subject to further review and refinement as the relevant specialist assessments associated with the EIS progress and further Project design work is completed. The surface facilities have been sited directly above the deepest level of the existing mining operations (500-600m below surface) where the underground cavern will be constructed.



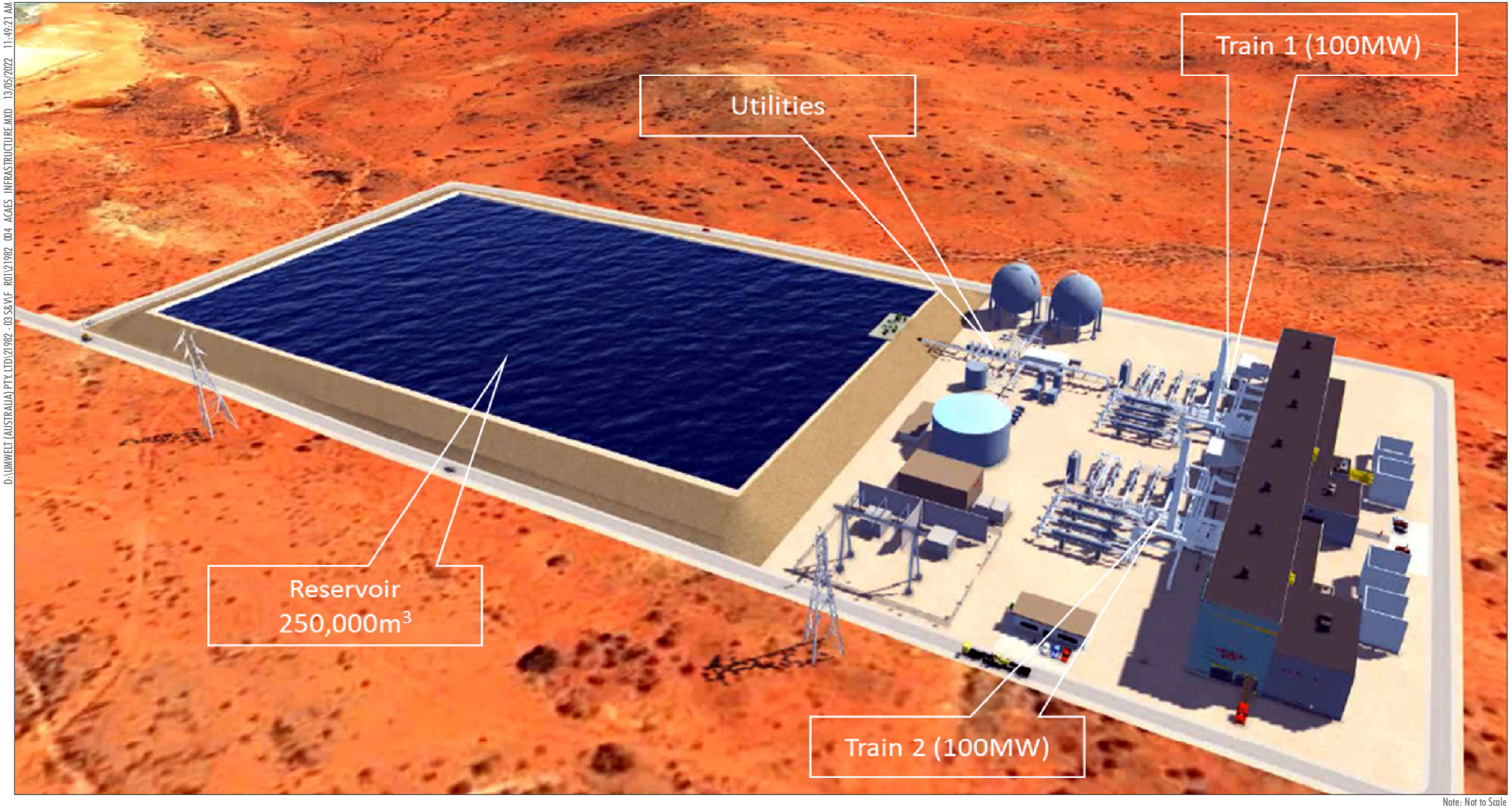


Note: Not to Scale

FIGURE 3.2

A-CAES Technology Overview

Image Source: Hydrostar (2022)



Note: Not to Scale

FIGURE 3.3
Proposed SCES Surface Infrastructure

Image Source: Energy Estate (2022)

3.1.2 Underground Cavern

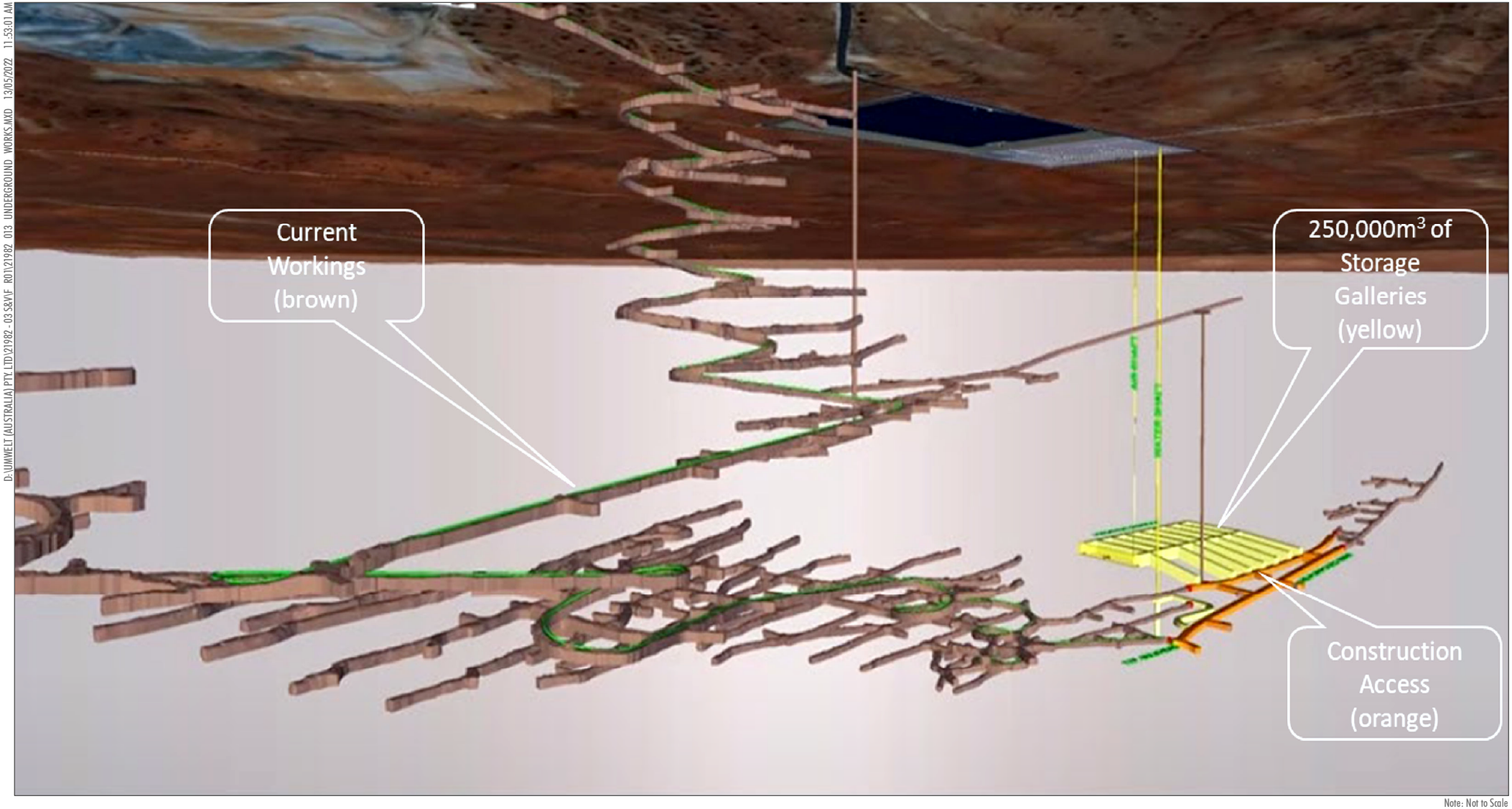
As discussed in **Section 2.3**, the geotechnical conditions at the Potosi Mine are characterised by strong competent rocks with few joints. The dominant lithologies are tightly packed and have a high metamorphic grade which provides low rock mass porosity and permeability, these conditions are favourable to the proposed underground cavern works.

There are currently two portals providing access to the underground workings. The Potosi Mine has an original portal to the underground within the Potosi Open Pit. As mining extended further north from the open pit, a second portal was created (the Silver Peak portal). These two features provide access to the Potosi Mine where mining has been undertaken down to a depth of 500-600 m. This is the optimal depth for the proposed cavern. The existing portals and workings will be utilised to construct and provide access to the cavern.

The current plan of the Potosi Mine indicates that Level 20/21 (current mining level 500-600 m below surface) has several parallel tunnels and drives. These existing workings will provide approximately 25% of the required cavern volume, with further excavation works proposed to provide the additional cavern storage, increasing the total volume by approximately 250,000 m^3. The cavern will be formed into a group of separate parallel excavated areas (known as drifts) and are estimated to be approximately 9 m wide x 15 m high, this will be confirmed through geotechnical assessment engineering design (refer to **Figure 3.4**). Excavated material will be brought to the surface and transported to the existing Potosi Mine overburden emplacement areas, these areas will be rehabilitated in accordance with the Mining Operations Plan (MOP) associated with the mining operations.

The cavern will be sealed from the remainder of the existing mine workings and to the atmosphere. These works will provide for the opportunity for future expansion of the SCES storage capacity, if required in the future. Any future expansion would be subject to a separate approval process and would be subject to future energy demands.

The underground cavern will be sealed to prevent uncontrolled movement of air and groundwater. The entire system will also be sealed with two shafts connected to the cavern from the surface which will operate the SCES facility, one for the conveyance of air, the other for water.



Note: Not to Scale

FIGURE 3.4
Proposed Underground Works

Image Source: Energy Estate (2022)

3.1.3 Water Reservoir

A purpose-built water reservoir will be constructed to provide hydrostatic pressure to the system. The proposed reservoir will have a footprint of approximately 200 m by 300 m and providing storage for approximately 300ML of water.

Essential Water provide water supply and sewerage services for the Far West region. Essential Water has confirmed there is sufficient capacity to supply water for the initial first fill of the reservoir, with the Project to enter into a water supply agreement with Essential Water. This water supply is planned to be provided via a connection to the existing Stephens Creek to Broken Hill Pipeline. The proposed water pipeline will connect to the existing above ground section of the Stephens Creek Pipeline to the southeast of the SCES (refer to **Figure 3.1**). Initial fill of the proposed reservoir will require approximately 250 GL over 18 months. Water usage associated with ongoing operations will be provided through recovery of water from the compression of air, groundwater inflows associated with Perilya Mining operations and/or continued supply from the Stephens Creek Reservoir, subject to licence requirements. The proposed reservoir will be covered to reduce evaporation which will reduce the extent of water supply required during operations.

3.1.4 Transmission Line

The proposed 16 km 220kV transmission line has been designed with sections of both overhead and underground line with the overhead line designed at a varying height. The design is the result of detailed site analysis to avoid adverse impacts to existing land uses particularly the Broken Hill Airport. The indicative transmission line alignment is shown on **Figure 3.1**. The transmission line will provide for connection of the SCES facility to the existing Transgrid Kanandah Road substation located on the western side of Broken Hill.

The current proposed transmission line includes:

- in ground line with 20 m easement (buried cable)
- overhead line 20-25 m high with 50 m easement (monopoles or steel towers)
- overhead line 40-48 m high with 50 m easement (monopoles or steel towers).

Associated access tracks within the easements will be established for both construction and ongoing operations/maintenance.

The detailed design for the transmission line will be developed in accordance with the Transgrid Transmission Line Design Standard (2018) and in consultation with Transgrid. There has been ongoing consultation with Transgrid regarding the Project, including in regard to the route and design of the transmission line.

3.2 Site Access

The Project will utilise the existing Potosi Mine access road(s), any road upgrade requirements will be determined through further assessment and detailed design proposed as part of the EIS.

3.3 Relationship to Mining Operations

The Project will be co-located on the Potosi Mine site and the Project will coexist with the existing and future mining operations. The SCES Facility will be located above the Potosi mine underground workings that will form part of the cavern as discussed above, with the existing mine workings to provide access for the proposed cavern development works.

The site of the SCES surface Facility overlaps with a part of the ancillary operational areas provided for by DA 336/2008 for the Flying Doctor Deposit. The Project does not impact on mining areas at the Flying Doctor Deposit. Consultation with Perilya has indicated that the Project and the mining operations can coexist and that the Project will not constrain the development of the Flying Doctor mining area. There may be a need for Perilya to undertake a minor modification to DA 336/2008 to provide for minor changes to ancillary operational areas and approved final land use in relation to overlapping parts of the consent areas, however, this will be determined following further design work for the Project and the Flying Doctor mining area. Broken Hill Council is the consent authority for the Flying Doctor development consent.

The Project will benefit from a long-term land agreement with Perilya which will cover the full operational life and no subdivision of land is proposed. This agreement will also cover the use of mining machinery and personnel to construct the Project.

3.4 Project Alternatives

Hydrostor and Energy Estates have been investigating locations suitable for the installation of the A-CAES technology since 2017. The current Project is a direct response to reliability supply issues in Broken Hill identified by TransGrid through the RIT-T process. The Project is proposed to replace the existing diesel combustion turbines and also enable greater renewable energy connection improving the economics of existing renewable energy facilities and encouraging future renewable energy projects. There is therefore a defined local need for an energy storage solution such as the proposed Project.

The Potosi Mine site was selected as the proposed location due to favourable geological conditions, utilisation of existing disused mining areas and utilisation of existing mining infrastructure, machinery and personnel. It also provides a suitable buffer distance to other land uses including from the residential areas of Broken Hill. Two locations for the surface facility within the Potosi mine site were investigated. The proposed location is preferred due to being immediately above the deepest part of the Potosi Mine (Level 20/21) and close to the existing mine access shafts. The alternative site location considered was immediately south of the preferred site location.

Three options associated with the proposed transmission line were investigated:

- alignment with new easements running north around the boundary of the City of Broken Hill
- alignment across the Perilya North Mine and then through the existing mined area located in the centre of the City of Broken Hill using existing easements
- alignment with potential widening of some current powerline easements and some new easements running south around the southern boundary of the City of Broken Hill.

Review of the northern alignment highlighted risks associated with potential land use conflict including with the golf course and other recreational areas, high quality habitat and potential visual amenity issues associated with cumulative impacts due to other transmission lines in the area. The central alignment is constrained by existing infrastructure which would be impacted during construction and proximity to existing residential areas. Based on minimising associated impacts to surrounding development and utilisation of existing easements the southern alignment was identified as preferred due to being primarily located on Perilya and Crown Land ownership and having reduced potential environmental and social impact compared to the other routes considered.

4.0 Statutory Context

The relevant statutory requirements for the Project are summarised in the following sections.

4.1 NSW Approval Pathway

The EP&A Act is the primary instrument which regulates the environmental impact assessment and approval process for development in NSW.

The Project will require development consent under Part 4 of the EP&A Act. Being development for the purpose of electricity generation with a capital investment value of more than $30 million (estimated Project CIV of approximately $650 million), the Project is declared to be SSD under the provisions of the Planning Systems SEPP. The development application will be lodged with the NSW Department of Planning and Environment (DPE).

Section 4.15 of the EP&A Act describes the matters for consideration in assessing SSD, which includes the provisions of relevant environmental planning instruments, proposed instruments that have been the subject of public consultation, development control plans, planning agreements and statutory regulations. The assessment of SSD must also consider the likely impacts of the development, suitability of the site, any submissions received and the public interest.

4.1.1 Consent Authority

Under Section 4.5(a) of the EP&A Act the consent authority for SSD is the Independent Planning Commission (IPC) (if the development is of a kind for which the Commission is declared the consent authority by an environmental planning instrument) or the Minister (if the development is not of that kind).

In accordance with Clause 2.7(1) of the SRD SEPP if any of the criteria identified below are exceeded the (IPC) will be the consent authority:

- Broken Hill City Council object to the application.
- 50 submissions (other than from the Councils noted above) are made objecting to the Project.
- The Proponent discloses a reportable political donation meeting the criteria outlined in the Act.

If these criteria are not triggered, the Minister will be the consent authority (noting that there are currently delegations in place which provide for the Secretary of DPE to determine certain applications). In both cases DPE will receive the application, co-ordinate the public exhibition processes and prepare an Assessment Report for the Project.

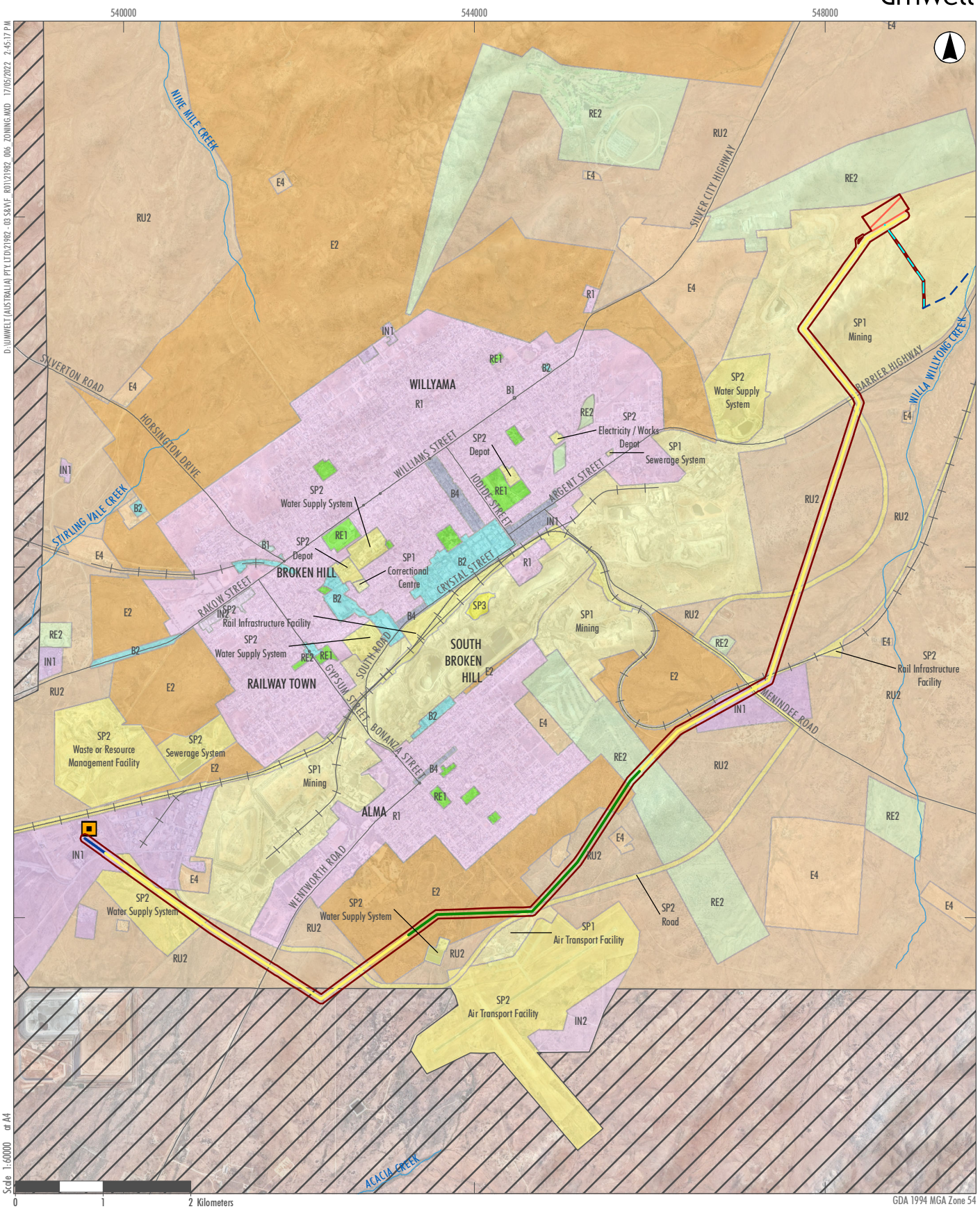
4.1.2 Permissibility

The Project Area covers multiple land zonings. The proposed SCES facility is located on land zoned SP1 (mining). The project is properly characterised as being 'electricity generating works' for the purposes of permissibility. Electricity generating works are not permissible within the SP1 (mining zone), however, clause 2.36(1)(b) of State Environmental Planning Policy (Transport and Infrastructure) 2021 states that development for the purpose of electricity generating works may be carried out by any person with

consent on any land in a prescribed rural, industrial or special use zone. Under this clause the provisions prevail where there are inconsistencies with any other Environmental Planning Instruments (EPIs), including LEPs and therefore the proposed SCES facility is permissible with development consent.

The transmission line traverses the SP1 (mining), RU2, IN1, RE2, SP2 (water supply systems) and E2. A short portion of the line also extends into the Unicorporated Far West Region which does not have any applicable zoning. The transmission line will be owned by Transgrid once operational. Under clause 2.44(1) of State Environmental Planning Policy (Transport and Infrastructure) 2021 development for the purpose of an electricity transmission or distribution network may be carried out by or on behalf of an electricity supply authority without consent on any land. In addition, clause 4.38(4) of the EP&A Act states that if part of a development may be carried out without consent but that the other part is SSD and requires development consent, then that other part of the development is taken to be development that may not be carried out except with development consent. Therefore, the transmission line component of the Project is permissible with development consent.

Due to the operation of Clause 2.44(1) of the Transport and Infrastructure SEPP and Clause 4.38(4) of the EP&A Act the Project is permissible with development consent.



Legend

- Project Area
- Silver City Energy Storage Facility
- Transgrid Substation
- In ground power line with 20m easement, buried cable
- Overhead power line 20-25m high with 25m easement, monopoles
- Overhead power line 40-48m high with 50m easement, monopoles or steel towers
- Existing Stephens Creek Reservoir Water Pipeline (above ground section)
- Proposed Above Ground Water Pipeline
- Road
- Drainage Line

EPI Land Zoning

- B1 Neighbourhood Centre
- B2 Local Centre
- B4 Mixed Use
- E2 Environmental Conservation
- E4 Environmental Living
- IN1 General Industrial
- IN2 Light Industrial
- R1 General Residential
- RE1 Public Recreation
- RE2 Private Recreation
- RU2 Rural Landscape
- SP1 Special Activities
- SP2 Infrastructure
- SP3 Tourist
- Unincorporated Far West Region - No Zoning

Image Source: Nearmap (Oct 2021) Data source: DSFI (2021)

FIGURE 4.1

Zoning Map

4.1.3 Other Approvals

In addition to development consent under the EP&A Act, a number of other NSW Acts or planning policies are applicable or potentially applicable to the Project. **Table 4.1** identifies the other NSW legislation and policies and their applicability to the Project.

Table 4.1 NSW Legislation

State Legislation	Description
Biodiversity Conservation Act 2016 (BC Act)	Under the BC Act, biodiversity assessment in accordance with the Biodiversity Assessment Method (BAM) is required for any SSD project. The Project (as SSD) triggers the need to prepare a Biodiversity Development Assessment Report (BDAR) in accordance with the BAM. The EIS will include a BDAR.
Protection of the Environment Operations Act 1997 (POEO Act)	The POEO Act regulates pollution to the environment and requires licences for environment protection including waste, air, water and noise pollution control. General electricity works that generated more the 30MW are a scheduled activity under the POEO Act and require an Environment Protection Licence (EPL). An EPL would be sought in relation to the construction and operation of the Project.
Water Management Act 2000 (WM Act)	Any water extractions (take) from water sources (surface and groundwater) regulated by a Water Sharing Plan (WSP) required for construction or operational purposes will require licensing under the WM Act. The potential water requirements during construction and operation will be assessed as part of the ground and surface water impact assessments prepared as part of the EIS. Any necessary licences would be obtained for the Project as required. To the extent that one is required, an Aquifer Interference Approval would also be obtained.
Roads Act 1993 (Roads Act)	A consent is required under Section 138 to work on or above a road or to connect a road to a classified road. Consents under Section 138 may be required associated with the site access upgrade works and construction of the proposed transmission line which will cross several roads. Approval requirements will be addressed in the EIS.
Crown Land Management Act 2016 (Crown Land Act)	The Crown Land Act provides for the administration and management of Crown Land in NSW. Crown land may not be occupied, used, sold, leased, licensed, dedicated, reserved or otherwise dealt with unless authorised by the Crown Land Act. There are some parcels of Crown Land within the Project Area. Consultation has commenced and appropriate approvals will be obtained under the Act.
Contaminated Land Management Act 1997 (CLM Act)	The CLM Act establishes the process for investigating and if required, remediating land that the NSW EPA considers to be contaminated significantly enough to require regulation. The Project Area does not contain lands listed on the Contaminated Lands Register. Relevant mitigation and management measures would be incorporated as part of the Project to address any potential contamination issues.

State Legislation	Description
Mining Act 1992	The objectives of this Act are to encourage and facilitate the discovery and development of mineral resources in New South Wales, having regard to the need to encourage ecologically sustainable development. While the Project does not propose any extraction for the purposes of mineral extraction – the proposed cavern expansion/modification and above ground works do alter the approved final land use for the mining associated with the Potosi Mine. Perilya currently holds a mining lease over the area where the subsurface works and above ground deposition of extracted material would occur and no additional mining leases are required. A sub-lease or part transfer of the ML in relation to the Project Area may be required as a result of the Project. Consultation in this regard has commenced with Perilya and further consultation will be undertaken with the Department of Regional NSW. The Perilya Mining Operations Plan/ Rehabilitation Management Plan required under the current mining lease may need to be updated to reflect changes in final land use in relation to the Project Area. Interactions with the mining operations and rehabilitation of the site in relation to the mining operation will be recognised in the EIS for the Project.
Dams Safety Act 2015 (DS Act)	The objectives of the DS Act are to promote transparency in regulation of dam safety, encourage proper and efficient management of dam safety and ensure that any risks relating to dams are within a level acceptable to the community. The proposed reservoir is unlikely to trigger the declared dam requirements, however, this will be investigated further as part of the EIS, including consultation with Dams Safety NSW to determine applicability.

4.2 Commonwealth Legislation

4.2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a framework for protection of the Australian environment, including its biodiversity and its natural and culturally significant places.

Any action which could have a significant impact on a matter of national environmental significance (MNES) must be referred to the Minister for the Environment, MNES includes:

- World heritage properties
- National heritage places
- Wetlands of international importance (listed under the Ramsar Convention)
- Listed threatened species and ecological communities
- Migratory species protected under international agreements
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions (including uranium mines)
- A water resource, in relation to coal seam gas development and large coal mining development.

The Project Area is not within a world heritage property or place, does not have wetlands of international importance, is not within either a Commonwealth marine area or the Great Barrier Reef Marine Park, and does not relate to a nuclear action, coal seam gas or coal mining development.

It is noted that the City of Broken Hill is listed on the National Heritage List (ID: 105861) however given the siting of the Project on an existing brownfield mine site and the nature of the Project there is unlikely to be any significant impact to the listed heritage values.

Based on initial investigations there is unlikely to be any significant impact to any EPBC listed threatened ecological communities or species affected by the Project, however, this will be further assessed as part of the BDAR. No significant impact to any other MNES is likely as a result of the Project, a referral to the Commonwealth will be submitted to confirm this.

4.3 Statutory Requirements Summary

This section provides an overview of the key statutory requirements for the Project. These statutory requirements are categorised as per the DPE Scoping Guideline.

Table 4.2 Statutory Requirements Summary

Matter	Detail	Comment
Power to grant consent	The legal pathway under which consent is to be sought, why the pathway applies, and who the consent authority is likely to be.	As outlined in **Section 4.1.1**, the Project requires approval under Part 4 of the EP&A Act being SSD. The consent authority will be the IPC or DPE based on the number and type of any objections regarding the Project or any political donations made by the Proponent or related entities.
Permissibility	The relevant provisions affecting the permissibility of the Project, including any land use zones. Any provisions or actions being taken that would allow the Project to be considered on its merits, where the Project would otherwise be partly or wholly prohibited.	As outlined in **Section 4.1.2**, the Project is defined as electricity generating works. The SCES facility is located on land zoned SP1 (mining). Electricity generating works are not permissible within the SP1 (mining zone) however clause 2.36(1)(b) of the Transport and infrastructure SEPP 2021 states that development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone. The transmission line traverses the SP1 (mining), RU2, IN1, RE2, SP2 (water supply systems). A short portion of the line also extends into the Unincorporated Far West Region which does not have any applicable zoning. It is noted that the RE2 (private recreation) zone is not covered by clause 2.36(1)(b) of the Transport and Infrastructure SEPP however clause 4.38(3) of the EP&A Act states that development consent may be granted for SSD despite the development being partly prohibited by an environmental planning instrument. The objectives of the RE2 zone are to enable land for private open space or recreational purposes and enhance natural environment for recreational purposes. The proposed transmission line will result in minimal disturbance and not preclude the use of the land for recreational purposes. The Project is permissible with development consent.

Matter	Detail	Comment
Other approvals	Other approvals that are required to carry out the Project and why they are required.	**Section 4.1.3** provides a list of other NSW approvals required or that may be required for the Project. **Section 4.2** discusses potential Commonwealth approvals that may be required for the Project.
Pre-conditions to exercising the power to grant consent	Pre-conditions to exercising the power to grant consent for the Project that may be relevant to setting the SEARs.	An EIS will be prepared in accordance with relevant legislative requirements and guidelines. No pre-condition to exercising the power to grant consent for the Project are currently envisaged.
Mandatory matters for consideration	Matters that the consent authority is required to consider in deciding whether to grant consent to any development application for the Project that may be relevant to setting the SEARs.	As outlined in **Section 4.1**, Section 4.15 of the EP&A Act describes the matters for consideration in assessing SSD, which includes the provisions of relevant environmental planning instruments, proposed instruments that have been the subject of public consultation, development control plans, planning agreements and statutory regulations. The assessment of SSD must also consider the likely impacts of the development, suitability of the site, any submissions received and the public interest. All relevant matters will be addressed in the EIS based on the outcomes of environmental assessments to be undertaken (refer to **Section 6.0**).

5.0 Stakeholder Engagement

Hydrostor and Energy Estate are committed to engagement with all relevant stakeholders and to undertake genuine and meaningful engagement with the community as part of planning and assessing the Project. This includes a focus on developing long-term relationships and maintaining open lines of communication. A Community and Stakeholder Engagement Plan (CSEP) has been developed for the Project to outline the objectives and approach to stakeholder and community engagement throughout the life of the Project, and the scoping stage engagement has been undertaken.

Stakeholder engagement for the Project is being undertaken following the NSW Government's Engagement Guidelines (DPIE, 2021d). A Social Impact Assessment (SIA) will also be undertaken in accordance with the SIA guidelines 2021, with the scoping phase SIA being completed as part of this scoping report.

It should be noted that extensive consultation with relevant government authorities/agencies and service providers has been ongoing through the initial feasibility and scoping phase of the Project. Additionally, efforts have been made to consult the broader community during the scoping phase through a range of engagement mechanisms. There has been a small amount of interest from the broader community residents and groups to be involved in the consultation program with 25 stakeholders attending a recent community information session. Ongoing effort will be made in the assessment phase of the SIA to provide the broader community with further opportunity to engage regarding the Project.

The following sections provide a summary of the CSEP, the consultation undertaken to date and the key issues raised. A copy of the CSEP is included in as Appendix B of the SIA (refer to **Appendix 4**).

5.1 Stakeholder Engagement Plan

The specific objects of the CSEP developed for the Project are:

- Identify key stakeholders and communities relevant to the development of the Project.
- Facilitate the genuine involvement of stakeholders in the planning and approvals process as well as in developing responses to positive and negative impacts.
- Support understanding of the project context, including identification of stakeholders and their expectations and aspirations, including identification of any vulnerable or at-risk groups that may be impacted by the project.
- Guide and support a strategic and coordinated approach to engagement, including specific mechanisms, timeframes and responsibilities during the planning and assessment phase of the Project.
- Ensure that community and stakeholder inputs are effectively integrated into the SIA and other technical assessments within the EIS and are considered in the finalisation of the project design.
- Meet regulatory requirements for public, stakeholder and community consultation.
- Collaborate with local stakeholders on local benefit sharing strategies to ensure they are co-designed, targeted, and appropriate to the Project's operating context.

The CSEP provides an overview of the intended approach to stakeholder engagement throughout all stages of the Project, outlines the Project and the relevant stakeholders, provides detail on the consultation undertaken to date and proposed consultation going forward.

The CSEP and engagement undertaken to date for the Project is consistent with the requirements of the Engagement Guidelines (DPIE, 2021d).

5.1.1 Key Stakeholders

Stakeholders for the Project were identified in the early stage of planning to inform the design of the engagement program and the SIA, and also included the identification of any potentially vulnerable or marginalised groups. Key stakeholder groups that have been consulted or engaged during the scoping phase, and whose engagement outcomes have been incorporated in the scoping phase SIA are outlined, are outlined in **Figure 5.1**. Subsequent phases of the engagement program and SIA will provide further opportunities for broad involvement across the stakeholder groupings identified and will include ongoing engagement with community residents.

Figure 5.1 Key Stakeholder Groups

5.2 Stakeholder Engagement

Extensive stakeholder consultation was undertaken with relevant Authorities and service providers by both Energy Estate and Hydrostor during the feasibility phase of the Project. This included consultation with Broken Hill City Council, the Australian Energy and Market Operator (AMEO), the Australian Renewable Energy Agency (ARENA) and relevant service providers such as Transgrid and Essential Water.

Energy Estate and Hydrostor have led the consultation and have undertaken community stakeholder engagement during the scoping phase to build relationships with near neighbours and key stakeholders in relation to the Project, as well as to inform Project design and development. This has assisted in identifying and understanding the perceived issues and impacts early in the planning and assessment process.

A range of engagement mechanisms have been identified including:

- Project website and online feedback survey (established April 2022).
- Dedicated project community line and email address (established April 2022).
- Media release (first release distributed in April 2022).
- Project newsletters (first newsletter distributed in May 2022 additional newsletters planned).
- Community information sessions (first session held in April, additional info session planned in EIS phase).
- Project briefings (initial briefings held in March and April, additional briefings to occur through EIS phase).
- Personal meetings/interviews (initial meetings held in April and May, additional meetings to occur through EIS phase).
- Service provider surveys (phone surveys planned during EIS phase).

Table 5.1 outlines the stakeholders that have participated in the scoping phase of the Project's planning and assessment process to date.

Table 5.1 Stakeholders Consulted during the Scoping Phase

Stakeholder group	Mechanism used	Number contacted	Number engaged
Proximal landholders	Personal Meetings/ Interviews	7	6
Broader community	Information Session Online Survey	- -	23[1] 10
Aboriginal stakeholders	Personal Meeting / Interview	2	2
Local government Representatives	Personal Meeting / Interview	3	3[2]
Community and development groups	Community Information Session Personal Meeting / Interview	1 4	1 2
Environmental groups	Community Information Session	2	1

[1] Some stakeholders attended the community information session in addition to completing an online survey or personal meeting.
[2] Refers to number of meetings held, rather than number of individuals consulted. All meetings had multiple attendees.

Stakeholder group	Mechanism used	Number contacted	Number engaged
	Personal Meeting / Interview	2	1
Local media	Media release	3	-
Project Information Sheet	Project Information Sheet distributed	8,302	-
	Total	8,326	49

Quantitative and qualitative information collected through the consultation and engagement activities in the scoping phase, has been analysed to inform the preliminary analysis of social impacts and opportunities associated with the Project.

The SIA outlines the identified issues and impacts (positive and negative) in relation to the Project, as summarised in **Figure 5.2**. Responses received by community members, and feedback from those in attendance at the community information session were largely positive (as highlighted in green in **Figure 5.2**). The issues analysis has been framed in accordance with the social impact categories outlined in the SIA Guideline.

Those consulted generally welcomed the potential for employment generation associated with the Project, particularly during the construction period, potential flow on effects to property values in the area, and positive economic benefits, due to further industry development. This diversification of industry through the promotion of science, advanced technology, engineering and mathematics, was seen as a key positive impact of the Project.

Additionally, various concerns were raised in relation to amenity impacts that the Project may have on local surroundings, with particular attention to land use and potential land use conflict associated with the Potosi Mine operations, visual amenity, access to water and use of roads, as well as potential noise associated with the Project.

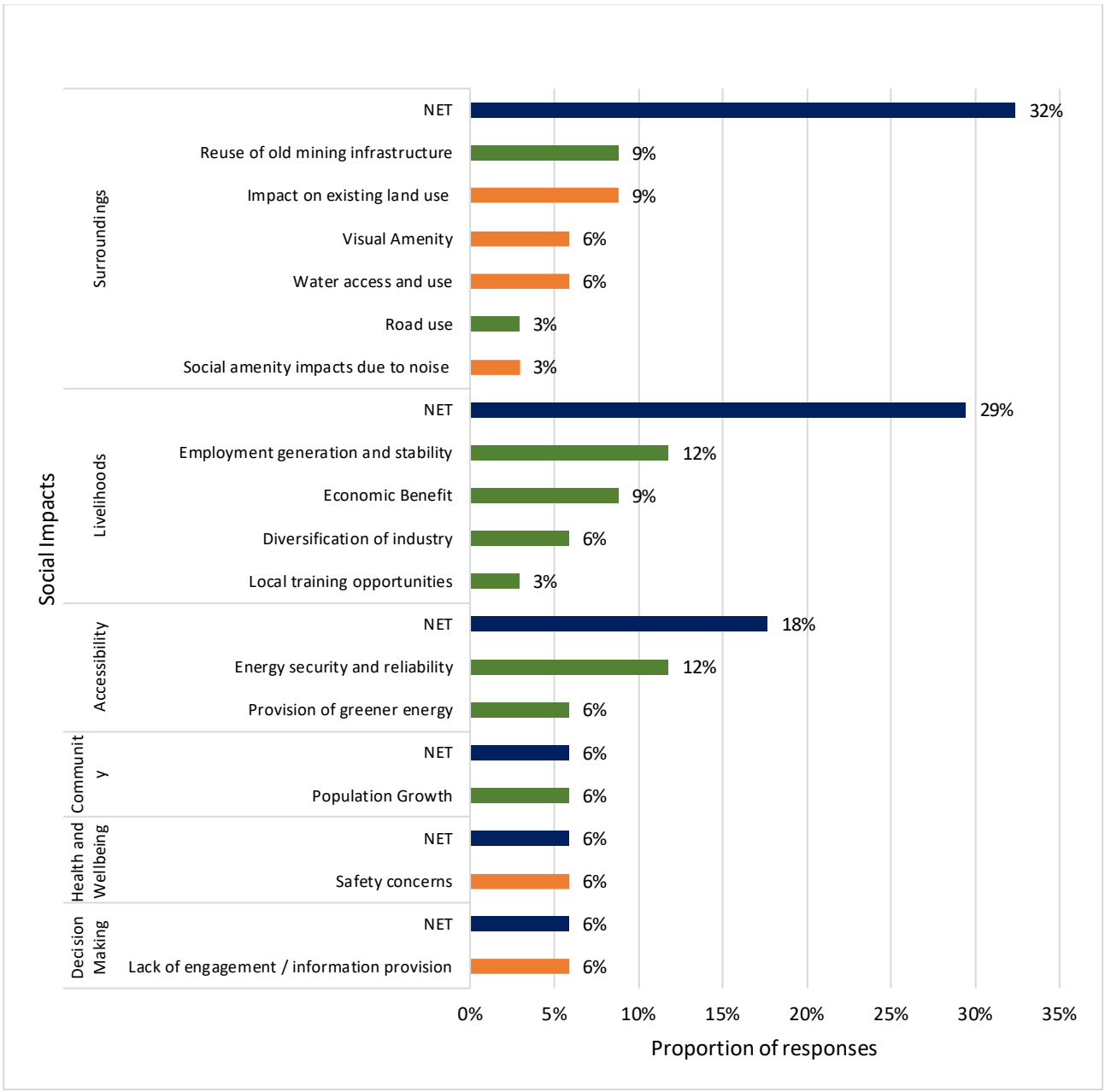


Figure 5.2 Perceived Social Positive and Negative Impacts

Source: Umwelt, 2022

Note: Multiple responses allowed. Data based on survey completions (n=10).

Key: Blue = NET response; Green = Perceived positive impact; Orange = Perceived negative impact

5.3 Agency/Authority Stakeholder Engagement

Agency and government consultation undertaken to-date in relation to the Project is provided in **Table 5.2**, along with some functional stakeholders associated with energy supply. Part of the agency and authority consultation has been undertaken as part of the RIT-T process and feedback in relation to the Project as part of this RIT-T process has been largely positive. Specific feedback in relation to the Project that was received is summarised in **Table 5.2**. There will be further engagement with relevant government agencies and other relevant stakeholders during the EIS Phase.

Table 5.2 Agency and Authority Stakeholder Consultation

Agency	Date	Details
Department of Planning and Environment (DPE)	Scoping Meeting x 3 (05/06/22 09/06/22, 17/06/22)	Project overview, assessment approach and timing.
Broken Hill City Council	November 2021	Written correspondence from Council provided directly to Transgrid as part of the RIT-T PADR review – indicating Councils encouragement for Transgrid to question the viability of the life-extension of the existing diesel-fired turbines and preference and support for the Project.
	February 2022	Project Introduction/Update
	April 2022 – Project update	Meeting – Project update, Council feedback included: • Positive economic benefits particularly energy security for Broken Hill • Potential negative impacts may include visual and cultural impacts associated with transmission line – however highlighted potential impacts seem limited • Broken Hill community are generally supportive of renewable energy development and mining and are keen to attract development that supports the development of the economy • Most significant constraint to development around Broken Hill is Crown Land Native Title land claim.
The Hon. Matthew Keen, NSW Energy Minister	October 2021	Letter – from Hydrostor Providing project overview and request for meeting to discuss the Project
	March 2022	Letter – from Hydrostor Providing project overview and request for meeting to discuss the Project
Broken Hill Chamber of Commence	Q4 2020	Project details and contribution to regional economic development

Agency	Date	Details
NSW Government Member for Broken Hill	2021 and 2022	Project details and contribution to regional economic development
Federal Member for Broken Hill	May 2021	Project Summary letter and Summary of issues exchanged following meeting
Broken Hill Economic Development Board	February 2022	Project Update
NSW Resources Regulator	2021	Discussion about interface between planning and mining regulation to establish requirements with respect to the Project
Mining Exploration and Geosciences (MEG)	2021	Discussion about interface between planning and mining regulation to establish requirements with respect to the Project
TransGrid	2019 - 2022	Ongoing consultation through the RIT-T process and design of the Project
	September 2021	Letter – confirming support of the Project and support for the application to ARENA for funding
Essential Water	2021	Water supply agreement discussions including supply capacity, source and likely offtake point for water pipeline.
	March 2022	Email correspondence confirming sufficient capacity to meet the water demand requirements for the Project under a supply agreement. Essential water will either draw from the Stephens Creek Reservoir or the main supply (from the Murray River)
Australian Renewable Energy Agency (ARENA)	2021-2022	Ongoing dialogue which included project familiarisation, updates and funding support
Australian Energy and Market Operator (AMEO)	November 2021 – April 2022	Project introduction and registration of an "Intending Market Participant" (achieved June 24, 2022)
Broken Hill Airport	Q4 2021 and Q1 2022	Consultation regarding airport operations and obstacle distances
Broken Hill Foundation	Q4 2021 and Q1 2022	Project details and contribution to economic development
Essential Energy	2020 onward	Potential connection and operation of the distribution network.
Origin Energy	2021	Potential offtake of storage capacity
AGL	2021	Potential offtake of storage capacity and understanding of Silverton windfarm operation
Energy Australia	2021 onwards	Potential offtake of storage capacity

6.0 Proposed Assessment of Impacts

6.1 Key Environmental and Social Matters

A review of the environmental and social matters relevant to the Project has been conducted to determine which issues need to be assessed as part of the EIS and the level of assessment that is required. This review has been undertaken with reference to the categories of assessment matters identified by the DPE Scoping Guideline (DPIE, 2021), with the key issues and the proposed level and scope of assessments discussed in the following sections.

The environmental and social matters relevant to the Project are identified and have been characterised (in accordance with DPIE, 2021) as follows:

- matters requiring further assessment in the EIS (refer to **Section 6.2**)
- matters requiring no further assessment in the EIS (refer to **Section 6.3**).

For the matters requiring further assessment in the EIS, **Section 6.2** identifies whether detailed or standard assessment is required (as defined by *Appendix D* of DPE Scoping Guideline). **Appendix 5** presents a Scoping Summary Table showing the outcome of the scoping stage review of matters as required by DPE (2021).

6.2 Matters Requiring Further Assessment in the EIS

The environmental, social and economic matters discussed in this section have been identified as key issues requiring further assessment as part of the EIS to fully understand the potential impacts and identify project-specific mitigation measures and/or alternatives.

6.2.1 Water and Soil Resources

The Project Area is located within the Rangelands Catchment which is within the Barwon Darling and Far Western Catchments. The Project Area is also located in the Stephens Creek Reservoir catchment. Stephens Creek Reservoir provides a backup water supply for Broken Hill and the surrounding area. Runoff from the Potosi Mine site is captured within an onsite water management system which drains to Willa Williyong Creek and subsequently into the Stephens Creek Reservoir (refer to **Figure 6.1**). All water courses surrounding the Project Area are ephemeral with the main water source being run off from Broken Hill and the surrounding catchment during rainfall. The main water supply to Broken Hill is via the 270 km Murray River to Broken Hill pipeline.

Groundwater at the site falls under the NSW Murray Darling Basin Fractured Rock Groundwater Source 2020. The predominant geology of the Project area has a low primary porosity. In highly fractured areas, close to major structures such as the Potosi Hill Fault, more permeable rock units may be present (Bergstrom, 2008).

A hydrogeological assessment undertaken for the original Potosi Mine EIS (coffey, 1994) confirmed groundwater was present at the site, however saline and low yielding, with inflows into the open cut pit of less than 1 L/s. The assessment predicted localised drawdown to within 500 m in response to mining and dewatering of the open cut pit. Additional assessment undertaken in 2006 also predicted inflows to the pit

of around 0.04 ML/day (GHD,2006). The presence of groundwater was also confirmed at Silver Peak shaft. A pump test was undertaken by Perilya in 2010 within the Silver Peak shaft, with nine days of pumping of groundwater and 18 days of recovery monitoring. The results indicated transmissivity of the shaft of approximately 0.5 m^2 /day and inflows of 0.07 L/s. These results indicate a low level of groundwater inflow to the mining operations which is consistent with the low porosity of the predominant geology.

Perilya currently hold a Water Access Licence (WAL) for groundwater take during excavation (WAL40959) with an associated works approval 60WA582779. Geotechnical studies indicate that groundwater inflows are minimal, however, the potential for groundwater to be intercepted as part of excavating the proposed underground cavern and the connecting shafts will be further investigated as part of the EIS.

Based on State vegetation type mapping (SVTM) there are small areas of mapped ground dependent ecosystems (GDE) within 200-300 m of the Project Area. However, associated Plant Community Types (PCT) associated with these mapped GDE areas are not currently mapped within the Project Area.

Water usage associated with the construction phase of the Project will be required for both construction activities, the initial first fill of the proposed reservoir and make up water. Water supply for the construction phase is proposed to be taken from the Stephens Creek Reservoir (subject to water supply agreement with Essential Water). Initial fill of the proposed reservoir will require approximately 250 GL over 18 months. Water usage associated with ongoing operations will be provided through recovery of water from the compression of air, groundwater inflows associated with Perilya Mining operations and supply from the Stephens Creek Reservoir. The proposed reservoir will be covered to reduce evaporation.

The underground cavern will be sealed to prevent inflow of groundwater. The entire system will also be sealed with two shafts connected to the cavern which will operate the SCES facility, one for the conveyance of air, the other for water. The lower end of the water shaft will extend into a sump chamber which will be constructed below the underground cavern, to ensure that a water seal can be maintained at all times during operation.

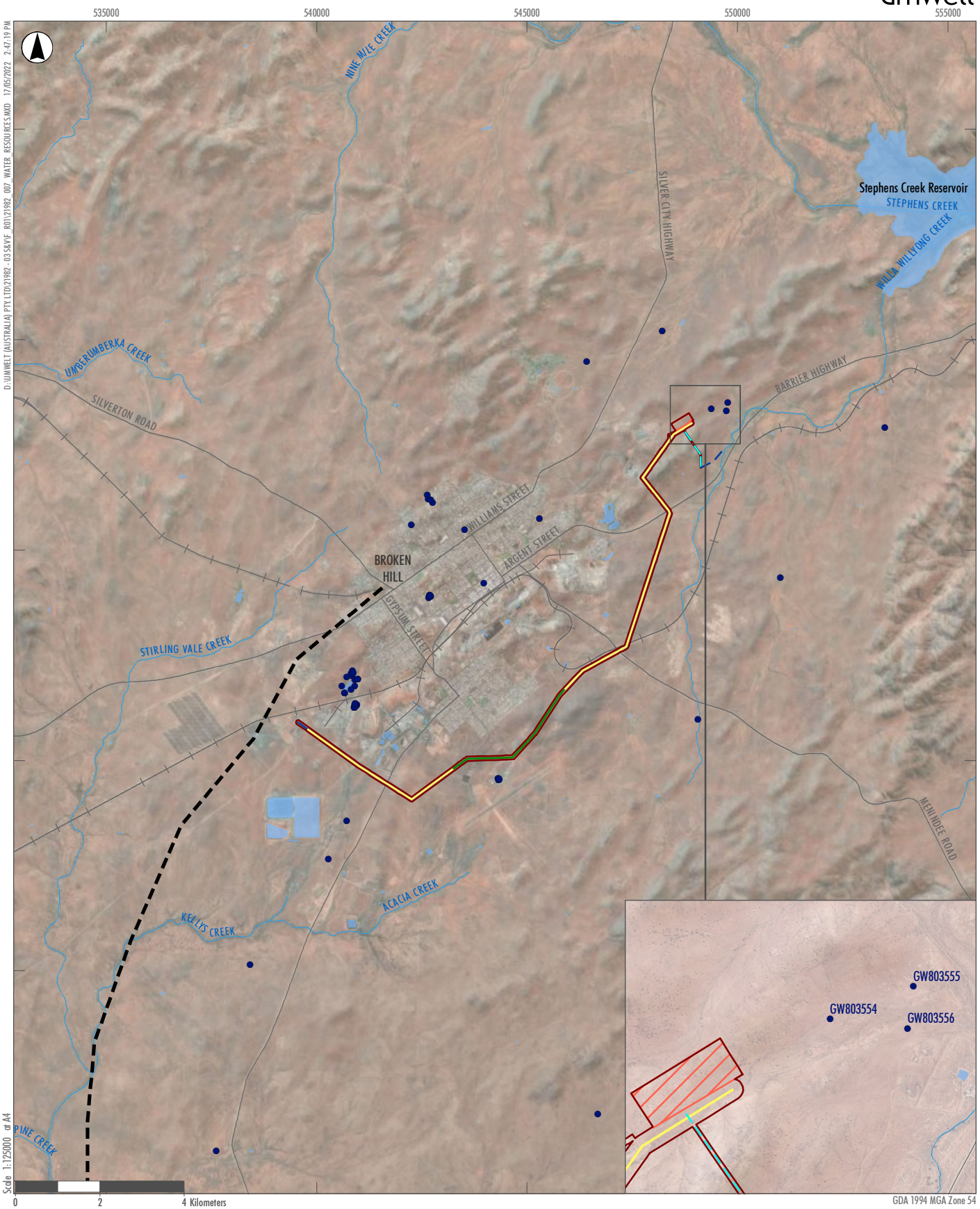
The construction works will be subject to appropriate erosion and sediment controls which will be outlined in a Construction Environment Management Plan (CEMP). The ongoing site water management requirements will be developed as part of an Operational Environmental Management Plan (OEMP) for the Project which will utilise the existing Potosi Mine Site Water Management Plan, where practicable.

6.2.1.1 Water and Soils Assessment

A Water and Soils Impact Assessment (WSIA) will be undertaken as part of the EIS that will consider potential impacts on water resources and the catchment including flooding, erosion and sediment control, water quality, water users, water sourcing and licencing requirements and any required management and mitigation measures to minimise potential impacts of the Project on water and soil resources.

6.2.1.2 Groundwater Impact Assessment

A qualitative Groundwater Impact Assessment (GWIA) will be undertaken as part of the EIS that will consider potential impacts to groundwater resources including aquifer systems, water users, GDEs, seepage, cumulative impacts, licencing requirements and identification of any required mitigation and management measures.



Legend

- Project Area
- Silver City Energy Storage Facility
- Indicative Location of the Broken Hill/Murray River Pipeline
- In ground power line with 20m easement, buried cable
- Overhead power line 20-25m high with 25m easement, monopoles
- Overhead power line 40-48m high with 50m easement, monopoles or steel towers
- Existing Stephens Creek Reservoir Water Pipeline (above ground section)
- Proposed Above Ground Water Pipeline
- Registered Groundwater Bores
- Road
- Railway Line
- Drainage Line

FIGURE 6.1

Water Resources Project Layout

Image Source: ESRI Basemap (2022) Data source: DSFI (2021)

6.2.2 Geology and Geotechnical

The Broken Hill region and Project Area has been subject to historical underground mining operations resulting in the geological conditions being well understood. The geotechnical investigations for the Project indicate that the geotechnical conditions of the site are generally characterised by strong competent rocks with few joints. The high metamorphic grade and tight packed nature of the dominant lithologies lead to an expectation of low rock mass porosity and permeability. Groundwater transmissivity in this rock mass is generally limited to passage through rock fractures where they occur.

Based on Potosi mine data and the preliminary investigations, all dominant rock types are expected to have low porosity and the geological conditions are well suited to the Project.

Geological and geotechnical investigations will be undertaken during the development of the EIS and to inform the detailed design of the Project, including any specific construction requirements to address interactions with existing and future underground mining. This will include the consideration of any geotechnical hazards and cavern construction requirements including long-term stability.

6.2.3 Biodiversity

The construction and operation of the Project is likely to impact biodiversity values within the Project Area and will require assessment in accordance with the NSW Biodiversity Assessment Method (BAM) with the preparation of a Biodiversity Development Assessment Report (BDAR).

A desktop assessment of threatened species and communities has been undertaken utilising NSW and Commonwealth government database searches and review of broad scale State vegetation type mapping (SVTM) to outline biodiversity values that are likely to be present within the Project Area. The desktop assessment also included a review of previous assessments undertaken in relation to the mining operations at Potosi Mine including Potosi Mine Environmental Impact Statement (Pasminco Mining, 1995), Flying Doctor Project Broken Hill Fauna and Flora Assessments (Environmental & Biodiversity Services, 2008). This preliminary work also provides an understanding of the assessment pathway to meet the requirements of NSW and Commonwealth legislation. The area investigated includes a 100 m buffer to the Project Area.

6.2.3.1 Desktop Database Search

A review of threatened species databases was undertaken to provide context and understanding of biodiversity values occurring within 10km of the Project Area. The following State and Federal government databases were reviewed:

- Department of Climate Change, Energy, the Environment and Water (DCCEEW) EPBC Act Protected Matters Search Tool (PMST)
- DPE BioNet Atlas Search Tool.

Results from the database searches were interrogated and a list of species likely to occur within the Project Area that would require further assessment (species credit species) in accordance with the BAM was developed. **Table 6.1** provides a summary of these species requiring further assessment.

An additional 20 threatened species were identified in the database search and were assessed to have potential to occur within and surrounding the Project Area. All 20 species are assigned as ecosystem credit species (under the BAM) which determines these species can be reliably predicted to occur within an area based on vegetation surrogates and the surrounding landscape. Ecosystem species do not require targeted survey under the BAM, to determine presences/absences like species credit species.

Table 6.1 Species credit species recorded within 10 km of the Project Area and require survey

Scientific Name	Common name	BC Act Status	EPBC Act Status	Biodiversity Credit Type (BAM)
Burhinus grallarius	Bush stone-curlew	E		Species
Calidris ferruginea	Curlew sandpiper	E	CE	Ecosystem/Species
Hamirostra melanosternon	Black-breasted buzzard	V		Ecosystem/Species
Hieraaetus morphnoides	Little eagle	V		Ecosystem/Species
Lophochroa leadbeateri	Major Mitchell's cockatoo	V		Ecosystem/Species
Rostratula australis	Australian painted snipe	V	E	Species
Acacia carneorum	Purple-wood wattle	V	V	Species
Acacia notabilis	Mallee golden wattle	E		Species
Acacia rivalis	Creek wattle	E		Species
Indigofera longibractea	Showy indigo	E		Species

Note: E = Endangered, V = Vulnerable, CE = Critically Endangered

6.2.3.2 Preliminary Plant Community Type Mapping

A preliminary vegetation map has been prepared (Refer to **Figure 6.2**) utilising the State Type Vegetation Map: Western Region V1.0.VIS_ID4492 (DPIE 2019). Plant Community Types (PCT) have been identified within the Project Area with a total of eight PCTs identified with all remaining areas assigned as non-native vegetation. **Table 6.2** provides a summary of PCTs based on this regional scale mapping and their estimated area within the Project Area. Survey work will be undertaken to confirm the PCTs present in the Project Area as part of preparing the BDAR.

Table 6.2 Preliminary Plant Community Types and their extent in the Study Area

Plant community types	Area (ha)
PCT 41 -River Red Gum open woodland wetland of intermittent watercourses mainly of the arid climate zone	1.3
PCT 123 -Mulga - Dead Finish on stony hills mainly of the Channel Country Bioregion and Broken Hill Complex Bioregion	46.8
PCT 128 -Nelia tall open shrubland of semi-arid sandplains	23
PCT 136 -Prickly Wattle open shrubland of drainage lines on stony rises and plains of the arid climate zone	3.4
PCT 139 -Prickly Wattle tall open shrubland of dunes and sandplains of semi-arid and arid regions	2.1
PCT 150 -Bottlewasher - Copperburr grassland of the arid zone	0.02
PCT 155 -Bluebush shrubland on stony rises and downs in the arid and semi-arid zones	53.7

Plant community types	Area (ha)
PCT 359 -Porcupine Grass - Red Mallee - Gum Coolabah hummock grassland / low sparse woodland on metamorphic ranges on the Barrier Range, Broken Hill Complex Bioregion	6
Non-native vegetation	34.1
Total	170.5

6.2.3.3 Potential Threatened Ecological Communities

The preliminary vegetation mapping has also been used to determine the occurrence of potential threatened ecological communities (TEC) within the Project Area. Three TECs listed under the BC Act have been identified as having potential to occur in the Project Area. Two of these TECs correspond in part with one of the PCTs identified. **Table 6.3** provides a summary of potential TECs that may occur within the Project Area and **Figure 6.3** details the regional scale PCT mapping.

This preliminary mapping will require refinement after site surveys have been carried out to develop accurate PCT and TEC mapping to further inform the biodiversity assessment and were possible avoid impacts to threatened entities such as TECs.

Table 6.3 Preliminary Threatened Ecological Communities

Threatened Ecological Community	Associated PCT	BC Act Status	EPBC Act Status	Potential Area (ha)
Acacia loderi shrublands	128, 155	E	-	76.7
Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions	128	E	-	23
Porcupine Grass—Red Mallee—Gum Coolabah hummock grassland/low sparse woodland in the Broken Hill Complex Bioregion	359	CE		6

Note: E = Endangered, CE = Critically Endangered

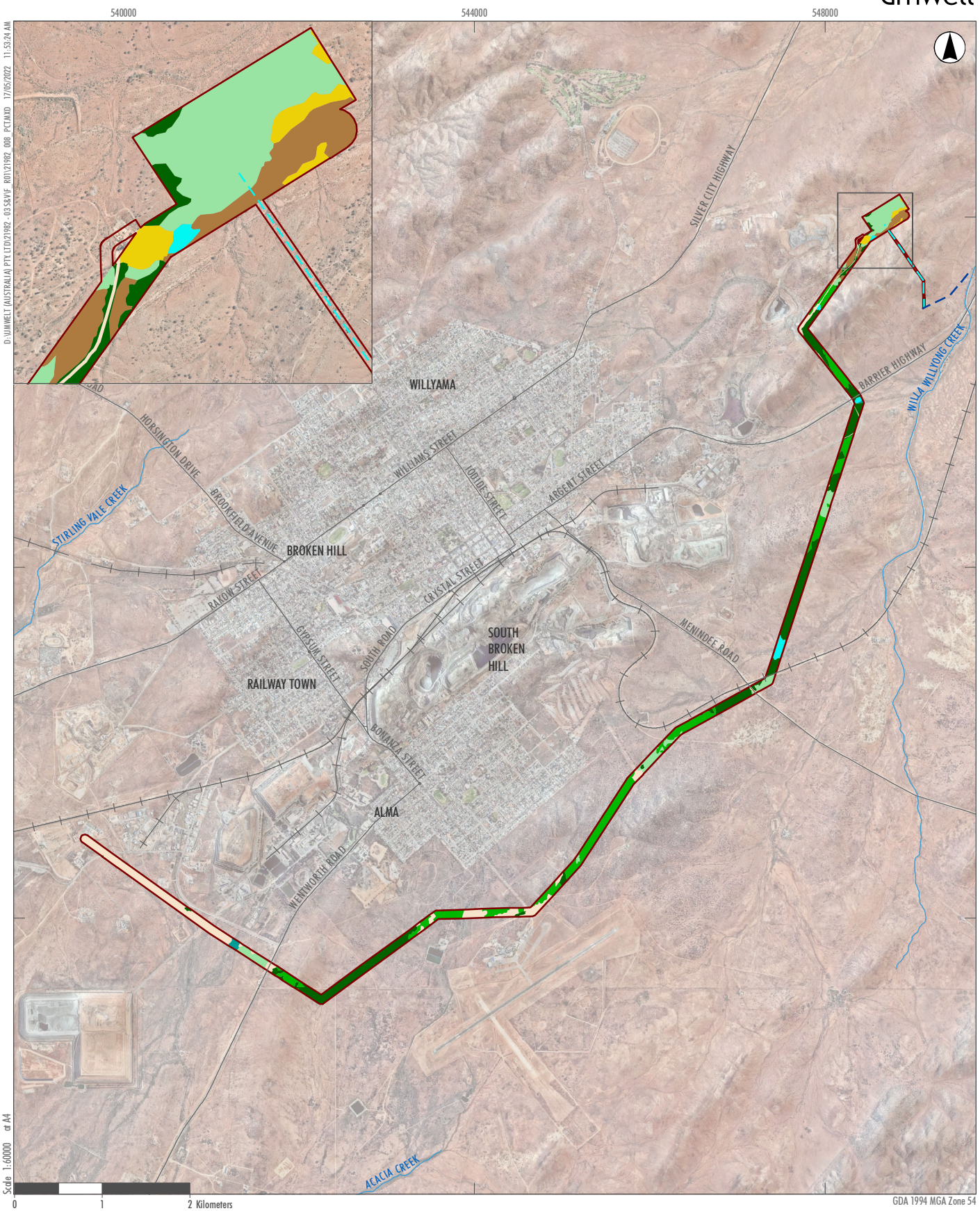
6.2.3.4 Species Credit Species Survey Requirements

The preliminary PCTs were entered into the BAM Calculator (BAM-C) to generate a list of species for which targeted surveys will be required. **Table 6.4** identifies all species generated that have the potential to occur within the Project Area. Optimal survey period requirements (highlighted in dark grey) have been provided in accordance with information outlined in the Threatened Biodiversity Data Collection (TBDC) (DPIE 2022). This list of species credit species may be refined following initial site surveys and where habitat constraint assessments can be carried out to determined if habitat features such as hollow bearing trees are present.

Table 6.4 Species Credit Species likely to require survey within the Study Area

Scientific Name	Common Name	Credit Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flora														
Acacia cameorum	Purple-wood wattle	Species												
Acacia notabilis	Mallee golden wattle	Species												
Acacia rivalis	Creek wattle	Species												
Atriplex infrequens		Species												
Eleocharis obicis	Spike-rush	Species												
Erodiophyllum elderi	Koonamore daisy	Species												
Indigofera longibractea	Showy indigo	Species												
Stackhousia clementii		Species												
Swainsona adenophylla	Violet swainsona	Species												
Swainsona flavicarinata	Yellow-keeled swainsona	Species												
Swainsona murrayana	Slender darling pea	Species												
Swainsona sericea	Silky Swainsona-pea	Species												
Swainsona viridis	Creeping darling pea	Species												
Threlkeldia inchoata	Tall bonefruit	Species												
Avifauna														
Ardeotis australis	Australian bustard	Species												
Burhinus grallarius	Bush stone-curlew	Species												
Calyptorhynchus banksii Samuel	Red-tailed black-cockatoo (inland subspecies)	Dual												

Scientific Name	Common Name	Credit Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Geophaps scripta scripta	Squatter Pigeon (southern subspecies)	Species												
Hamirostra melanosternon	Black—breasted buzzard	Dual												
Hieraaetus morphnoides	Little eagle	Dual												
Lophochroa leadbeateri	Major Mitchell's cockatoo	Dual												
Lophoictinia isura	Square-tailed kite	Dual												
Tyto novaehollandiae	Masked owl	Dual												
Reptiles														
Antaresia stimsoni	Stimson's python	Species												
Ctenophorus mirrityana	Barrier range dragon	Species												
Ctenotus pantherinus ocellifer	Leopard ctenotus	Species												
Diplodactylus platyurus	Eastern fat-tailed gecko	Species												
Lucasium stenodactylum	Crowned gecko	Species												



Legend

- Project Area
- Existing Water Line
- Proposed Water Pipeline
- Road
- Railway Line
- Drainage Line

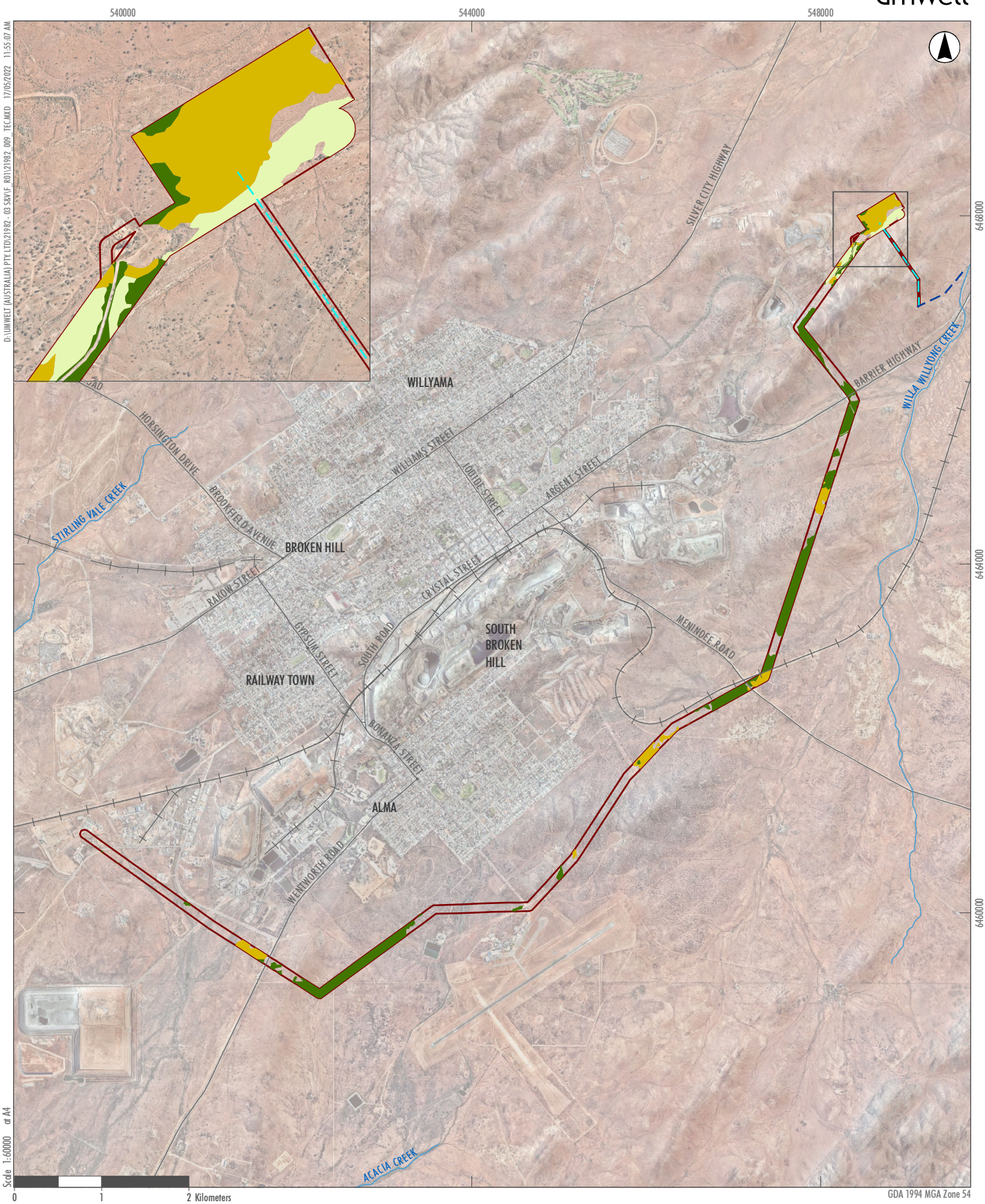
Vegetation Communities

- 0, Not native vegetation
- 41, River Red Gum open woodland wetland of intermittent watercourses mainly of the arid climate zone
- 123, Mulga - Dead Finish on stony hills mainly of the Channel Country Bioregion and Broken Hill Complex Bioregion
- 128, Nelia tall open shrubland of semi-arid sandplains
- 136, Prickly Wattle open shrubland of drainage lines on stony rises and plains of the arid climate zone
- 139, Prickly Wattle tall open shrubland of dunes and sandplains of semi-arid and arid regions
- 150, Bottlewasher - Copperburr grassland of the arid zone
- 155, Bluebush shrubland on stony rises and downs in the arid and semi-arid zones
- 359, Porcupine Grass - Red Mallee - Gum Coolabah hummock grassland / low sparse woodland on metamorphic ranges on the Barrier Range, Broken Hill Complex Bioregion

FIGURE 6.2

Preliminary Plant Community Type Mapping

Image Source: Nearmap (Oct 2021) Data source: DSFI (2021)



Legend

- Project Area
- Existing Water Line
- Proposed Water Pipeline
- Road
- Railway Line
- Drainage Line

Threatened Ecological Communities

- Acacia loderi shrublands
- Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions
- Porcupine Grass—Red Mallee—Gum Coolabah hummock grassland/low sparse woodland in the Broken Hill Complex Bioregion

FIGURE 6.3

Potential Threatened Ecological Communities Mapping

Image Source: Nearmap (Oct 2021) Data source: DSFI (2021)

6.2.3.5 Biodiversity Assessment Report

Field surveys will be undertaken to confirm PCTs and TECs within the Project Area and targeted surveys for relevant species listed in **Table 6.4.** To ensure survey coverage of relevant species, survey effort in May, September and November will be required. Biodiversity surveys will be undertaken within the Project Area with a focus on the SCES Facility site and in the vicinity of proposed infrastructure locations. Following the completion of the surveys, a BDAR will be prepared. The BDAR will include:

- field surveys and GIS mapping:
    - PCT survey and GIS mapping
    - targeted species-credit survey
- preparation of the BDAR including:
    - results of the literature review
    - methods and results of vegetation surveys including a vegetation community map (based on PCTs and including TECs)
    - methods and results of field surveys targeting species-credit species
    - detailed impact avoidance and mitigation strategies
    - assessment of direct, indirect and prescribed impacts
    - outcomes of the calculator assessment identifying the credits generated by the PCTs (and ecosystem-credit species) and species-credit species
    - relevant data and mapping for Agency submission including field sheets, figures and associated GIS files.

6.2.4 Heritage

6.2.4.1 Aboriginal Heritage

The Project Area is within the Traditional country of the Barkandji People. The Barkandji People hold a determination that native title exists over a substantial portion of the City of Broken Hill. The Registered Native Title Body Corporate is the Barkandji Native Title Group (with the claim being NCD2015/001, Barkandji Traditional Owners #8). These areas are also subject to an Indigenous Land Use Agreement (Barkandji Interim Licences ILUA NI2018/007).

Searches of the Aboriginal Heritage Information Management System (AHIMS) database were conducted for an area of approximately 17 km by 16 km centred on the Project Area (comprising the area MGA54 E535000-552000, N6455000-6475000). A total of 205 sites were recorded with in the search area, with sites listed in **Table 6.5** with reference to identified site features. The distribution of the sites is shown in **Figure 6.4**, with reference to the site feature.

Table 6.5 AHIMS registered sites by site feature

Site Feature	Number of sites
Artefact (artefact scatter or isolated artefact)	164
Stone quarry (including those with artefacts)	31
Hearth (including those with artefacts)	3
Potential archaeological deposit with artefact (artefact scatter or isolated artefact)	3
Waterhole (including one with associated art site)	2
Aboriginal resource and gathering	1
Artefact, PAD, Aboriginal ceremony and dreaming	1
TOTAL	**205**

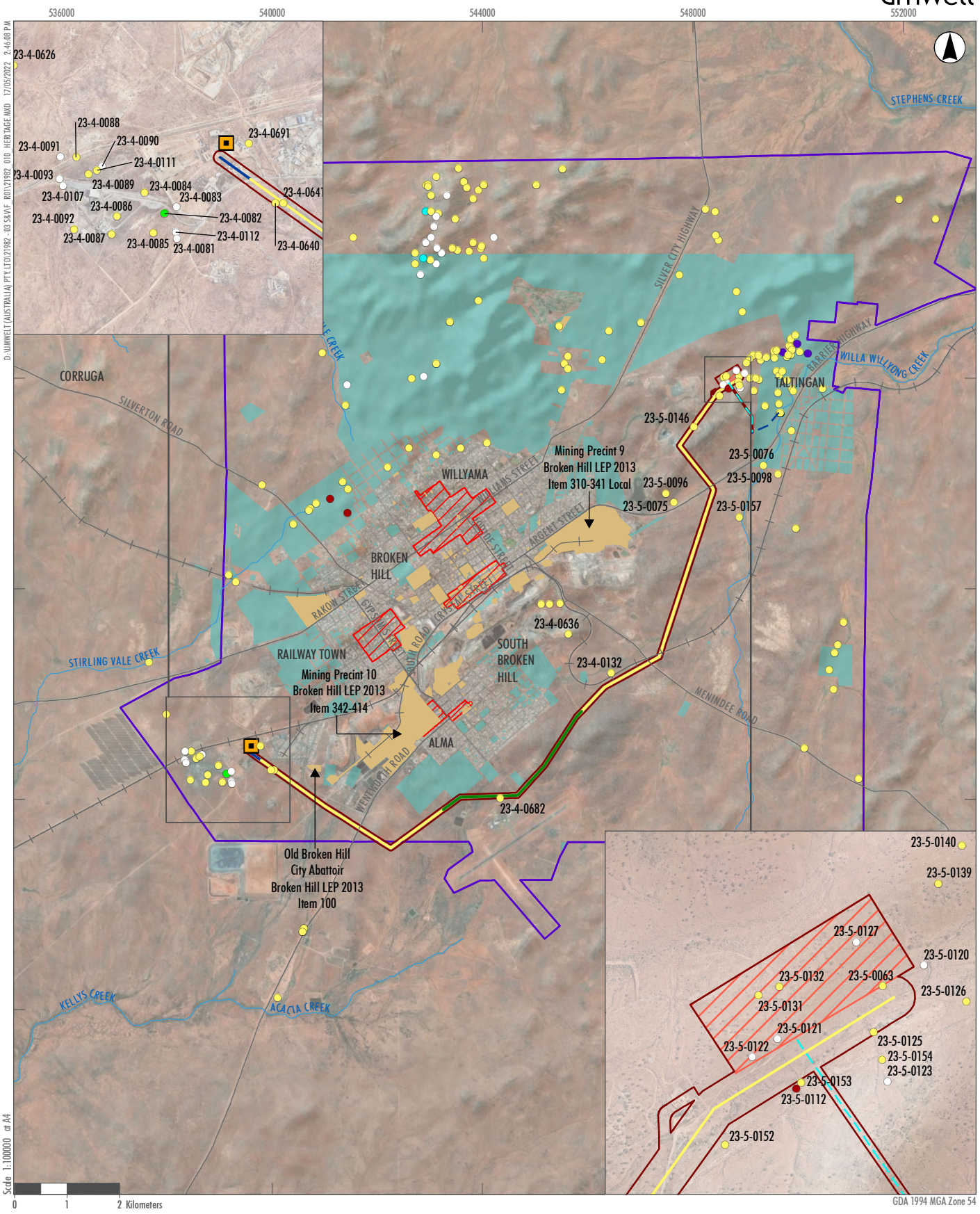
Sites containing stone artefacts are the most common site type, with these sites generally located in proximity to mapped watercourses. There is a substantial cluster of artefact scatters/isolated artefacts in proximity to Willa Willyong Creek and its tributaries, which is located adjacent to the eastern end of the Project Area. Stone quarries are the second most common site type and are generally clustered in three areas. Two of these areas are associated with elevated landforms, potentially because these landforms provide direct access to suitable raw materials for quarrying.

Eleven sites (two artefact scatters, four isolated artefacts, three quarry sites and two sites containing ground ovens) have been registered within the Project Area, with an additional three sites (a hearth with artefacts, an artefact scatter and an isolated artefact) located immediately adjacent to the Project Area. Based on the AHIMS data, these sites remain valid and have not been subject to approved impact associated with the Flying Doctor mining area. The current status of these sites will be confirmed as part of the further investigations completed as part of the EIS.

An Aboriginal Cultural Heritage Assessment (ACHA) will be prepared for the Project as part of the EIS. The ACHA will be undertaken in accordance with the following key guidelines:

- the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011)
- the Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010a).

The ACHA will include consultation with the registered Aboriginal parties for the Project in determining and assessing impacts, developing and selecting options and mitigation measures, having regard to the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010b). This will include consultation with the Registered Native Title Body Corporate.



Legend

- Project Area
- Silver City Energy Storage Facility
- National Heritage List Boundary – Place ID 105861
- Transgrid Substation
- In ground power line with 20m easement, buried cable
- Overhead power line 20-25m high with 25m easement, monopoles
- Overhead power line 40-48m high with 50m easement, monopoles or steel towers
- Existing Stephens Creek Reservoir Water Pipeline (above ground section)
- Proposed Above Ground Water Pipeline
- Road
- Railway Line
- Drainage Line
- Conservation Area - General
- Historic Heritage Item - General

Native Title

- NCD2015/001, Barkandji Traditional Owners #8

AHIMS Sites

- Artefact
- Aboriginal Resource and Gathering
- Hearth
- Potential Archaeological Deposit (PAD)
- Stone Quarry
- Water Hole

FIGURE 6.4

Heritage

Image Source: Nearmap (Oct 2021) Data source: DSFI (2021); NSW DPIE (2022)

6.2.4.2 Historical Heritage

Broken Hill was founded in 1883 by boundary rider Charles Rasp, who discovered valuable metals in the region. The silver ore and lead deposits discovered in nearby Silverton, 25 km north-west of Broken Hill, attracted opportunistic settlers to the area, with the local population reaching approximately 3000 by the end of 1885. Mining soon became a dominant economic sector in Broken Hill, with the formation of the Broken Hill Proprietary Company Ltd (BHP) in 1885 and the establishment of numerous mines. Broken Hill contained one of the world's richest reserves of lead, zinc and silver, and was declared a municipality in 1888. By 1907 Broken Hill was the second largest settlement in New South Wales and had a population of over 30,000. The natural reserves of precious metals began to decline in the twentieth century, leading to a rise in sheep farming and agriculture; now the primary industry of the region. In 2015 Broken Hill became the first Australian city to be included on the National Heritage List (Broken Hill City Council 2022).

A search of the Broken Hill Local Environmental Plan (LEP) 2013, State Heritage Registry and Commonwealth Heritage Database was conducted for the Broken Hill Local Government Area (LGA), encompassing the Project Area. A total of 241 heritage items were identified, predominately located within Broken Hill city centre and peripheral residential or industrial zones. Many of the identified sites are related to the rich mining history associated with Broken Hill, with numerous groups and individually listed items.

No statutory heritage items were identified within the curtilage of the Project Area. Listed heritage items within 1.5 km of the Project Area are outlined in **Table 6.6.** The distribution of all identified sites is shown on **Figure 6.4**.

Table 6.6 Historical Heritage sites by item listing

Site Name	Site Listing	Significance	Site Type	Distance to Project Area
Mining Precinct 10	Broken Hill LEP 2013 Item 342-414	Local	Item – General	<400 metres
Old Broken Hill City Abattoir	Broken Hill LEP 2013 Item 100	Local	Item – General	<400 metres
Mining Precinct 9	Broken Hill LEP 2013 Item 310-341	Local	Item – General	<1500 metres

The EIS will include a historical heritage assessment (HHA) which will be prepared with regard to the NSW Heritage Manual, relevant Heritage Council of NSW guidelines and with consideration of the principles contained in *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance* (ICOMOS, 2013).

6.2.5 Noise and Vibration

The Project will generate noise associated with both the construction and operation phase. Existing background noise levels are influenced by the existing Perilya mining operations, other nearby industrial noise sources and the Barrier and Silver City Highways. There are limited rural residences in the vicinity of the SCES Facility with the closest rural residential receiver to the SCES Facility approximately 1 km to the east on an area of Crown Land. The next nearest residence is located to the south, approximately 2.1 km. The residential area associated with Broken Hill is located approximately 3 km to the southwest of the SCES Facility. The Outback Astronomy business is located approximately 1.3 km to the east.

The construction phase of the Project is expected to be completed over approximately 35 months. Construction activities will also include excavation works associated with the proposed cavern including drilling works and hauling of overburden to the mining overburden emplacement areas. Mining equipment will be utilised for this aspect of the construction program.

The noise level will vary during the construction period depending on the construction phase and will be temporary. A detailed construction program, equipment schedule and associated sound power levels will be developed to inform the Noise and Vibration Impact Assessment (NVIA) for the Project.

Vibration impacts associated with construction operations may occur as a result of blasting (if required), excavation works and machinery operation. This will also be assessed as part of the NVIA.

Noise associated with the operational phase is expected to be typical of other power plants with key aspects of the surface infrastructure housed to reduce associated noise. Equipment details and associated sound power levels will be confirmed to inform the NVIA for the Project.

The NVIA will be undertaken as part of the EIS in accordance with:

- The Noise Policy for Industry (NPfI)
- The Interim Construction Noise Guideline (EPA 2009) (ICNG)
- NSW Road Noise Policy (DECCW 2011) (RNP).

The NVIA will include:

- determination of the existing background and ambient noise levels in the locality of the Project including:
    - confirmation of the nearest potentially affected residential receivers and the noise-sensitive localities
    - establishing the existing background noise levels
- a detailed assessment of prevailing weather conditions in accordance with the NPfI using available meteorological data
- determination of the project-specific noise levels based on the existing intrusive and amenity noise levels as required under the NPfI
- predictive noise modelling and the assessment of potential noise impacts at the nearest affected noise sensitive receivers for the Project
- consideration of feasible and reasonable noise mitigation strategies where the project-specific noise levels are exceeded (if required)
- determination of monitoring and reporting programs required
- an assessment of the cumulative noise impacts from the Project, the Perilya mining operations and other relevant nearby mining and industrial operations

- an assessment of vibration impacts
- an assessment of the construction noise and traffic noise impacts of the Project in accordance with relevant assessment procedures.

6.2.6 Air Quality and Greenhouse Gas and Energy

Air quality and greenhouse gas emissions will be predominately associated with the construction phase of the Project. The construction phase will generate emissions from machinery and dust associated with exposed surfaces and transport of excavated material. There will also be greenhouse gas emissions associated with energy use for construction activities.

Emissions associated with the operation of the SCES facility will comprise of venting heated compressed air. The temperature of released air is planned to be regulated to existing ambient air with maximum temperatures of ~30 degrees Celsius expected. There will be minor emissions associated with maintenance of equipment and the use of emergency diesel generators to operate critical systems during emergency events.

An air quality impact assessment (AQIA) will be undertaken to support the Project including:

- a review of air quality monitoring data
- identification of the potentially affected sensitive receivers
- identification of all sources of dust/air pollution associated with construction and operation
- assessment of cumulative air quality impacts of the Project, including cumulative emissions from the Project, and the Perilya mining operations
- consideration of released air temperatures and associated impacts
- greenhouse gas and energy assessment
- identification of required air quality monitoring and management measures.

6.2.7 Traffic and Transport

The SCES facility will be accessed directly from the Barrier Highway via the existing Potosi Mine access road. Both the construction and operation phase will generate additional traffic with the majority of traffic associated with the construction phase. The transmission line will be accessed from multiple locations with an associated easement applied for ongoing maintenance and access.

Port Adelaide is the closest port to Broken Hill and will be utilised for the delivery of construction components. Oversize over mass (OSOM) vehicles will be required for the delivery of some components however works to the existing road network are unlikely to be required to facilitate the delivery of construction, a route analysis will be undertaken to confirm this. Consultation with relevant roads authorities will also be undertaken during the preparation of the EIS.

A Traffic and Transport Impact Assessment (TTIA) undertaken to assess any potential impact to the existing road network and road users. The assessment will be undertaken following relevant NSW Government guidelines and assessment standards including the Guide to Traffic Generating Developments (RTA, 2002), Road Design Guide and relevant Austroads Standards and Austroads Guide to Traffic Management.

The TTIA will be include:

- a review and assessment of the existing road network
- a review of any previous traffic impact assessments undertaken for the surrounding area
- traffic counts in selected areas along the proposed traffic routes (if data is not readily available)
- a detailed assessment of the likely Project-alone and cumulative traffic impacts during the construction and operational phases of the Project (including intersection performance, capacity and safety)
- identification of any mitigation and management measures that may be required.

6.2.8 Social Impact Assessment

A Social Impact Scoping Assessment has been prepared in accordance with the SIA Guideline 2021 (refer to **Appendix 4**). As discussed in **Section 5.0**, a key component of the SIA process to date has been and will be ongoing community and stakeholder engagement through the continued implementation of the CSEP, which will inform the assessment of social and economic impacts associated with the Project.

6.2.8.1 Key Challenges and Opportunities

The scoping phase SIA outlines the social baseline profile of the communities defined within the Projects Social Locality, including identifying the key challenges and opportunities facing the Region. This analysis has been undertaken through the review of local, regional and state government reports, strategies and plans, ABS Census data and other secondary data sources, and through community consultation.

The Far West Region is expansive, covering an area from Lightning Ridge, near the Queensland border, to the Murray River townships near the Victorian border, and along the South Australian Border (NSW Government, 2022). The region has a population of 44,917. Broken Hill is considered the only city within the Far West, with a population of 17,708 in 2016, accounting for almost 40% of the total regional population (ABS, 2016).

Far West NSW's economy is significantly focused on mining and agriculture, specifically extensive pasturing. There continues to be a push from state government to improve overall connectivity and infrastructure in the region to develop economic and social capacity within the region and to strengthen local communities (NSW Government, 2022).

Experiences of recent population decline, and the reliance of the town's economy on the mining sector are a key challenge for the Region. Through community consultation, it is evident that the community largely support the diversification of industry, and the continued establishment of renewable projects in the region to facilitate further economic and population growth. Local Government representatives also commented on the general community support for renewable project development within the community.

Despite support for population growth, the availability and standard of housing in Broken Hill has been recognised as a key challenge needing to be addressed should the community wish to attract a broader demographic. Housing concerns were also noted as a key need by community members during consultation, as was overall access to health services, including medical specialists.

Low levels of education and employment are becoming a key challenge, with local and state governments recognising the need to grow educational opportunities in the area, by both supporting school aged children with numeracy and literacy, but also technical skills development. Increasing access to training opportunities and apprenticeships for young people in the community was recognised by community residents, as a means to not only increase education rates, but also overall employment.

The scoping phase SIA includes the following summary based on the understanding of the social locality and the characteristics of the community identified. The Project is:

- located within a region which is continuing to experience population decline, with a recognition that the area needs to reduce its mining dependence and diversify its industry base
- is compatible with existing land uses in the area, opportunity for re-use and repurposing of mining land and infrastructure
- is consistent with government and community aspirations for the area
- unlikely to result in cumulative impacts on local service providers during the construction phase, however an influx of project workforce may put strain on the limited capacity of local service providers (requires further assessment in Phase 2 of the SIA)
- an option to address critical energy supply issues for the town.

6.2.8.2 Social Impact Assessment

The scoping phase of the SIA has included the compilation of a social baseline profile, outcomes of early community and stakeholder consultation to inform the scoping of Project-related social impacts and opportunities, and preliminary social impact prediction and evaluation. The outcomes of the stakeholder engagement are outlined in **Section 5.0**. A preliminary social impact evaluation has been undertaken to inform and support the refinement of Project design and plans to reduce negative project impacts and facilitate the enhancement of positive project benefits (refer to **Appendix 4** for further detail).

A detailed SIA will be prepared to inform the EIS which will include an ongoing process of stakeholder engagement. The SIA for the Project will include the assessment of social impacts and development of relevant strategies to mitigate the negative and enhance the positive impacts associated with the Project. Further SIA and technical environmental impact studies will address perceptions of impacts raised by key stakeholders.

The SIA will be developed in accordance with the SIA Guideline 2021 and will involve the following key activities:

- An update of the baseline social profile so that any further baseline data relevant to the social impacts identified is obtained.

- Further validation of the area of social influence and identification of affected communities and vulnerable groups.

- Provision of feedback to Broken Hill community members and key stakeholders on the outcomes of the issues raised in the scoping phase and communication of the next steps in the assessment process and further opportunities for community input.

- Update of the Project CSEP and further engagement with Broken Hill community members and other key stakeholders on key social impact areas. This will involve feedback on the outcomes of EIS technical studies and will provide opportunities for input to the development of appropriate management and enhancement measures to address social impacts and residual effects.

- A comprehensive assessment and evaluation of social impacts against existing baseline conditions.

6.2.9 Economic Impact

To inform the feasibility of the Project, Acil Allen was engaged to undertake a preliminary economic assessment (Acil Allen, 2021). The assessment provides a socio-economic profile of the Broken Hill economy and the potential contribution of the Project relevant to construction and operation. This includes potential employment, and the generation of taxation revenue. The assessment also outlines the direct impact and the total economic impact of the project using Computable General Equilibrium (CGE) modelling.

The potential economic impacts of the Project include:

- up to $560 million of capital expenditure (including labour costs and contingency), with the vast majority of construction expenditures occurring in NSW and the community of Broken Hill

- average of 260 full time equivalent (FTE) construction jobs created over a 3-year construction period, with a peak in the second year of 350 personnel. It is anticipated that many of these will be sourced from the local Broken Hill region

- during the 50+ year operational life, approximately 53% of all operations expenditures will be purchased from the Broken Hill region, equivalent to roughly $12 million per annum

- in addition to the direct jobs generated during the construction and operation phases, the project will require significant quantities of NSW goods and services, which will assist with increasing labour demand across NSW

- will provide a fossil-fuel free long-term grid reliability solution to enable the community, mining operations and renewable energy sector to grow over time, serving an increasing electrical load in the most cost-effective manner for the grid.

- The economic impact assessment will be reviewed and updated based on the outcomes of the detailed assessment proposed during the EIS phase. The assessment will outline the benefits of the Project for the Broken Hill Region and NSW, applicable to both the construction and operational phase. Any requirement management and mitigation measures will also be identified.

6.2.10 Hazards and Safety

The following section addresses the proposed approach to assessing potential hazards and safety impacts associated with the Project including preliminary hazard analysis, electromagnetic fields (EMF), impacts to telecommunications and bushfire threat.

6.2.10.1 Preliminary Hazard Analysis

A preliminary risk screening for storage and transport of hazardous materials/dangerous goods will be undertaken in accordance with State Environmental Planning Policy 33 Hazardous and Offensive Development (SEPP 33). This will include a review of the hazardous materials/dangerous goods required for construction and to be stored at the SCES facility and the quantity and frequency of hazardous materials/dangerous goods to be transported to/from the SCES Facility during operation of the Facility.

With regard to the works associated with construction and operation of the proposed cavern, given the location of the SCES facility within an existing mining area and depth of the proposed cavern below surface, no geotechnical risks to the community are anticipated as a result of the Project. The geological conditions are well understood, and the proposed excavation works will use standard excavation methods similar to the existing mining operations. Whilst no material geological or geotechnical risks are expected, a risk assessment capturing risks associated with construction and operation of the Project and proposed mitigation and management measures, will also be included in the Hazard Analysis. This will include consideration of any geological and geotechnical risks.

6.2.10.2 Electromagnetic Fields

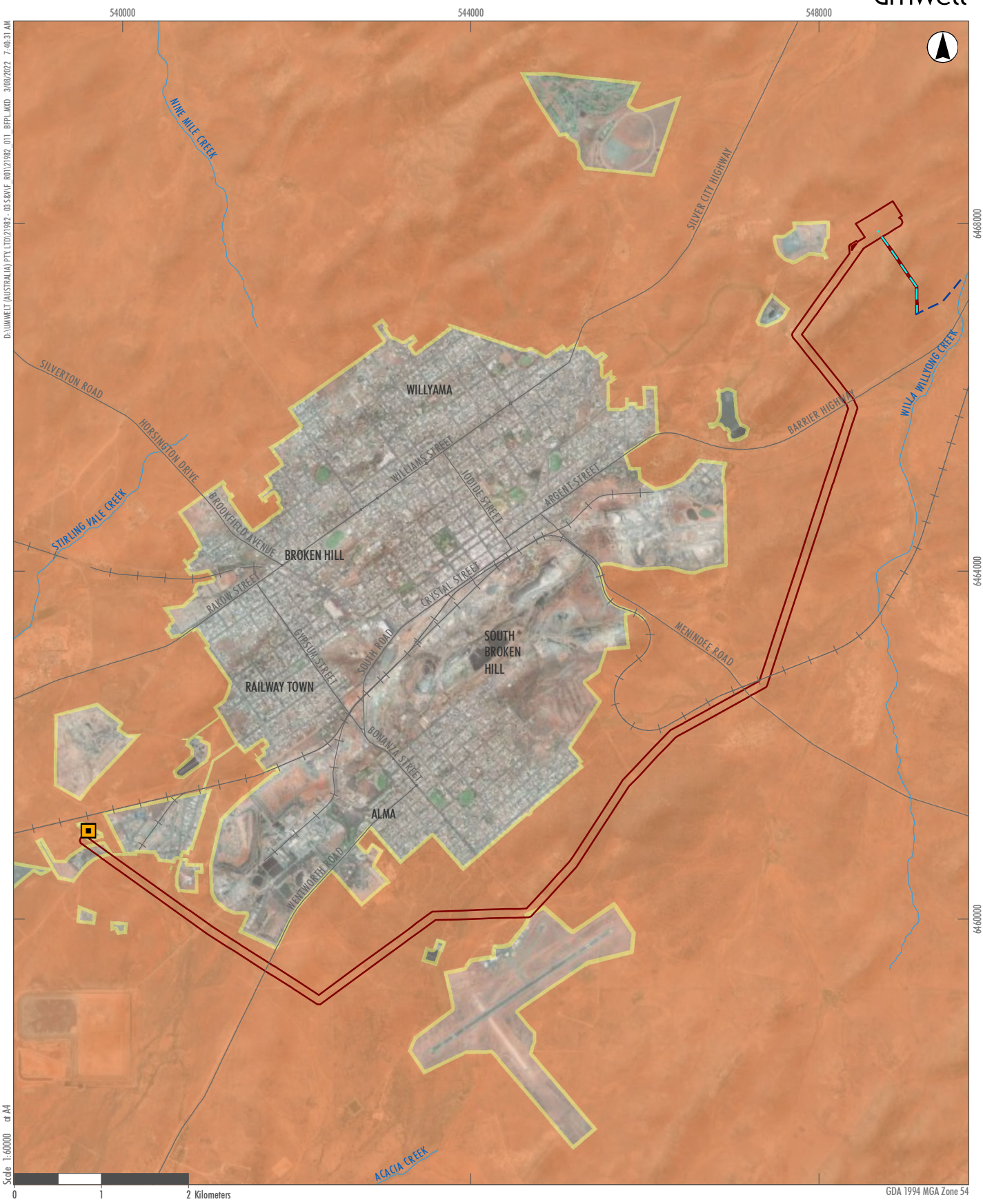
EMF are present where electric current flows, including overhead and underground transmission lines and substations and electrical appliances. The standard SEARs for electricity related developments require proponents to *"consider and document any health issues having regard to the latest advice of the National Health and Medical Research Council, and identify potential hazards and risks associated with electric and magnetic fields and demonstrate the application of the principles of prudent avoidance."*

The EIS will include an EMF assessment which will consider potential health issues and risks associated with EMF produced by the Project and associated electrical infrastructure within the Project Site in accordance with the ICNIRP Guidelines for Limiting Exposure to Time-varying Electric, Magnetic and Electromagnetic Fields (1998).

6.2.10.3 Bushfire Hazard

The Project Area is identified as bushfire prone land by the RFS Bushfire Prone Land Mapping (refer to **Figure 6.5**).

A bushfire threat assessment will be undertaken in accordance with the requirements of Planning for Bushfire Protection (PBP) 2019 (NSW Rural Fire Service, 2019). Consultation with the NSW RFS will also be undertaken during the preparation of the EIS.



Legend

- Project Area
- Transgrid Substation
- Existing Stephens Creek Reservoir Water Pipeline (above ground section)
- Proposed Above Ground Water Pipeline
- Road
- Railway Line
- Drainage Line

Bushfire Prone Land Vegetation Category Mapping

- Vegetation Buffer (100m to Category 1 Vegetation and 30m to Category 2 Vegetation)
- Vegetation Category 3

FIGURE 6.5

Bushfire Prone Land Map

Image Source: Nearmap (Oct 2021) Data source: DSFI (2021)

6.2.11 Cumulative Impacts

As discussed in **Section 2.4**, the Project will be assessed in accordance with the requirements of the Cumulative Impact Assessment Guidelines for State Significant Project (DPIE, 2021b), which sets clear expectations and requirements for assessing project-level cumulative impacts related to SSD projects. The EIS will consider relevant other construction, industrial and employment generating projects within the locality. Additionally, the EIS will address the interaction with the existing mining operations and other industrial development in the area associated with the operations phase of the Project.

6.2.12 Other Matters

The EIS will also address other issues relating to:

- Visual Impact – including potential visual impact associated with the proposed transmission line and potential lighting impacts, specifically in relation to the Broken Hill Observatory.
- Land use – the EIS will assess the potential interactions of the Project with other land uses, including the existing Potosi mining operation and surrounding land uses including the Outback Astronomy Facility. This assessment will draw on the findings of other related assessments including impacts on visual amenity, water, soil, noise, air quality, traffic, hazards and safety.
- Waste – the EIS will describe the likely waste streams to be generated during construction and operation and describe measures to manage, reuse, recycle and dispose of this waste in accordance with relevant guidelines.
- Decommissioning and rehabilitation, including outlining interactions with the Potosi Mining operations and associated rehabilitation requirements.
- Dam Safety – the Project is unlikely to result in any impacts relating to dam safety, this will be confirmed through further investigation and consultation with Dams Safety during the development of the EIS.

Whilst these matters will be appropriately assessed in the EIS, detailed assessments are not proposed as the issues can be readily defined, assessed and mitigated using well recognised approaches.

6.3 Matters Requiring No Further Assessment in the EIS

Table 6.7 outlines the matters that are considered to not require further assessment in the EIS based on the scoping phase assessment along with a comment justifying why no further assessment is required.

Table 6.7 Matter requiring no further assessment in the EIS

Issue	Comment
Port and airport facilities	The Project does not result in any change to port or airport facilities. The design of the proposed transmission line section near the airport has been designed to avoid interactions with the airport through managing the height of the proposed line. Further engagement will be undertaken with the airport operator as part of the ongoing engagement program as part of the EIS to confirm that the transmission line design avoids impacting on the airport operations.
Rail facilities	The Project does not propose to utilise any rail facilities.
Coastal hazards	The Project is not located within a coastal zone and will not result in any impacts to coastal zones.

7.0 References

Acil Allen (2021) Economic Impacts of the Broken Hill ACAES

Broken Hill City Council (2022) *History* (https://www.brokenhill.nsw.gov.au/Community/About-the-city/History)

Commonwealth of Australia (2021) *International climate change commitments* (https://www.industry.gov.au/policies-and-initiatives/australias-climate-change-strategies/international-climate-change-commitments)

International Commission on Non-Ionizing Radiation Protection (ICNIRP) (1998) Guidelines for Limiting Exposure to Time-varying Electric, Magnetic and Electromagnetic Fields

International Council on Monuments and Sites (ICOMOS) (2013) The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance

Landcom (2004) Managing Urban Stormwater: Soils and Construction Volume 1

NSW Department of Environment, Climate Change and Water (DECCW) (2009) *Waste Classification Guidelines*

NSW Department of Environment, Climate Change and Water (DECCW) (2010a) Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW

NSW Department of Environment, Climate Change and Water (DECCW) (2010b) *Aboriginal Cultural Heritage Consultation Requirements for Proponents*

NSW Department of Planning, Industry and Environment (DPIE) (2021a) State significant development guidelines – preparing a scoping report

NSW Department of Planning, Industry and Environment (DPIE) (2021c) NSW Cumulative Impact Assessment (CIA) Guidelines for State Significant Projects

NSW Department of Planning, Industry and Environment (DPIE) Social Impact Assessment Guidelines for State Significant Projects

NSW Department of Planning, Industry and Environment (DPIE) Undertaking Engagement Guidelines for State Significant Projects

NSW Environment Protection Authority (EPA) (2016) The Approved Methods for the Modelling and Assessment of Air Pollutants in NSW

NSW Government (2016) NSW Climate Change Policy Framework

NSW Government (2020a) NSW Electricity Strategy

NSW Government (2020b) Renewable Energy Zones: Frequently asked questions

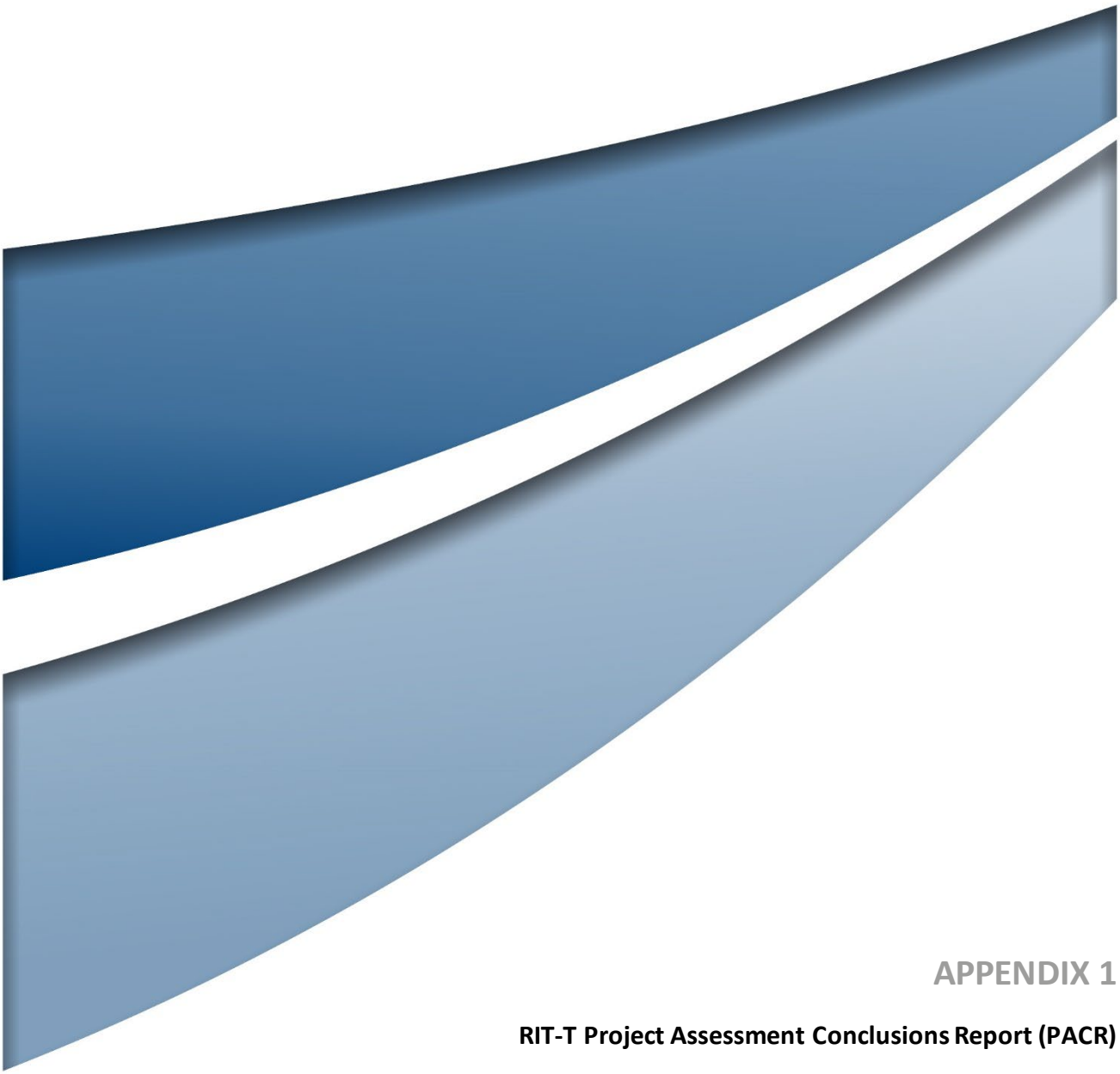
NSW Office of Environment and Heritage (OEH) (2011) Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW

NSW Roads and Traffic Authority (RTA) (2002) *Guide to Traffic Generating Developments*

NSW Rural Fire Service (RFS) (2019) Planning for Bushfire Protection (PBP) 2019

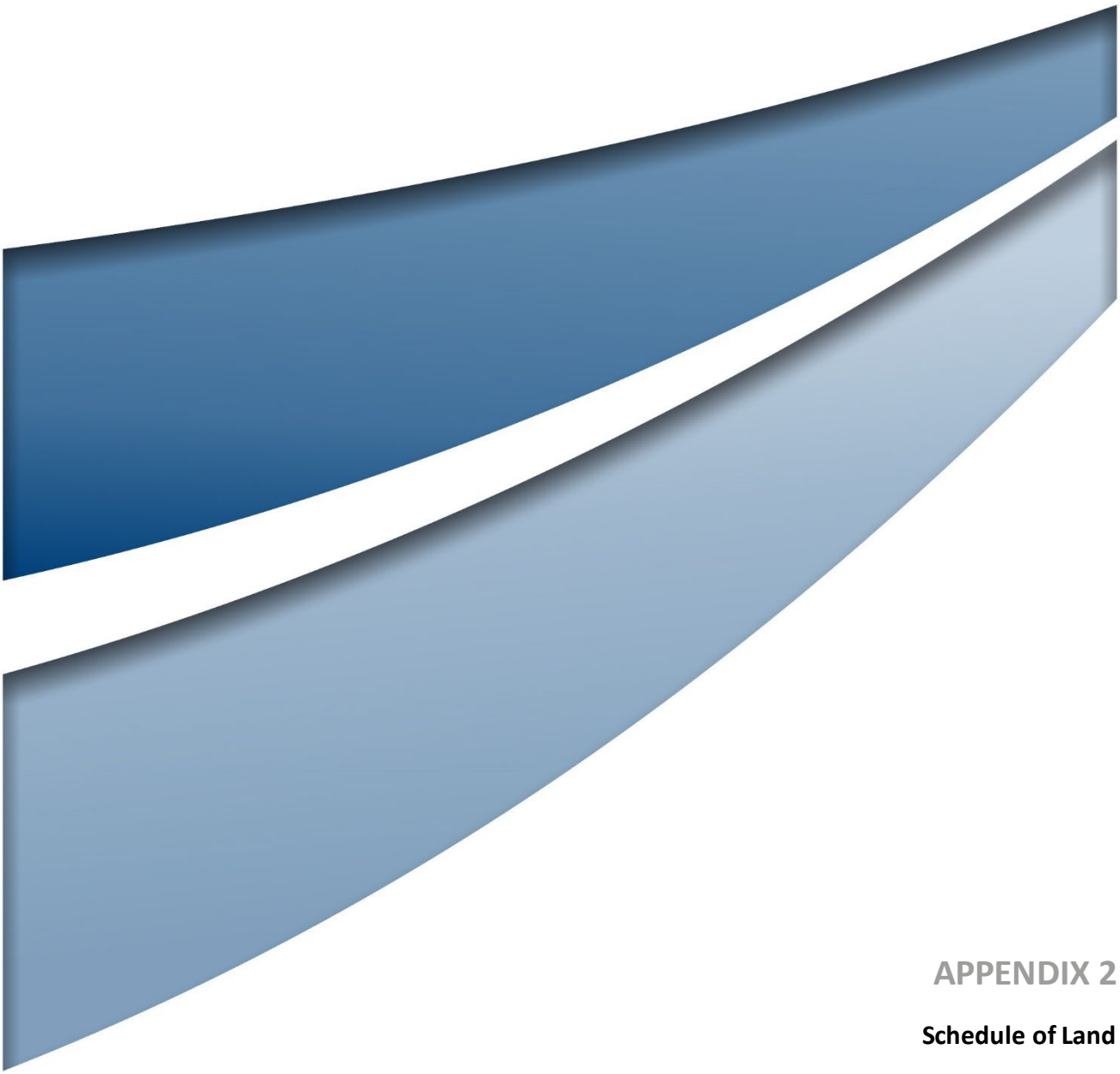
Transgrid (2022) Maintaining Reliable Supply to Broken Hill, RIT-T – Project Assessment Conclusions Report

Transgrid (2018) Transmission Line Design Standard



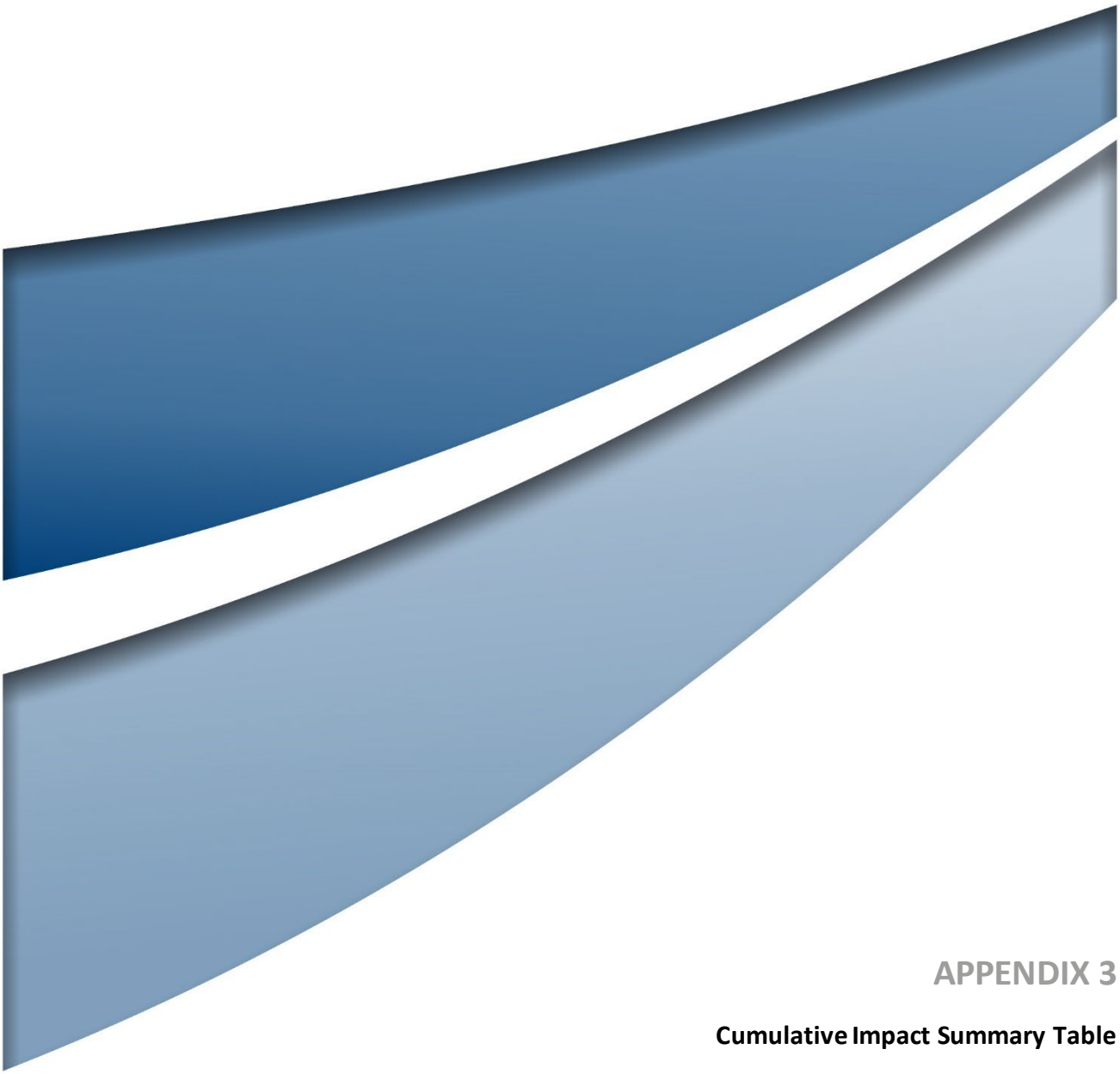
APPENDIX 1

RIT-T Project Assessment Conclusions Report (PACR)



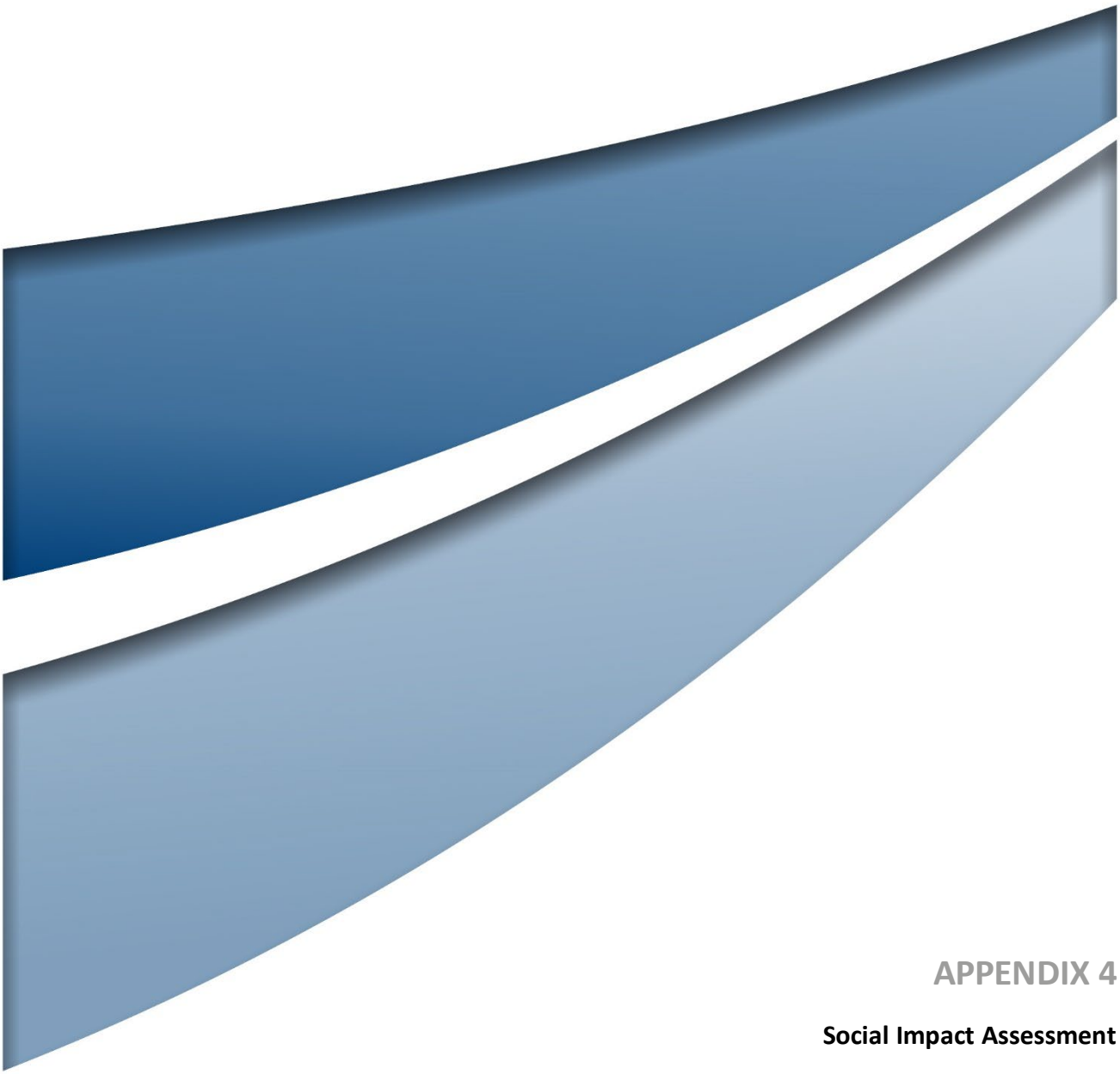
APPENDIX 2

Schedule of Land



APPENDIX 3

Cumulative Impact Summary Table



APPENDIX 4

Social Impact Assessment

APPENDIX 5

Scoping Summary Table

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